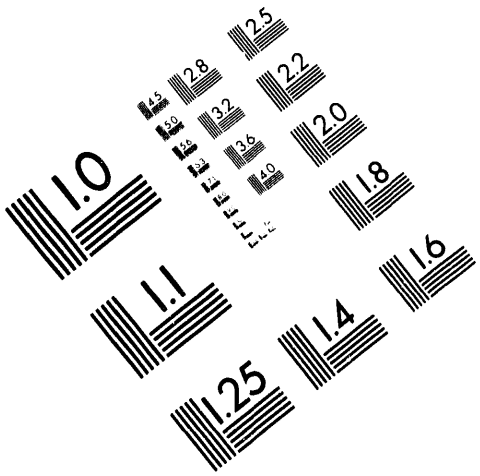

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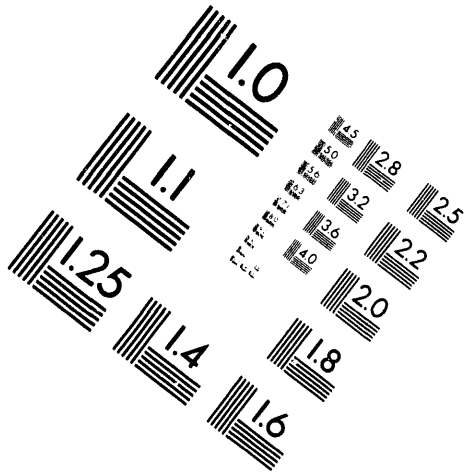

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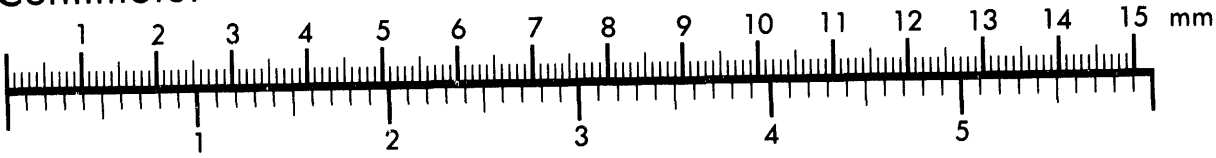

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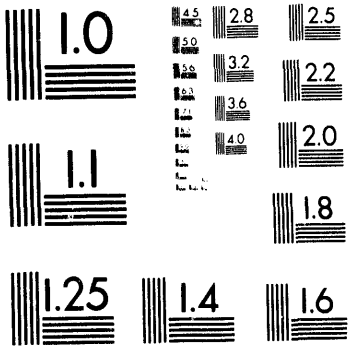

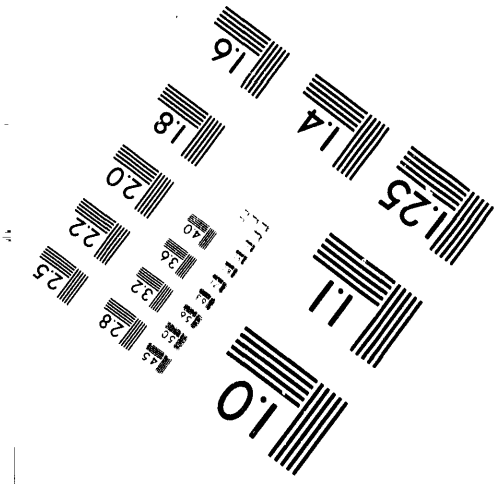

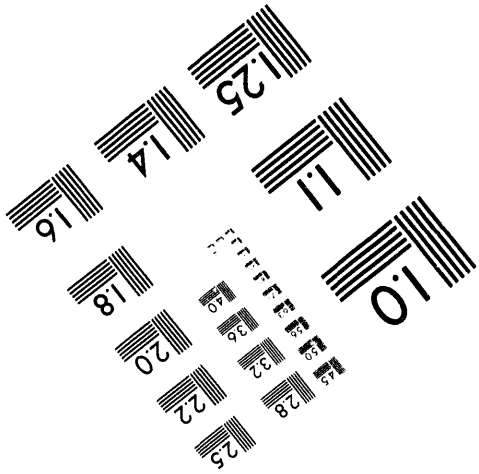

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7/21/94
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7. Abstract

Underground single-shell waste storage tanks located at the Hanford Site in Richland, Washington, generate gaseous mixtures that could be ignited, challenging the structural integrity of the tanks. The structural capacity of the single-shell tanks to internal pressure is estimated through nonlinear finite-element structural analyses of the reinforced concrete tank. To determine their internal pressure capacity, designs for both the million-gallon and the half-million-gallon tank are evaluated on the basis of gross structural instability.

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STATIC INTERNAL PRESSURE CAPACITY OF HANFORD SINGLE-SHELL WASTE TANKS

June 1994

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INDEPENDENT REVIEW

Document Reviewed Static Internal Pressure Capacity of Hanford Single-Shell Waste Tanks

Author ADVENT Report No. WHC-SD-WM-TI-623 Rev. 0 EDT No. 142736

The subject document has been reviewed by the undersigned. The reviewer reviewed and verified the following items as applicable [EP.4.1].

- Engineering Specification
- Design Input
- Basic Assumption
- Approach/Design Methodology
- Related Information
- Conclusion/Result Interpretation

Reviewer

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Date

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Yes	No	N/A	
☒	[ ]	[ ]	Problem completely defined.
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ENGINEERING ANALYSIS SOFTWARE REPORT FORM

ABAQUS Ver. 4.9	N/A 94-025
SOFTWARE APPLICATION	KEY NUMBER (IF APPLICABLE)
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ANALYST (PRINTED NAME)	EDT/DOCUMENT NUMBER
James B. Truitt	
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DATE PERFORMED	

DESCRIPTION OF ANALYSIS:

Axisymmetric static analysis using the ANACAP-U subroutine, for evaluation of one-million-gallon single-shell waste tanks.

Elements:	Eight-node axisymmetric solid elements, two-node axisymmetric shell elements, *REBAR subelements, and linear spring elements.
Loads:	Distributed pressure loads (*DLOADs) including gravity loads, hydrostatic loads, and uniform pressure loads.
Materials:	*USER MATERIAL for concrete, *ELASTIC and *PLASTIC for reinforcing steel, and *ELASTIC for liner steel.
Boundary Conditions:	*BOUNDARY conditions to define nonzero spring displacements, SPRING1 elements which are restrained at one end.
Solution:	*STATIC analysis with the NOSTOP option.

Phillip R. Kich
SIGNATURE OF ANALYST

5/27/94
DATE

ENGINEERING ANALYSIS SOFTWARE REPORT FORM

ABAQUS Ver. 4.9	N/A 94-026
SOFTWARE APPLICATION	KEY NUMBER (IF APPLICABLE)
Randall Marlow	WHC-SD-WM-TI-623
ANALYST (PRINTED NAME)	EDT/DOCUMENT NUMBER
James B. Truitt	
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January, 1994	
DATE PERFORMED	

DESCRIPTION OF ANALYSIS:

Axisymmetric static analysis using the ANACAP-U subroutine, for evaluation of half-million-gallon single-shell waste tanks.

Elements: Eight-node axisymmetric solid elements, three-node axisymmetric shell elements, *REBAR subelements, and nonlinear spring elements.

Loads: Distributed pressure loads (*DLOADs) including gravity loads and hydrostatic loads.

Materials: *USER MATERIAL for concrete, *ELASTIC and *PLASTIC for reinforcing and liner steel, *DRUCKER PRAGER and *YIELD for soil plasticity, *FIELD variables to augment concrete and soil material behavior.

Boundary Conditions: *BOUNDARY to impose roller-type restraints at soil boundaries. Used sub-option FIXED to freeze dummy nodes as well as *MODEL CHANGE to add and remove soil elements. Used linear constraint equations (*EQUATION) to allow proper soil layer placement.

Solution: *STATIC analysis with the NOSTOP option and *INITIAL CONDITIONS, TYPE=FIELD for initializing field variables.

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ENGINEERING ANALYSIS SOFTWARE REPORT FORM

ANACAP-U Ver. 92-2.2
SOFTWARE APPLICATION

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KEY NUMBER (IF APPLICABLE)

Randall Marlow / Phillip Kich
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WHC-SD-WM-TI-623
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January-May, 1993
DATE PERFORMED

DESCRIPTION OF ANALYSIS:

Axisymmetric static ABAQUS analysis using the ANACAP-U subroutine.

ANAGEN preprocessing: Axisymmetric geometry, UMAT92 concrete model 3, Q8 element type, and ELEMENT REBAR definitions.

ANAPOST postprocessing: Crack plots.

Randall Marlow / Phillip R Kich
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DATE 6/8/94 5/27/94

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STATIC INTERNAL PRESSURE CAPACITY OF HANFORD SINGLE-SHELL WASTE TANKS

1.0 INTRODUCTION

Underground storage tanks at the Hanford site contain radioactive chemical wastes that generate potentially explosive quantities of gaseous mixtures. Ignition of accumulated gaseous mixtures such as hydrogen could compromise the structural integrity of the tank, increasing the probability of radioactive material releases to the environment. Although ignition of these gasses is unlikely, issues of public safety require evaluations of this beyond-design-basis event. Eighteen single-shell tank (SST) have been identified and included as watch list tanks because of potential hydrogen sources (Hanlon 1993). Table 1.0-1 identifies the 18 tanks and summarizes some of the characteristics of each.

In consideration of a postulated hydrogen burn, finite-element analyses were performed to determine the ultimate static internal pressure that these SSTs could structurally sustain. While the static pressurization analyses are not intended as substitutes for dynamic analyses, they do provide a measure of the structural capacity to such loading. In particular, the static pressurization analyses are valid for a slow-burn condition (i.e., a burn time greater than approximately one second). Analyses were performed to represent both one-million- and half-million-gallon tanks. These analyses are expected to bound the 750,000-gallon tanks.

Table 1.0-1. Single-Shell Watch List Tanks for Hydrogen/Flammable Gasses.

Tank Farm 241	Tank	Storage capacity (gal)	Waste content	Sludge (10^3 gal)	Drainable liquid (10^3 gal)	Total waste volume (10^3 gal)	Total gas space (ft^3)	Gas space to waste volume ratio	Vented	Specified concrete compressive strength (lbf/in^2)	Soil depth above dome (ft)	Date built	Date assumed leaker
A	101	1,000,000	DSSF	3	413	953	34,168	0.27	passive	3,000	6.5	1954-55	-
AX	101	1,000,000	DSSF	3	320	748	58,852	0.57	passive	4,000	7	1963-64	-
	103		CC	2	36	112			passive				-
SX	101	1,000,000	DC	112	146	456	97,951	1.55	active	3,000	6.3	1953-54	-
	102		DSSF	117	183	543	85,801	1.14	active				1993
	103		NCPLX	115	233	652	71,996	0.81	active				-
	104		DSSF	136	201	614	74,020	0.85	active				1988
	105		DSSF	73	261	683	66,657	0.7	active				-
	106		NCPLX	12	255	538	85,323	1.12	active				-
	109		NCPLX	250	10	250			active				1965
S	102	758,000	DSSF	4	230	549	57,201	0.76	passive	3,000	5.5	1950-51	-
	111		NCPLX	139	205	596	57,422	0.77	passive				-
	112		NCPLX	6	134	637	59,999	0.83	passive				-
T	110	530,000	NCPLX	376	42	379	43,721	0.8	passive	3,000	5.4	1943-44	-
U	103	530,000	NCPLX	32	189	468	36,745	0.6	passive	3,000	5.9	1943-44	-
	105		NCPLX	32	179	418	42,967	0.78	passive				-
	108		NCPLX	29	196	468	36,690	0.6	passive				-
	109		NCPLX	48	182	463	37,426	0.62	passive				-

Note: All tanks are single-shell tanks (SST) with 75-ft internal diameters.
All SSTs were removed from service (not allowed to receive waste) on or before November 21, 1980.
SX-109 has hydrogen/flammable gas potential only - other tanks vent through it.
CC = Concentrated complexant.
DC = Dilute complexed (waste).
DSSF = Double-shell slurry feed.
NCPLX = General term applied to all Hanford Site waste liquids not identified as complexed.

2.0 PURPOSE AND SCOPE

The purpose of the analysis reported herein is to determine the static internal pressure capacity of SSTs that are subject to the potential accumulation of hydrogen/flammable gasses. The tanks were evaluated on the basis of a global instability failure criterion. Permanent structural damage, including concrete cracking and rebar yielding, may occur before the predicted point of structural instability.

Million-gallon tanks represented by this analysis comprise tanks in farms A, AX, and SX. A generic model, used to envelop the geometries of these tanks, was reconstructed from a model developed in a previous preliminary analysis of these tanks for internal pressure loading.

A finite-element model of tank 241C106 had been developed for the evaluation of in situ conditions (Julyk et al. 1993). For convenience, this model is used herein to represent the half-million-gallon SSTs included as watch list tanks for hydrogen/flammable gasses. The 241C, -T, and -U Tank Farms were built from 1943 to 1944. The half-million-gallon SSTs in these tank farms are geometrically similar to tank 241C106.

There are only three 750,000-gallon SSTs on the watch list tanks for hydrogen/flammable gasses (S102, -111, and -112). Because these tanks are enveloped geometrically by the one-million- and half-million-gallon tanks that comprise the majority of the hydrogen watch list tanks, no specific analyses are performed for them.

All analyses were performed with ABAQUS[1], version 4.9 (HKS 1989), a general-purpose finite-element computer program with extensive nonlinear analysis capabilities. The user-defined material subroutine from the ANACAP-U[2] concrete analysis package (James 1993) was used to model the nonlinear constitutive behavior of the concrete.

---

[1]ABAQUS is a trademark of Hibbit, Karllsson, and Sorensen, Inc.

[2]ANACAP-U is a trademark of ANATECH Research Corporation.

3.0 SUMMARY OF RESULTS

The static internal pressure capacity of a generic one-million-gallon and a typical half-million-gallon SST has been determined on the basis of gross structural instability. The maximum internal pressure capacity is 11.6 lbf/in^2 for the one-million-gallon and 14 lbf/in^2 for the half-million-gallon SSTs identified on the watch list tanks for hydrogen/flammable gasses. These pressures represent instability failure points. Permanent structural damage may occur before these pressures are reached.

3.1 ONE-MILLION-GALLON TANK

3.1.1 Capacity

Figure 3.1.1-1 is a history plot of the relative dome displacement (i.e., the displacement difference between the dome apex and haunch) vs. applied internal pressure for the generic one-million-gallon SST. An internal pressure of approximately 6.6 lbf/in^2 balances the deadweight of the dome and the 7-ft soil overburden. The displacement response continues linearly to an internal pressure of approximately 11.6 lbf/in^2, at which point the response becomes nonlinear, and the dome displacement increases rapidly with the application of small increments in pressure. The displacement history curve is shown to level slightly after the "jump" discontinuity, an indication that additional capacity is developed. However, the slope of the displacement quickly returns to a steep increasing gradient with increasing pressure. The internal pressure at which the initial jump occurs is defined conservatively as the effective internal pressure capacity of the tank. Additional capacity, determined on the basis of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) criterion discussed in Section 4.3, would be relatively small in this case.

Figures 3.1.1-2 and 3.1.1-3 show crack plots at pressure increments immediately before and after the jump discontinuity in the dome displacement history (at an internal pressure of approximately 11.6 lbf/in^2). The plots show that the dome transforms from an uncracked state to a cracked state with the application of a very small pressure increment (0.01 lbf/in^2). Figure 3.1.1-4 shows the advancement of dome cracking with an additional increment in pressure.

Explicit consideration of rebar bond failure is necessary, as this type of failure is not addressed in the concrete constitutive model and it is crucial to the ultimate capacity of reinforced concrete in tension. A failure criterion for rebar bond failure, developed in Julyk et al. (1993), considers parameters such as the concrete cover, rebar diameter, splice or bond length, concrete compressive strength, and rebar cross-section shape (round vs. square). The criterion is used in Appendix A to conservatively determine the rebar stress limit for a splitting bond failure. Figure 3.1.1-5 is a plot of the meridional rebar stress history for critical elements in the tank dome. The rebar stress is shown to remain below 2,500 lbf/in^2 up to an internal pressure of approximately 11.6 lbf/in^2, at which point the stress increases rapidly with the application of additional small pressure increments. The rebar stress response closely resembles that of the relative dome displacement. Because the rebar stress exceeds the splitting bond failure

stress limit of 33.2 kip/in^2 within the jump discontinuity in the rebar stress history with increasing pressure, the internal pressure capacity of 11.6 lbf/in^2, defined on the basis of relative dome displacement, remains valid.

3.1.2 Convergence

Equilibrium convergence can be difficult to obtain in the analysis of reinforced concrete structures with loads approaching the ultimate capacity of the structure. The use of the ANACAP-U concrete constitutive model is especially challenging because tension stiffening is modeled only to a minor degree. ABAQUS provides an option to allow continuation of the analysis even if the equilibrium force tolerances are not satisfied at all nodes after the specified maximum number of iterations for a given load increment. Gradual application of the pressure load results in the achievement of continued equilibrium force convergence up to and partially into the nonlinear response portion, to an internal pressure of 12.78 lbf/in^2. An equilibrium force tolerance of 100 lbf was used for the load steps up to this pressure.

To continue the analysis beyond this pressure the equilibrium force convergence criterion in ABAQUS is ignored. As a rough measure of convergence for additional pressure increments, a quantity called the "convergence indicator" was computed on the basis of the change in maximum displacement increments over the maximum number of iteration within a load step increment. Figure 3.1.2-1 plots and defines the convergence indicator for load increments that did not meet the ABAQUS equilibrium force convergence criterion. The convergence indicator provides a measure of the asymptotic behavior of the displacement solution calculated by taking the difference of succeeding maximum displacement increments from one iteration to the next. If the absolute value of the difference decreases with each successive iteration, the solution is classified as convergent. This convergence in displacement is represented as a positive value on the plot of the convergence indicator. Because both radial and vertical displacements are involved, they are combined into a single parameter by application of the square-root-sum-of-squares (SRSS) to the displacement increment components. The plot shows that, in general, convergence is obtained throughout the pressure range indicated in the plot. Although several divergent spikes occur, each comprises only one to three increments, after which the solution recovers with continued apparent convergence for many increments before the next spike. However, the behavior of the convergence indicator in this case is more erratic than exhibited in the more robust model used for the half-million-gallon tank, as discussed below.

3.2 HALF-MILLION-GALLON TANK

3.2.1 Capacity

Figure 3.2.1-1 is a history plot of the relative dome displacement vs. applied internal pressure for the half-million-gallon SST over the full range of pressure loading applied in the analysis. Figure 3.2.1-2 also plots the relative dome displacement vs. pressure, but focuses on internal pressures up to 18 lbf/in^2. This plot illustrates that the deadweight of the 7 ft of soil overburden is balanced by an internal pressure of approximately 7 lbf/in^2.

The displacement response remains linear up to an internal pressure of 14 lbf/in^2, beyond which the response becomes nonlinear, and dome displacements increase rapidly with the addition of internal pressure increments. Beyond this "jump" discontinuity, the displacement history curve becomes slightly level, and then begins to increase in slope again. A refined analysis applied smaller load increments in the region of this jump in displacement. The corresponding displacement history, plotted in Figure 3.2.1-3, shows that the analysis refinement sharpened the jump.

Figure 3.2.1-4 shows the distribution of cracks in the tank cross section immediately preceding and following the jump in dome displacement. Before the jump, the dome is uncracked; after the jump, extensive cracking is evident in the dome.

Again, the additional capacity beyond the jump, on the basis of the ASME criterion discussed in Section 4.3, would be small. The internal pressure of 14 lbf/in^2 at the jump is conservatively defined as the effective capacity of the half-million-gallon SST.

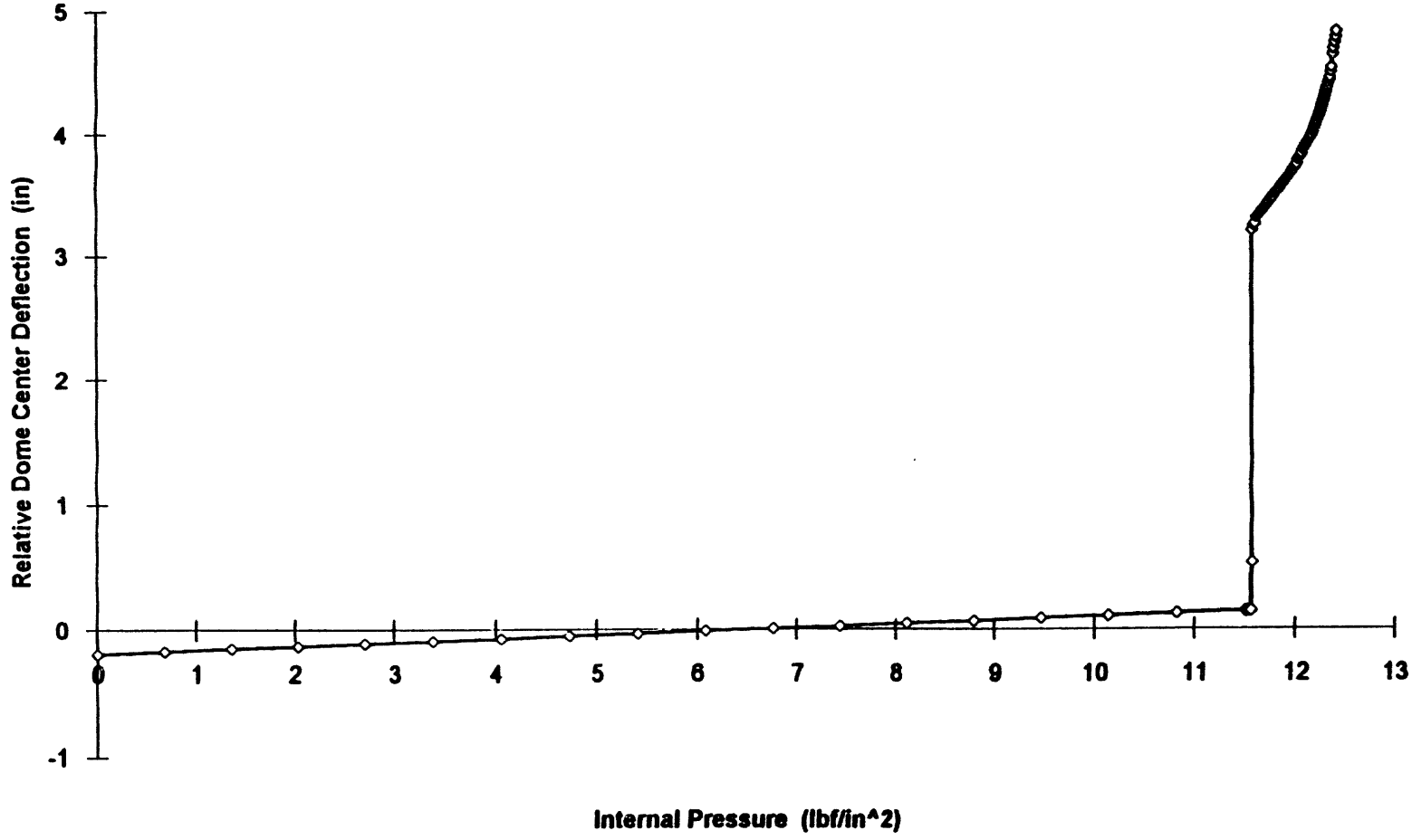
As discussed in Section 3.1.1, rebar bond failure is not addressed in the concrete constitutive model. The failure criterion developed by Julyk et al. (1993) was used in Appendix B to conservatively determine the rebar stress limit stress for splitting bond failure. Figure 3.2.1-5 shows the predicted rebar stress with increasing internal pressure for critical elements in the tank dome. The rebar stress remains below 2,500 lbf/in^2 up to an internal pressure of 14 lbf/in^2, beyond which the stress increases rapidly with the addition of internal pressure increments. This behavior closely parallels that of the relative dome displacement. Because the calculated splitting bond failure limit of 44 kip/in^2 is exceeded just beyond the jump, the internal pressure capacity of 14 lbf/in^2, defined on the basis of relative dome displacement, still controls.

3.2.2 Convergence

As discussed in Section 3.1.2, convergence on the basis of force equilibrium can be difficult to obtain for increments involving the nonlinear behavior of reinforced concrete. An equilibrium force tolerance of 100 lbf was used in the analysis. Equilibrium force convergence was achieved up to and partially into the nonlinear response region of the structure. However, an ABAQUS option was exercised to allow continuation of the analysis beyond the point where equilibrium force convergence could not be maintained. To evaluate the solution integrity in the nonlinear region, a quantity called the "convergence indicator" was computed as discussed in Section 3.1.2. Figure 3.2.2-1 defines and plots the convergence indicator used for the analysis of the half-million-gallon SST. Values less than zero indicate divergence. The plot shows that convergence is indicated to an internal pressure of approximately 28 lbf/in^2 and then the solution integrity degrades rapidly.

Compared to the convergence obtained in the one-million-gallon SST model, the half-million-gallon SST model appears to be more robust. This apparent robustness could be attributed to the greater mesh refinement or to the greater number of iteration provided in the half-million-gallon SST model.

Figure 3.1.1-1. Relative Dome Displacement of One-Million-Gallon Generic Tank under Deadweight and Internal Pressure.



GHDISP1.XLC

Figure 3.1.1-2. Cracking of the One-Million-Gallon Generic Tank at an Internal Pressure of 11.56 lbf/in^2.

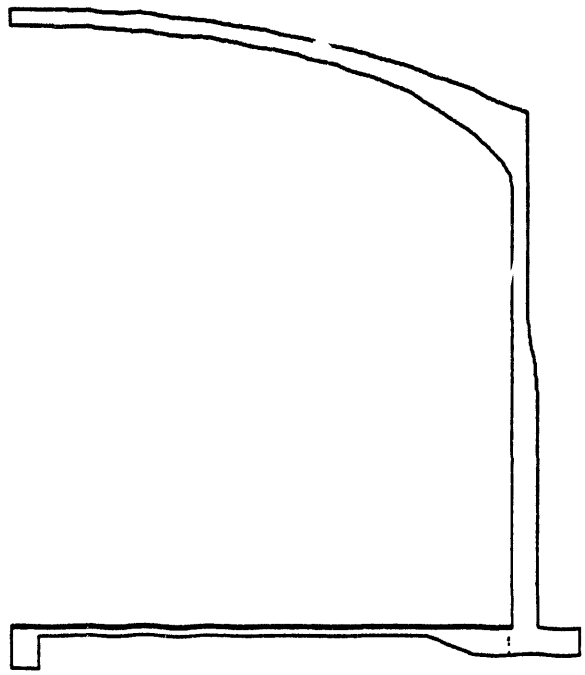
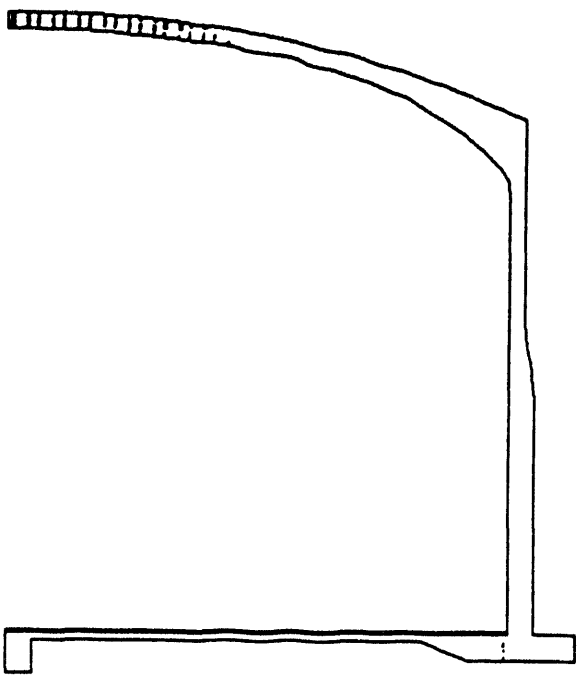
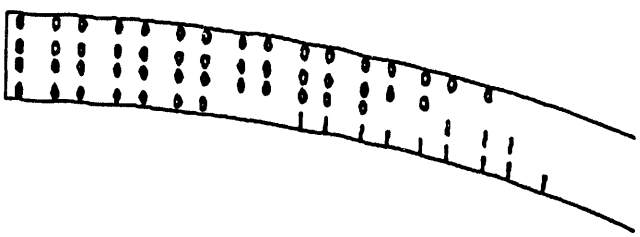


Figure 3.1.1-3. Cracking of the One-Million-Gallon Generic Tank at an Internal Pressure of 11.57 lbf/in^2.

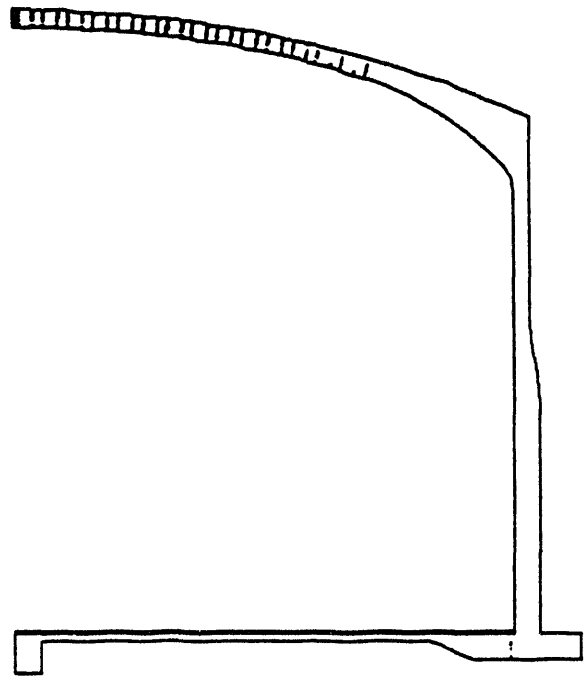


(a) Overall Tank

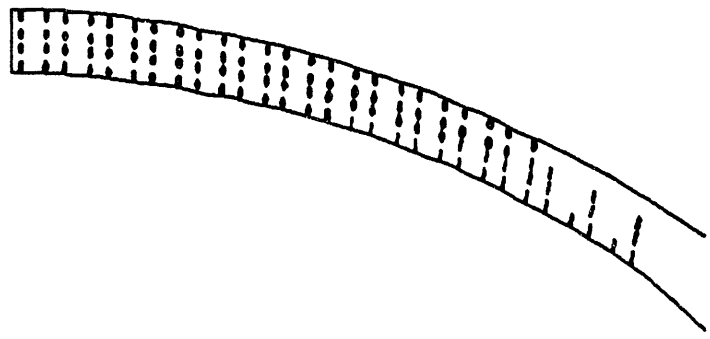


(b) Dome Region

Figure 3.1.1-4. Cracking of the One-Million-Gallon Generic Tank at an Internal Pressure of 11.58 lbf/in^2.

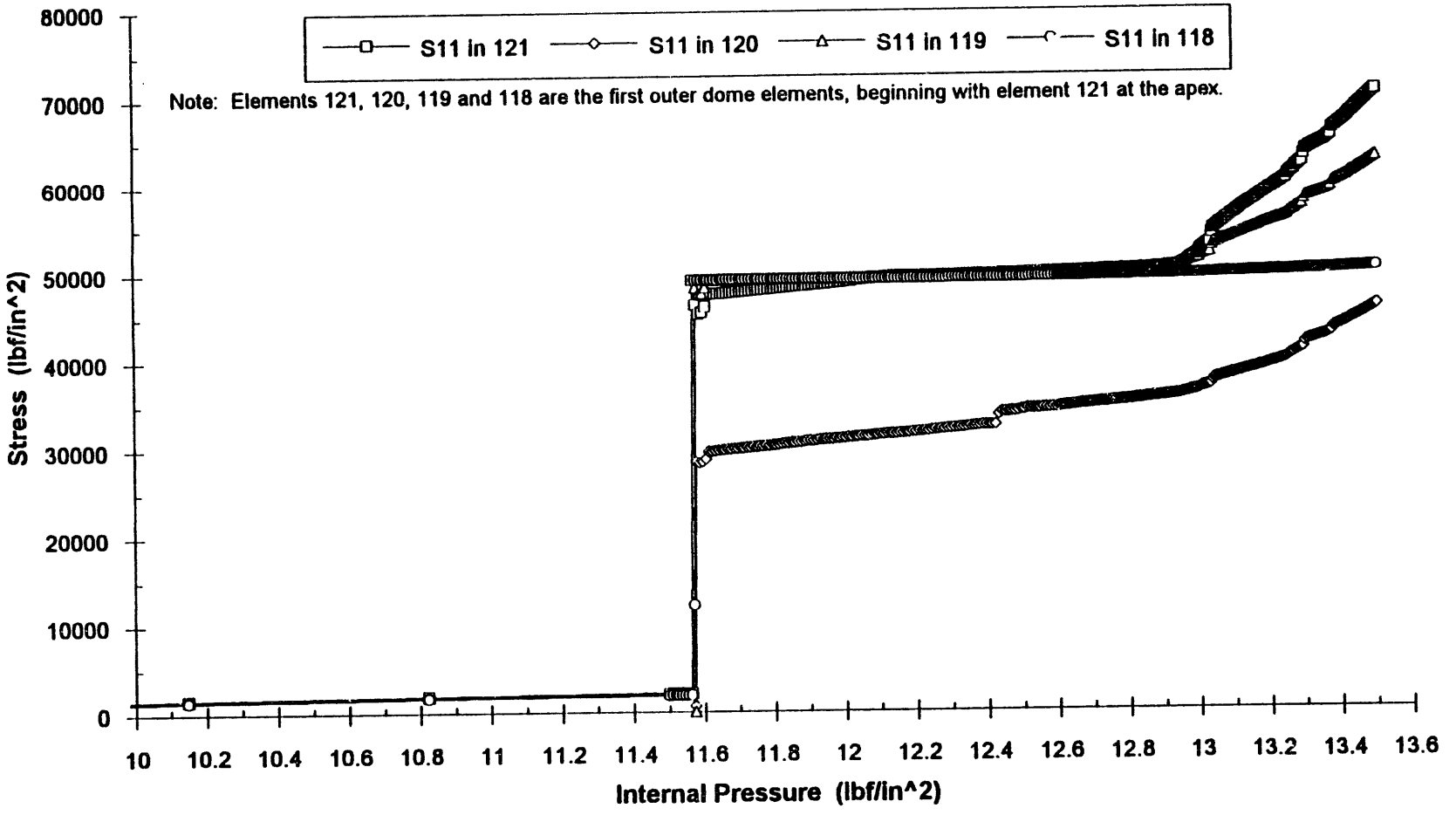


(a) Overall Tank



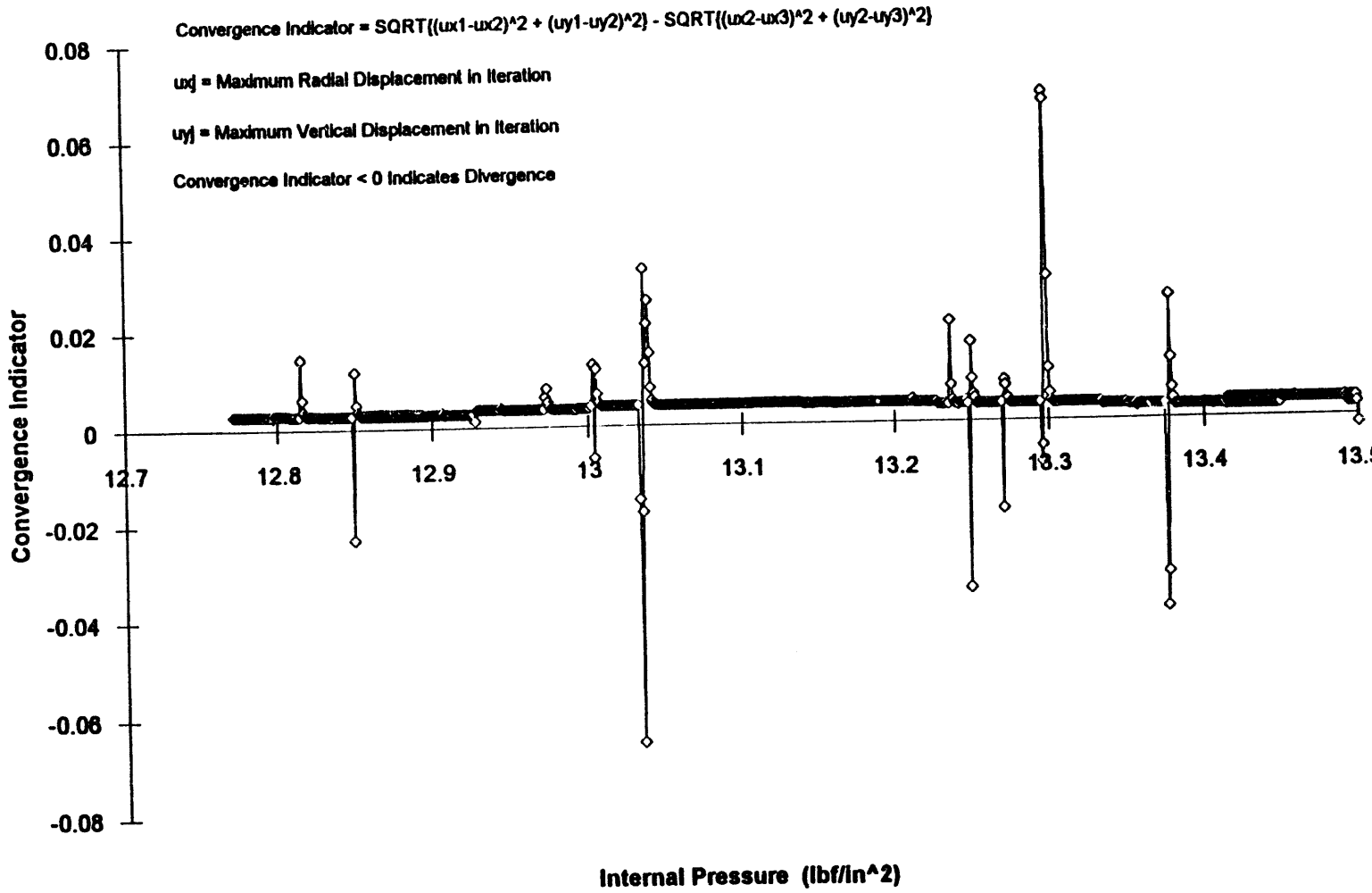
(b) Dome Region

Figure 3.1.1-5. Meridional Rebar Stress for Top Dome Elements of One-Million-Gallon Generic Tank Under Deadweight and Internal Pressure Loading.



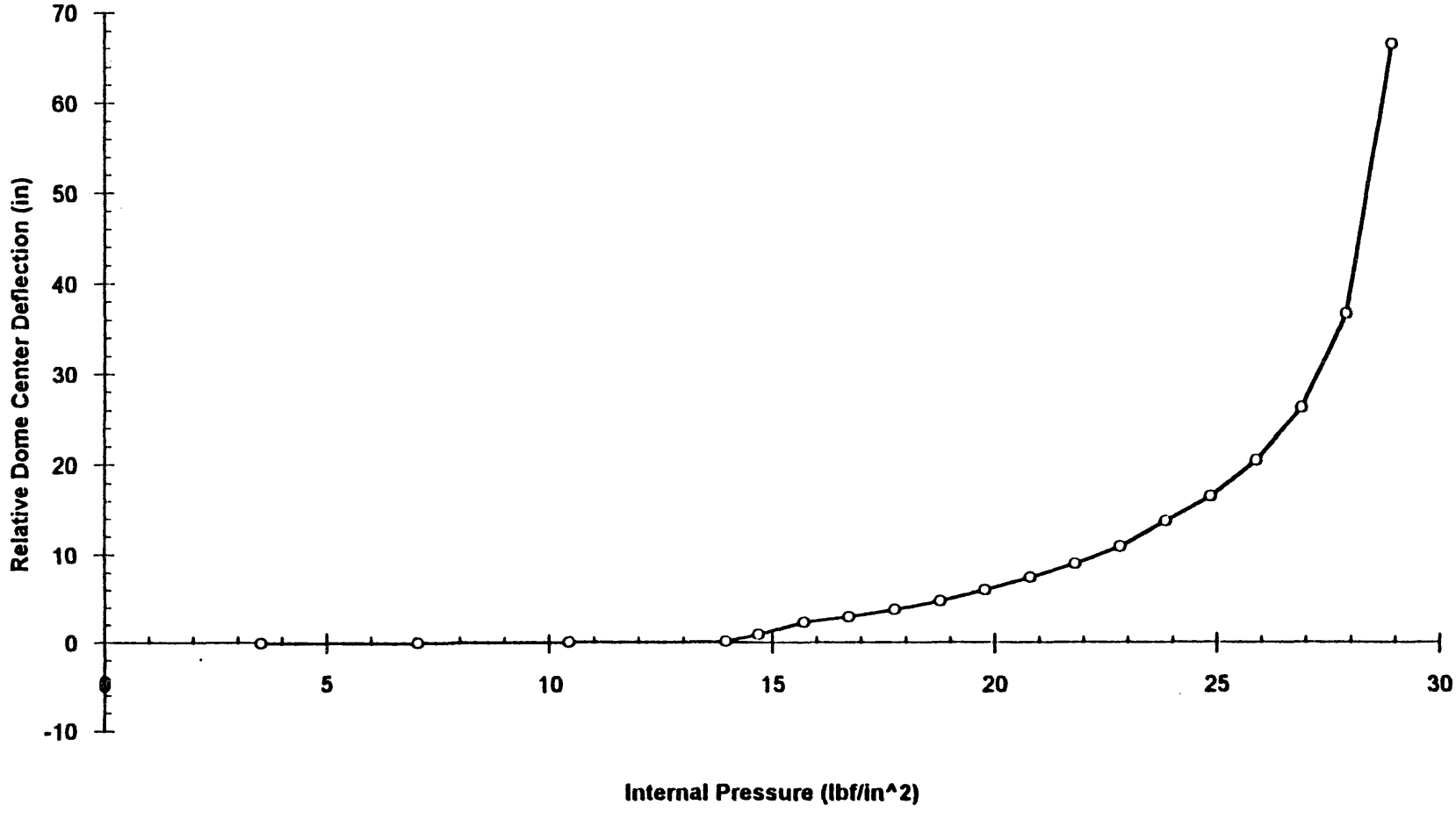
HBARSTRS.XLC

Figure 3.1.2-1. Convergence Indicator for Pressurization of One-Million-Gallon Generic Tank.



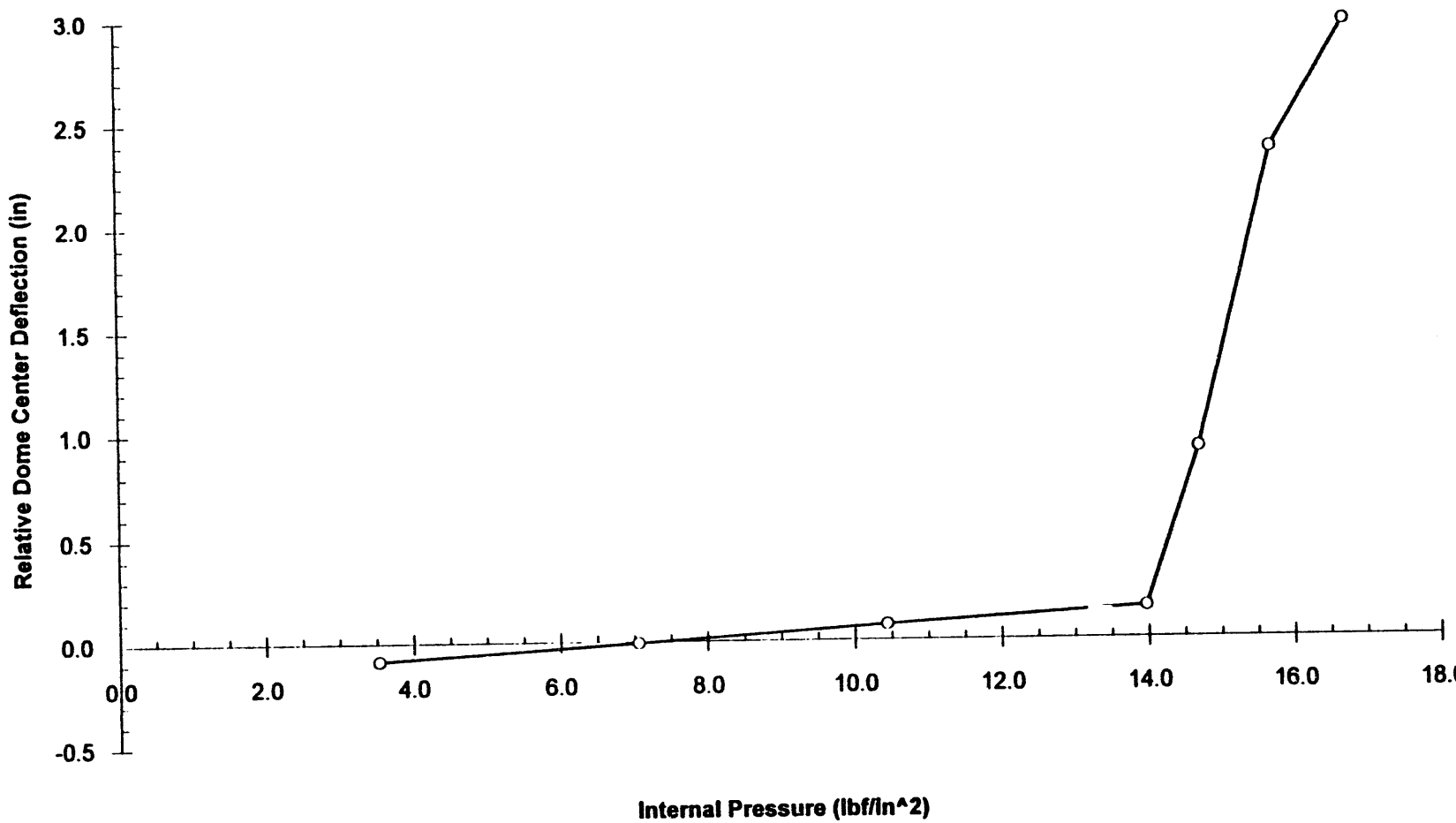
HCONV3.XLC

Figure 3.2.1-1. Relative Dome Displacement of Half-Million-Gallon Tank under Deadweight and Internal Pressure.



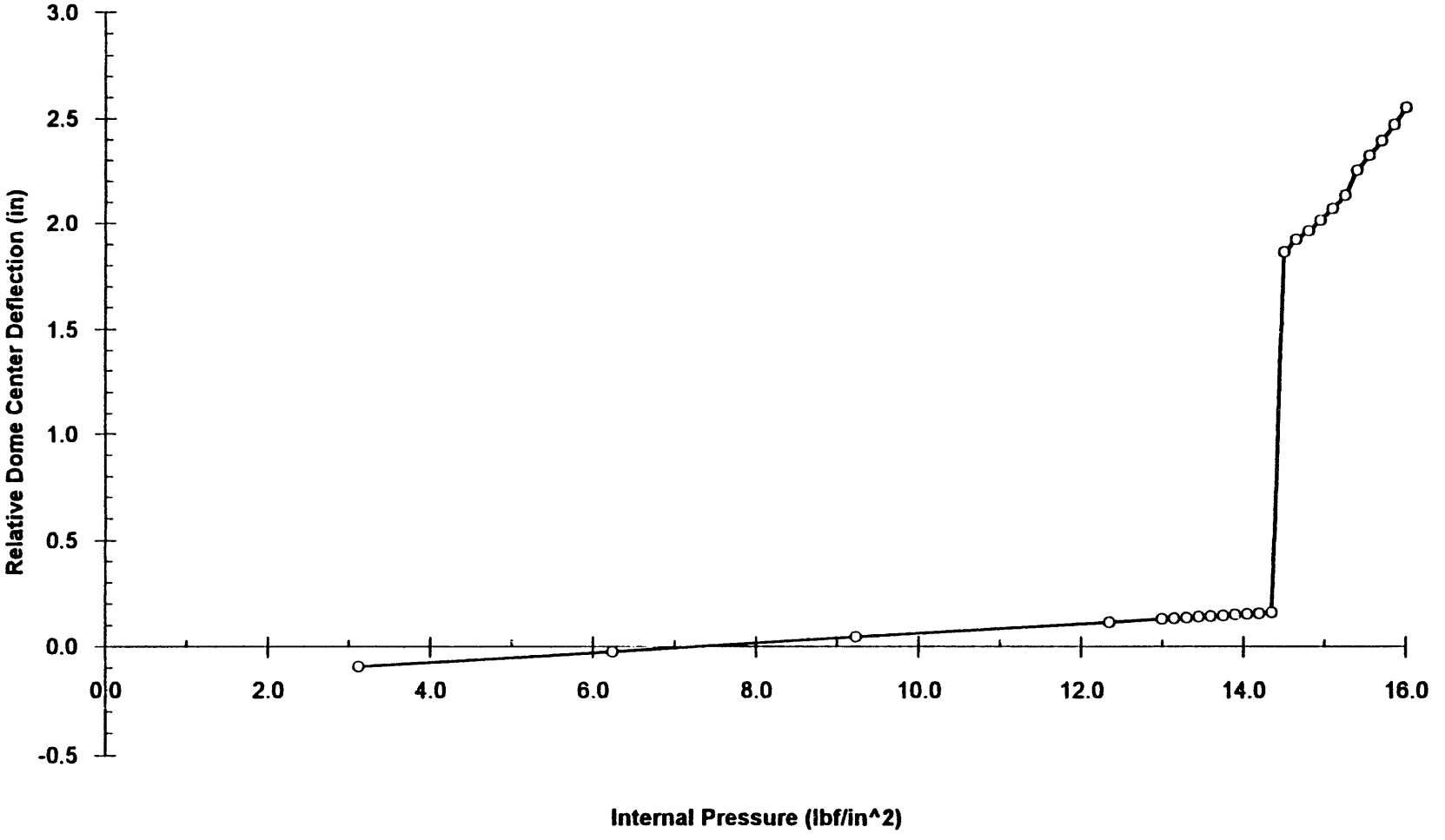
DOMDISA.XLC

Figure 3.2.1-2. Relative Dome Displacement of Half-Million-Gallon Tank under Deadweight and Internal Pressure.



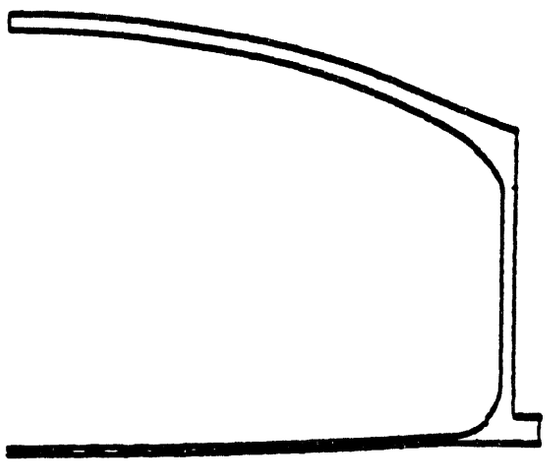
DOMDISB.XLC

Figure 3.2.1-3. Relative Dome Displacement of Half-Million-Gallon Tank under Deadweight and Internal Pressure for the Refined Analysis.

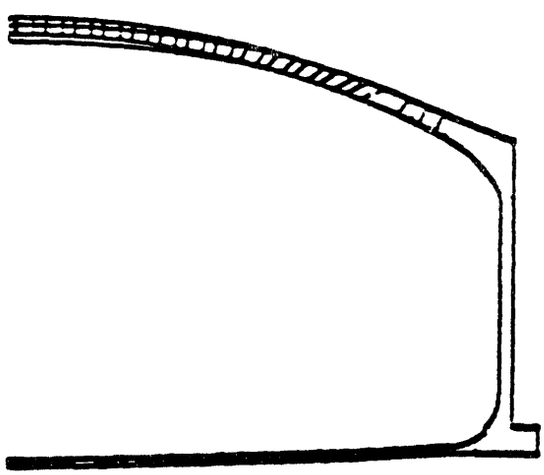


DOMDISR.XLC

Figure 3.2.1-4. Cracking of the Half-Million-Gallon Tank.

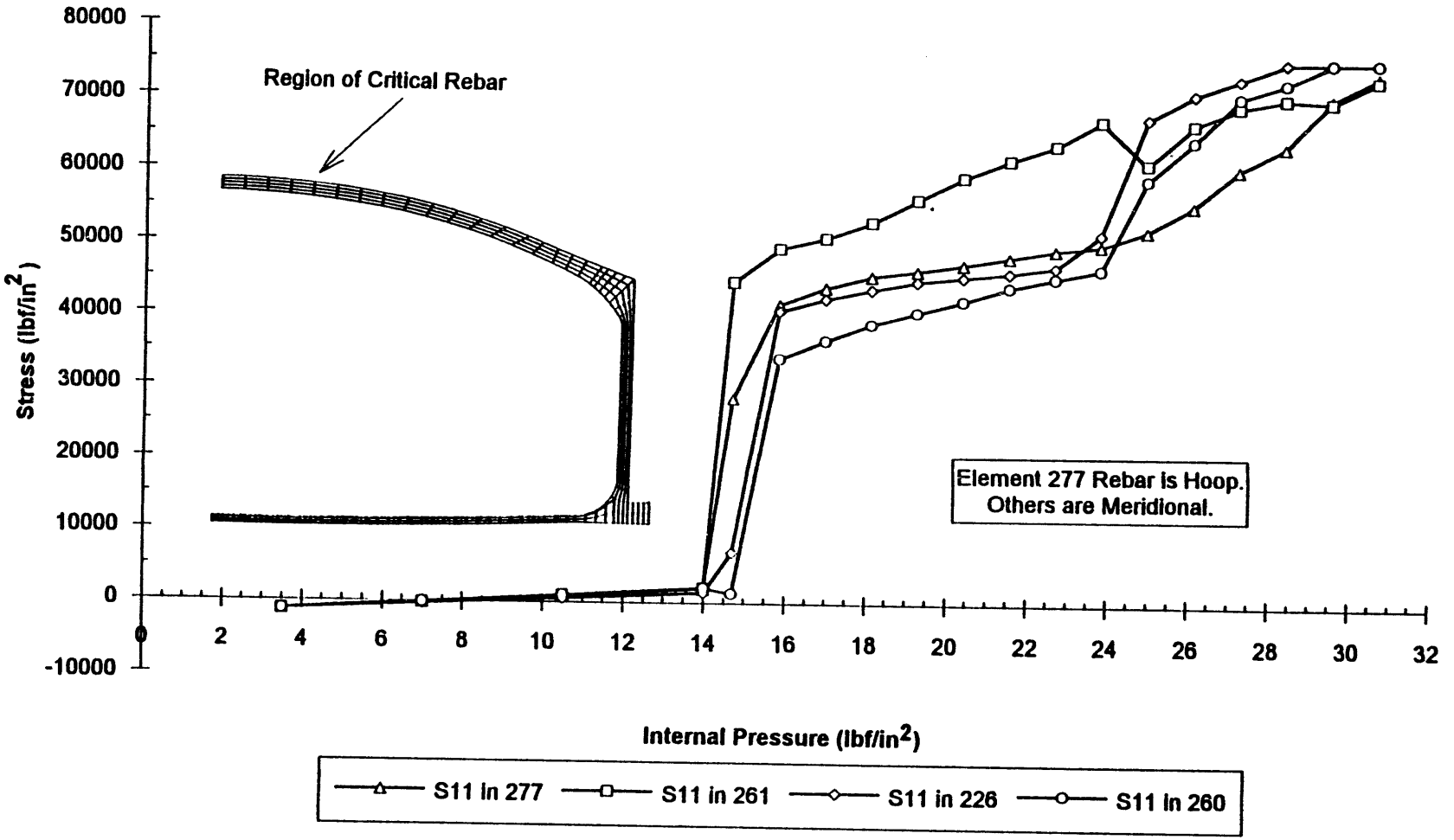


(a) Before Jump in Displacement



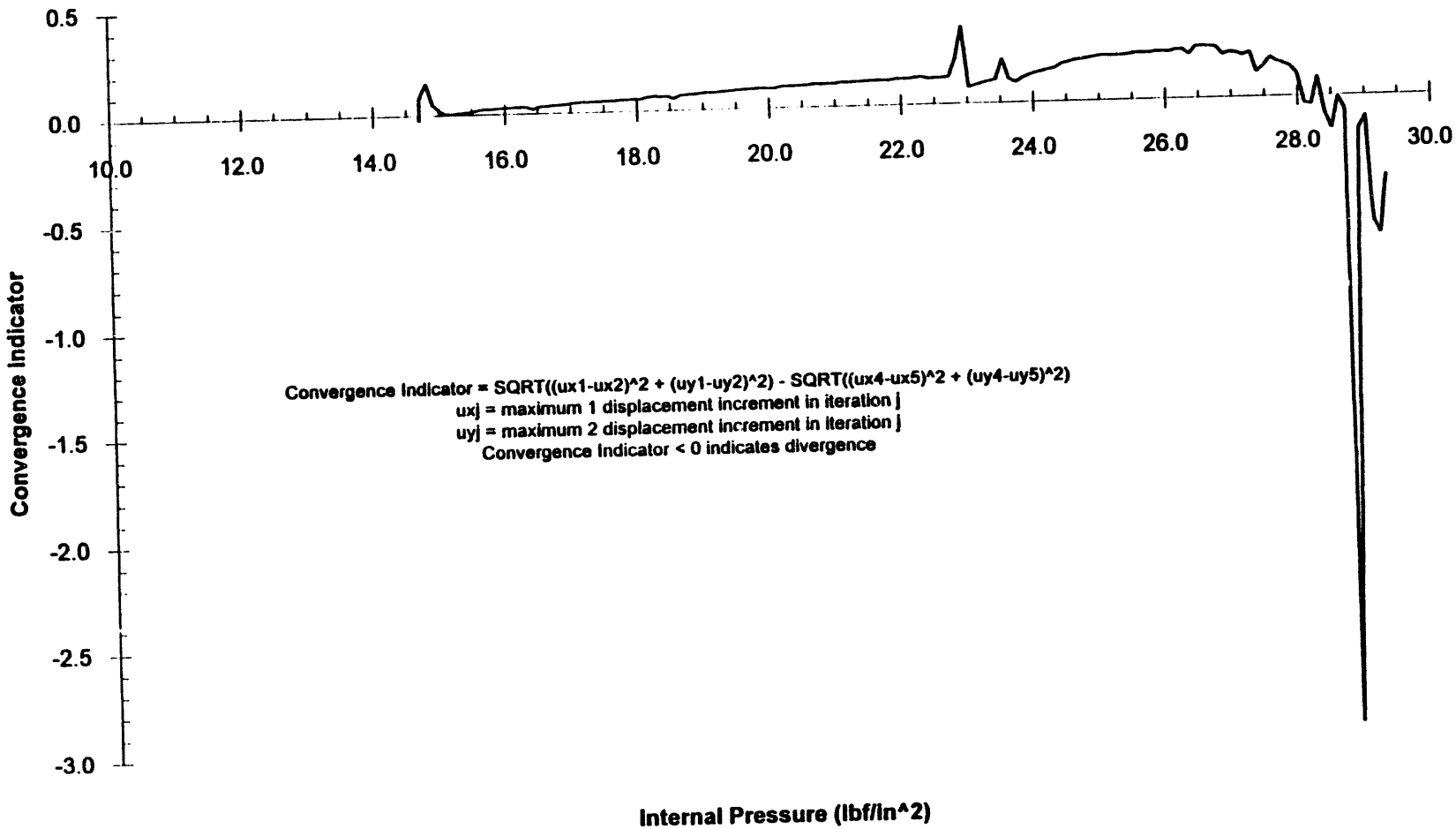
(b) After Jump in Displacement

Figure 3.2.1-5. Rebar Stress for Selected Dome Elements of Half-Million-Gallon Tank Under Deadweight and Internal Pressure Loading.



REBAR.XLC

Figure 3.2.2-1. Convergence Indicator for Pressurization of Half-Million-Gallon Tank.



DISINCS.XLC

4.0 FAILURE CRITERIA

Failure can be associated with loss of structural load-carrying ability or loss of function. Failure modes generally fall into two categories, local and global. Local failure modes include excessive concrete cracking and spallation, rebar rupture, rebar bond and splice failures, concrete shear failures, and concrete crushing. Global failures are characterized by structural instability associated with either collapse or buckling. Failure, in the context of this report, is defined as a structural instability or the presence of a local failure that cannot be dismissed from consideration as a precursor to structural instability. In a reinforced concrete structure, the failure mechanisms can be segregated into those associated with concrete and those associated with reinforcement.

4.1 CONCRETE

The concrete material is modeled with the ANACAP-U strain-hardening/softening model. This model represents the full constitutive behavior of reinforced concrete. The concrete constitutive model in ANACAP-U interfaces with ABAQUS through the user-defined material subroutine (*USER MATERIAL) option provided in ABAQUS. The failure mechanisms of concrete and their treatment by ANACAP-U are discussed below.

4.1.1 Tension

Concrete cracking is a local failure condition expected under service loads and is accounted for explicitly in the constitutive model. When the fracture strain is reached at a given integration point in the model, the normal stress capacity is reduced to zero. The tensile load is redistributed to other elements within the model. Therefore, no consideration should be given to cracking as a state of structural failure. However, excessive cracking or spallation can affect the load transfer between the concrete and the reinforcement. Excessive cracking or spallation, to the extent that rebar bond is compromised, would be accompanied by solution instability and the breakdown of the analysis.

4.1.2 Compression

Concrete crushing is a local failure condition not expected under service loads, but is accounted for explicitly in the constitutive modeling. The nonlinear compressive stress-strain diagram includes strain hardening and post-peak strain softening. Although concrete crushing frequently signals the onset of collapse for simple structures, in more complex structures it may be only an indication of a local softening resulting in load redistribution. Because of the explicit modeling of concrete crushing, prediction of global instability will account implicitly for any effects of concrete crushing.

4.1.3 Shear

The compressive and tensile constitutive treatment within ANACAP-U operates on principal stresses, i.e., in a state of pure shear, a diagonal tension crack will develop when the shear stress reaches the tensile fracture stress. The crack will open in the direction of the maximum principal strain (in tension). A demonstration of this phenomenon is provided by imposing displacements on a one-element model, as shown in Figure 4-1 of Appendix A. The reaction force as a function of displacement, as defined in Figure 4-1 of Appendix A, is illustrated in Figure 4-2 of Appendix A. The tensile fracture strain, elastic modulus and Poisson's ratio for the problem are 96×10^{-6} in/in, 2×10^{6} lbf/in^2, and 0.15, respectively. At a shear stress approaching the tensile fracture stress (192 lbf/in^2), a crack will occur. Beyond this point the solution is unstable. It is clear that diagonal tension failure induced by shear loads will be predicted implicitly by the finite-element analysis.

In the case in which shear loads do not cause an increase in the crack opening, the elastic shear modulus remains constant. The behavior of the shear modulus in the presence of different fixed values of tensile strain (crack-opening displacement), as represented in Figure 4-3 of Appendix A, is apparent by examination of Figure 4-4 of Appendix A. The shear modulus is reduced to approximately 40% of the uncracked shear modulus on crack initiation. The shear modulus is reduced further with increasing values of the tensile strain across the crack (James 1992). The shear capacity still is governed by a crushing failure criterion in the principal plane, but the reduction of the shear modulus extends to the full nonlinear behavior. The strain required to reach the peak compressive stress is increased significantly. The result is a decrease in stiffness that allows redistribution of load to other unsoftened portions of the structure.

4.2 REINFORCEMENT

Although the tensile capability of sound, plain concrete is considerable, concrete typically is not credited with any tensile load-carrying capacity in design codes. Concrete is susceptible to cracking damage from shrinkage, environmental exposure, and service loads; this susceptibility makes its in situ tensile capacity largely unknown. Therefore, the concrete relies on the reinforcement to establish the tensile capacity of a reinforced concrete section.

4.2.1 Plasticity

The steel reinforcement has an elastic-plastic behavior with strain hardening to the point of rupture. The tank pressurization analyses are modeled with the ABAQUS elastic-plastic constitutive options where an isotropic stress-strain relationship is defined. The maximum stress that the reinforcement can withstand is defined by this relationship. Therefore, the finite-element model is capable of predicting failure with this phenomenon as an implicitly limiting characteristic.

4.2.2 Bond Slip

Insufficient rebar bond or splice capacity results in local failure. The ABAQUS/ANACAP-U finite-element analysis of the tank, which directly addresses such local "failure modes" as concrete cracking as well as compressive failure of concrete, does not account for failure of reinforcement bond in its constitutive model. Because the ultimate capacity of reinforced concrete in tension relies on the integrity of the reinforcement bond, failure criteria for rebar bond and splices must be addressed to establish limits that ensure the validity of the finite-element analysis in predicting global structural behavior.

A well-established theory for splitting bond failure, first proposed by Orangun et al. (1977), addresses the dependency of bond stress on such parameters as development length, bar size, bar cover, and clear bar spacings. The radial forces generated between the bar lugs and the surrounding concrete are treated as internal pressure acting on a thick-walled cylinder with an inner diameter equal to the bar diameter and a thickness, C, that is the smaller of (1) the clear top/bottom or side cover, C_b, and (2) one-half the clear spacing between adjacent bars, $C_s/2$. The capacity of the cylinder depends on the tensile strength of the concrete. With C_b greater than $C_s/2$, a horizontal split develops at the level of the bars and is termed a "side-split" failure. With $C_s/2$ greater than C_b, a "face-and-side split" failure forms with longitudinal cracking through the cover followed by splitting through the plane of the bars.

From the results of more than 500 development and splice tests, a regression analysis was used to develop an equation in which the bond stress was expressed in terms of the concrete strength f'_c, bar diameter d_b, thickness of concrete cylinder surrounding the bar C, length of anchored bar l_d or l_s, and transverse reinforcement (Orangun et al. 1977). With this approach, the limiting rebar stress governing bond failure, ignoring any contribution from transverse reinforcement, is determined for $C/d_b \leq 2.5$ as

$$f_s = \frac{4 l_s}{d_b} \left(1.2 + 3\frac{C}{d_b} + 50\frac{d_b}{l_s}\right) \sqrt{f_c'}$$

where

f_s	=	longitudinal rebar limit stress for splitting bond failure (lbf/in^2)
l_s	=	splice or bond length (in.)
C	=	smaller of cover dimension or ½ of spacing between splices or rebar (in.)
d_b	=	rebar diameter (in.)
f'_c	=	compressive strength of concrete (lbf/in^2).

For top-cast rebar, a 23% reduction should be applied. For a complete discussion of concrete/rebar interaction and the development of the above criteria, see Julyk et al. 1993. An additional capacity reduction factor of 0.63 is prescribed for square rebar in Julyk et al. (1993). However, the one-million-gallon SSTs within the scope of this report are not constructed with the square rebar. The half-million-gallon SSTs use the square rebar in the haunch regions only.

4.3 CAPACITY DETERMINATION

The method used to determine the internal pressure capacity of the tank involved the development of a model capable of accurately predicting the nonlinear structural behavior. The model accounted for tank structural details and was used to predict structural instability. All of the failure mechanisms of reinforced concrete are modeled implicitly with the exception of rebar bond failure, for which an independent check must be performed.

The ASME B&PV Code definition of collapse load applicable to experimental stress analysis is applied to the calculated load-deflection curve to define the collapse load. On a load-deflection curve, an angle θ defines the angle between the best-fit linear regression of the linear portion of the load-deflection curve and the load axis. A second straight line, hereafter called the collapse-limit line, is drawn through the displacement axis intercept at an angle ϕ with the load axis, where $\phi = \tan^{-1}(2\tan\theta)$. The collapse load is defined as the intersection of the load-deflection curve with the collapse-limit line, as shown in Figure II-1430-1, ASME B&PV Code, Section III, NB-3213.25 (ASME 1992). The ASME technique can give a grossly conservative collapse load when the linear portion of the load-displacement curve is interrupted by a "jump" in displacement without an appreciable change in load and then returns to a relatively linear behavior just after the "jump." For determination of the collapse load, the ASME technique may be augmented to take into consideration the jump discontinuity. Displacement data beyond the jump discontinuity may be shifted down by a constant amount to eliminate the discontinuity. The ASME method described above then is applied to the shifted data.

5.0 ONE-MILLION-GALLON TANK

5.1 GENERIC MODEL DEVELOPMENT AND ANALYSIS METHODOLOGY

Tank farms A, AX, and SX contain ten one-million gallon single-shell waste tanks that are buried entirely below grade. The reinforced-concrete tanks are lined with welded steel plate along the floor and walls. No structural connection is provided between the liner and concrete. The finite-element model developed for this analysis conservatively represents all ten tanks, by modeling the most structurally inferior geometric and material properties of each component of the tanks. Tables 5.1-1 through 5.1-4 summarize geometry and material property data for tanks in farms A, AX, and SX, used to develop the generic model. Tables 5.1-2 through 5.1-4 also include the corresponding data defined in the generic model. Figure 5.1-1 is a sketch that provides the overall generic tank geometry as used in this analysis.

The analysis was performed with ABAQUS, version 4.9 (HKS 1989), which is a general-purpose finite-element computer program. The user-defined material subroutine of the ANACAP-U concrete analysis package (James 1993) was used to model the constitutive behavior of the concrete. The structure and loading are axisymmetric, and the tank was modeled accordingly. Calculations supporting this analysis are included as Appendix A to this report, and the ABAQUS input file is listed in Attachment 3 to the appendix.

5.2 MODEL DESCRIPTION

5.2.1 Generic Tank Geometry

The one-million-gallon generic SST has a height of approximately 48 ft, measured from the bottom of the footing to the dome apex, and an internal diameter of 75 ft. The tank is buried 7-ft deep at the dome apex. The minimum dome thickness is 1 ft 3 in. and the wall increases in thickness from 1 ft 3 in. at the top portion to 2 ft along the lower portion. The tank floor slab is 6-in. thick with a 2-in. layer of cement grout and a 3/8-in. layer of three-ply (3-ply) asphaltic waterproofing membrane between the slab and steel liner. The liner is 3/8-in. thick and is stiffened with 5 by 3½ by 5/16-in. structural angles welded along the circumference. Figure 5.1-1 shows the geometry of the one-million-gallon generic tank, and Figures 5.2.1-1 through 5.2.1-3 show the reinforcement details as used for the generic model.

Figure 5.2.1-4 is a plot of the completed analytical model including rebar subelements. Detailed plots showing node and element identification numbers are provided in Attachment 1 to Appendix A.

5.2.2 Element Types

The concrete sections were modeled with eight-node axisymmetric solid elements with four integration points (CAX8R). This higher-order element allows two elements to be used through the dome and wall thickness. The number of elements through the thickness was chosen in consideration of the computational demands of a full dynamic analysis as this was the basis of the

preliminary analysis from which this model was developed. The stiffness of the soil below the slab prevents any significant bending and provides a justification for use of a single CAX8R element through the thickness. The steel liner was modeled with two-node axisymmetric shell elements (SAX1) with three integration points through the thickness. Rebar subelements were superimposed on the mesh of the concrete elements.

Meridional and hoop reinforcement was defined as well as the through-thickness reinforcement in the haunch, consistent with the design drawings. Plots displaying the resulting rebar configuration are provided in Attachment 1 to Appendix A. Reinforcement in the base slab is arranged in a rectangular grid pattern. An equivalent radial/hoop reinforcement configuration was modeled to represent the actual pattern.

The structural-angle stiffeners, which are welded to the liner, were not modeled discretely, but were accounted for by uniformly increasing the thickness of the liner shell elements. This increase in thickness provides additional hoop-direction stiffness, which is the predominant effect of the stiffeners. The thickness increase was computed as the ratio of the combined liner/stiffener area to the liner area only, taken over the entire height of the liner. The interface between the liner and the concrete comprises a layer of grout and a waterproofing membrane along the floor. Along the wall, the liner is in direct contact with the concrete. This interface is modeled by defining a set of linear springs between the liner and wall with a single degree of freedom normal to the liner surface.

5.2.3 Boundary Conditions

Boundary conditions represent the tank's interface with the soil. This interface was defined in the form of spring elements. The floor/soil interface was modeled with vertical, linear springs calculated on the basis of elastic half-space theory applied to a circular foundation (Johnson 1981). The wall/soil interface was modeled with horizontal, linear springs also based on elastic half-space theory (Newmark 1971), and were approximated as the average stiffness of the tank moving laterally as a unit. These springs were initialized with nonzero displacements to model the effect of lateral soil pressure, as discussed in Section 5.4.3. Because the internal pressure loading causes only compression in the soil springs, gaps were not defined. Spring constants and initial displacements are calculated in Appendix A.

The selection of soil springs to represent the lateral soil pressure was motivated by the potential use of this model in a dynamic analysis, where radial displacements could induce additional lateral forces. For the purpose of static pressurization, an applied hydrostatic pressure in place of the soil springs provided almost identical results as shown in Attachment 10 of Appendix A.

In addition to the above spring-type boundary conditions, the use of axisymmetric elements results in the elimination of the radial and rotational degrees of freedom along the axis of symmetry.

5.3 MATERIAL PROPERTIES

5.3.1 Concrete Properties

The inelastic behavior of the concrete was considered by invoking the user-defined material subroutine of the ANACAP-U concrete analysis package (James 1993). Constitutive Model 3 was used, which is the general-purpose model with full plasticity including compressive strain hardening and softening.

The following concrete properties were defined for the material subroutine:

- Minimum compressive strength = 3,000 lbf/in^2
- Fracture strain = 0.00009 in/in
- Compressive modulus of elasticity = 3.1×10^6 lbf/in^2
- Poisson's Ratio = 0.15.

In addition, a mass density of 0.000225 $lbf\text{-}sec^2/in^4$ (150 lbf/ft^3) was defined for concrete material.

Post-cracking parameters were not required for the material subroutine, but are computed internally (James 1992, 1993). Shear retention, which allows for a reduced transfer of shear across cracks, is attributed to reinforcement ratio, crack roughness, and aggregate interlock. The material subroutine addresses shear retention without regard for reinforcement quantity or aggregate size. On cracking, the shear modulus is reduced to 40% of the uncracked value and is further reduced by the ratio of the fracture strain to total strain as the crack opens.

Tension stiffening is the ability of cracked concrete to share tensile load with the reinforcement in regions between the actual cracks. The ANACAP-U material subroutine models tension stiffening by adding a descending branch to the uniaxial stress-strain curve. The descending branch decays exponentially, resulting in zero tensile stress at a strain of five times the fracture strain (James 1992).

5.3.2 Steel Properties

Reinforcing steel was defined as an elastic-plastic material with a von Mises yield surface. As required by ABAQUS, true stress and logarithmic strain values were entered, as determined from the plot of engineering stress vs. engineering strain documented in Appendix A.

Steel for the liner plate was defined as an elastic material with a Young's modulus of 29×10^6 lbf/in^2. A simplified calculation, provided in Appendix A, determined that failure of the concrete dome occurs before yielding of the steel liner; therefore, the definition of an elastic material is acceptable. A mass density of 0.000734 $lbf\text{-}sec^2/in^4$ (490 lbf/ft^3) was defined for the liner and rebar elements.

5.3.3 Soil Properties

Although soil elements were not explicitly modeled the soil was accounted for through the definition of soil springs and distributed loads, as discussed in Section 5.2.3 above. In addition, distributed loads were defined to represent the weight of the overburden soil.

Soil properties used in the determination of spring constants and distributed load values are as follows:

- Shear modulus = 31,250 lbf/in^2 (URS/Blume 1981)
- Poisson's ratio = 0.24 (URS/Blume 1981)
- Coefficient of active soil pressure = 0.26 (WHC 1990)
- Specific weight = 110 lbf/ft^3 (URS/Blume 1981).

5.4 LOAD DESCRIPTION

Static loads were applied to the one-million-gallon generic model in two load steps. The first step applied the dead loads of the system which include the tank weight, soil overburden, lateral soil pressure, and hydrostatic waste pressure. The second step applied the internal pressure loading to the liner and dome. In both steps, loads were increased gradually (ramped) to allow the system to equilibrate under the nonlinear behavior of the reinforced concrete tank.

5.4.1 Tank Deadweight

Gravitational acceleration was applied to all tank component masses. As indicated in Section 5.3 above, all concrete elements were defined with a mass density of 0.000225 $lbf\text{-}sec^2/in^4$ (150 lbf/ft^3), and all reinforcement and liner elements were defined with a mass density of 0.000734 $lbf\text{-}sec^2/in^4$ (490 lbf/ft^3).

5.4.2 Soil Overburden

The generic configuration considers the tank to be buried, with the dome apex 7 ft below the soil surface. The weight of this soil overburden was considered by defining a distributed hydrostatic load along the dome concrete elements. A sensitivity assessment was performed (see Attachment 11 of Appendix A) by reducing the overburden to 6 ft. No significant differences were noted.

5.4.3 Lateral Soil Pressure

Soil surrounding the buried tank exerts lateral pressure on the wall. This pressure would increase if the wall displaced radially outward from the internal pressure load. Similarly, the lateral soil pressure would decrease if the tank wall displaced radially inward. This displacement-dependent variation in pressure was modeled by defining precompressed spring elements.

Spring constants were assigned on the assumption of a uniform soil stiffness along the height of the tank and were varied only to account for nonuniform element sizes. The total radial soil stiffness was calculated by means of elastic half-space theory. The initial nonzero displacements for each spring element were defined on the basis of the corresponding depth of the element relative to the top of the soil. Appendix A includes the calculations of spring constants and initial displacements.

5.4.4 Hydrostatic Waste Loads

The weight of the waste was included in the model by defining a uniformly distributed load along the tank bottom. In addition, the radial pressure exerted by the liquid waste was modeled as a hydrostatic load applied to the tank liner. The distributed loads, calculated on the basis of a specific gravity of 1.7 (Fox 1990), are documented in Appendix A.

5.4.5 Internal Pressure

Internal pressure for a postulated hydrogen burn was modeled as a distributed static load and was applied incrementally to all liner elements as well as to the unlined dome and haunch elements. In addition to the dome elements, the pressure loading was applied directly to the liner wall and base elements because the waste liquid would transfer the load to the liner in the presence of overpressure. The internal pressure was increased until the solution diverged, indicating structural failure. Section 3.1 summarizes the results.

Figure 5.1-1. One-Million-Gallon Generic Single-Shell Tank.

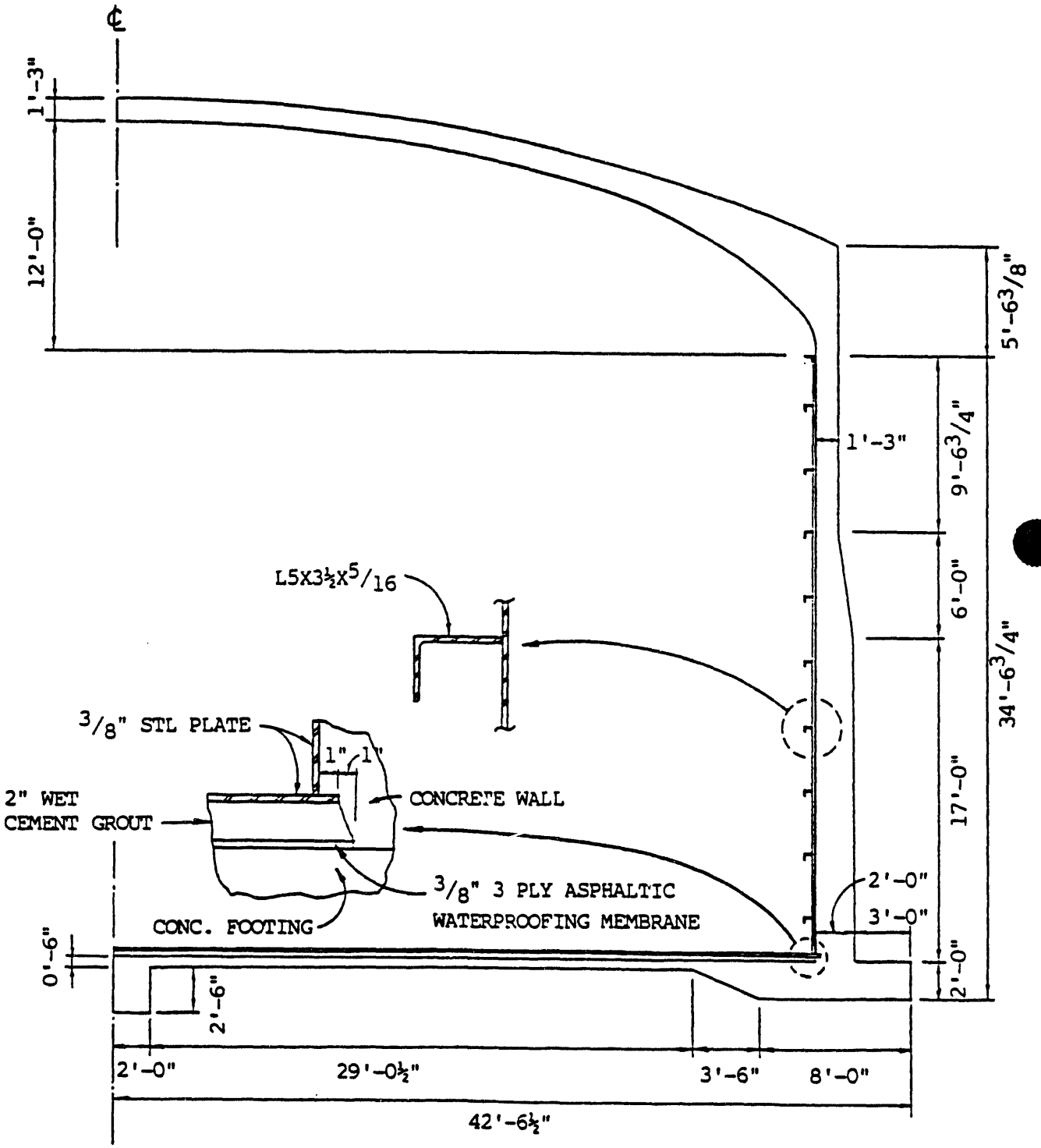


Figure 5.2.1-1. Reinforcement of One-Million-Gallon Generic Tank.

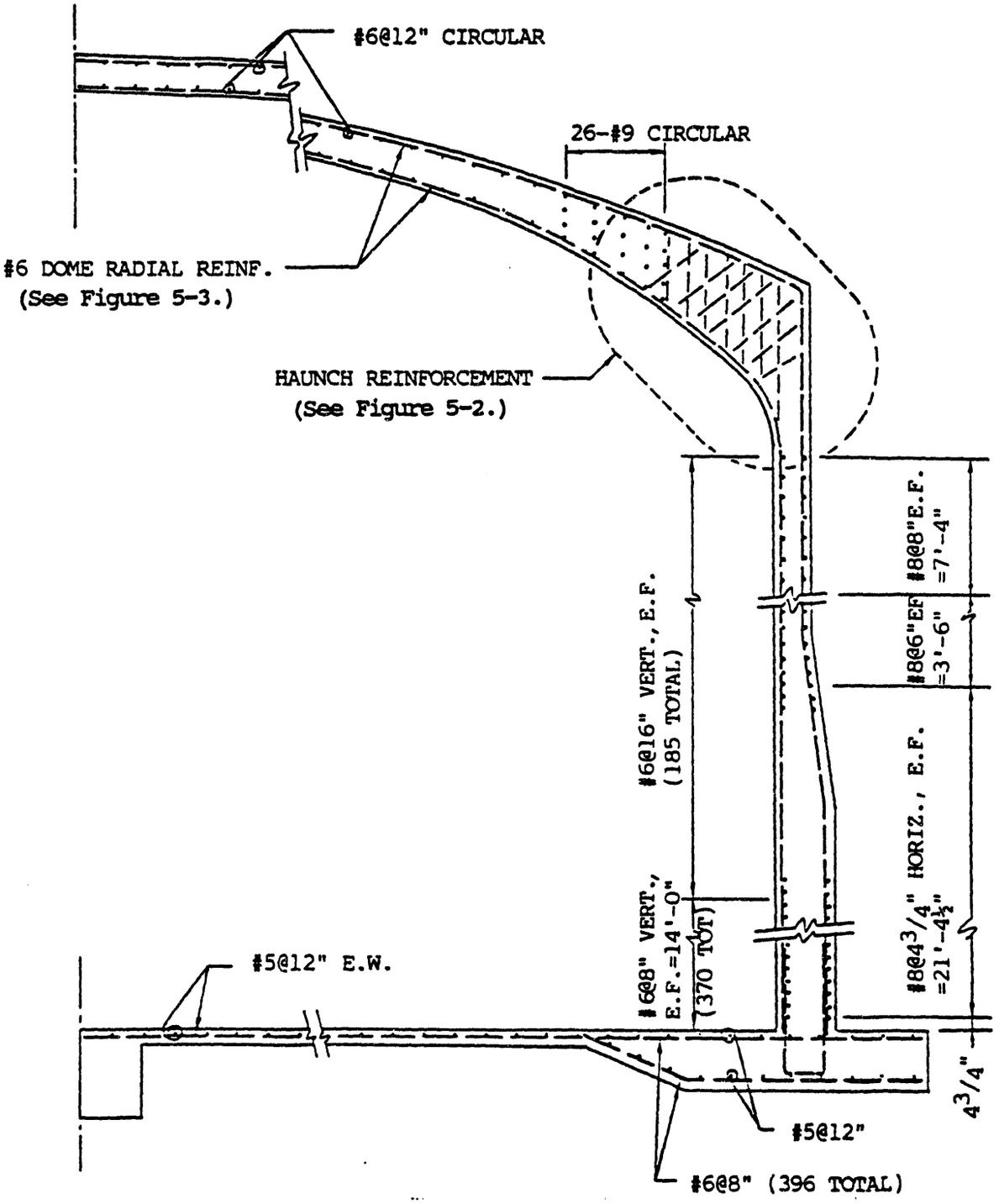


Figure 5.2.1-2. Haunch Reinforcement of One-Million-Gallon Generic Tank.

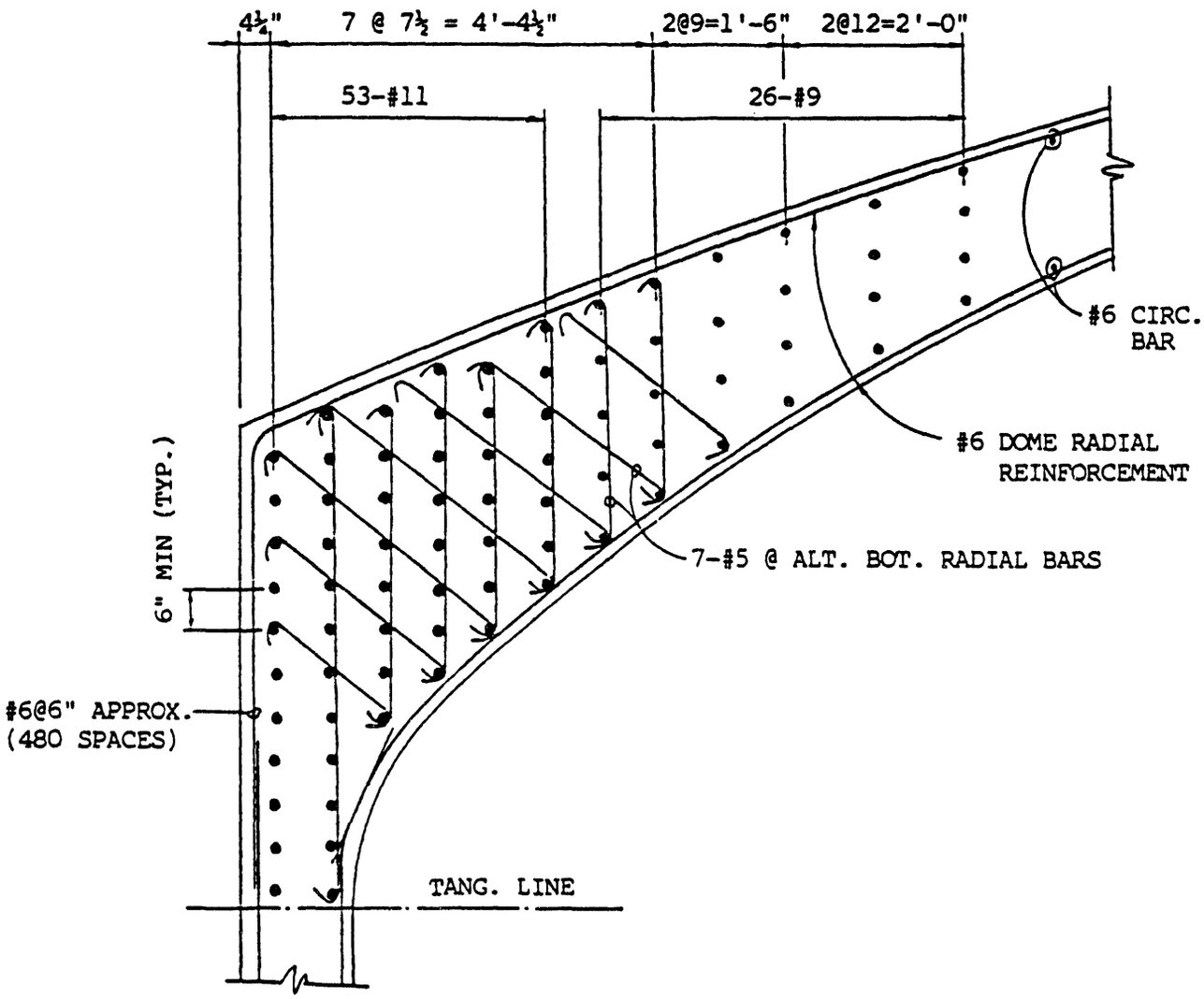


Figure 5.2.1-3. Dome Reinforcement of One-Million-Gallon Generic Tank.

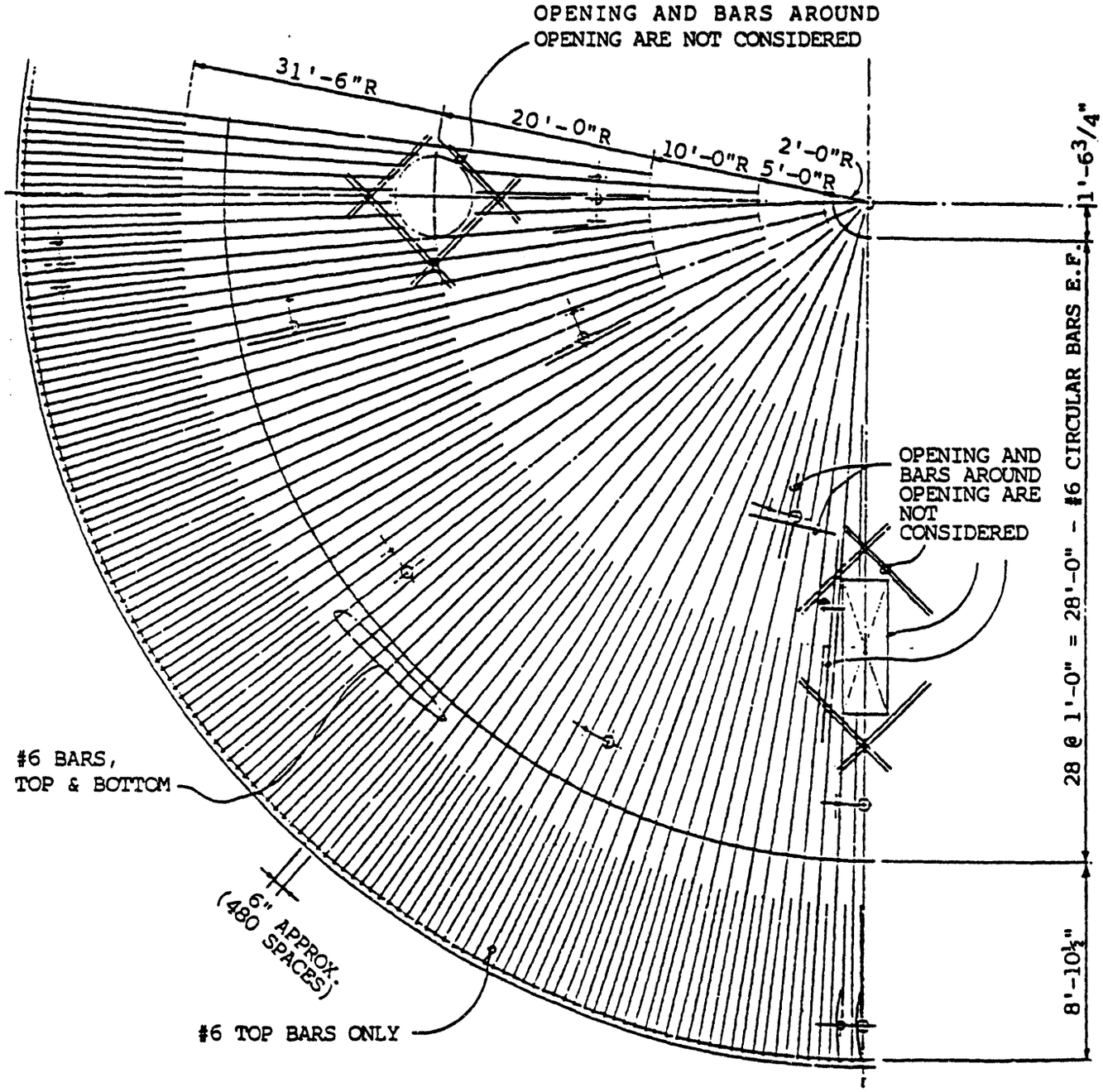


Figure 5.2.1-4. Finite-Element Mesh Plot of One-Million-Gallon Tank.

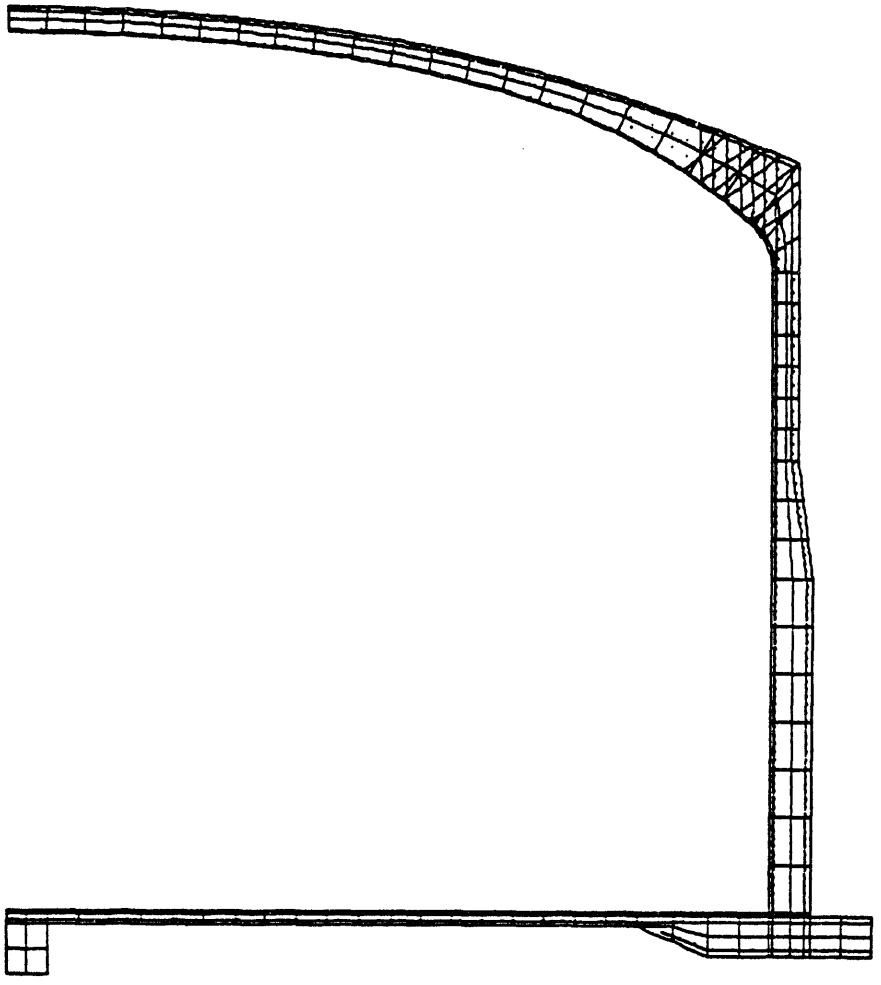


Table 5.1-1. Comparison of One-Million-Gallon Single-Shell Tanks.

Item	Tank Farm		
	A	AX	SX
Capacity ($x10^6$ Gallons)	1.0	1.0	1.0
Year of Construction	1954-1955 (1)	1963-1964 (1)	1953-1954 (1)
Latest Year of Decommission	1980 (1)	1980 (1)	1980 (1)
Present Maximum Storage ($x10^3$ Gallons) Total/Liquid/Sludge (2)	953/413/3 (1) (A-101)	748/320/3 (1) (AX-101)	683/281/73 (1) (SX-105)

Notes for Table 5.1-1

1. Refer to Hanlon (1993)
2. Total = Total Waste Volume, Solids plus Supernatant
   Liquid = Total Liquids, Drainable Interstitial plus Supernatant

Table 5.1-2. Comparison of Geometries of One-Million-Gallon Single-Shell Tanks.

Item	Tank Farm			Generic
	A	AX	SX	Tank
Tank Bot. Slab Thickness	(2)	(3)	(5)	
- Underneath shell	24	36	23	24
- At center of tank	36	18	38	36
- Between shell & center	6	18	8	6
Concrete Shell	(2)	(3)	(5)	
- Radius	450.5	450.5	450.5	450.5
- Thickness at top	15	15	15	15
- Thickness at bottom	24	24	24	24
- Transition length	72	72	72	72
Concrete Haunch & Dome	(2)	(3)	(5)	
- Dome radius at center	1,140	1,410	1,140	1,410
- Dome height at center	144	144	144	144
- Dome Thickness	15	15	15	15
Concrete Shell to Slab Connection	(2) 90°	(3) 4 Radius	(5) 90°	90°
Steel Liner Thickness	(2)	(3)	(5)	
- At bottom	0.375	0.375	0.375	0.375
- At bottom to shell trans.	0.375	0.375	0.375	0.375
- At shell	0.375	0.375	0.375	0.375
Steel Shell to Steel Bottom Connection	(2) 90°	(3) 4 Radius	(5) 90°	90°
Steel Liner Height	390 (2)	390 (3)	390 (5)	390
Stiffeners (Structural Angles)	(2) 5x3½x5/16	(3) 5x3½x5/16	(5) 5x3½x5/16	5x3½x5/16
Soil Depth Above Dome	84 (2)	84 (4)	75.6 (5)	84

Notes for Table 5.1-2

1. All dimensions are in inches unless noted otherwise
2. Refer to Dwg. H-2-55911
3. Refer to Dwg. H-2-44562
4. Refer to Dwg. H-2-73378
5. Refer to Dwg. H-2-39511

Table 5.1-3. Comparison of Reinforcement in One-Million-Gallon Single-Shell Tanks.

Item	Tank Farm			Generic
	A	AX	SX	Tank
Slab at Center of Tank	(2)	(4)	(6)	
- Top (Square Grid)	-	#5 @ 12	-	-
- Bottom (Square Grid)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
Slab Under Shell	(2)	(4)	(6)	
- Top (Radial)	#8 @ 10	#8 Eq. Sp.	#6 @ 8	#6 @ 8
- Bottom (Radial)	#8 @ 10	#8 Eq. Sp.	#6 @ 8	#6 @ 8
- Top (Hoop)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
- Bottom (Hoop)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
Shell	(2)	(4)	(6)	
- Center Row (Hoop)	#8 @ 4¼	None	None	None
- Center Row (Meridional)	#5 @ 24	None	None	None
- Meridional	#8	#8, #7	#6	#6
- Hoop	#8	#8	#8	#8
Haunch	(3)	(5)	(7)	
- Meridional	#8	#6	#6	#6
- Radial	#5	#5	#5	#5
- Hoop	#11	#11	#11	#11
Dome	#6 (3)	#6 (5)	#6 (7)	#6

Notes for Table 5.1-3

1. All dimensions are in inches unless noted otherwise
2. Refer to Dwg. H-2-55912
3. Refer to Dwg. H-2-55913
4. Refer to Dwg. H-2-44562
5. Refer to Dwg. H-2-44565
6. Refer to Dwg. H-2-39512
7. Refer to Dwg. H-2-39513

Table 5.1-4. Comparison of Material Properties of One-Million-Gallon Single-Shell Tanks.

Item	Tank Farm			Generic Tank
	A	AX	SX	
Concrete Compressive Strength (lbf/in^2)	(1) 3,000	(5) 4,000	(8,9) 3,000	3,000
Steel Liner Material Specification	ASTM (1) A283-52T	ASTM (5) A201,GR.A	ASTM (10) A283-52T	$\sigma_{y\,min}$ (12) $=32\ kip/in^2$
Reinforcement Material Specification	ASTM (1) A15-50T	ASTM (2) A15-58T	ASTM (10) A15-50T	(12) Grade 40
Reinforcement Min. Yield Strength(lbf/in^2)	(2) 40,000	(2) 40,000	(2) 40,000	40,000
Waterproofing Materials in Concrete	(3,4) Asphaltic	(6,7) Copper	(3,11) Asphaltic	(3) Asphaltic

Notes for Table 5.1-4

1. Refer to HWS-5614
2. Refer to Leach (1993)
3. 3-Ply asphaltic membrane between the slab and footing.
4. Refer to Dwg. H-2-55911
5. Refer to HWS-8237
6. 20 oz. copper plates embedded across construction joints.
7. Refer to Dwg. H-2-44562
8. Refer to Dwg. H-2-39512
9. Refer to Dwg. H-2-39513
10. Refer to HW-4957
11. Refer to Dwg. H-2-39511
12. Refer to Attachment 12g and 12h of Appendix A

6.0 HALF-MILLION-GALLON TANK

6.1 MODEL DEVELOPMENT AND ANALYSIS METHODOLOGY

The model used to represent the half-million-gallon SSTs is essentially the same as that used in the in situ evaluation of tank 241C106 (Julyk et al. 1993). The primary difference between the two models is that the concrete strength used here is 3,000 lbf/in^2, the minimum specified compressive strength for tank 241C106, rather than the aged and subsequently degraded strength determined for the thermal history of the tank. This approach is conservative because the predicted in situ compressive strength of this high-heat tank did not degrade below the specified compressive strength (Julyk et al. 1993). In the previous in situ analysis, the first load steps were performed to obtain a geostatic state of stress in the soil corresponding to the completed construction of the tank with backfill soil in place. Additional load steps then were analyzed by way of ABAQUS restart runs to evaluate the in situ condition for the predicted thermal history. For the internal pressurization analysis, within the scope of this report, the analysis is continued from the point of the completed construction with backfill soil in place but does not consider the specific in situ loadings.

As was the case for the one-million-gallon tank, the analysis for the half-million-gallon tank was performed with ABAQUS, version 4.9 (HKS 1989), which is a general-purpose finite-element computer program. The user-defined material subroutine of the ANACAP-U concrete analysis package (James 1993) was used to model the constitutive behavior of the concrete. The structure and loading are axisymmetric, and the tank was modeled accordingly. The soil surrounding the tank is explicitly modeled as a continuum.

This chapter summarizes the features of the half-million-gallon model and provides a description of the analysis performed. For a detailed description of the model, refer to Julyk et al. (1993), which documents the model development and analyses performed for the in situ evaluation of tank 241C106. Calculations supporting this analysis are included as Appendix B to this report, and the ABAQUS data input file is listed in Attachments 1 and 2 to the appendix.

6.2 MODEL DESCRIPTION

6.2.1 Tank Geometry

Tank 241C106 is a half-million-gallon tank approximately 77 ft in diameter and 33-ft tall. The tank is buried approximately 5-ft 7-in. deep (assumed 7 ft for analysis) at the dome apex. The minimum dome thickness is 15 in. and the cylindrical wall is 12-in. thick. The tank floor slab is 6-in. thick with a 2-in. layer of grout and a 3-ply asphaltic membrane layer between the slab and liner. The steel liner thickness is 1/4 in. except at the knuckle transition between the floor and wall, where 5/16-in. plate is used. Although the steel liner is not structurally connected to the concrete shell, it is stiffened with 5 by 3½ by 5/16-in. angles that form circumferential rings spaced uniformly along the height of the wall.

Figure 6.2.1-1 provides a schematic of the tank considered in this analysis. Figure 6.2.1-2 is a mesh plot of the complete model including the soil elements. Figures 6.2.1-3 and 6.2.1-4 are mesh plots of the tank only, with the latter showing the rebar subelements.

6.2.2 Element Types

The concrete elements and soil elements were modeled with eight-node axisymmetric solid elements with four integration points (CAX8R). The ABAQUS rebar subelement was used to model the reinforcement explicitly. Both meridional and circumferential reinforcement was modeled as well as the steel ties in the haunch. The rectangular grid pattern of reinforcement in the floor and in the center portion of the dome was modeled with equivalent meridional and circumferential rebar, assigned to match the volume and distribution of the actual rebar configuration. The axisymmetry of the model necessitated this approximation.

The steel liner was modeled with three-node axisymmetric shell elements (SAX2). The 5 by 3½ by 5/16-in. stiffener angles were modeled with three-node axisymmetric shell elements oriented perpendicular to the liner shell elements. The short (vertical) leg of the angle was not explicitly modeled, but was accounted for by increasing the thickness of the stiffener; the result is a cross-sectional area that is equivalent to the actual angle. The grout layer on the tank floor was modeled with a single layer of CAX8R elastic elements with a soft modulus relative to that of normal concrete.

6.2.3 Boundary Conditions and Interfaces

Displacement boundary conditions along the axis of symmetry are implicit in an axisymmetric model. However, because some nodes were slightly offset from the axis of symmetry, horizontal displacement boundary conditions were explicitly defined at all nodes on or near the axis of symmetry. Horizontal boundary conditions (vertical rollers) are imposed at the outer radius of the soil, and vertical boundary conditions (horizontal rollers) are imposed at the bottom of the modeled soil.

Nonlinear (compression-only) springs were used as soil/tank-wall interface elements, to allow separation of the tank from the soil. To model the initial nonzero state of soil stress, the construction sequence was simulated by building up layers of soil. See Julyk et al. (1993) for a complete discussion of this procedure. Figure 6.2.3-1 provides a sketch of the soil layers modeled in the analysis.

The interface between the liner and the grout is defined with rigid springs to represent the asphaltic membrane as a highly confined, incompressible material.

6.3 MATERIAL PROPERTIES

6.3.1 Concrete Properties

The inelastic behavior of the concrete for the half-million-gallon tank was modeled by invoking constitutive Model 3 of the ANACAP-U material subroutine (James 1993). The defined material properties are very similar to those of the one-million-gallon SST, as follows:

- Minimum compressive strength = 3,000 lbf/in^2
- Fracture strain = 0.0001 in/in
- Compressive modulus of elasticity = 3.1×10^6 lbf/in^2
- Poisson's ratio = 0.15
- Mass density = 0.000225 $lbf\text{-}sec^2/in^4$ (150 lbf/ft^3).

See Section 5.3.1 above for a brief discussion of the features of the ANACAP-U material subroutine.

6.3.2 Steel Properties

Reinforcement material was modeled as a von Mises material with isotropic strain hardening. True stress and corresponding logarithmic strain values (as required by ABAQUS) were assigned on the basis of ASTM A15-39 Grade 40 material.

Liner material is also modeled as a von Mises material with an assumed yield strength of 33 kip/in^2, ultimate strength of 60 kip/in^2, and an elongation of 21% at ultimate strength. A mass density of 0.000734 $lbf\text{-}sec^2/in^4$ (490 lbf/ft^3) was defined for both the liner and reinforcement material.

6.3.3 Soil Properties

The soil constitutive model was defined with the ABAQUS Drucker-Prager elastic, perfectly plastic model. Soil density, Poisson's ratio, and the Drucker-Prager constants are assumed to be constant throughout the soil depth. Tests show that Young's modulus and the uniaxial compressive yield stress vary as a function of the confining pressure. Therefore, these pressure-dependent properties are specified on the basis of depth through an ABAQUS field variable. Refer to Julyk et al. (1993) for a complete discussion of the soil characterization.

6.4 LOAD DESCRIPTION

6.4.1 Tank Deadweight

Gravitational acceleration was applied to all tank component masses. As indicated in Section 6.3 above, all concrete elements were defined with mass densities of 0.000225 $lbf\text{-}sec^2/in^4$ (150 lbf/ft^3), and all reinforcement and liner elements were defined with mass densities of 0.000734 $lbf\text{-}sec^2/in^4$ (490 lbf/ft^3).

6.4.2 Soil Pressure

As indicated in Section 6.2.3 above, soil element layers were added to the model over several load steps to simulate the construction backfilling operations to obtain an initial nonzero state of soil stress. Figure 6.2.3-1 provides a sketch of the soil layers modeled in the analysis. Because the soil is explicitly modeled, lateral soil pressure on the tank walls and soil overburden on the tank dome are directly developed within the analysis. Overburden soil was modeled to a depth of 7 ft at the dome apex.

6.4.3 Hydrostatic Waste Loads

Waste contained in the tank has been considered by defining a hydrostatic load on the basis of a waste depth of 17 ft. A specific gravity of 2.0 (corresponding to solid waste) was assumed along the tank floor and to an elevation of 35 in. above the lowest interior point in the tank. For points above 35 in., up to the 17-ft total waste depth, a specific gravity of 1.0 was assumed for the liquid portion of the waste. The modeling of two discrete waste layers is intended to approximate the actual variation in waste density, in which the heavier liquids and suspended solids tend to settle with time.

6.4.4 Internal Pressure

The static internal pressure, simulating a hydrogen burn loading, was applied in two load steps. The first step applied a pressure of 14.7 lbf/in^2, corresponding to the estimated pressure required to crack the dome. In the second step of the analysis, the pressure was gradually increased until the numerical algorithms failed at a pressure of approximately 28.0 lbf/in^2 (see Figures 3.2.1-1 and 3.2.2-1). The pressure loadings were applied directly to all interior concrete elements because the waste liquid and liner would transfer the load to the concrete in the presence of overpressure.

A refined analysis applied smaller load increments in the region of the jump in displacement. In the refined analysis, the first step applied an internal pressure of 13 lbf/in^2, and the second step increased the pressure to 16 lbf/in^2 (see Figure 3.2.1-2). This refined analysis was conducted to better characterize the "jump" discontinuity region in the displacement with increasing pressure. Section 3.2 summarizes the results.

Figure 6.2.1-1. Schematic of Half-Million-Gallon Single-Shell Tank.

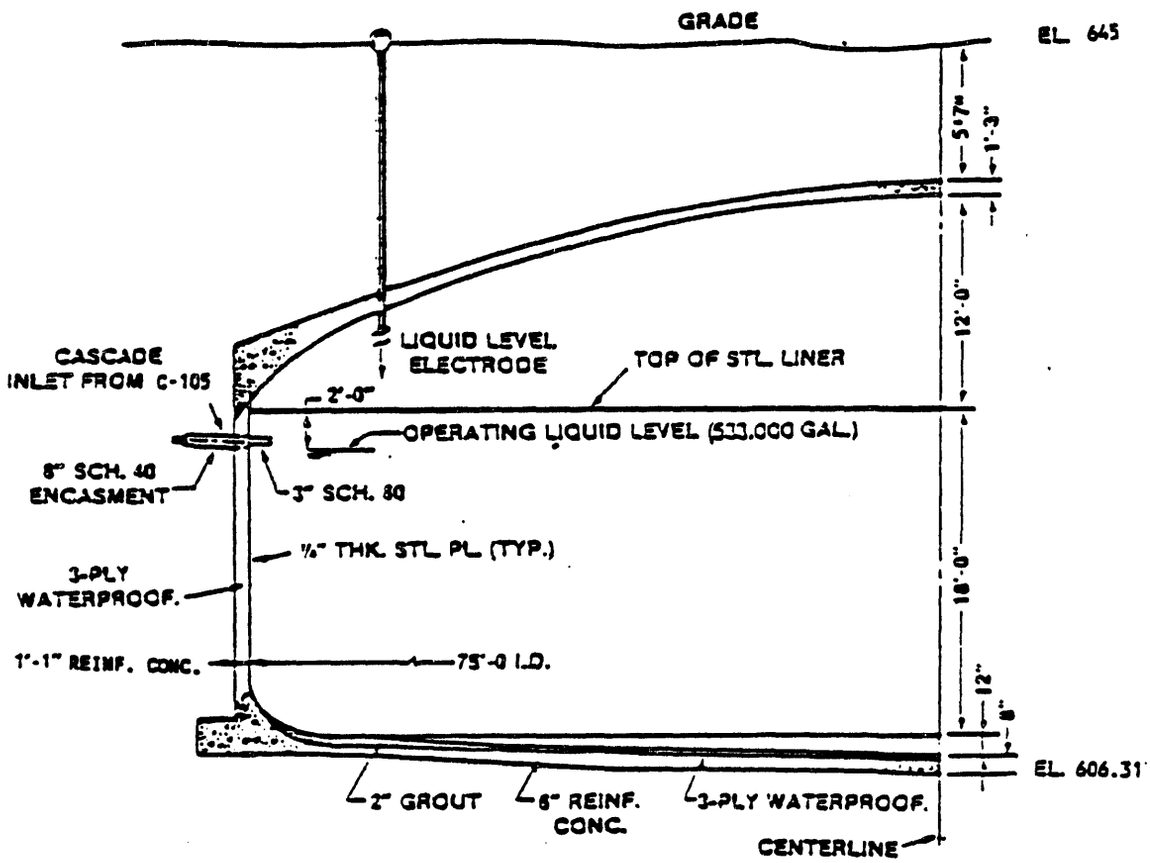


Figure 6.2.1-2. Finite-Element Mesh Plot of the Complete Half-Million-Gallon Tank Model.

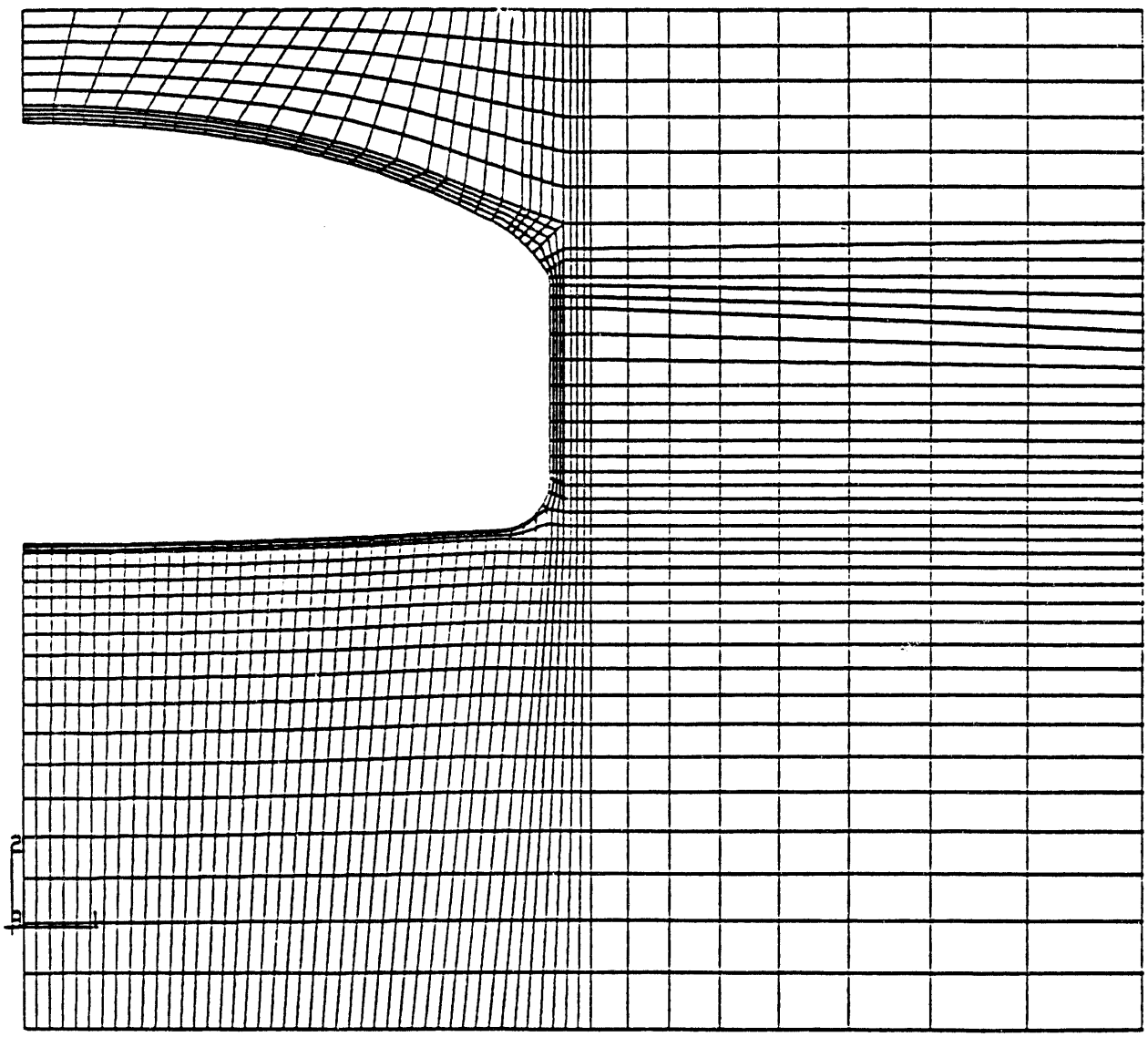


Figure 6.2.1-3. Finite-Element Mesh Plot of the Half-Million-Gallon Tank Model.

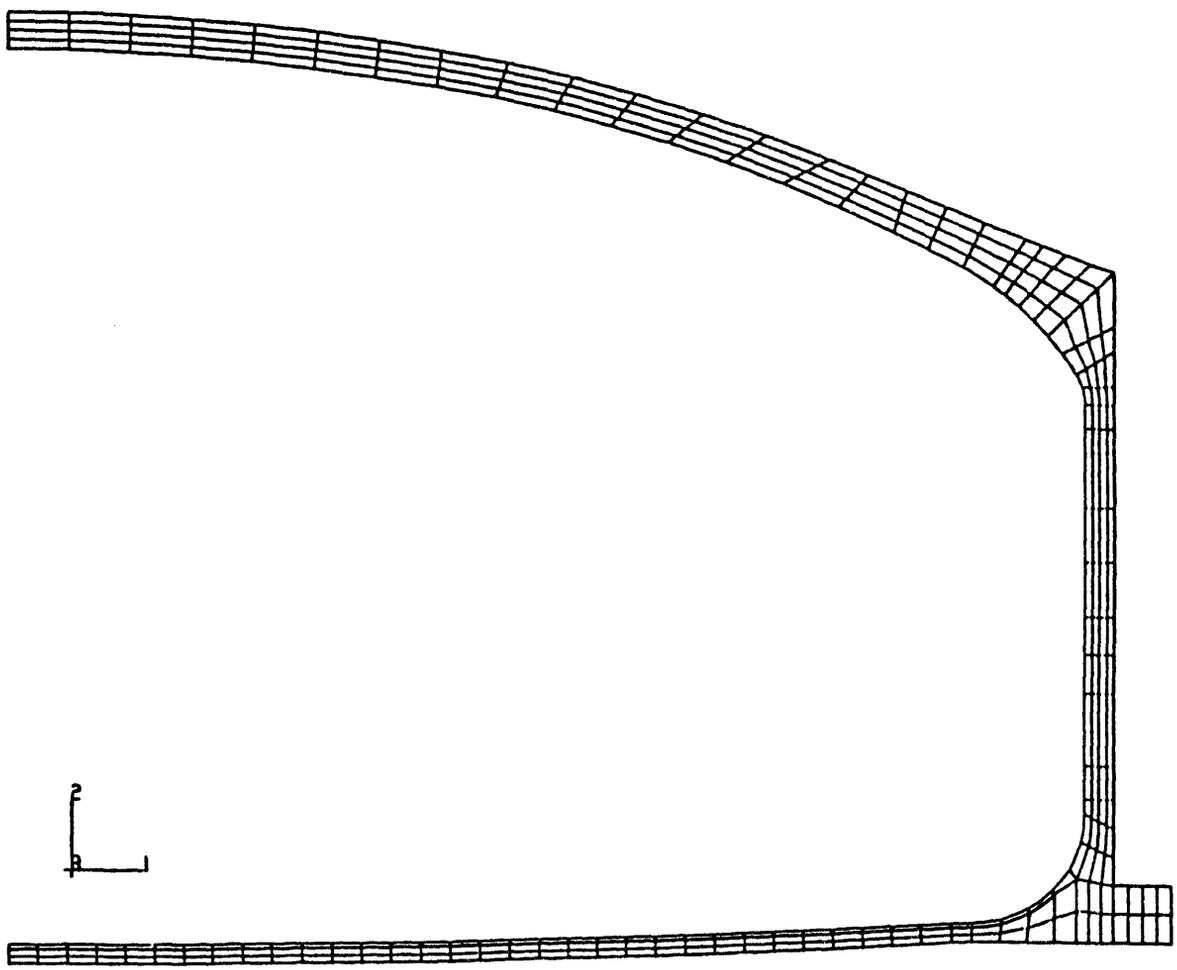


Figure 6.2.1-4. Finite-Element Mesh Plot of the Half-Million-Gallon Tank Model with Rebar Sub-elements shown.

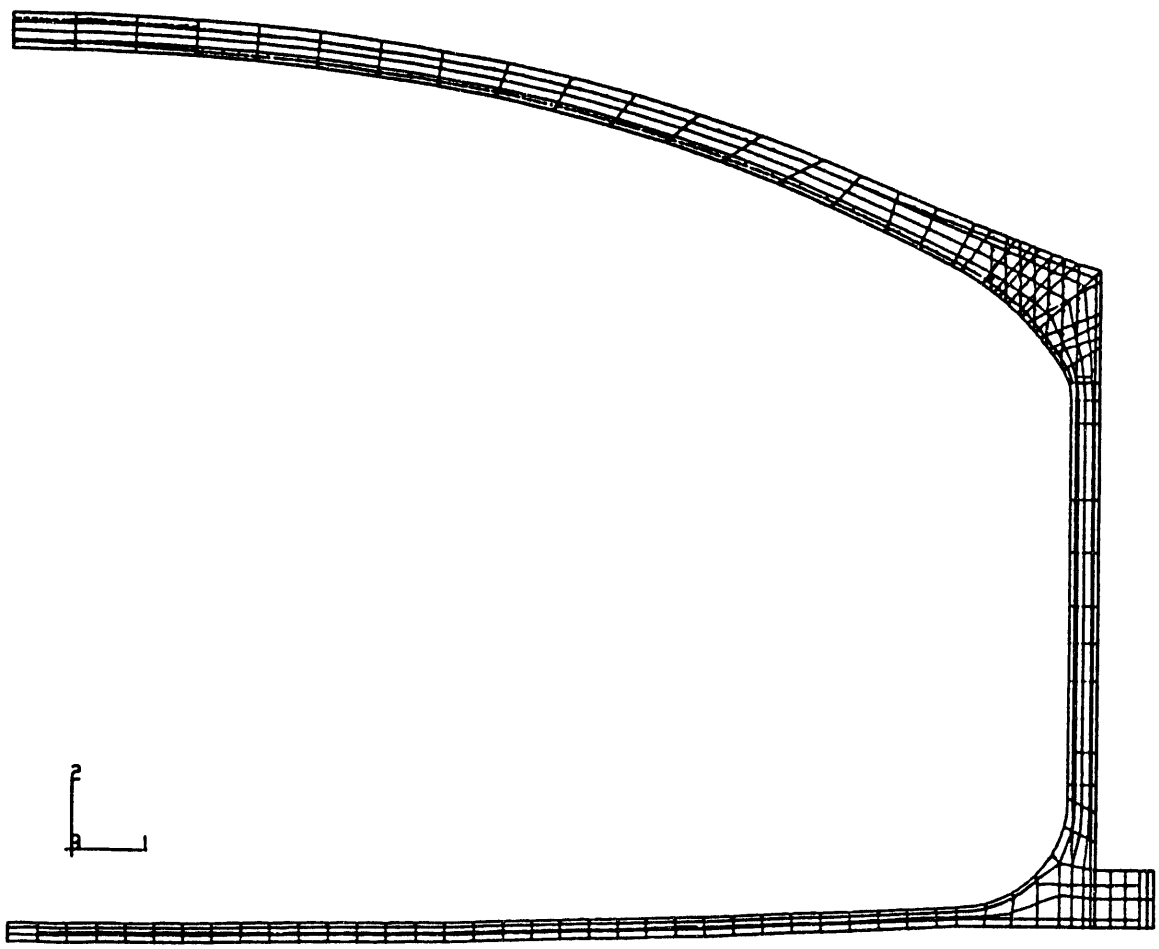
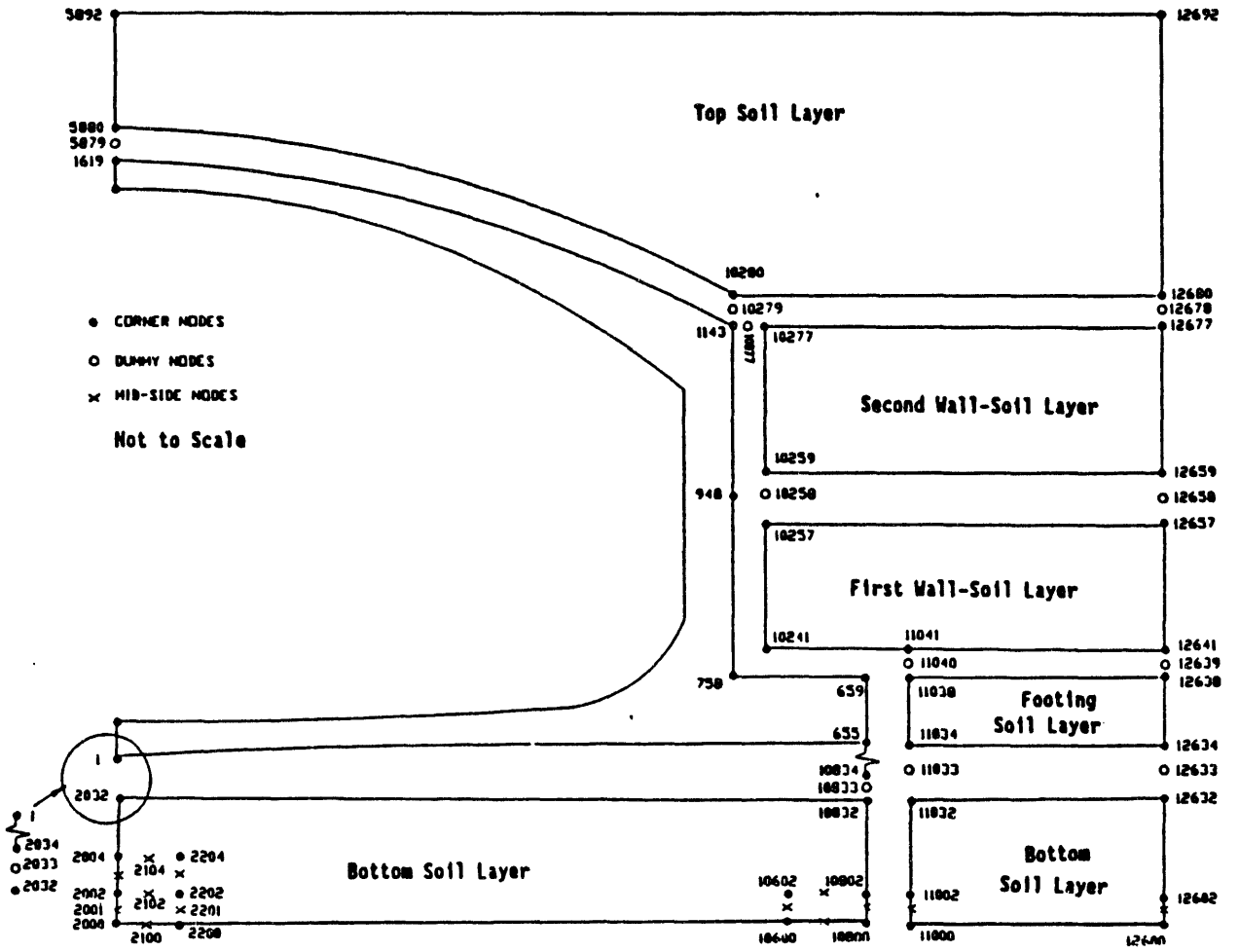


Figure 6.2.3-1. Discrete Soil Layers Used in the Half-Million-Gallon Tank Analysis.



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WHC, 1990, *Soil Properties: 241-SY Tank Analysis*, (Internal Memorandum from Structural Qualification Group to D. M. Chenault, September 17), Westinghouse Hanford Company, Richland, Washington.

Appendix A

GENERIC ONE-MILLION-GALLON SINGLE-SHELL TANK PRESSURIZATION ANALYSIS

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1.0 INTRODUCTION

A finite-element analysis was performed to determine the ultimate static internal pressure that could be structurally sustained by a typical one-million gallon single-shell waste tank in farms A, AX, and SX. The internal pressure under consideration is due to a postulated explosion. Many of the tanks contain chemical wastes which generate potentially-explosive gas. Although ignition of these gasses is unlikely, issues of public safety require evaluations of this beyond-design-basis event.

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2.0 PURPOSE AND SCOPE

The scope of this effort includes a reconstruction of a model previously developed to evaluate dynamic pressurization. This calculation provides detailed documentation of this model and associated static pressurization analysis results. The evaluation is performed on the basis of a global instability failure criteria. Permanent structural damage, including concrete cracking and rebar yielding, may occur before the point of structural instability.

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3.0 METHODOLOGY

Tank farms A, AX, and SX contain ten one-million gallon single-shell waste tanks that are buried entirely below grade. The reinforced-concrete tanks are lined with welded plate-steel along the floor and walls.

The model for this analysis was developed to conservatively represent all ten tanks. This was accomplished by modelling the most structurally inferior geometric and material properties, as provided by Westinghouse Hanford Company, of each component of the tanks. Tables 3-1 through 3-4 summarize geometry and material property data for tanks in farms A, AX, and SX, used to develop the generic model. Figure 3-1 provides the overall generic tank geometry as used in this analysis.

The analysis was performed with ABAQUS version 4.9, a general-purpose finite-element computer program. The user-defined material subroutine of the ANACAP-U concrete analysis package was used to model the constitutive behavior of the concrete. The structure and loading are axisymmetric, and the tank was modelled accordingly. Reinforcing bars were modelled with ABAQUS subelements superimposed on the axisymmetric continuum elements representing the concrete.

In addition to gravity loads, a static internal pressure loading was applied to the concrete-dome and steel-liner elements. Nonlinear response was considered through the application of incremental loads.

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Table 3-1
Comparison of Single Shell Tanks

Item	Tank Farm		
	A	AX	SX
Capacity ($x10^6$ Gallons)	1.0	1.0	1.0
Year of Construction	1954-1955 (1)	1963-1964 (1)	1953-1954 (1)
Latest Year of Decommission	1980 (1)	1980 (1)	1980 (1)
Present Maximum Storage ($x10^3$ Gallons) Total/Liquid/Sludge (2)	953/413/3 (1) (A-101)	748/320/3 (1) (AX-101)	683/281/73 (1) (SX-105)

Notes for Table 3-1

1. Refer to Hanlan, 1993 (*ref. 24*)
2. Total = Total Waste Volume, Solids plus Supernatent
   Liquid = Total Liquids, Drainable Interstitale plus Supernatent

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Table 3-2
Comparison of Geometries of Single Shell Tanks

Item	Tank Farm			Generic
	A	AX	SX	Tank
Tank Bot. Slab Thickness	(2)	(3)	(5)	
- Underneath shell	24	36	23	24
- At center of tank	36	18	38	36
- Between shell & center	6	18	8	6
Concrete Shell	(2)	(3)	(5)	
- Radius	450.5	450.5	450.5	450.5
- Thickness at top	15	15	15	15
- Thickness at bottom	24	24	24	24
- Transition length	72	72	72	72
Concrete Haunch & Dome	(2)	(3)	(5)	
- Dome radius at center	1140	1410	1140	1410
- Dome height at center	144	144	144	144
- Dome Thickness	15	15	15	15
Concrete Shell to Slab Connection	(2) 90°	(3) 4 Radius	(5) 90°	90°
Steel Liner Thickness	(2)	(3)	(5)	
- At bottom	0.375	0.375	0.375	0.375
- At bottom to shell trans.	0.375	0.375	0.375	0.375
- At shell	0.375	0.375	0.375	0.375
Steel Shell to Steel Bottom Connection	(2) 90°	(3) 4 Radius	(5) 90°	90°
Steel Liner Height	390 (2)	390 (3)	390 (5)	390
Stiffeners (Structural Angles)	(2) 5x3½x5/16	(3) 5x3½x5/16	(5) 5x3½x5/16	5x3½x5/16
Soil Depth Above Dome	84 (2)	84 (4)	75.6 (5)	84

Notes for Table 3-2
1. All dimensions are in inches unless noted otherwise
2. Refer to Dwg. H-2-55911 (*ref. 10*)
3. Refer to Dwg. H-2-44562 (*ref. 8*)
4. Refer to Dwg. H-2-73378 (*ref. 25*)
5. Refer to Dwg. H-2-39511 (*ref. 26*)

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Table 3-3
Comparison of Reinforcement in Single Shell Tanks

Item	Tank Farm			Generic Tank
	A	AX	SX	
Slab at Center of Tank	(2)	(4)	(6)	
- Top (Square Grid)	-	#5 @ 12	-	-
- Bottom (Square Grid)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
Slab Under Shell	(2)	(4)	(6)	
- Top (Radial)	#8 @ 10	#8 Eq. Sp.	#6 @ 8	#6 @ 8
- Bottom (Radial)	#8 @ 10	#8 Eq. Sp.	#6 @ 8	#6 @ 8
- Top (Hoop)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
- Bottom (Hoop)	#5 @ 12	#6 @ 12	#5 @ 12	#5 @ 12
Shell	(2)	(4)	(6)	
- Center Row (Hoop)	#8 @ 4¾	None	None	None
- Center Row (Meridional)	#5 @ 24	None	None	None
- Meridional	#8	#8, #7	#6	#6
- Hoop	#8	#8	#8	#8
Haunch	(3)	(5)	(7)	
- Meridional	#8	#6	#6	#6
- Radial	#5	#5	#5	#5
- Hoop	#11	#11	#11	#11
Dome	#6 (3)	#6 (5)	#6 (7)	#6

Notes for Table 3-3

1. All dimensions are in inches unless noted otherwise
2. Refer to Dwg. H-2-55912 (*Ref. 11*)
3. Refer to Dwg. H-2-55913 (*Ref. 12*)
4. Refer to Dwg. H-2-44562 (*Ref. 8*)
5. Refer to Dwg. H-2-44565 (*Ref. 9*)
6. Refer to Dwg. H-2-39512 (*Ref. 27*)
7. Refer to Dwg. H-2-39513 (*Ref. 28*)

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Table 3-4
Comparison of Material Properties of Single Shell Tanks

Item	Tank Farm			Generic
	A	AX	SX	Tank
Concrete Compressive Strength (lbf/sq. in)	(1) 3000	(5) 4000	(8,9) 3000	3000
Steel Liner Material Specification	ASTM (1) A283-52T	ASTM (5) A201,GR.A	ASTM (10) A283-52T	(12) $\sigma_y$min=32 ksi
Reinforcement Material Specification	ASTM (1) A15-50T	ASTM (2) A15-58T	ASTM (10) A15-50T	(12) Grade 40
Reinforcement Minimum Yield Strength (lbf/sq. in)	(2) 40,000	(2) 40,000	(2) 40,000	40,000
Waterproofing Materials in Concrete	(3,4) Asphaltic	(6,7) Copper	(3,11) Asphaltic	(3) Asphaltic

Notes for Table 3-4

1. Refer to HWS-5614 (*ref. 29*)
2. Refer to Leach, 1993 (*ref. 32*)
3. 3-Ply asphaltic membrane between the slab and footing.
4. Refer to Dwg. H-2-55911 (*ref. 10*)
5. Refer to HWS-8237 (*ref. 30*)
6. 20 oz. copper plates embedded across construction joints.
7. Refer to Dwg. H-2-44562 (*ref. 8*)
8. Refer to Dwg. H-2-39512 (*ref. 27*)
9. Refer to Dwg. H-2-39513 (*ref. 28*)
10. Refer to HW-4957 (*ref. 31*)
11. Refer to Dwg. H-2-39511 (*ref. 26*)
12. Ref. Attachment 12g and 12h

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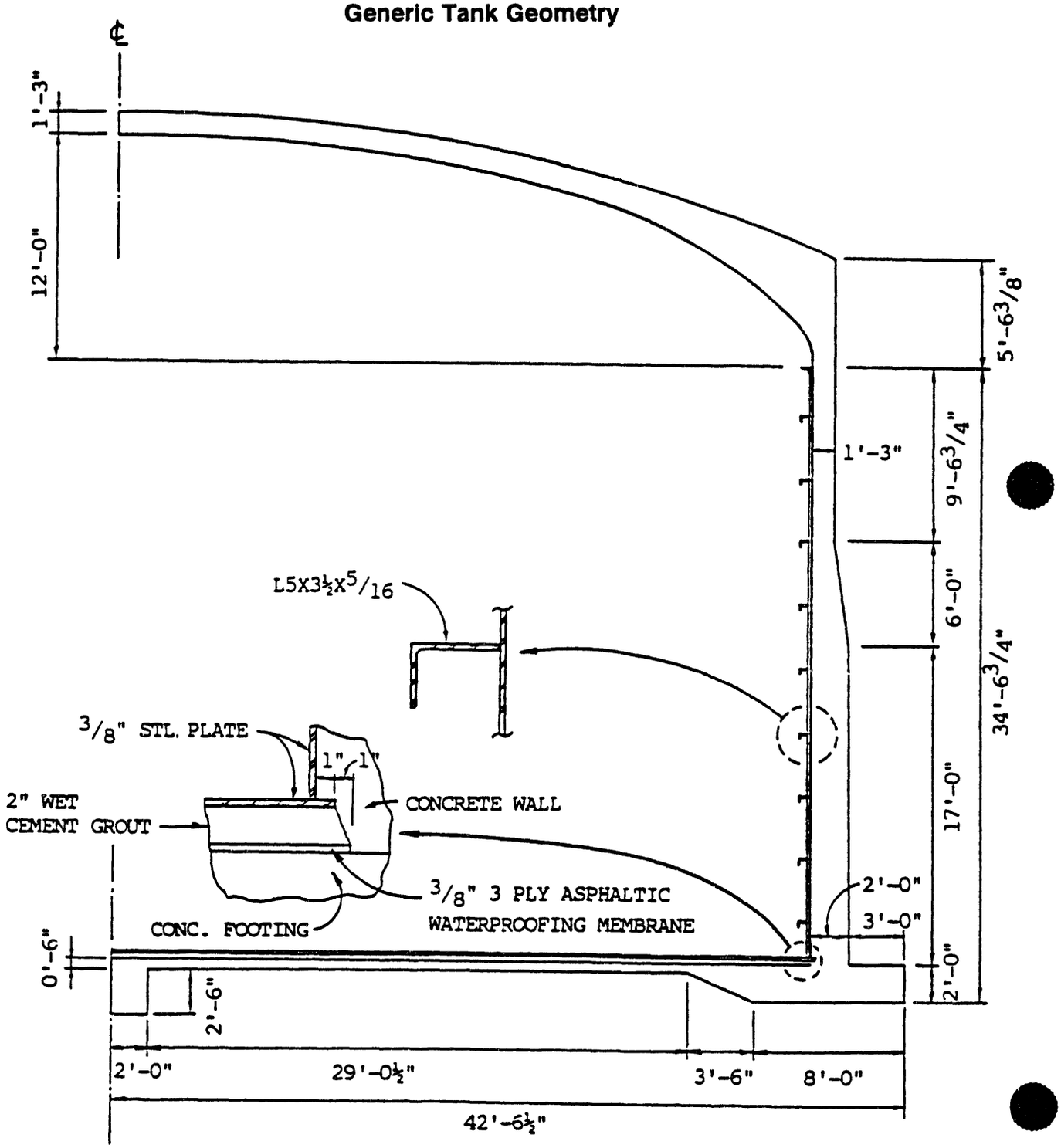
Figure 3-1
Generic Tank Geometry



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4.0 FAILURE CRITERIA

Failure can be associated with loss of structural load-carrying ability or loss of function. Failure modes generally fall into two categories, local and global. Local failure modes include excessive concrete cracking and spallation, rebar rupture, rebar bond and splice failures, concrete shear failures, and concrete crushing. Global failures are characterized by structural instability associated with either collapse or buckling. Failure, in the context of this report, is defined as a structural instability or the presence of a local failure that cannot be dismissed from consideration as a precursor to a structural instability. In a reinforced concrete structure, the failure mechanisms can be segregated into those associated with concrete and those associated with reinforcement.

4.1 Concrete

The concrete material is modeled with the ANACAP-U strain-hardening/softening model. This model represents the full constitutive behavior of reinforced concrete. The concrete constitutive model in ANACAP-U interfaces with ABAQUS through the user-defined material subroutine (*USER MATERIAL) option provided in ABAQUS. The failure mechanisms of concrete and their treatment by ANACAP-U are discussed below.

4.1.1 Tension. Concrete cracking is a local failure condition expected under service loads and is accounted for explicitly in the constitutive model. When the fracture strain is reached at a given integration point in the model, the normal stress capacity is reduced to zero. The tensile load is redistributed to other elements within the model. Therefore, no consideration should be given to cracking as a state of structural failure.

However, excessive cracking or spallation can affect the load transfer between the concrete and the reinforcement. Excessive cracking or spallation, to the extent that rebar bond is compromised, would be accompanied by solution instability and the breakdown of the analysis.

4.1.2 Compression. Concrete crushing is a local failure condition not expected under service loads, but is accounted for explicitly in the constitutive modeling. The nonlinear compressive stress-strain diagram includes strain hardening and post-peak strain softening. Although concrete crushing frequently signals the onset of collapse for simple structures, in more complex structures it may be only an indication of a local softening resulting in load redistribution. Because of the explicit modeling of

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concrete crushing, prediction of global instability will integrate implicitly any effects of concrete crushing.

4.1.3 Shear. The compressive and tensile constitutive treatment within ANACAP-U operates on principal stresses. This means that in a state of pure shear, a diagonal tension crack will develop when the shear stress reaches the tensile fracture stress. The crack will open in the direction of the maximum principal strain (in tension). A demonstration of this phenomenon is provided by imposing displacements on a one-element model, as shown in Figure 4-1. (Associated input and output files are provided in Attachment 13.) The reaction force as a function of displacement, as defined in Figure 4-1, is illustrated in Figure 4-2. The tensile fracture strain, elastic modulus and Poisson's ratio for the problem are 96×10^{-6} in/in, 2×10^{6} lbf/in^2,and 0.15, respectively. At a shear stress approaching the tensile fracture stress (192 lbf/in^2) a crack will occur. Beyond this point the solution is unstable. It is clear that diagonal tension failure induced by shear loads will be predicted implicitly by the finite-element analysis.

In the case where shear loads do not cause an increase in the crack opening, the elastic shear modulus remains constant. The behavior of the shear modulus in the presence of different fixed values of tensile strain (crack opening displacement), as represented in Figure 4-3, is apparent by examination of Figure 4-4. The shear modulus is reduced to approximately 40% of the uncracked shear modulus on crack initiation. The shear modulus is reduced further with increasing values of the tensile strain across the crack (*ref. 18*). The shear capacity is still governed by a crushing failure criteria in the principal plane, but the reduction of the shear modulus extends to the full nonlinear behavior. The strain required to reach the peak compressive stress is significantly increased. This results in a relative stiffness that allows redistribution of load to other unsoftened portions of the structure.

4.2 Reinforcement

Although the tensile capability of sound, plain concrete is considerable, concrete typically is not credited with any tensile load-carrying capacity in design codes. Concrete is susceptible to cracking damage from shrinkage, environmental exposure and service loads which makes its in situ tensile capacity largely unknown. Therefore, reinforcement is relied on to establish the tensile capacity of a reinforced concrete section.

4.2.1 Plasticity. The steel reinforcement has an elastic plastic behavior with strain hardening to the point of rupture. The tank pressurization analyses are modeled with the ABAQUS elastic-plastic constitutive options where an isotropic stress-strain

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relationship is defined. The maximum stress that the reinforcement can withstand is defined by this relationship. Therefore, the finite-element model is capable of predicting failure with this phenomenon as an implicitly limiting characteristic.

4.2.2 Bond Slip. Insufficient rebar bond or splice capacity results in local failure. The ABAQUS/ANACAP-U finite-element analysis of the tank, which directly addresses such local "failure modes" as concrete cracking as well as compressive failure of concrete, does not account for failure of reinforcement bond in its constitutive model. Because the ultimate capacity of reinforced concrete in tension relies on the integrity of the reinforcement bond, failure criteria for rebar bond and splices must be addressed to establish limits that assure the validity of the finite-element analysis in predicting global structural behavior.

A well-established theory for splitting bond failure, first proposed in Orangun et al. 1977 (*ref. 34*), addresses the dependency of bond stress on such parameters as development length, bar size, bar cover, and clear bar spacings. The radial forces generated between the bar lugs and the surrounding concrete are treated as internal pressure acting on a thick-walled cylinder with an inner diameter equal to the bar diameter and a thickness, C, that is the smaller of (1) the clear top/bottom or side cover, C_b, and (2) one-half the clear spacing between adjacent bars, $C_s/2$. The capacity of the cylinder depends on the tensile strength of the concrete. With C_b greater than $C_s/2$, a horizontal split develops at the level of the bars and is termed a "side-split" failure. With $C_s/2$ greater than C_b, a "face-and-side split" failure forms with longitudinal cracking through the cover followed by splitting through the plane of the bars.

From the results of more than 500 development and splice tests, a regression analysis was used to develop an equation in which the bond stress was expressed in terms of the concrete strength f'_c, bar diameter d_b, thickness of concrete cylinder surrounding the bar C, length of anchored bar l_d or l_s and transverse reinforcement (*ref. 34*). With this approach, the limiting rebar stress governing bond failure, ignoring any contribution from transverse reinforcement, is determined for $C/d_b \leq 2.5$ as

$$f_s = \frac{4l_s}{d_b}\left(1.2 + 3\frac{C}{d_b} + 50\frac{d_b}{l_s}\right)\sqrt{f'_c}$$

where

f_s = longitudinal rebar limit stress for splitting bond failure (lbf/in^2)
l_s = splice or bond length (in.)

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C	=	smaller of cover dimension or ½ of spacing between splices or rebar (in.)
d_b	=	rebar diameter (in.)
f'_c	=	compressive strength of concrete (lbf/in^2).

For top-cast rebar, a 23-percent reduction should be applied. For a complete discussion of concrete/rebar interaction and the development of the above criteria, see Julyk et al. 1993 (*ref. 21*).

4.3 Capacity Determination

The method used to determine the internal pressure capacity of the tank involved the development of a model capable of accurately predicting the nonlinear structural behavior. The model accounted for tank structural details and was used to predict structural instability. All of the failure mechanisms of reinforced concrete are modeled implicitly with the exception of rebar bond failure, for which an independent check must be performed.

The ASME B&PV Code definition of collapse load applicable to experimental stress analysis is applied to the calculated load-deflection curve to define the collapse load. On a load-deflection curve, an angle θ defines the angle between the best-fit linear regression of the linear portion of the load-deflection curve and the load axis. A second straight line, hereafter called the collapse limit line, is drawn through the displacement axis intercept at an angle ϕ with the load axis, where $\phi = \tan^{-1}(2\tan\theta)$. The collapse load is defined as the intersection of the load-deflection curve with the collapse limit line, as shown in Figure II-1430-1, ASME B&PV Code, Section III, NB-3213.25 (ASME, 1992). The ASME technique can give a grossly conservative collapse load when the linear portion of the load-displacement curve is interrupted by a "jump" in displacement without an appreciable change in load and then returns to a relatively linear behavior just after the "jump." In determining the collapse load the ASME technique may be augmented to take into consideration the jump discontinuity. Displacement data beyond the jump discontinuity may be shifted down by a constant amount to eliminate the discontinuity. The ASME method described above is then applied to the shifted data.

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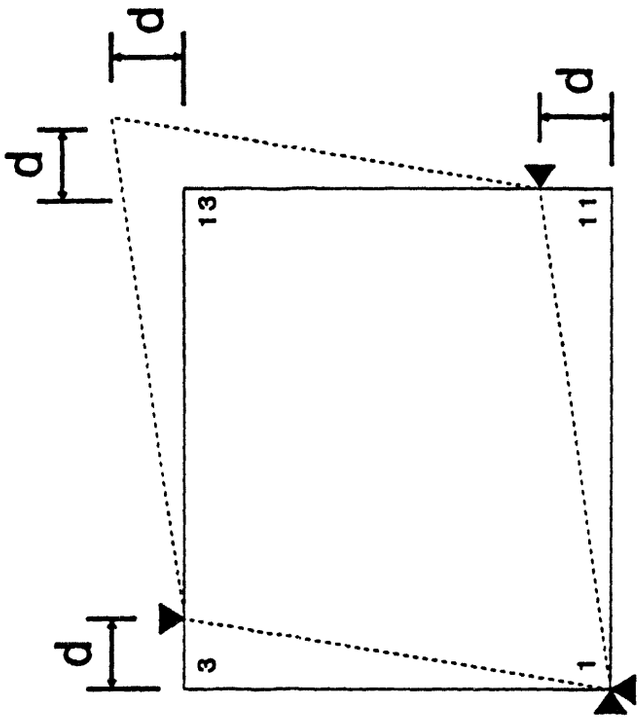

Figure 4-1
State of Pure Shear for 1"x1" Element

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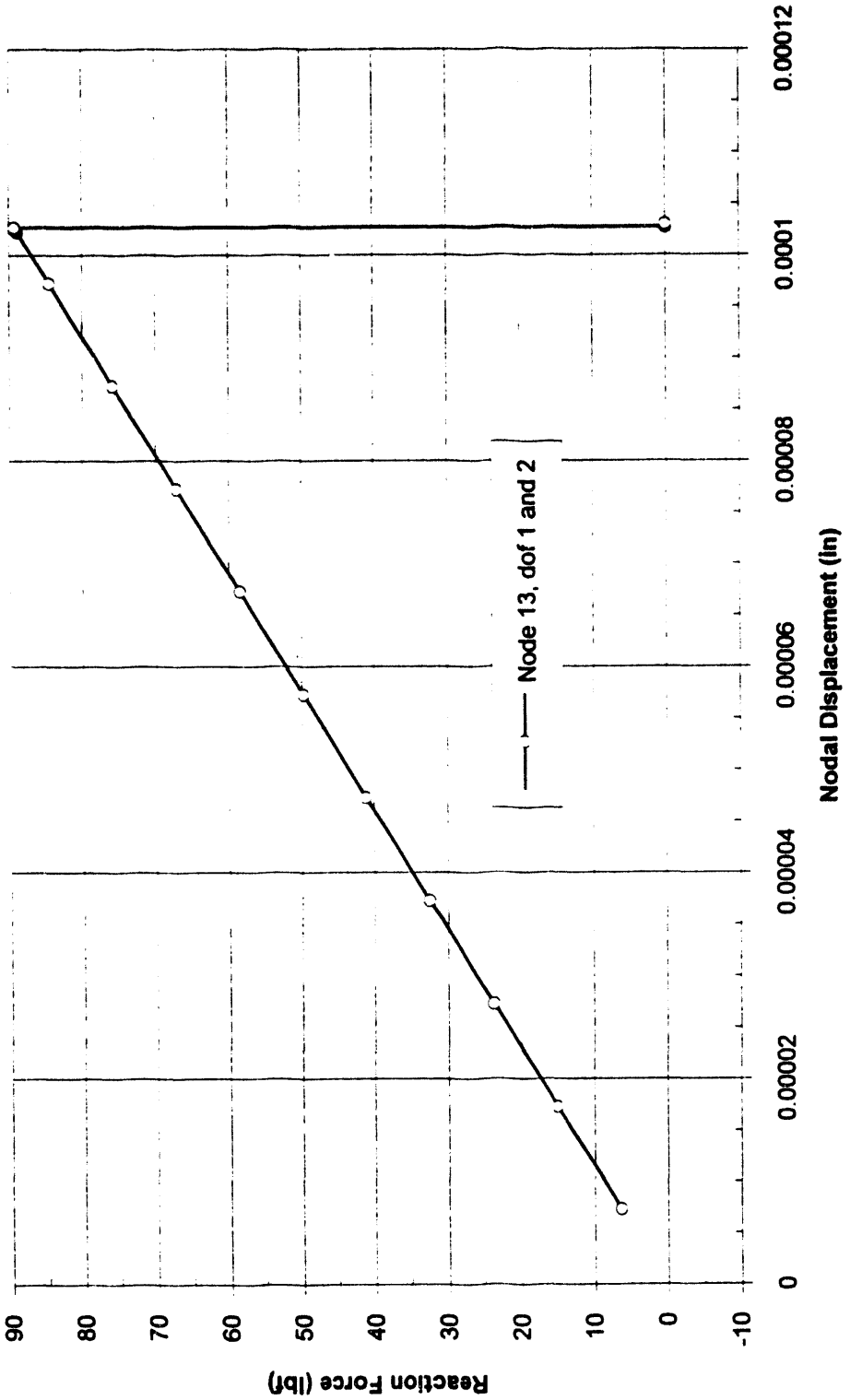

Figure 4-2
Force vs. Displacement for Pure Shear

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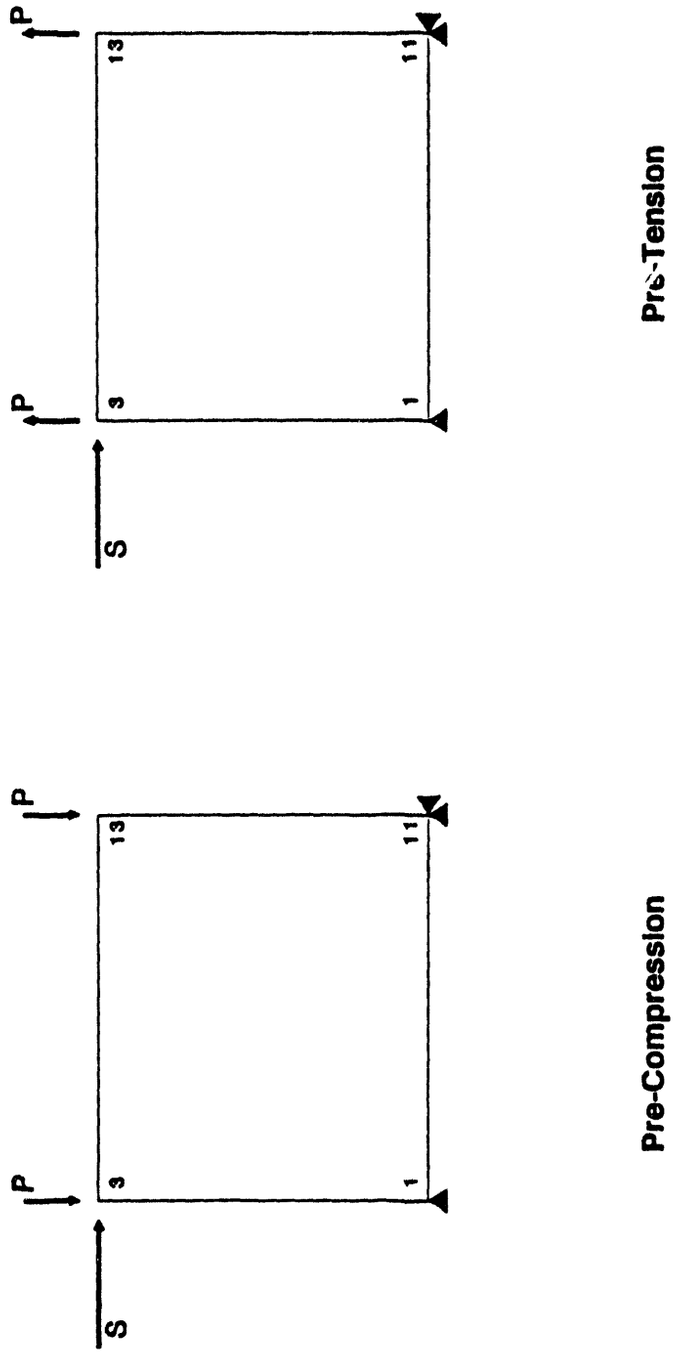

Figure 4-3
State of Stress with Shear Load Applied to a Pre-Strained Element

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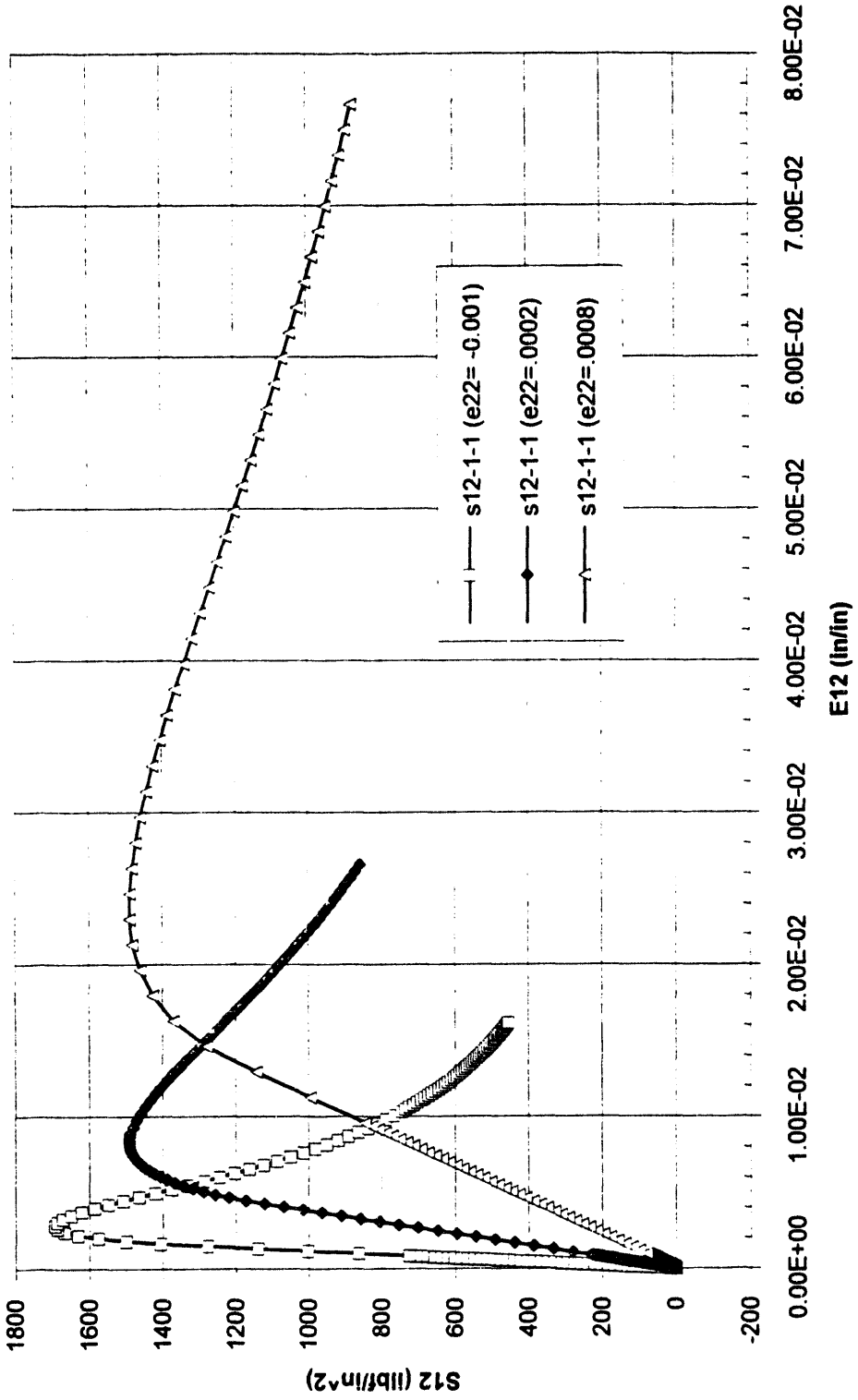
Figure 4-4
Comparison of Shear Modulus



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5.0 MODEL DESCRIPTION

The tank model represents ten single-shell tanks, in farms A, AX, and SX, by modelling the most structurally inferior geometric and material properties for each component of the tanks. The ABAQUS finite-element program was utilized for this effort. The analysis input file is listed as Attachment 3 to this calculation. This section describes all aspects of the finite-element model geometry.

5.1 Generic Tank Geometry

The one-million gallon generic tank is approximately 48-ft. in height, measured from the bottom of the footing to the dome apex, and 75-ft. in diameter internally. The tank is buried 7'-0" deep at the dome apex. The minimum dome thickness is 1'-3" and the wall thickness transitions from 1'-3" at the top portion to 2'-0" along the lower portion. The tank floor slab is 6-in. thick with a 2-in. layer of cement grout and a 3/8-in. layer of 3-ply asphaltic waterproofing membrane between the slab and liner plate. The liner plate is 3/8 in.-thick and is stiffened with 5x3½x5/16 structural-angles, welded along the circumference. The liner plate is not mechanically attached to the concrete. Figure 3-1 provides the geometry of the generic tank, and Figures 5-1 through 5-3 provides the reinforcement details as used for this analysis.

The tank geometry was developed using ANAGEN, which is a preprocessor for ABAQUS. Included in this section is the calculation of node coordinates used as input to the ANAGEN preprocessor. Computer plots showing element numbers, node numbers, and reinforcement for the final model are provided in Attachment 1. Table 5-1 correlates element numbers with the physical components of the tank. Figure 5-4 provides node numbers used to define spring elements for the soil/tank interface and the liner/concrete interface.

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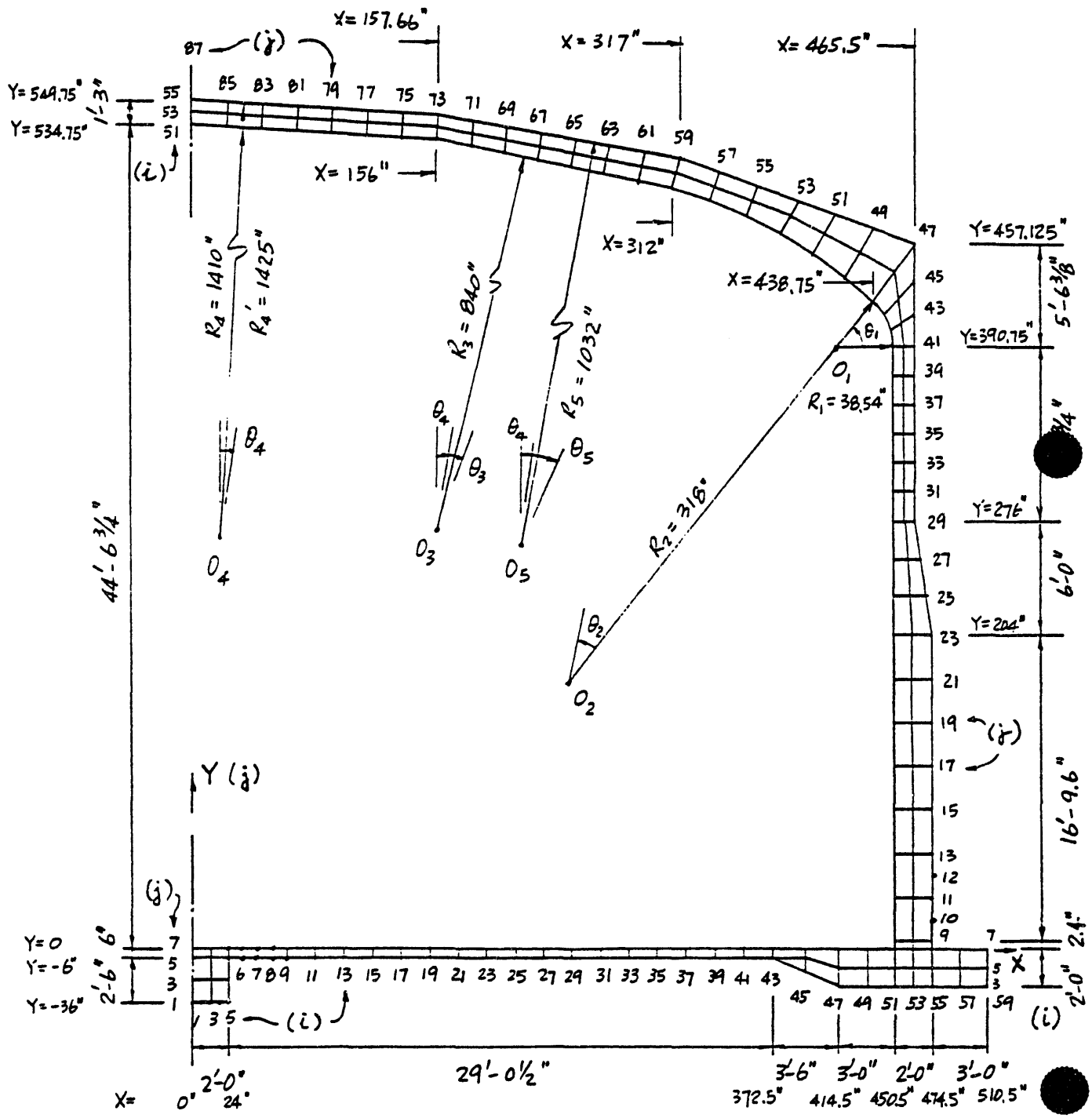
NODE NUMBERING FOR ANAGEN PREPROCESSOR

(note: dome curvature not shown for simplicity)



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ANAGEN

NODAL COORDINATES (PARTIAL, REMAINING NODES BY GENERATION)

REGION	I,J	X (in)	Y (in)
	O_1	$X_1 = 450.5 - 38.54 = 411.96$ $\theta_1 = \cos^{-1}[(38.54 - 11.75)/38.54] = 0.302207$	$Y_1 = 390.75$
HAUNCH	51,43	$X_1 + 38.54 \cos(\theta_1/3) = 449.130$	$Y_1 + 38.54 \sin(\theta_1/3) = 400.933$
	51,45	$X_1 + 38.54 \cos(2\theta_1/3) = 445.119$	$Y_1 + 38.54 \sin(2\theta_1/3) = 410.343$
	51,47	$X_1 + 38.54 \cos\theta_1 = 438.75$	$Y_1 + 38.54 \sin\theta_1 = 418.456$
	53,47	$\frac{1}{2}(438.75 + 474.5) = 456.625$ [mid point between (51,47) & (55,47)]	$\frac{1}{2}(418.456 + 457.125) = 437.791$
	O_2	$X_2 = 438.75 - 318 \cos\theta_1 = 217.701$ $\theta_1 + \theta_2 = \cos^{-1}[(438.75 - 126.75 - X_2)/318]$	$Y_2 = 418.456 - 318 \sin\theta_1 = 139.5455$ $\therefore\ \theta_2 = 0.467525$
DOME 1	51,49	$X_2 + 318 \cos(\theta_1 + \theta_2/6) = 420.284$	$Y_2 + 318 \sin(\theta_1 + \theta_2/6) = 434.969$
	51,51	$X_2 + 318 \cos(\theta_1 + \theta_2/3) = 400.589$	$Y_2 + 318 \sin(\theta_1 + \theta_2/3) = 449.995$
	51,53	$X_2 + 318 \cos(\theta_1 + \theta_2/2) = 379.783$	$Y_2 + 318 \sin(\theta_1 + \theta_2/2) = 463.442$
	51,55	$X_2 + 318 \cos(\theta_1 + 2\theta_2/3) = 357.994$	$Y_2 + 318 \sin(\theta_1 + 2\theta_2/3) = 475.229$
	51,57	$X_2 + 318 \cos(\theta_1 + 5\theta_2/6) = 335.354$	$Y_2 + 318 \sin(\theta_1 + 5\theta_2/6) = 485.283$
	51,59	$X_2 + 318 \cos(\theta_1 + \theta_2) = 312.$	$Y_2 + 318 \sin(\theta_1 + \theta_2) = 493.545$
	O_4	$X_4 = 0$ $\theta_4 = \sin^{-1}(156/1410) = 0.110865$	$Y_4 = 534.75 - 1410 = -875.25$
	O_3	$X_3 = (1410 - 840) \sin\theta_4 = 63.064$ $\theta_3 = \sin^{-1}[(312 - X_3)/840] - \theta_4 = 0.190006$	$Y_3 = Y_4 + (1410 - 840) \cos\theta_4 = -308.749$
	O_5	$X_5 = (1425 - 1032) \sin\theta_4 = 43.481$ $\theta_5 = \sin^{-1}[(465.5 - X_5)/1032] - \theta_4 = 0.310420$	$Y_5 = Y_4 + (1425 - 1032) \cos\theta_4 = -484.663$

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ANAGEN

NODAL COORDINATES (CONT'D)

REGION	I, J	X (in)	Y (in)
DOME 1	55,59	$X = 312 + 16.5^{*} \sin(\theta_3+\theta_4) = 317''$	$Y_5 + 1032 \cos(\theta_4+\theta_5') = 510.431$
		$\theta_5' = \sin^{-1}[(317-X_5)/1032] - \theta_4 = 0.157378$	$\theta_5'' = \theta_5 - \theta_5' = 0.153042$
	55,49	$X_5 + 1032 \sin(\theta_4+\theta_5'+5\theta_5''/6) = 441.344$	$Y_5 + 1032 \cos(\theta_4+\theta_5'+5\theta_5''/6) = 467.561$
	55,51	$X_5 + 1032 \sin(\theta_4+\theta_5'+2\theta_5''/3) = 416.929$	$Y_5 + 1032 \cos(\theta_4+\theta_5'+2\theta_5''/3) = 477.398$
	55,53	$X_5 + 1032 \sin(\theta_4+\theta_5'+\theta_5''/2) = 392.271$	$Y_5 + 1032 \cos(\theta_4+\theta_5'+\theta_5''/2) = 486.609$
	55,55	$X_5 + 1032 \sin(\theta_4+\theta_5'+\theta_5''/3) = 367.386$	$Y_5 + 1032 \cos(\theta_4+\theta_5'+\theta_5''/3) = 495.189$
	55,57	$X_5 + 1032 \sin(\theta_4+\theta_5'+\theta_5''/6) = 342.290$	$Y_5 + 1032 \cos(\theta_4+\theta_5'+\theta_5''/6) = 503.131$
DOME 2	55,61	$X_5 + 1032 \sin(\theta_4+6\theta_5'/7) = 294.560$	$Y_5 + 1032 \cos(\theta_4+6\theta_5'/7) = 516.328$
	55,63	$X_5 + 1032 \sin(\theta_4+5\theta_5'/7) = 271.994$	$Y_5 + 1032 \cos(\theta_4+5\theta_5'/7) = 521.720$
	55,65	$X_5 + 1032 \sin(\theta_4+4\theta_5'/7) = 249.312$	$Y_5 + 1032 \cos(\theta_4+4\theta_5'/7) = 526.603$
	55,67	$X_5 + 1032 \sin(\theta_4+3\theta_5'/7) = 226.526$	$Y_5 + 1032 \cos(\theta_4+3\theta_5'/7) = 530.974$
	55,69	$X_5 + 1032 \sin(\theta_4+2\theta_5'/7) = 203.648$	$Y_5 + 1032 \cos(\theta_4+2\theta_5'/7) = 534.833$
	55,71	$X_5 + 1032 \sin(\theta_4+\theta_5'/7) = 180.688$	$Y_5 + 1032 \cos(\theta_4+\theta_5'/7) = 538.176$
DOME 2	51,61	$X_3 + 840 \sin(\theta_4+6\theta_3/7) = 290.134$	$Y_3 + 840 \cos(\theta_4+6\theta_3/7) = 499.977$
	51,63	$X_3 + 840 \sin(\theta_4+5\theta_3/7) = 268.102$	$Y_3 + 840 \cos(\theta_4+5\theta_3/7) = 505.842$
	51,65	$X_3 + 840 \sin(\theta_4+4\theta_3/7) = 245.918$	$Y_3 + 840 \cos(\theta_4+4\theta_3/7) = 511.107$
	51,67	$X_3 + 840 \sin(\theta_4+3\theta_3/7) = 223.599$	$Y_3 + 840 \cos(\theta_4+3\theta_3/7) = 515.768$
	51,69	$X_3 + 840 \sin(\theta_4+2\theta_3/7) = 201.162$	$Y_3 + 840 \cos(\theta_4+2\theta_3/7) = 519.821$
	51,71	$X_3 + 840 \sin(\theta_4+\theta_3/7) = 178.624$	$Y_3 + 840 \cos(\theta_4+\theta_3/7) = 523.264$
		* 16.5" is the approx. dome thickness at	Node (55,59).

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ANAGEN
NODAL COORDINATES (CONT'D)

REGION	I,J	X (in)	Y (in)
DOME 3	51,73	$1410 \sin \theta_4 = 156.$	$Y_4 + 1410 \cos\theta_4 = 526.094$
	51,75	$1410 \sin(6\theta_4/7) = 133.787$	$Y_4 + 1410 \cos(6\theta_4/7) = 528.386$
	51,77	$1410 \sin(5\theta_4/7) = 111.540$	$Y_4 + 1410 \cos(5\theta_4/7) = 530.331$
	51,79	$1410 \sin(4\theta_4/7) = 89.266$	$Y_4 + 1410 \cos(4\theta_4/7) = 531.921$
	51,81	$1410 \sin(3\theta_4/7) = 66.969$	$Y_4 + 1410 \cos(3\theta_4/7) = 533.159$
	51,83	$1410 \sin(2\theta_4/7) = 44.655$	$Y_4 + 1410 \cos(2\theta_4/7) = 534.043$
	51,85	$1410 \sin(\theta_4/7) = 22.330$	$Y_4 + 1410 \cos(\theta_4/7) = 534.573$
	51,87	0.	$Y_4 + 1410 = 534.75$
DOME 3	55,73	$1425 \sin \theta_4 = 157.660$	$Y_4 + 1425 \cos \theta_4 = 541.002$
	55,75	$1425 \sin(6\theta_4/7) = 135.210$	$Y_4 + 1425 \cos(6\theta_4/7) = 543.321$
	55,77	$1425 \sin(5\theta_4/7) = 112.727$	$Y_4 + 1425 \cos(5\theta_4/7) = 545.284$
	55,79	$1425 \sin(4\theta_4/7) = 90.216$	$Y_4 + 1425 \cos(4\theta_4/7) = 546.891$
	55,81	$1425 \sin(3\theta_4/7) = 67.682$	$Y_4 + 1425 \cos(3\theta_4/7) = 548.142$
	55,83	$1425 \sin(2\theta_4/7) = 45.130$	$Y_4 + 1425 \cos(2\theta_4/7) = 549.035$
	55,85	$1425 \sin(\theta_4/7) = 22.566$	$Y_4 + 1425 \cos(\theta_4/7) = 549.571$
	55,87	0.	$Y_4 + 1425 = 549.750$
FUND 3	45,3	$\frac{1}{2}(372.5 + 414.5) = 393.5$	$\frac{1}{2}(-6 - 24) = -15$
	45,5	393.5	-6
Note:	51,59	As a check, the coordinates of Node $X_3 + 840(\theta_3 + \theta_4) = 312.0$ The X-coordinates calculated above is the same as that shown on Sht. 18. The Y-coordinates is 0.028" smaller than that shown on Sht. 18. ∴ O.K.	(51,59) calculated using θ_3 & θ_4 are: $Y_3 + 840 \cos(\theta_3 + \theta_4) = 493.517$

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5.2 Element Types

The concrete sections were modelled using eight-node axisymmetric solid elements with four integration points (CAX8R). This higher-order element allows two elements to be used through the dome and wall thickness. The number of elements through the thickness was chosen in consideration of the computational demands of a full dynamic analysis. The stiffness of the soil below the slab prevents any significant bending and provides a justification for using a single CAX8R element through the thickness. The steel liner was modelled using two-node axisymmetric shell elements (SAX1) with three integration points through the thickness. Rebar subelements were superimposed on the mesh of the concrete elements.

Meridional and hoop reinforcement was defined as well as the through-thickness reinforcement in the haunch, consistent with the design drawings. The resulting rebar configuration is plotted in Attachment 1. Reinforcement in the base slab is arranged in a rectangular grid pattern. Included in this section is a calculation that determines an equivalent radial/hoop reinforcement configuration, modelled to represent the actual pattern.

The structural-angle stiffeners, which are welded to the liner, were not modelled discretely. However, the stiffeners were accounted for by uniformly increasing the thickness of the liner shell elements. This provides additional hoop-direction stiffness, which is the predominant effect of the stiffeners. The increased thickness is calculated as follows:

- considering corrosion on both sides (see section 6.2), effective thickness of stiffener
  $= 5/16 - 2(0.001)(1994-1953) = 0.2305"$

- total area of 10 stiffeners $= 10(0.2305)(3.5+5) = 19.6\ in^2$

- additional liner plate thickness $= 19.6 \div 388.4 = 0.050"$
  where 388.4 is the liner height

- modelled liner plate thickness $= 3/8 - (0.001)(1994-1953) + 0.050 = \underline{0.384"}$

- note: thickness was actually input as 0.389" - negligible difference.

The interface between the liner and the concrete was modelled using springs. At the tank base, the interface consists of a layer of grout and a waterproofing membrane, while along the wall, the liner is in direct contact with the concrete. Included in this section is a calculation of the spring constants.

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Modeling of Square Pattern of Foundation Reinforcement

As shown on Dwg. H-2-55912, the foundation slab has a square reinforcement pattern (#5 @ 12" E.W.) from r=0" to r= 32'-6". Between r= 29'-0½" and r= 32'-6" (Ref. 11), this square pattern is overlapped with a radial pattern (#6 @ 8", 396 total, Ref. 4). Since the axisymmetric model cannot accept the square pattern, the reinforcement between r=0" to r= 31'-0½" is modeled with equivalent radial and hoop reinforcement as follows:

Hoop Rebars : #5 @ 12" from r=0" to r= 42'-6"

Radial Rebars are calculated for different segments using a 12" spacing at the average radius of that segment:

Radius Range*	r_{ave}	No. of #5 Rebar = $2\pi r_{ave}/12"$	
r= 0 to 24"	12"	$2\pi \times 12/12 = 6.28$	(use 6)
r= 24" to 97.4"	60.7"	$2\pi \times 60.7/12 = 31.8$	(use 32)
r= 97.4" to 189.1"	143.25"	$2\pi \times 143.25/12 = 75.0$	(use 75)
r= 189.1" to 280.8"	234.95"	$2\pi \times 234.95/12 = 123.0$	(use 123)
r= 280.8" to 372.5"	326.65"	$2\pi \times 326.65/12 = 171.0$	(use 171)

* These radii are selected based on the location of the edges of the concrete elements

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GSST1 MATH. MODEL - SPRINGS CONNECTING STEEL LINER & CONCRETE

The stiffness of the springs connecting the steel liner and concrete is calculated as EA/L, where E is the Young's modulus for the composite section of 2" wet cement grout and 3/8" asphaltic. Therefore, $E \simeq E_c/100 = 3.1E6/100 = 31000.$ psi. $L = 2.4"$

$\therefore K_{total} = 31000 \times (\pi\, 450.5^2)/2.4 = 8.24\,E9$ lbs/in

Comparing this value with the total stiffness of the vertical soil springs (1.334E8, sec. 5.3), $K_{total} \simeq 62$ Vert. Soil Springs.

Since the spring stiffness is much larger than the vertical stiffness of the liner plate, it is approximately modeled as 100 times the soil stiffness of the nodes with the largest radius in a group of nodes as shown below.

NODES	K (lbs/in)	ELSET	DIRECTION
1001 to 1005	2.45E7	LS1	VERTICAL
1006 to 1010	6.56E7	LS2	↓
1011 to 1021	1.60E8	LS3	↓
1022 to 1031	2.47E8	LS4	↓
1032 to 1041	3.33E8	LS5	↓
1042 to 1051	5.68E8	LS6	↓
1051 to 1083	6.0E8	LS7	RADIAL

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5.3 Boundary Conditions

Tank boundary conditions were assigned in the form of springs to represent the interface between the soil and the tank. The floor/soil interface was modelled with vertical, linear springs which were calculated on the basis of elastic half space theory applied to a circular foundation. The wall/soil interface was modelled with horizontal, linear springs which also were based on elastic half-space theory, and were approximated as the average stiffness of the tank moving laterally as a unit. These springs were initialized with nonzero displacements to model the effect of lateral soil pressure. Included in this section are calculations to determine constants and initial displacements for the above springs.

The selection of soil springs to represent the lateral soil pressure was motivated by the potential use of this model in a dynamic analysis, where radial displacements could induce additional lateral forces. For the purpose of static pressurization, an applied hydrostatic pressure in place of the soil springs provided almost identical results as shown in Attachment 10.

In addition to the above spring-type boundary conditions, the use of axisymmetric elements results in an effective constraint of the radial displacement and rotation of nodes along the axis of symmetry.

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GSST1 MATH. MODEL - VERT. SOIL STIFFNESS

The total vertical soil stiffness of the tank is calculated per Ref. 16 :
(Circular foundation on elastic half space, considering embedment depth.)

$$K_V = \frac{4GR}{1-\nu}\left(1 + 0.47\frac{E}{R}\right)$$

where G = Shear Modulus = $E_s/2(1+\nu)$, ν = Poission's Ratio.

E = Embedment Depth , R = Foundation Radius

G = 4.5E6 psf = 31250. psi , ν = 0.24 (Ref. 13)

E_s = $2(1+\nu)G$ = 77500. psi

E = 7'-0"* + 1'-3" + 12'-0" + 32'-6¾" + 6" = 639.75"

R = 42'-6½" = 510.5

$$\therefore K_V = \frac{4 \times 31250 \times 510.5}{1-0.24}\left(1 + 0.47\frac{639.75}{510.5}\right) = 1.334E8 \text{ lbs/in}$$

The stiffness of the Individual Soil Spring = (Tributary Area / Total Area) Kv

where Total Area = $\pi(510.5)^2$ = 8.187E5

Tributary Area, $A_i = \frac{\pi}{2}(r_{i-1}^2 - r_{i+1}^2)$ in in²,

r_{i-1} and r_{i+1} is the radius at Node i-1 and i+1, respectively.

$\therefore$ Spring Stiffness = $(1.334E8 / 8.187E5)\,A_i$ = $163\,A_i$

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* The soil depth (7'-0") at the top of the dome is taken from Ref. 10.

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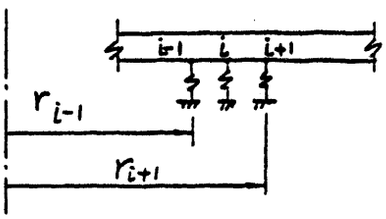
GSST NO.1 MATH. MODEL
VERTICAL SOIL SPRING STIFF.



NODE	RADIUS r_i (in)	TRIB. AREA (1) A_i (in²)	SOIL STIFF. (2) k_i (lbs/in)	ELSET	NODE
1	0	113. (3)	1.84 E4	VS 1	1
11	12	905.	1.48 E5	VS 2	11
21	24	1502.	2.45 E5	VS 3	21
44	33.171	1911.	3.11 E5	VS 4	44
47	42.342	2440.	3.98 E5	VS 5	47
50	51.513	2968.	4.84 E5	VS 6	50
53	60.684	3497.	5.70 E5	VS 7	53
56	69.855	4025.	6.56 E5	VS 8	56
59	79.026	4554.	7.42 E5	VS 9	59
62	88.197	5082.	8.28 E5	VS 10	62
65	97.368	5611.	9.15 E5	VS 11	65
68	106.539	6139.	1.00 E6	VS 12	68
71	115.711	6668.	1.09 E6	VS 13	71
74	124.882	7196.	1.17 E6	VS 14	74
77	134.053	7725.	1.26 E6	VS 15	77
80	143.224	8253.	1.34 E6	VS 16	80
83	152.395	8781.	1.43 E6	VS 17	83
86	161.566	9310.	1.52 E6	VS 18	86
89	170.737	9838.	1.60 E6	VS 19	89
92	179.908	10367.	1.69 E6	VS 20	92
95	189.079	10895.	1.78 E6	VS 21	95

(1) $A_i = \frac{\pi}{2}(r_{i+1}^2 - r_{i-1}^2)$

(2) $k_i = (K_v / A_{TOTAL}) A_i = 163 A_i$

(3) $A_i = \pi (12/2)^2 = 113 \text{ in}^2$

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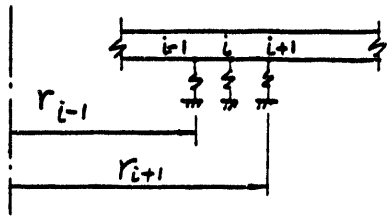
GSST NO.1 MATH. MODEL
VERTICAL SOIL SPRING STIFF.



NODE	RADIUS r_i (in)	TRIB. AREA (1) A_i (in²)	SOIL STIFF. (2) k_i (lbs/in)	ELSET	NODE
98	198.23	11424.	1.86E6	VS 22	98
101	207.421	11952.	1.95E6	VS 23	101
104	216.592	12481.	2.03E6	VS 24	104
107	225.763	13009.	2.12E6	VS 25	107
110	234.934	13538.	2.21E6	VS 26	110
113	244.105	14066.	2.29E6	VS 27	113
116	253.276	14595.	2.38E6	VS 28	116
119	262.447	15123.	2.47E6	VS 29	119
122	271.618	15651.	2.55E6	VS 30	122
125	280.789	16181.	2.64E6	VS 31	125
128	289.961	16709.	2.72E6	VS 32	128
131	299.132	17237.	2.81E6	VS 33	131
134	308.303	17765.	2.90E6	VS 34	134
137	317.474	18294.	2.98E6	VS 35	137
140	326.645	18822.	3.07E6	VS 36	140
143	335.816	19351.	3.15E6	VS 37	143
146	344.987	19879.	3.24E6	VS 38	146
149	354.158	20408.	3.33E6	VS 39	149
152	363.329	20936.	3.41E6	VS 40	152
158	372.5	23061.	3.76E6	VS 41	158
167	383.	25268.	4.12E6	VS 42	167

(1) $A_i = \frac{\pi}{2}(r_{i+1}^2 - r_{i-1}^2)$

(2) $k_i = (K_v / A_{TOTAL}) A_i = 163 A_i$

DESIGN CALCULATION

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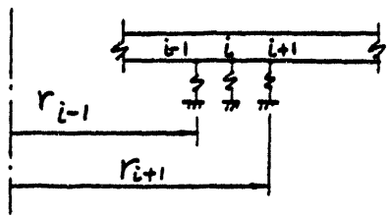
(9) Checker R. BALIGA Date 5/25/94

GSST NO.1 MATH. MODEL
VERTICAL SOIL SPRING STIFF.



NODE	RADIUS r_i (in)	TRIB. AREA (1) A_i (in²)	SOIL STIFF. (2) k_i (lbs/in)	ELSET	NODE
174	393.5	25961.	4.23E6	VS 43	174
175	404.	26653.	4.34E6	VS 44	175
188	414.5	25347.	4.13E6	VS 45	188
193	423.5	23948.	3.90E6	VS 46	193
198	432.5	24457.	3.99E6	VS 47	198
203	441.5	24966.	4.07E6	VS 48	203
213	450.5	29820.	4.86E6	VS 49	213
223	462.5	34872.	5.68E6	VS 50	223
238	474.5	31205.	5.09E6	VS 51	238
243	483.5	27341.	4.46E6	VS 52	243
248	492.5	27850.	4.54E6	VS 53	248
253	501.5	28359.	4.62E6	VS 54	253
258	510.5	14307. (3)	2.33E6	VS 55	258

(1) $A_i = \frac{\pi}{2}(r_{i+1}^2 - r_{i-1}^2)$

(2) $k_i = (K_V / A_{TOTAL})\, A_i \quad = 163\, A_i$

(3) $A_i = \frac{\pi}{2}(510.5^2 - 501.5^2)$

DESIGN CALCULATION

(1) Drawing _____ (2) Doc. No. WHC-SD-WM-TI-623 (3) Page _____ of _____
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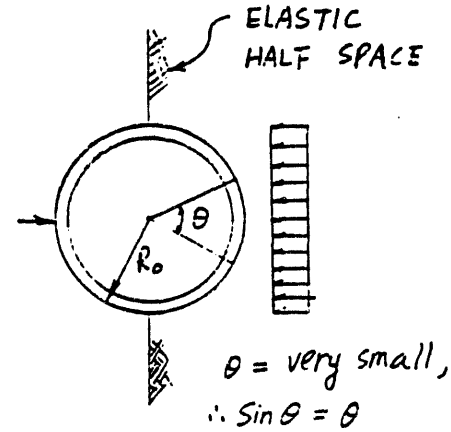
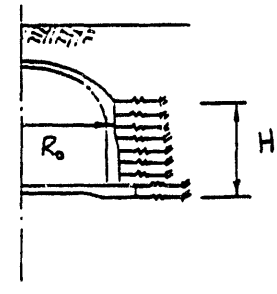
(9) Checker R. BALIGA Date 5/25/94

GSST1 MATH. MODEL - RADIAL SOIL STIFFNESS AND SOIL PRESSURE

The radial soil stiffness is approximately calculated using the elastic half spaced method in Ref. 17 as shown. It is assumed that radial stiffness is equivalent to the average stiffness of the tank moving sideways. It is also assumed that this radial stiffness is constant along the height.





Ave. Stiffness (lbs/in/rad.)

$$= \text{Total Stiffness } (K_H, \text{lbs/in}) \times \frac{2R_o \sin\frac{\theta}{2}}{2R_o} \times \left(\frac{\text{rad}}{\theta}\right)$$

$$= K_H \times \left(\frac{\theta}{2}\right) \times \left(\frac{1/\pi}{\theta}\right) = K_H/2\pi$$

The projecting area, $A = 2R_o \times H = 2 \times 465.5 \times 481.125 = 447927.\ in^2$

where R_o = minimum outside radius of the tank, 465.5"

The aspect ratio of the projecting area, $2R_o/H = 1.94$

From Sht. 98 of Ref. 17, $C_s = 1.09$

$K_H = E\sqrt{A}\, C_s/(1-\nu^2)$ (Note that the equation for vertical stiffness in Ref. 17 is used to calculate K_H.)

where $E = 77500$ psi and $\nu = 0.24$ ⟶ See calc. of vertical soil stiffness

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Centimeter

Inches

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DESIGN CALCULATION

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(9) Checker R. GALIGA Date 7/25/94

GSST1 - RADIAL SOIL STIFFNESS & PRESSURE (CONT'D)

$\therefore K_H = 77500 \times (467927)^{1/2} \times 1.09 / (1 - 0.24^2) = 6.00\ E7$ lbs/in

Stiffness per Height $= K_H / 481.125 = 1.247E5$ lbs/in/in

$\therefore k_i = 124700 \times \frac{1}{2}(h_{i+1} - h_{i-1}) = 62350\ (h_{i+1} - h_{i-1})$

where h_{i+1} is the height of the node above and
h_{i-1} is the height of the node below.

Radial Soil Pressure

The depth of soil from Grade $= (7'\text{-}0'' + 1'\text{-}3'' + 12'\text{-}0'' + 32'\text{-}6\tfrac{3}{4}'') - h_i$
$= 633.75'' - h_i = H_i$
(see Dwg. H-2-55911)

The active soil pressure coefficient, $K_a = \frac{1 - \sin\phi}{1 + \sin\phi} = 0.26$ per Ref. 1

(The corresponding soil friction angle, $\phi = 36°$.)

Radial Soil Pressure, $P_i = K_a \gamma H_i$ where $\gamma = 110$ pcf $= 0.0637$ lbs/in^3 (Ref. 13)

$0.26 \times 0.0637\ H_i = 0.0166\ H_i$

Initial Deformation of Radial Soil Spring

$= P_i \times (R_o \times 2\pi) \times \frac{1}{2}(h_{i+1} - h_{i-1}) / k_i$

$= P_i \times (465.5 \times 2\pi) \times \frac{1}{2}(h_{i+1} - h_{i-1}) / [62350\ (h_{i+1} - h_{i-1})]$

$= (465.5 \times \pi / 62350) = 0.02345\ P_i$

DESIGN CALCULATION

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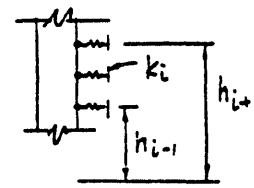
(9) Checker R. BALIGA Date [illegible]

GSST NO.1 MATH. MODEL

RADIAL SOIL SPRING STIFFNESS & PRESSURE (CONT'D)



NODE	HEIGHT h_i (in)	SOIL STIFF (1) k_i (lbs/in)	ELSET	SOIL DEPTH (2) H_i (in)	SOIL PRES (3) P_i (psi)	INIT. SPRING DEFORM. (4) Δ_i (in)	@ NODE
258	-24	7.48 E5 (5)	RS1	657.75	10.92	0.256	1151
260	-12	1.50 E6	RS2	645.75	10.72	0.251	1152
262	0	1.80 E6	RS3	633.75	10.52	0.247	1153
339	16.8	1.95 E6	RS4	616.95	10.24	0.240	1154
340	31.2	1.80 E6	RS3	602.55	10.00	0.235	1155
341	45.6			588.15	9.76	0.229	1156
342	60.			573.75	9.52	0.223	1157
343	74.4			559.35	9.29	0.218	115[illegible]
344	88.8			544.95	9.05	0.212	1159
345	103.2			530.55	8.81	0.207	1160
346	117.6			516.15	8.57	0.201	1161
347	132.			501.75	8.33	0.195	1162
348	146.4			487.35	8.09	0.190	1163
349	160.8			472.95	7.85	0.184	1164
350	175.2			458.55	7.61	0.178	1165
351	189.6			444.15	7.37	0.173	1166
381	204.	1.65 E6	RS5	429.75	7.13	0.167	1167
382	216.	1.50 E6	RS6	417.75	6.93	0.163	1168
383	228.			405.75	6.74	0.158	1169
384	240.			393.75	6.54	0.154	1170
385	252.			381.75	6.34	0.149	1171

(1) $k_i = 62350(h_{i+1} - h_{i-1})$

(2) $H_i = 633.75 - h_i$

(3) $P_i = 0.0166 H_i$

(4) $\Delta_i = 0.02345\, P_i$

(5) $k_i = 124700 \times (12/2)$

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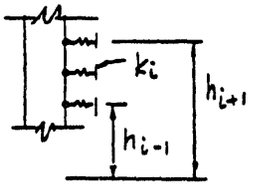
(9) Checker R. BALIGA Date 5/27/94

GSST NO.1 MATH. MODEL

RADIAL SOIL SPRING STIFFNESS & PRESSURE (CONT'D)



NODE	HEIGHT h_i (in)	SOIL STIFF (1) k_i (lbs/in)	ELSET	SOIL DEPTH (2) H_i (in)	SOIL PRES (3) P_i (psi)	INIT. SPRING DEFORM. (4) Δ_i (in)	@ NODE
386	264.	1.50 E6	RS6	369.75	6.14	0.144	1172
440	276.	1.34 E6	RS7	357.75	5.94	0.139	1173
441	285.5625	1.19 E6	RS8	348.1875	5.78	0.136	1174
442	295.125	|	|	338.625	5.62	0.132	1175
443	304.6875	|	|	329.0625	5.46	0.128	1176
444	314.25	|	|	319.5	5.30	0.124	1177
445	323.8125	|	|	309.9375	5.14	0.121	1178
446	333.375	|	|	300.375	4.99	0.117	1179
447	342.9375	|	|	290.8125	4.83	0.113	1180
448	352.5	|	|	281.25	4.67	0.110	1181
449	362.0625	|	|	271.6875	4.51	0.106	1182
450	371.625	|	|	262.125	4.35	0.102	1183
451	381.1875	↓	↓	252.5625	4.19	0.098	1184
466	390.75	1.29 E6	RS9	243.	4.03	0.095	1185
477	401.8125	1.38 E6	RS10	231.9375	3.85	0.090	1186
482	412.875	|	|	220.875	3.67	0.086	1187
487	423.9375	|	|	209.8125	3.48	0.082	1188
492	435.	|	|	198.75	3.30	0.077	1189
497	446.0625	↓	↓	187.6875	3.12	0.073	1190
555	457.125	6.90 E5 (5)	RS11	176.625	2.93	0.069	1191

(1) $k_i = 62350(h_{i+1} - h_{i-1})$

(2) $H_i = 633.75 - h_i$

(3) $P_i = 0.0166\, H_i$

(4) $\Delta_i = 0.02345\, P_i$

(5) $K_i = 124700 \times \frac{1}{2}(457.125 - 446.0625)$

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(8) Originator Phillip R. Keil Date 5/27/94
(9) Checker Albert Hy Date 5/28/94

Table 5-1
Correlation of Element Numbers to Tank Components

Component	ABAQUS Element Numbers
Concrete Tank	1 - 121
Steel Liner Plate	131 - 212
Foundation Soil Springs	241 - 295
Radial Soil Springs	301 - 341
Springs Connecting Liner to Concrete	401 - 484

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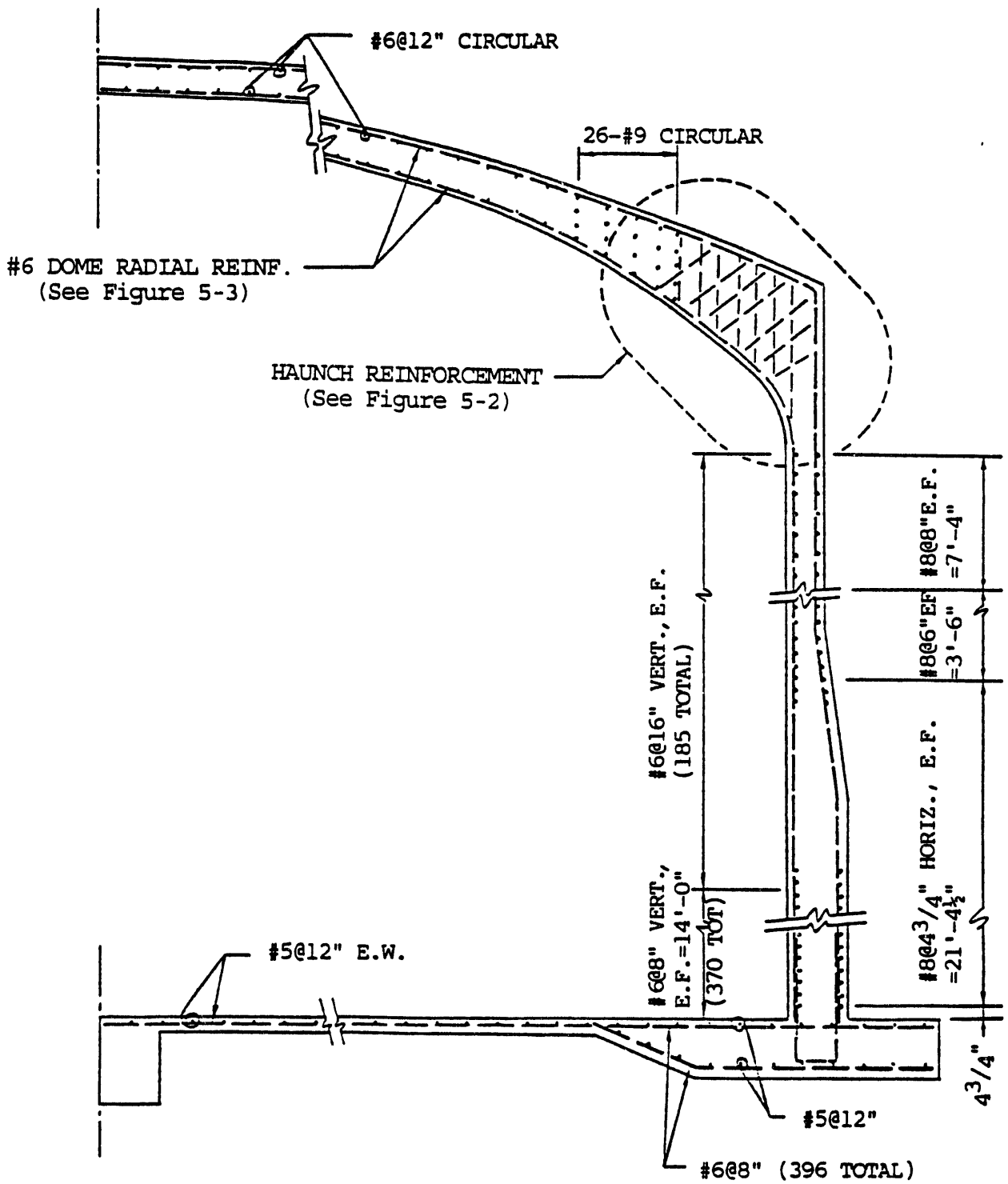
(8) Originator Phillip R. Rand Date 5/27/94
(9) Checker [illegible] Date 5/29/94

Figure 5-1
Generic Tank Reinforcement



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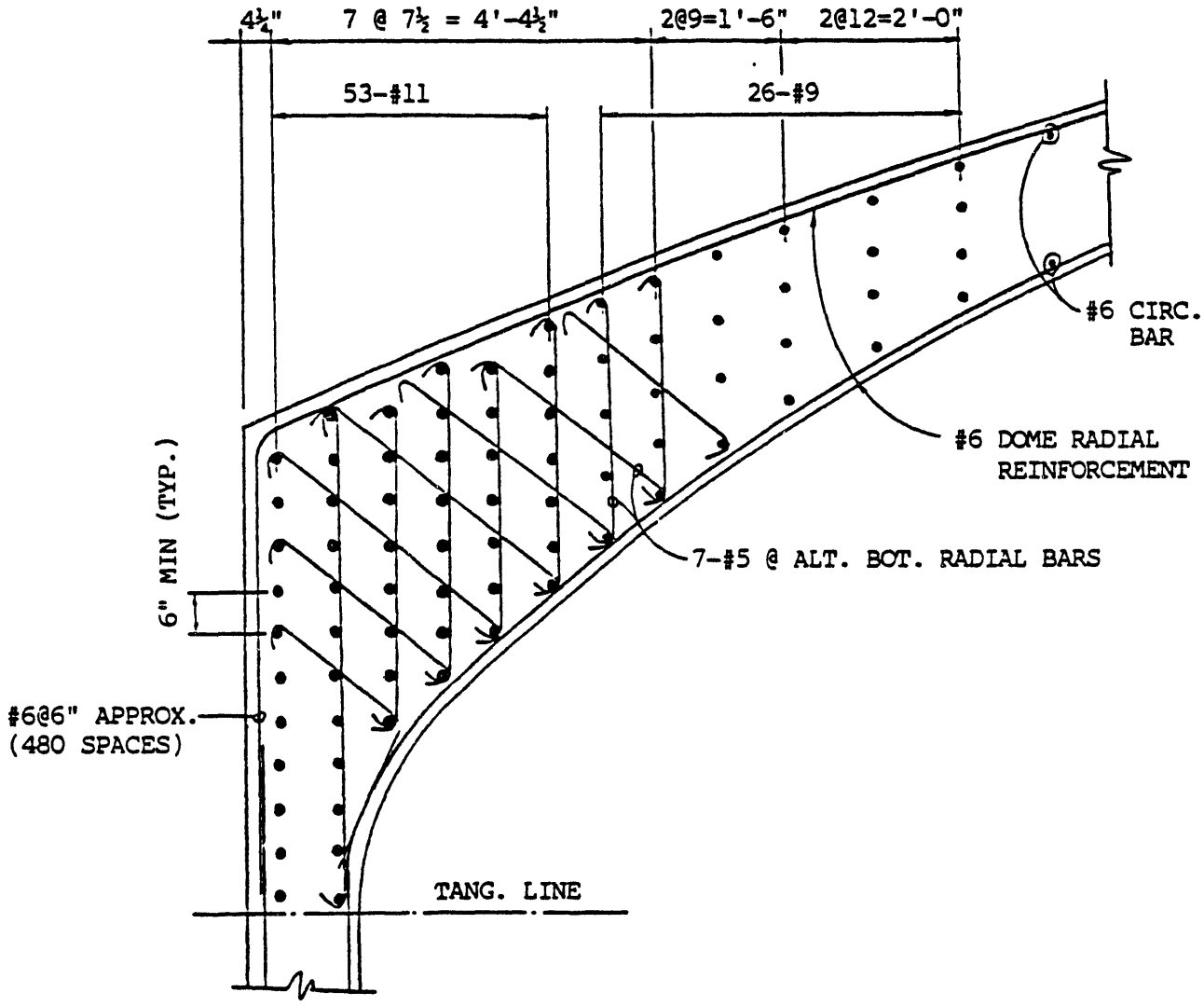
(9) Checker [illegible] Date 5/25/94

Figure 5-2
Generic Tank Haunch Reinforcement



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(8) Originator Phillip R Kirk Date 5/27/94
(9) Checker [illegible] Date 5/26/94

Figure 5-3
Generic Tank Dome Reinforcement

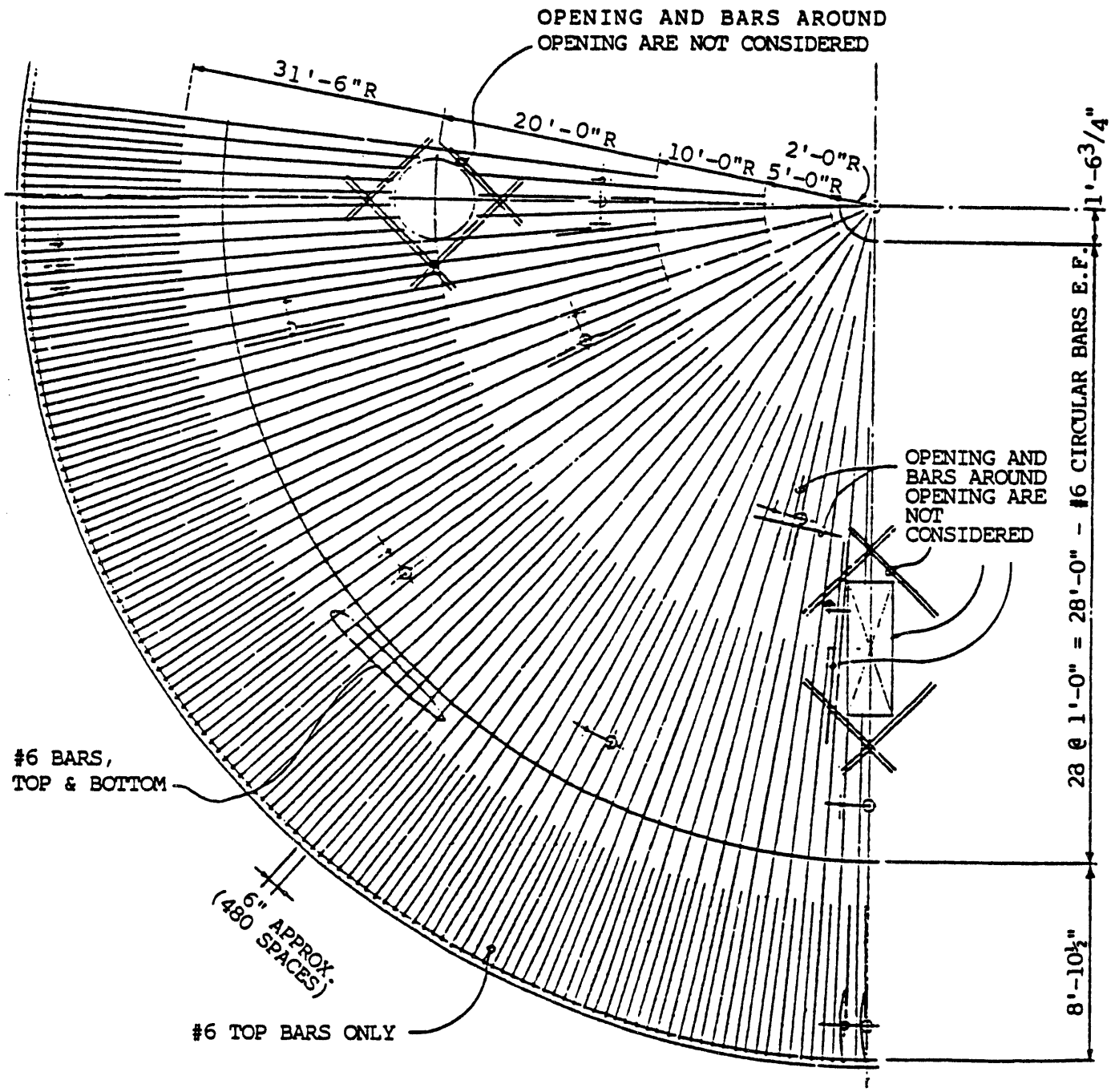

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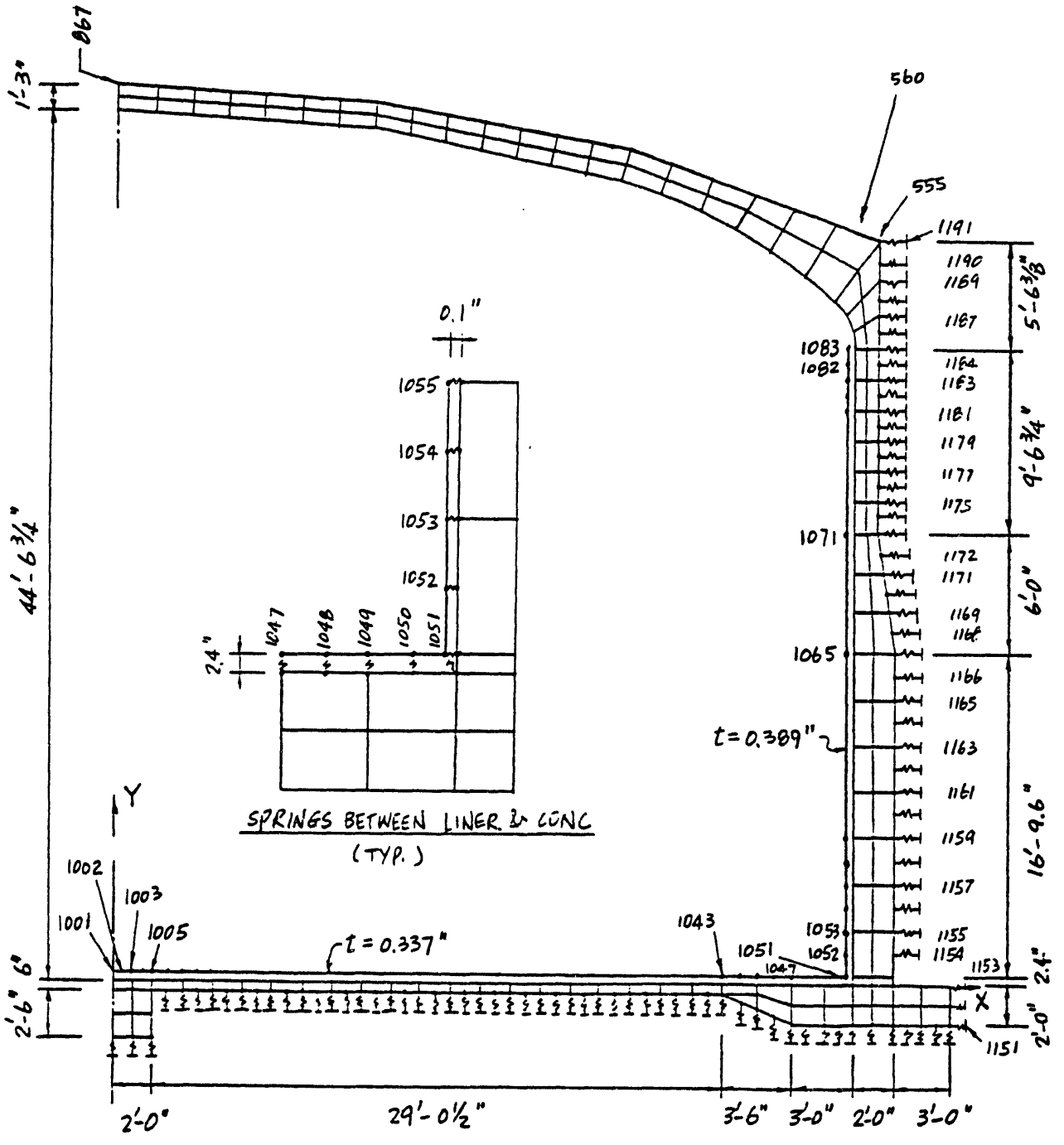
Figure 5-4
Spring Elements for Generic Tank Model



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(8) Originator Phillip R. Koch Date 5/27/94
(9) Checker [illegible] Date 5/26/94

6.0 MATERIAL PROPERTIES

6.1 Concrete Properties

The inelastic behavior of the concrete was accounted for by invoking the user-defined material subroutine of the ANACAP-U concrete analysis package (*ref. 15*). Constitutive Model 3 was defined, which is the general purpose model with full plasticity including compressive strain hardening and softening.

The following concrete properties were required as input to the subroutine:

- Minimum Compressive Strength = 3000 lbf/in^2 (ref. 2)
- Fracture Strain = 0.00009 in/in
- Compressive Modulus of Elasticity = 3.1×10^6 lbf/in^2
- Poisson's Ratio = 0.15

Additionally, a mass density of 0.000225 $lbf\text{-}sec^2/in^4$ (150 lbf/ft^3) was defined.

Post-cracking parameters were not required as input to the material subroutine, but were computed internally (*ref. 15 & 18*). Shear retention allows for a reduced transfer of shear across cracks and is attributed to reinforcement ratio, crack roughness, and aggregate interlock. The material subroutine addresses shear retention without regard for reinforcement quantity or aggregate size. Upon cracking, the shear modulus is reduced to 40% of the uncracked value and is further reduced by the ratio of the fracture strain to total strain as the crack opens.

Tension stiffening is the ability of cracked concrete to share tensile load with the reinforcement, in regions between the actual cracks. The ANACAP-U material subroutine models tension stiffening by adding a descending branch to the uniaxial stress-strain curve. The descending branch decays exponentially, resulting in zero tensile stress at a strain of five times the fracture strain (*ref. 18*).

6.2 Steel Properties

Reinforcing steel was defined in the ABAQUS input as an elastic-plastic material that uses the von Mises yield surface. As required by ABAQUS, true stress and log strain values were entered, as determined from the plot of engineering stress verses engineering strain shown in Figure 6-1 (provided in ref. 6 & 7).

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(9) Checker [illegible] Date 5/27/94

Steel for the liner plate was defined as an elastic material with a Young's Modulus of 29×10^6 lbf/in^2. The following rough calculation determines that failure of the concrete dome occurs prior to yielding of the steel liner.

- the corrosion rate is 0.001-in. per year for the liner (*ref. 2*).
- the initial tank fill was in 1953 (*ref. 2*).
- effective plate thickness, t = 3/8 - 0.001(1994-1953) = 0.334"
- yield stress of liner plate, σ_y = 40,000 lbf/in^2
- radius of the liner hoop = 450.5"
- internal pressure needed to yield the liner = $\sigma_y t/R$ (*ref. 19*)

$$= 40000(0.334)/450.5 = 29.7 \text{ lbf/in}^2$$

The above pressure is conservatively calculated for an unreinforced hollow cylinder. The actual liner is stiffened with structural angles and is supported by the concrete wall. Since the above pressure is higher than that determined to fail the dome (see Section 8.2), the definition of the liner material as an elastic material is acceptable.

A mass density of 0.000734 lbf-sec^2/in^4 (490 lbf/ft^3) was defined for all steel elements.

6.3 Soil Properties

Although soil elements were not explicitly modelled, the soil was accounted for through the definition of springs and distributed loads, as discussed in Section 5.3 of this calculation. Additionally, distributed loads were defined to represent the weight of the overburden soil.

Soil properties used in the determination of spring constants and distributed load values are as follows:

- Shear Modulus = 31,250 lbf/in^2 (*ref. 13*)
- Poisson's Ratio = 0.24 (*ref. 13*)
- Coefficient of Active Soil Pressure = 0.26 (*ref. 1*)
- Weight Density = 110 lbf/ft^3 (*ref. 13*)

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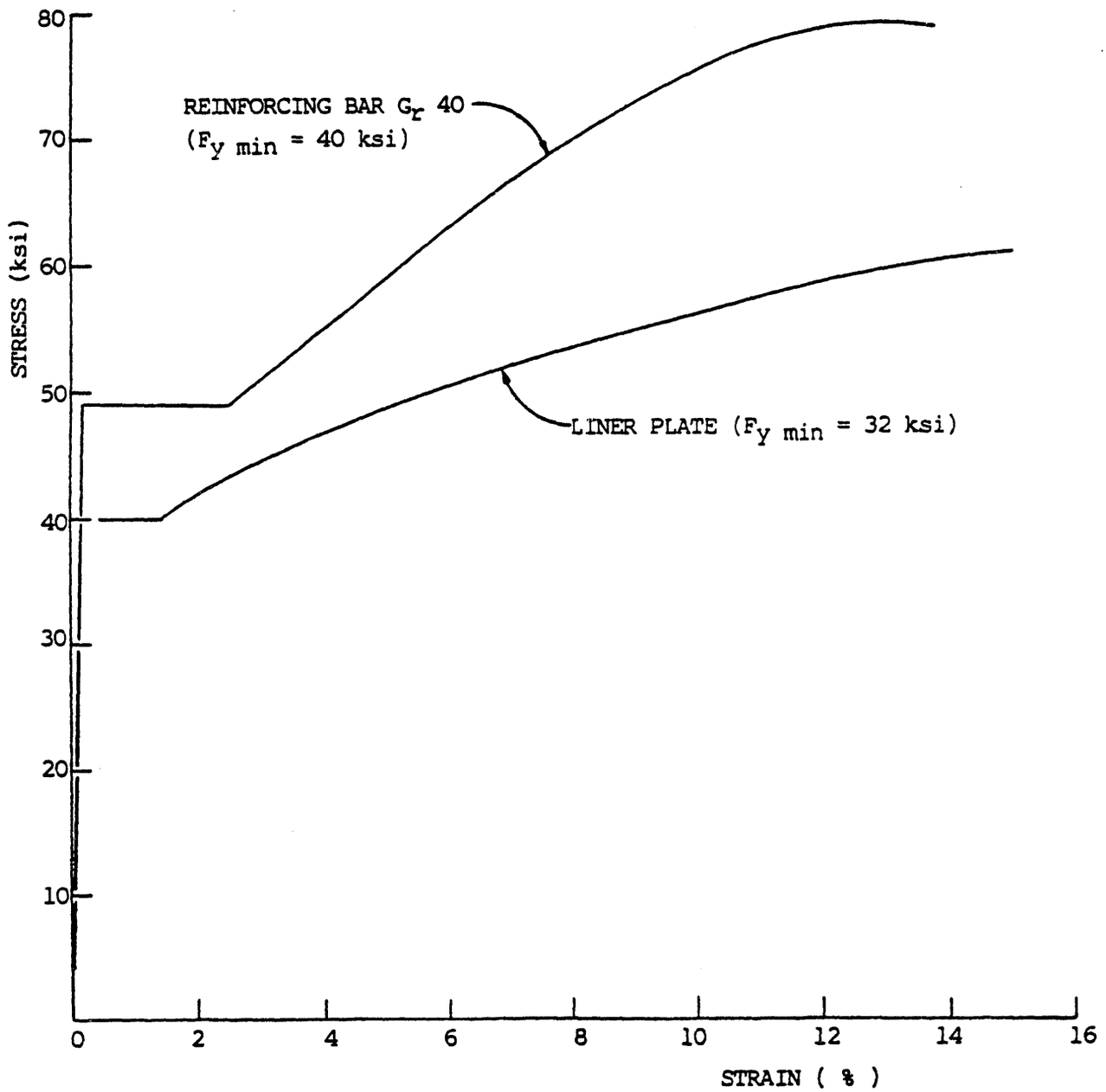
(8) Originator Phillip R Koch Date 5/27/94
(9) Checker [illegible] Date 5/23/94

Figure 6-1
Stress vs. Strain for Liner and Reinforcing Steel



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(8) Originator Phillip R. Reid Date 5/27/94
(9) Checker _____ Date _____

7.0 LOAD DESCRIPTION

Static loads were applied to the model in two load steps. The first step applied the dead loads of the system which include the tank weight, soil overburden, lateral soil pressure, and hydrostatic waste pressure. The second step applied the internal pressure loading to the liner and dome. In both steps, loads were ramped gradually to allow the system to equibrilate under the nonlinear behavior of the reinforced-concrete tank.

7.1 Tank Deadweight

Gravitational acceleration was applied to all tank component masses. As stated in Section 6.0 of this calculation, all concrete elements were defined with a mass density of 0.000225 lbf-sec^2/in^4 (150 lbf/ft^3), and all reinforcement and liner elements were defined with a mass density of 0.000734 lbf-sec^2/in^4 (490 lbf/ft^3).

7.2 Soil Overburden

The generic configuration considers the tank to be buried 7 ft. below the soil surface, at the dome apex. The weight of this overburden soil was considered by defining a distributed hydrostatic load along the dome elements. The ABAQUS variables are defined as follows:

- Magnitude of distributed load = 11.24 lbf/in^2 = 110(633.75-457.125)/12^3
- Z-coordinate of zero pressure level = 633.75" (top of soil elevation).
- Z-coordinate of point at which pressure is defined = 457.125" (node 555, haunch corner).

7.3 Lateral Soil Pressure

Soil surrounding the buried tank exerts lateral pressure on the wall. This pressure would increase if the wall displaced radially-outward due to the internal pressure load. Similarly, the lateral soil pressure would decrease if the tank wall displaced radially-inward. This displacement-dependent variation in pressure was modelled by defining precompressed spring elements.

Spring constants were assigned on the assumption of a uniform soil stiffness along the height of the tank and were varied only to account for nonuniform element sizes. The

DESIGN CALCULATION

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(9) Checker [illegible] Date [illegible]

total radial soil stiffness was calculated using elastic half-space theory and using the soil properties provided in section 6.3 of this calculation. The total stiffness was approximated as the average stiffness of the tank moving laterally. The initial nonzero displacements for each spring element were defined based on the corresponding depth of the element. Section 5.3 includes the calculation of spring constants and initial displacements. The resulting soil pressure profile is indicated in Figure 7-1, which is a plot of the initial spring displacements with respect to elevation.

(Attachment 10 documents a study performed to determine the effect of modelling the lateral soil pressure with a hydrostatically-distributed load instead of the system of springs described above. The soil pressure in this test analysis was therefore modelled as a constant force; it was not displacement-dependent. The dome displacement results were effectively the same as those of the original run, demonstrating that the lateral displacement-dependence of the springs had negligible impact on the solution of the ultimate internal pressure capacity of the tank.)

7.4 Hydrostatic Waste Loads

The weight of the waste was included in the model by defining a uniformly distributed load along the tank bottom. Additionally, the radial pressure exerted by the liquid waste was modelled as a hydrostatic distributed load. The ABAQUS variables are calculated as follows:

- Magnitude of distributed load = -22.29 lbf/in^2 = $-1.7(62.4)(363)/12^3$
- Z-coordinate of zero pressure level = 365.5" (top of liquid elevation).
- Z-coordinate of point of at which pressure is defined = 2.4"

The above calculations are based on a specific gravity of 1.7 for the waste material (*ref. 20*).

7.5 Internal Pressure

Internal pressure, due to postulated hydrogen burn, was modelled as a distributed static load of 13.50 lbf/in^2 and was applied to all liner elements as well as the unlined dome and haunch elements. The value of the total applied pressure load does not correspond to a known value; it is merely an arbitrary bounding value assigned based on preliminary analyses. The pressure loading was applied directly to the liner walls and base since the waste liquid would transfer the load to the liner in the presence of overpressure.

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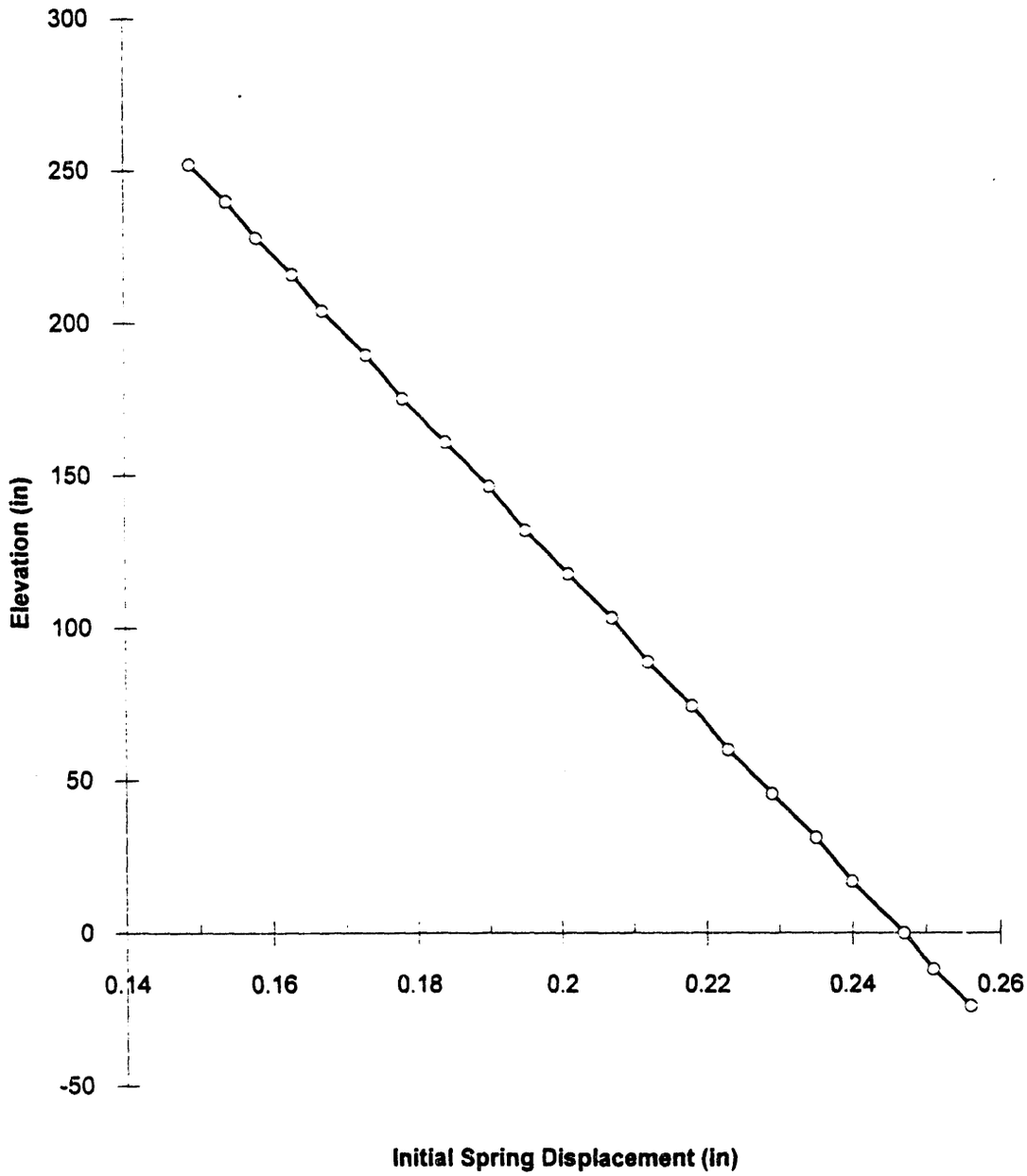
Figure 7-1
Soil Pressure Profile in Terms of Initial Spring Displacements



SOILSPRG.XLC

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8.0 RESULTS

Table 8-1 summarizes the computer input and output files used for this analysis. Also summarized are the spreadsheet files used in postprocessing the results. Copies of the relevant files are included as attachments to this calculation. Figures 8-1 and 8-2 show the displaced shape of the model under deadweight loads and internal pressure.

8.1 Convergence

Convergence, on the basis of force equilibrium, can be difficult to obtain for increments involving nonlinear behavior of concrete. Use of the ANACAP-U constitutive model is especially challenging because tension stiffening is modelled only to a minor degree. The "NO STOP" option was specified, which allows continuation of the analyses even if the equilibrium tolerances are not satisfied at all nodes after the specified maximum number of iterations is performed for a given increment. In the first step (dead loads), loads were applied in 200 increments while in the second step (internal pressure), 1700 load increments were used. Figures 8-3 and 8-4 show the rate at which the model was loaded. The number of iterations solved for each increment was limited to four for step 1 and three for step 2. An equilibrium tolerance of 100 lbf was defined for the load steps.

By gradually applying the loads, normal ABAQUS convergence, based on equilibrium tolerances, has been obtained throughout the linear-response of the analysis and partially into the nonlinear-response portion (to 12.78 lbf/in^2 of pressure application). As a rough measure of convergence for the remaining iterations involving nonlinear response, a quantity called the "convergence indicator" was computed. The convergence indicator is based on convergence of the maximum displacement increments which are available in the ABAQUS ".about" file.

Figure 8-5 plots the convergence indicator for load increments that did not meet the normal ABAQUS convergence criteria. The convergence indicator provides a measure of the asymptotic behavior of the solution in terms of a pseudo second derivative of the maximum displacement increments. The first derivative is calculated by taking the difference of succeeding maximum displacement increments from one iteration to the next. If the absolute-value of the difference is decreasing with each successive iteration, the solution is classified as convergent. This is represented as a positive value on the plot of the convergence indicator. Because two degrees of freedom (DOF) are involved, they are combined to a single DOF by performing a square-root-sum-of-squares on the displacement increment components. The specific equation for the convergence indicator is as follows:

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$$CI = \sqrt{(ux_1 - ux_2)^2 + (uy_1 - uy_2)^2} - \sqrt{(ux_2 - ux_3)^2 + (uy_2 - uy_3)^2}$$

where

CI	=	Convergence Indicator
ux_j	=	Maximum Radial Displacement Increment in Iteration j
uy_j	=	Maximum Vertical Displacement Increment in Iteration j

The plot shows that, in general, convergence is obtained throughout the pressure range applied. Several divergent spikes occur, but each comprises only one to three increments, after which the solution recovers with convergence for many increments before the next spike.

8.2 Capacity

Figure 8-6 is a history plot of the relative dome displacement (i.e., the displacement difference between the dome apex and haunch). An internal pressure of approximately 6.6 lbf/in^2 balances the deadweight of the dome and soil. The displacement response continues linearly to an internal pressure of approximately 11.6 lbf/in^2, at which point the response becomes nonlinear, and the dome displacement increases rapidly with the application of small pressure increments. The displacement history curve is shown to slightly level after the discontinuity "jump", indicating that additional capacity is developed. However, the slope quickly returns to a steep gradient. The internal pressure at which the initial jump occurs is conservatively defined as the effective capacity of the tank. Additional capacity, determined on the basis of the ASME criteria discussed in Section 4.3, would be relatively small.

Figures 8-7 and 8-8 show crack plots at increments immediately before and after the discontinuity in the dome displacement history (at an internal pressure of approximately 11.6 lbf/in^2). The plots show that the dome transforms from an uncracked state to a cracked state with the application of a very small pressure increment (0.01 lbf/in^2). Figure 8-9 shows the advancement of dome cracking with the application of slightly more pressure.

The above results are applicable to a soil overburden depth of 7'-0". Attachment 11 documents a test analysis for the soil overburden depth reduced to 6'-0". This caused only a 1-percent reduction in ultimate internal pressure capacity, to a value of 11.5 lbf/in^2.

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8.3 Rebar Stress

Consideration of rebar bond failure is necessary, as this type of failure is not addressed in the concrete constitutive model and is crucial to the ultimate capacity of reinforced concrete in tension. A failure criteria for rebar bond has been developed in reference 21 resulting in the following equation:

$$f_s = \frac{4l_s}{d_b}\left(1.2 + 3\frac{C}{d_b} + 50\frac{d_b}{l_s}\right)\sqrt{f_c'}$$

where

f_s	=	longitudinal rebar limit stress for splitting bond failure (lbf/in^2)
l_s	=	splice or bond length (see below)
C	=	smaller of cover dimension or ½ of spacing between splices or rebar = 2 in. (rebar cover - dwg. H-2-44562)
d_b	=	rebar diameter = 0.75 in.
f'_c	=	compressive strength of concrete = 3000 lbf/in^2

Reference 22 specifies that splice lengths are to be 40 bar diameters for single-shell tanks in farm 241. However, a conservative value of 12 in. will be used here which corresponds to the minimum splice length allowed per ACI 349 (Ref. 23). A 23-percent reduction factor is applied to the stress limit which is applicable to top-cast rebar. Based on the above, f_s = 33,200 lbf/in^2.

Figure 8-10 is a plot of the meridional rebar stress history for critical elements in the tank dome. The rebar stress is shown to remain below 2500 lbf/in^2 up to an internal pressure of approximately 11.6 lbf/in^2, at which point the stress increases rapidly with the application of small internal pressure increments. The rebar stress response closely resembles that of the relative dome displacement. Since the calculated splitting bond failure limit occurs within the jump in rebar stress, the capacity of 11.6 lbf/in^2, defined on the basis of relative dome displacement, is still valid.

8.4 Conclusions

A generic finite-element model was developed to represent 10 one-million gallon buried tanks in Farms A, AX, and SX. In addition to typical dead loads, an increasing internal static pressure was applied to determine the failure limit. The analysis indicates that an internal pressure of 11.6 lbf/in^2 causes excessive cracking in the tank dome, resulting in relative dome displacements that increase sharply with each incremental pressure increase.

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Table 8-1
Computer File Descriptions

File Name	Description
GSST1.ana	ANACAP-U ANAGEN input file for generation of base ABAQUS input file.
GSST1H.abdat	ABAQUS input file for the static pressurization analysis.
GSST1H.about	ABAQUS output file.
GSST1H.sm1	Force tolerance convergence summary extracted from GSST1H.about.
GSST1H.sm2	Displacement increment summary extracted from GSST1H.about.
HCONV.xls	Worksheet for computing the convergence indicator, using GSST1H.sm2
HCONV3.xlc	Chart of the computed convergence indicator.
GHDISP.abdat	ABAQUS input file to postprocess GSST1H.fil file for dome displacement history.
GHDISP.about	ABAQUS output file of the postprocessed dome displacement history.
GHDISP.xls	Spreadsheet for determination of relative dome displacement history (uses GHDISP.about).
GHDISP1.xlc	Chart of relative dome displacement history.
HBARSTRS.abdat	ABAQUS input file to postprocess GSST1H.fil file for dome rebar stress history.
HBARSTRS.about	ABAQUS output file of the postprocessed dome rebar stress history.
HBARSTRS.xls	Spreadsheet to summarize stress history for selected dome rebar.
HBARSTRS.xlc	Chart of stress history for selected dome rebar.
GHDEADW.xlc	Chart of the application rate of deadload.
GHPRESS.xlc	Chart of the application rate of internal pressure.

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Figure 8-1
Generic Tank Displaced Shape due to Dead Loads

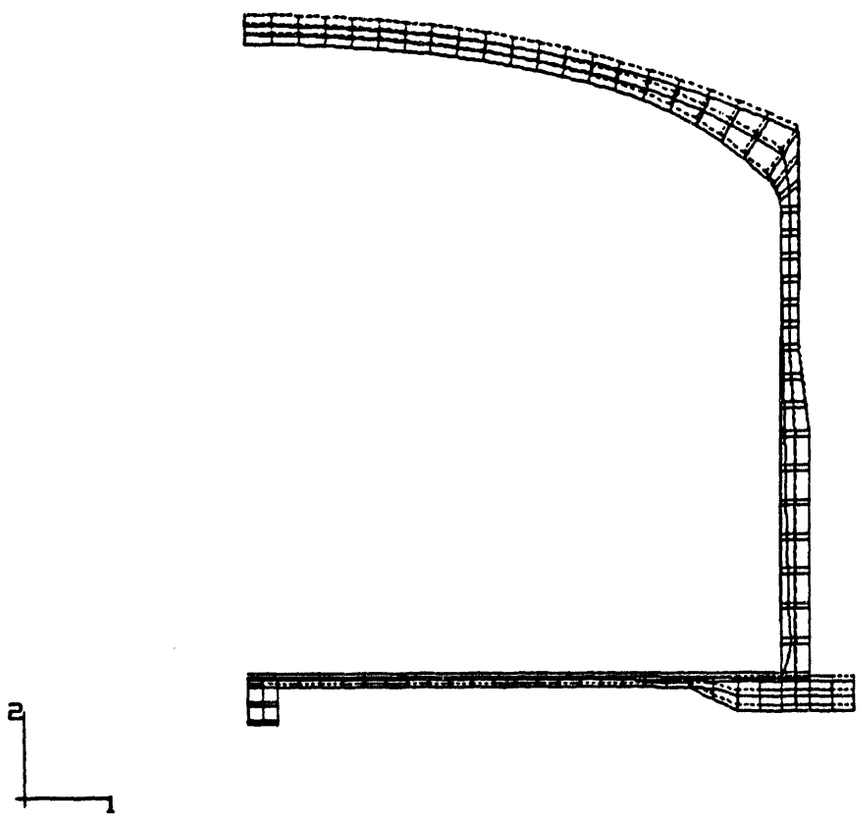

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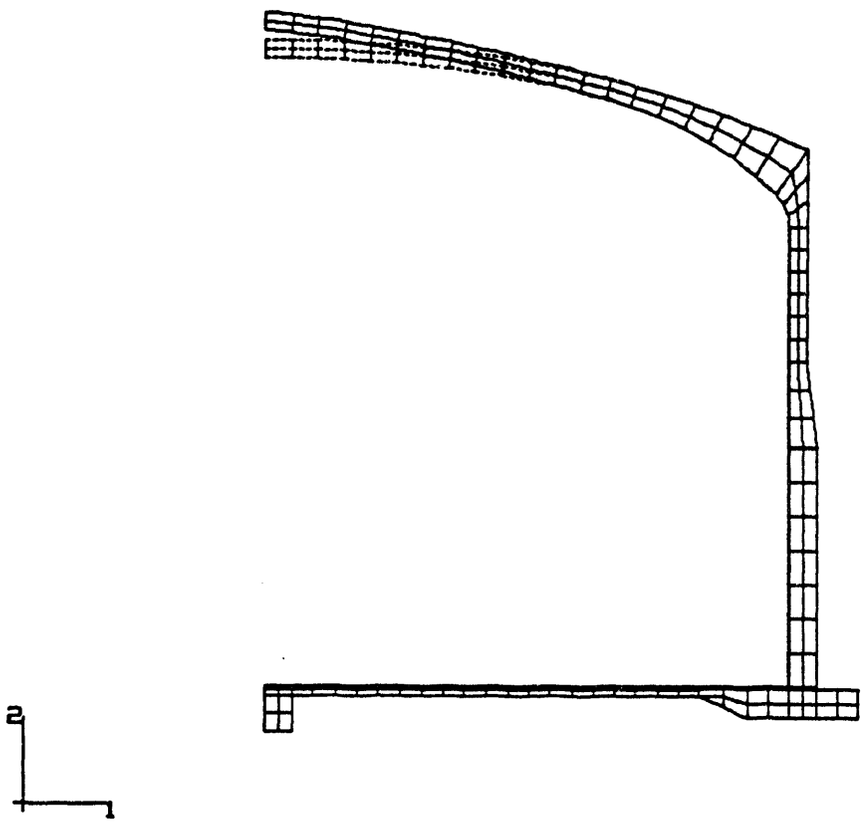
Figure 8-2
Generic Tank Displaced Shape due to Dead Loads + Internal Pressure



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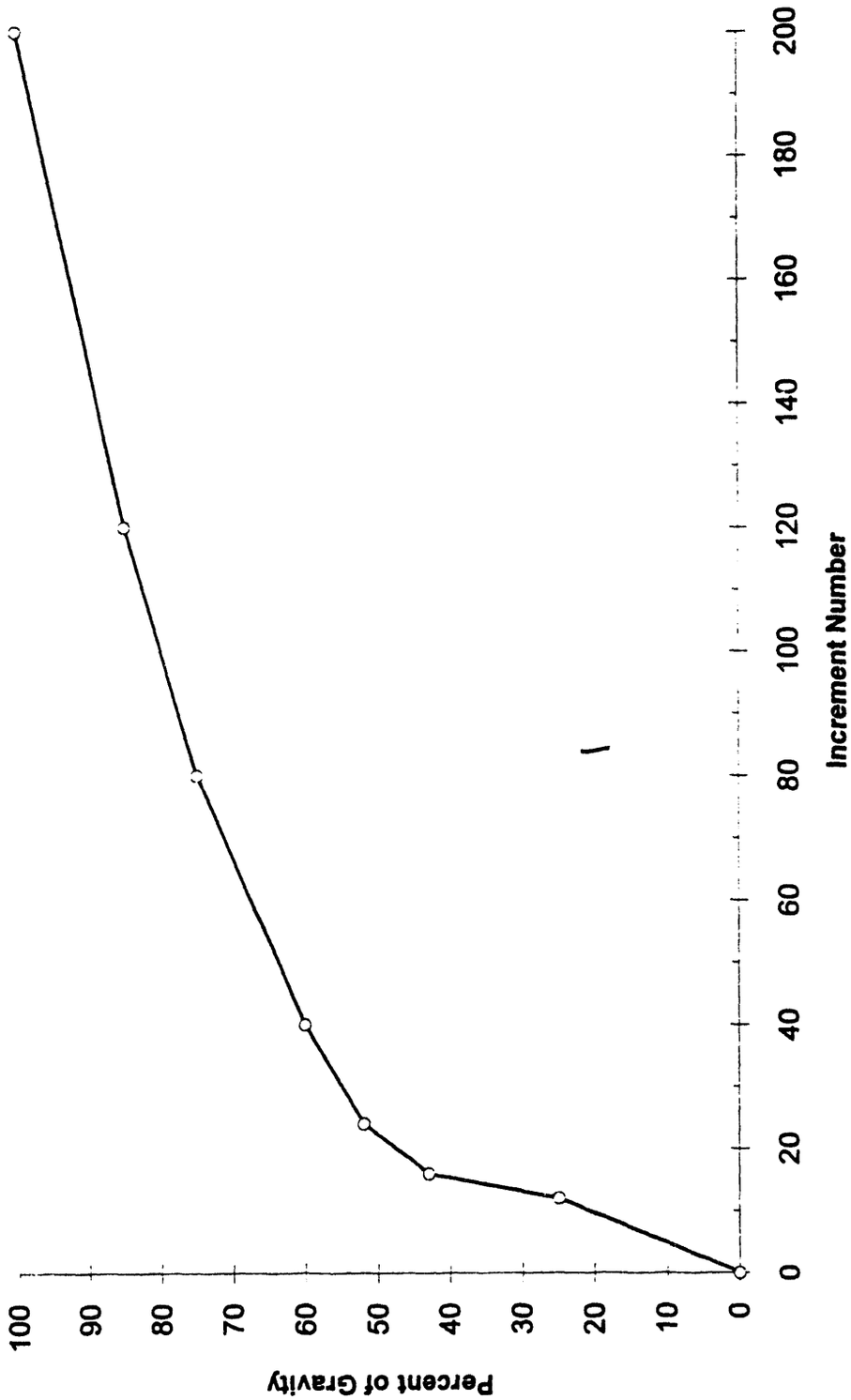

Figure 8-3
Rate of Deadload Application

GHDEADW.XLC

DESIGN CALCULATION

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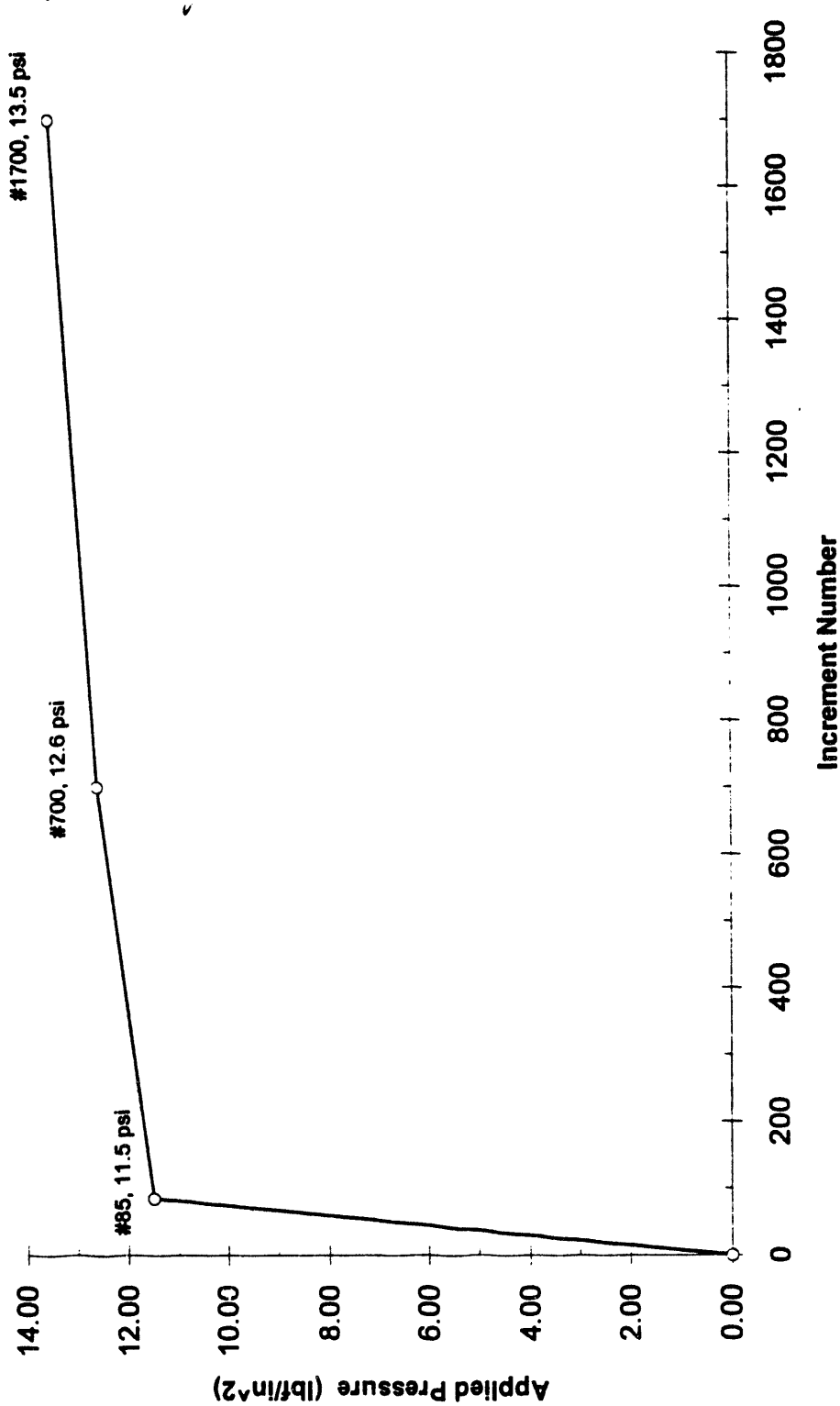
Figure 8-4
Rate of Internal Pressure Application



GHPRESS.XLC

DESIGN CALCULATION

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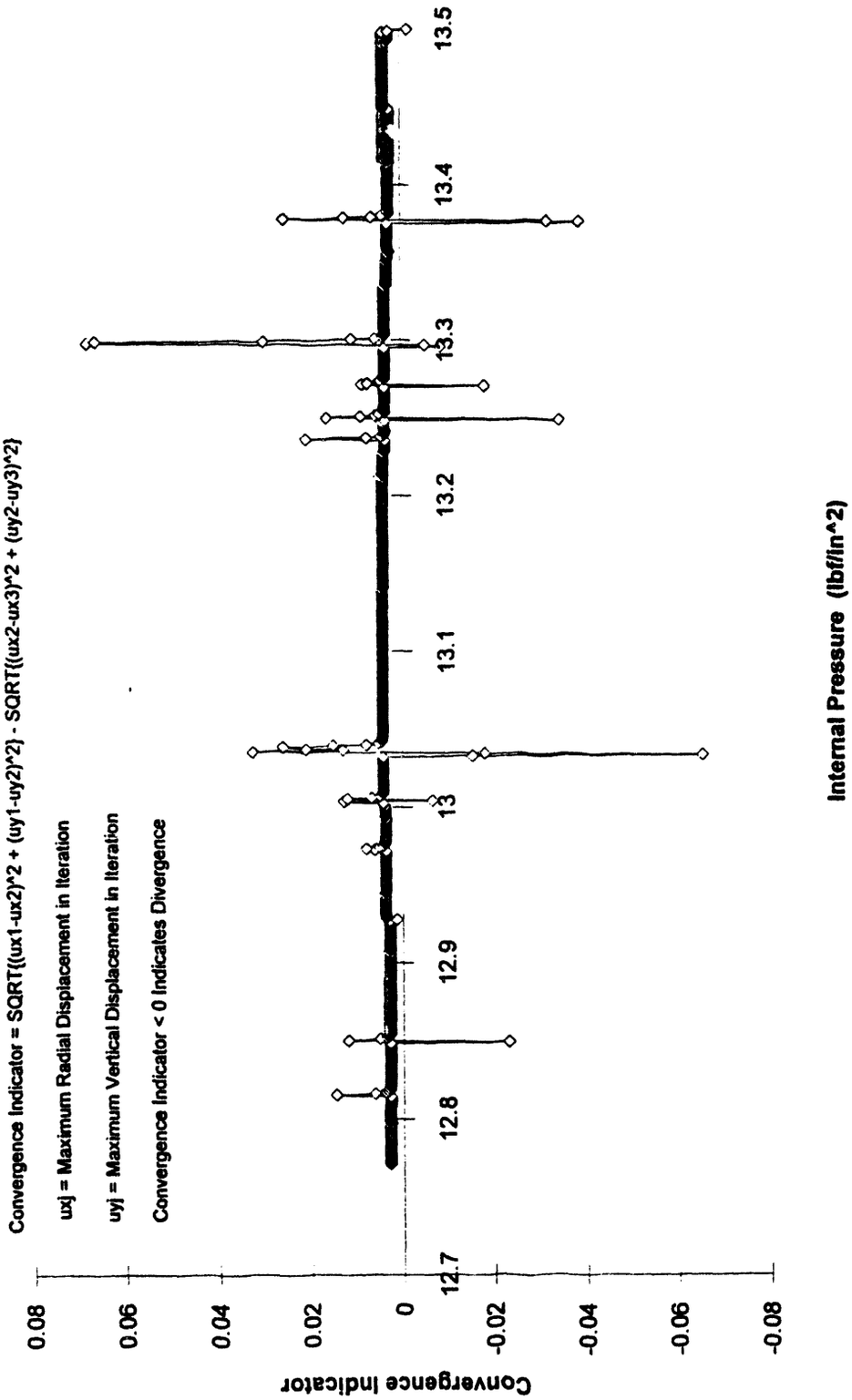
(9) Checker [illegible] Date [illegible]

Figure 8-5
Convergence Indicator for Pressurization of Generic Tank



HCONV3.XLC

DESIGN CALCULATION

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(9) Checker [illegible] Date 5/27/94

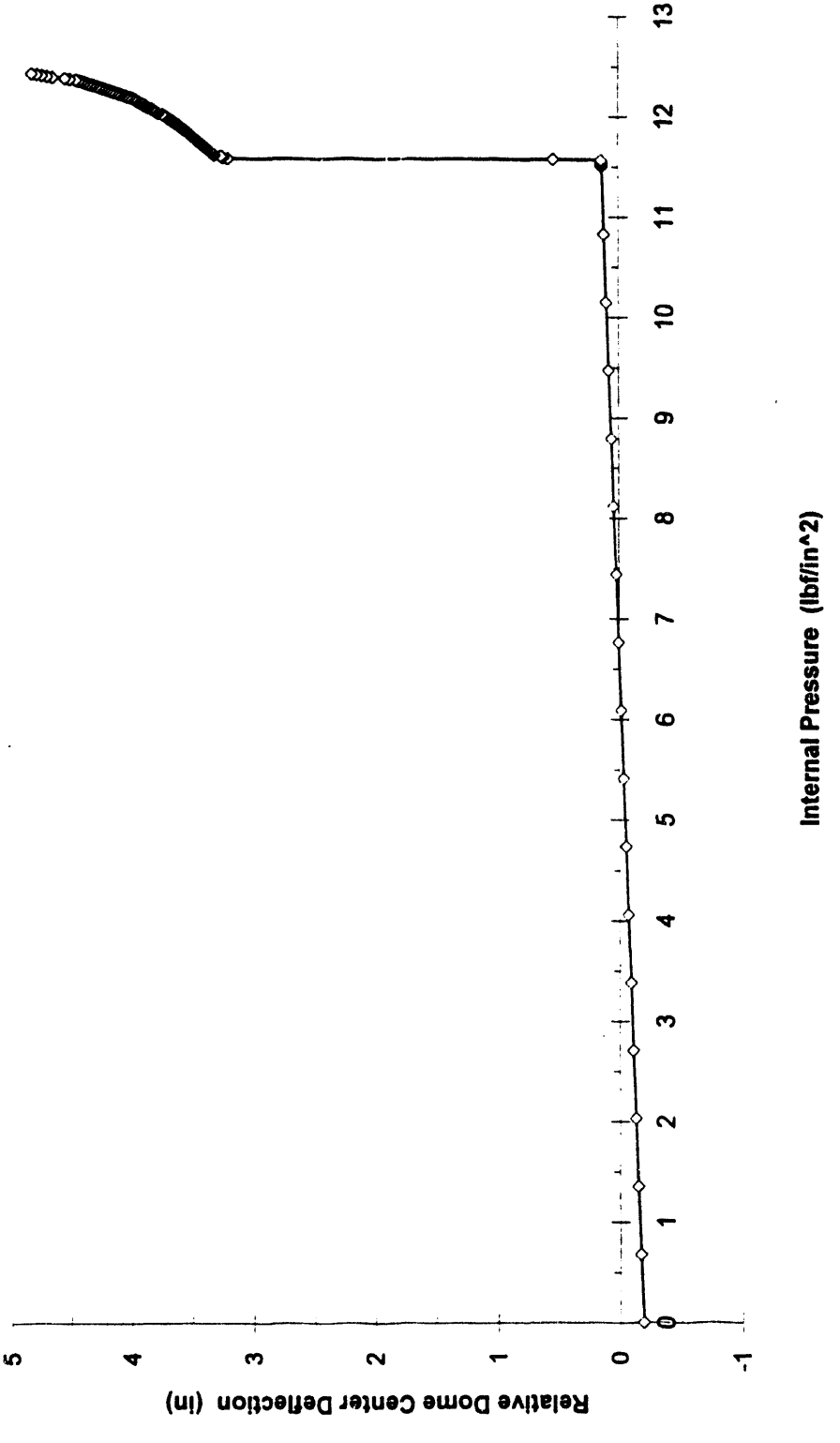

Figure 8-6
Relative Dome Displacement of Generic Tank under Deadweight and Internal Pressure

GHDISP1.XLC

DESIGN CALCULATION

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Figure 8-7
Cracking of the Tank at Internal Pressure of 11.56 lbf/in^2

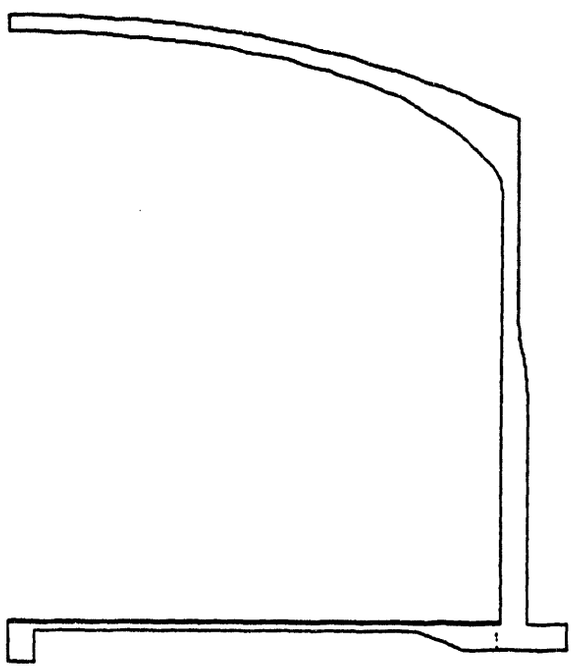

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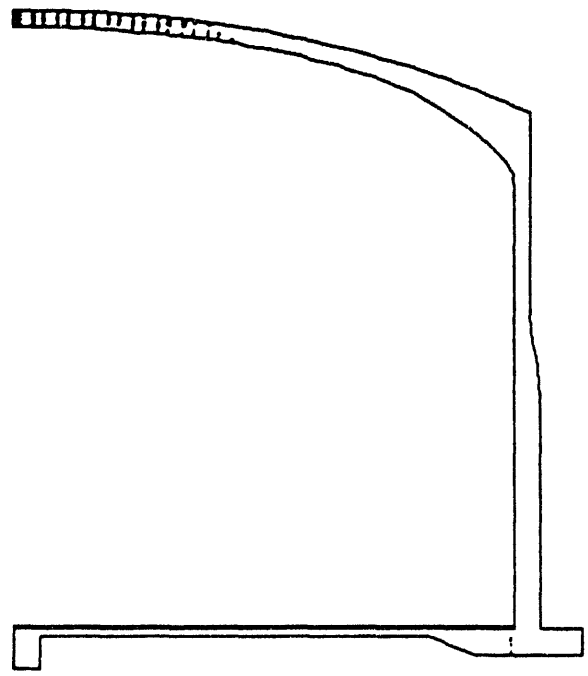
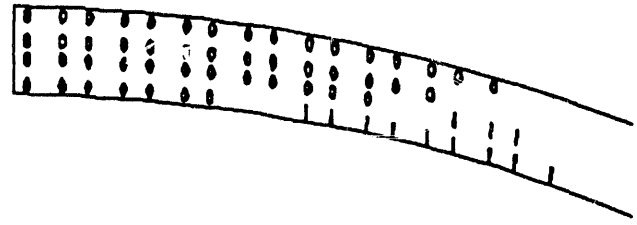
Figure 8-8
Cracking of the Tank at Internal Pressure of 11.57 lbf/in^2



(a) Overall Tank



(b) Dome Region

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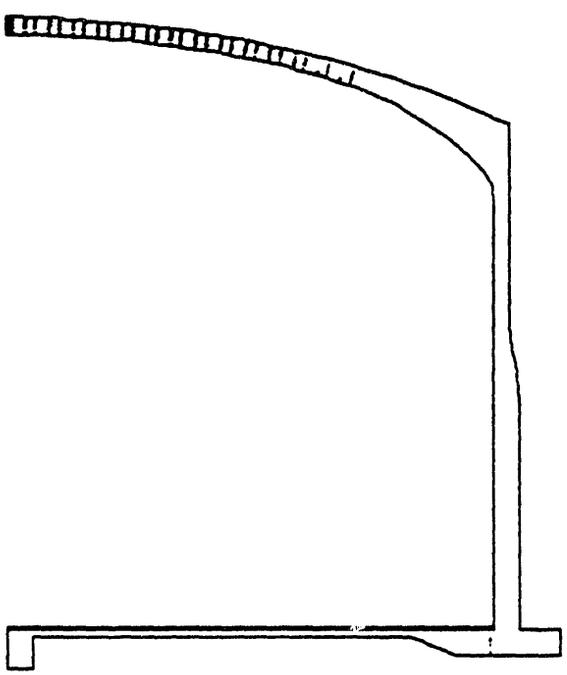
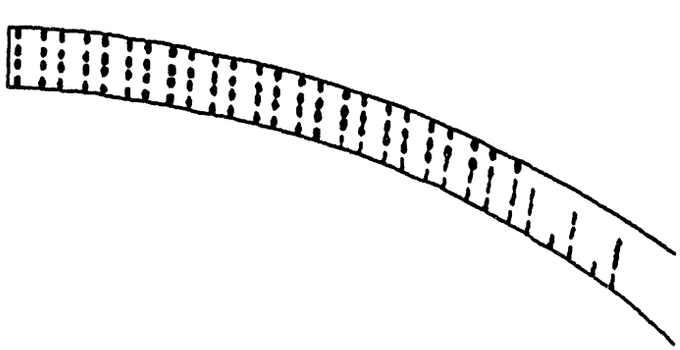
Figure 8-9
Cracking of the Tank at Internal Pressure of 11.58 lbf/in^2



(a) Overall Tank



(b) Dome Region

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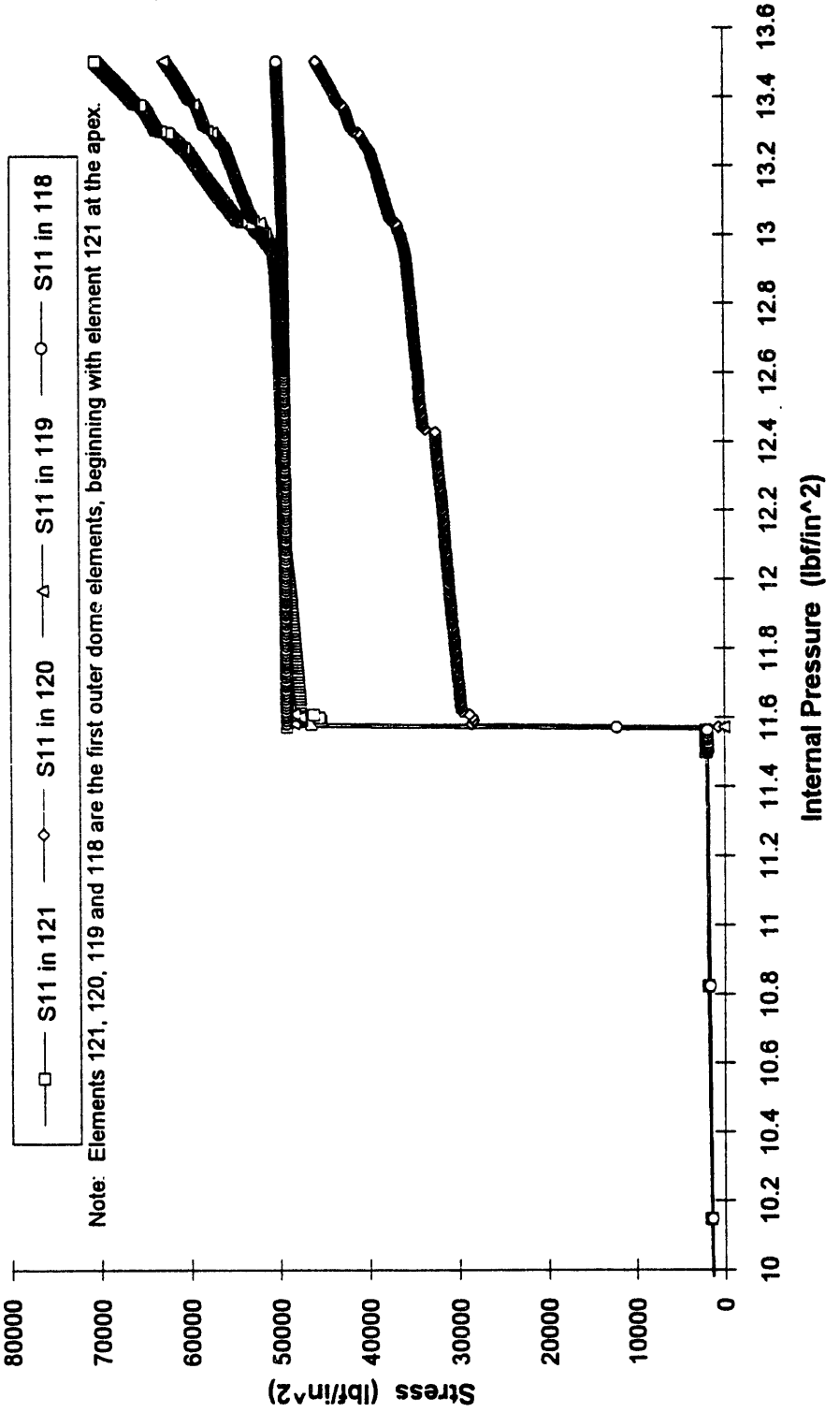
Figure 8-10
Meridional Rebar Stress for Top Dome Elements of Generic Tank Under Deadweight and Internal Pressure Loading



HBARSTRS.XLC

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(8) Originator Phillip R. [illegible] Date 5/27/94
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10. Drawing No. H-2-55911, "Composite Section," Bldg. 241-A, Rev. 1.

11. Drawing No. H-2-55912, "Footing & Wall Reinforcing," Bldg. 241-A, Rev. 1.

12. Drawing No. H-2-55913, "Dome Reinforcing," Bldg. 241-A, Rev. 2.

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(8) Originator Phillip R. Red Date 5/27/94
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34. Orangun, C. O., J. O. Jirsa, and J. E. Breen, March 1977, "A Re-Evaluation of Test Data on Development Length and Splices," *ACI Journal*, Proceedings, 74, pp. 114-122.

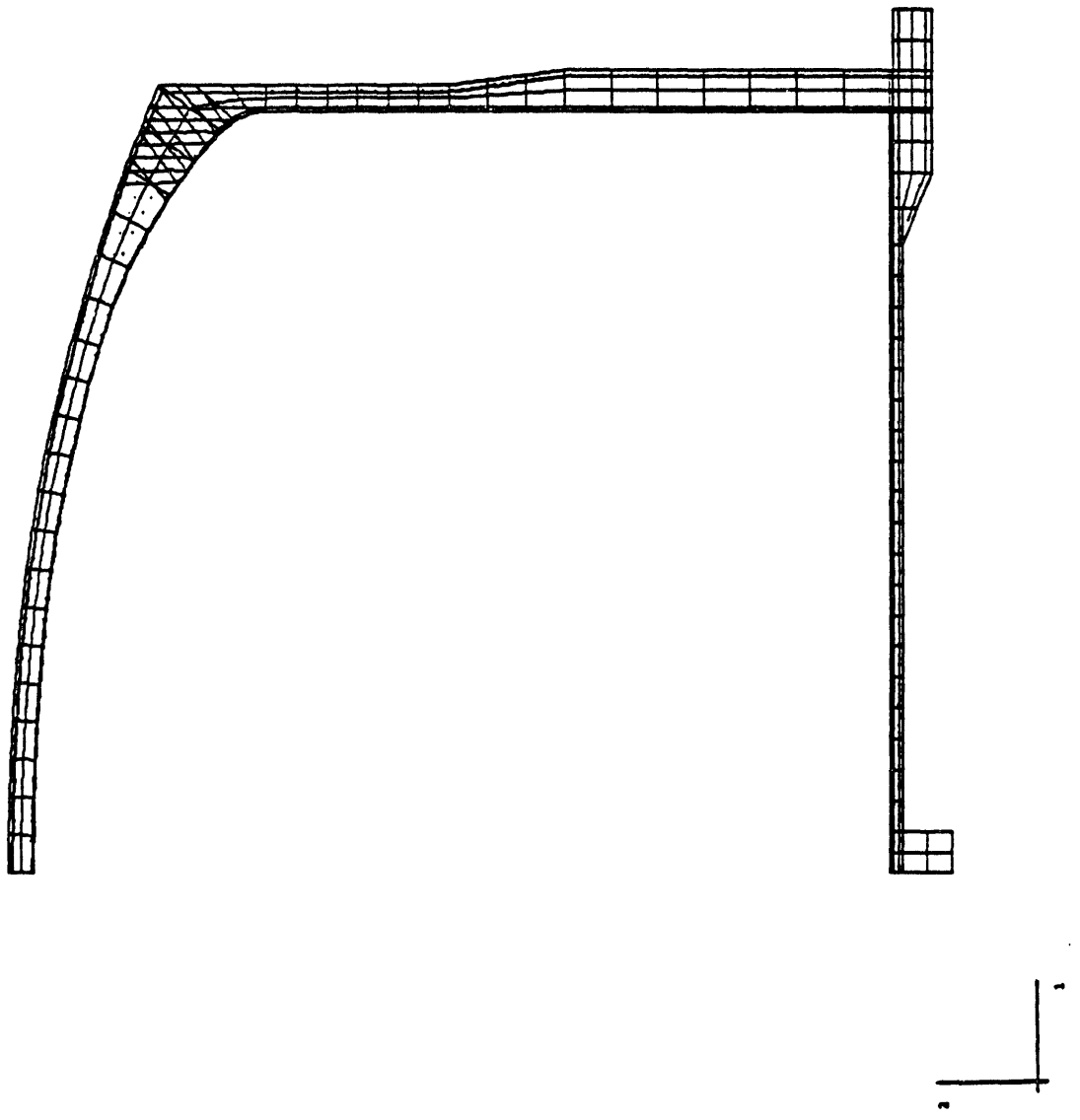
ATTACHMENT 1

FINITE-ELEMENT MESH PLOTS FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Keil 5/27/94
Date

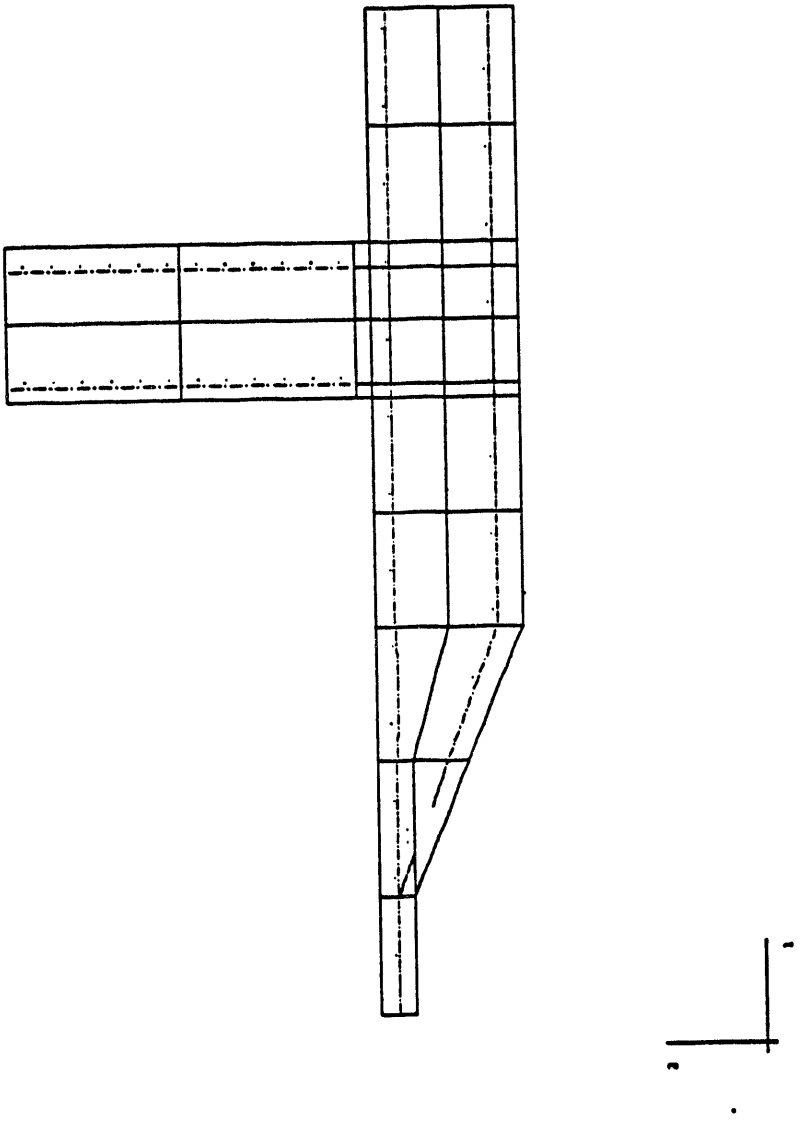
Checked by: [illegible] 5/29/94
Date

Complete Model - Liner and Concrete Elements with Reinforcement

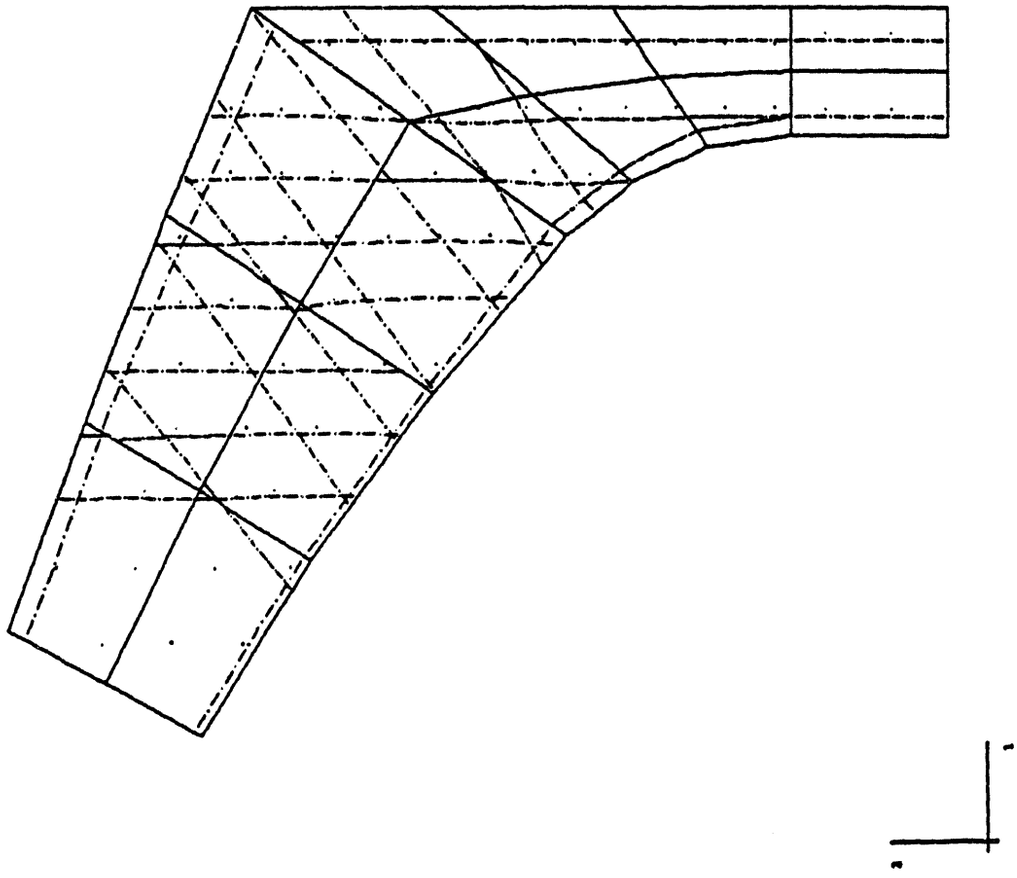


Liner Elements

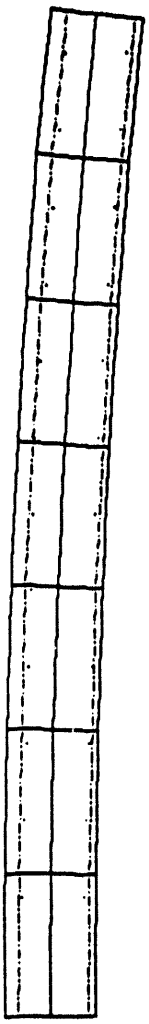
Reinforcement In Footing



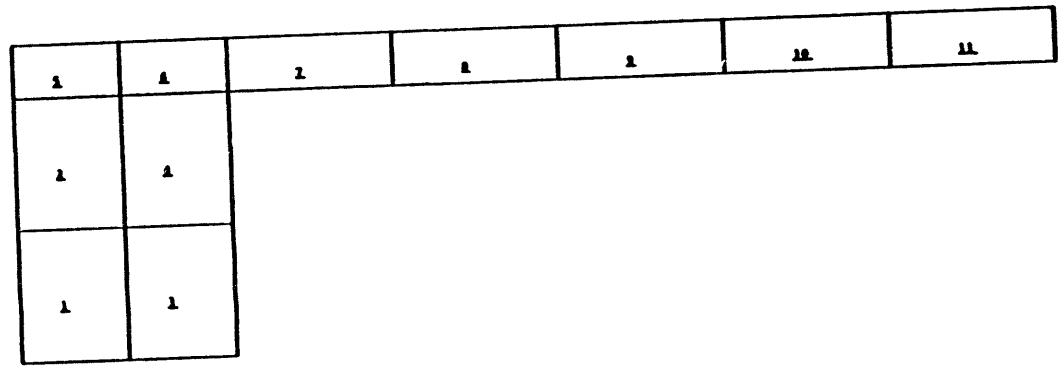
Reinforcement In Haunch

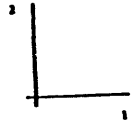


Reinforcement In Dome



Element I.D. Numbers for Center Floor Elements

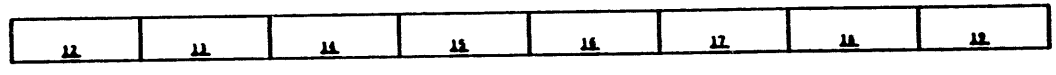


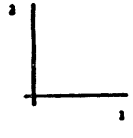


GENERIC TANK - Group 1 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Intermediate Floor Elements

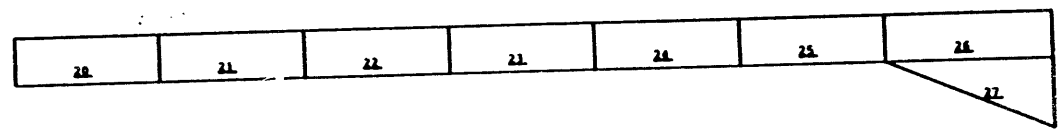


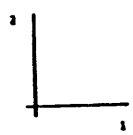


GENERIC TANK - Group 2 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Outer Floor Elements

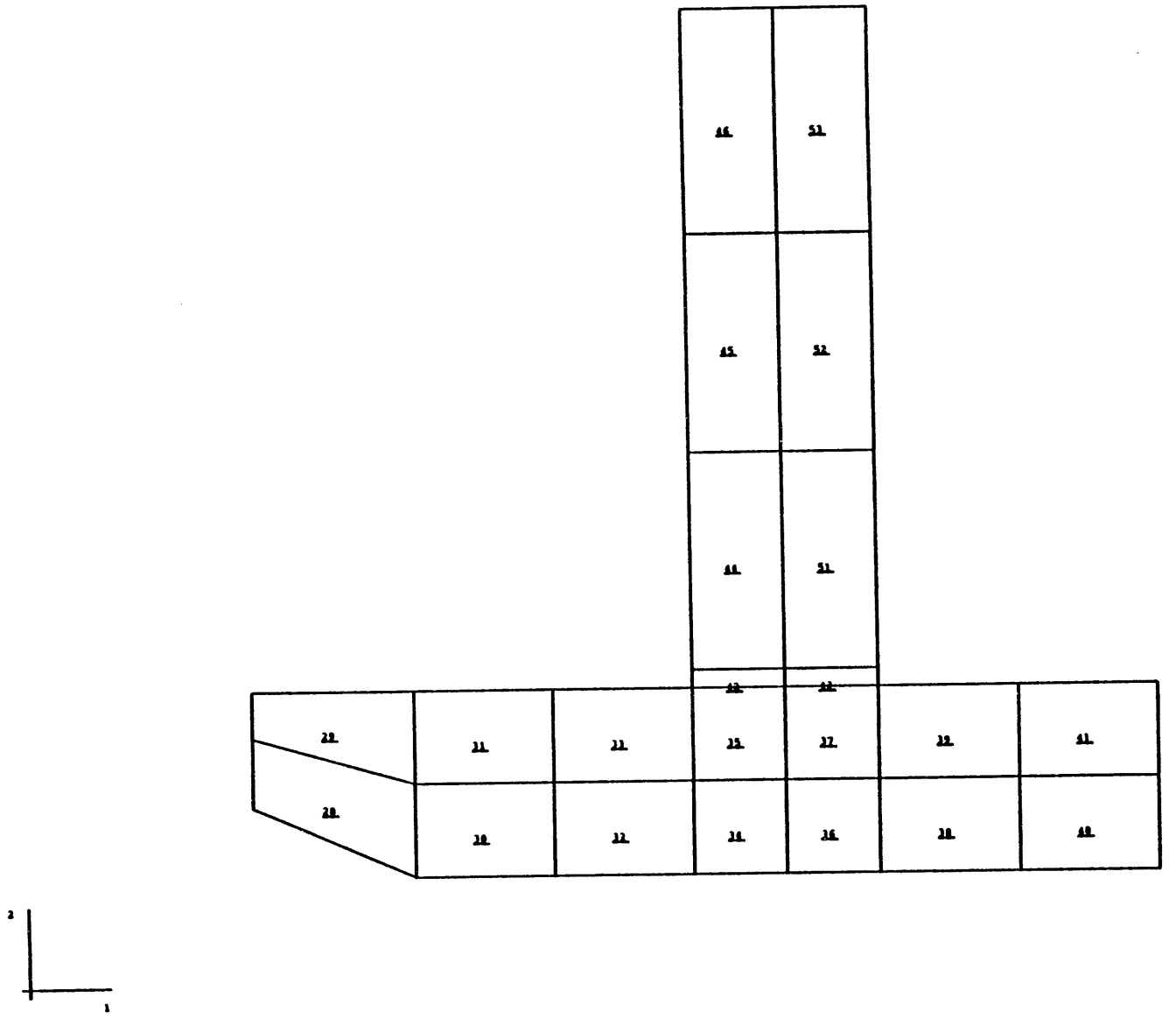




GENERIC TANK - Group 3 Elements

ABAQUS VERSION 6-5-1 DATE: 10-Apr-96 TIME: 10:47:15

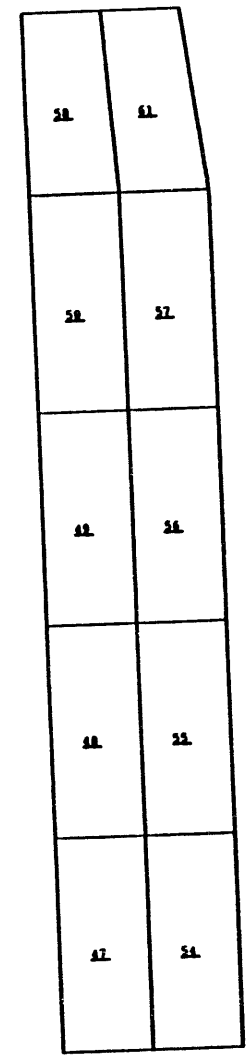
Element I.D. Numbers for Footing and Lower Wall Elements

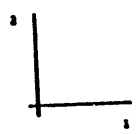


GENERIC TANK - Group 4 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Intermediate Wall Elements

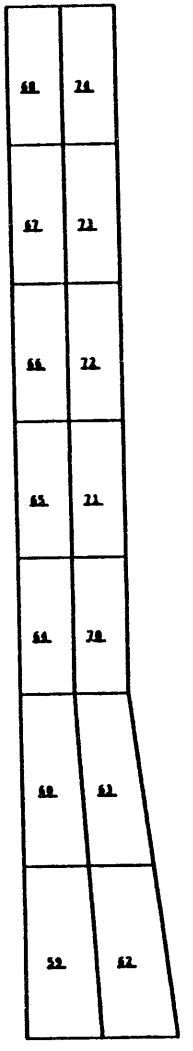




GENERIC TANK - Group 5 Elements

ABAQUS VERSION 4-9-1 DATE: 10-Apr-94 TIME: 10:47:15

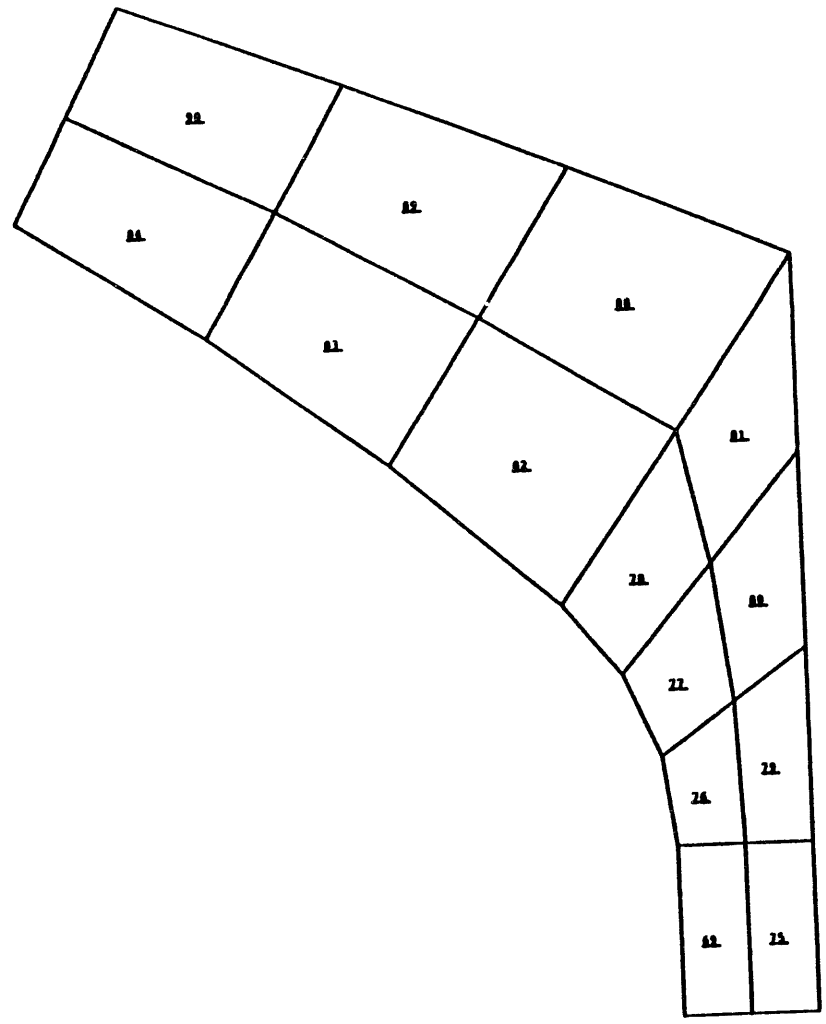
Element I.D. Numbers for Upper Wall Elements

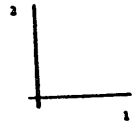


GENERIC TANK - Group 6 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Haunch Elements

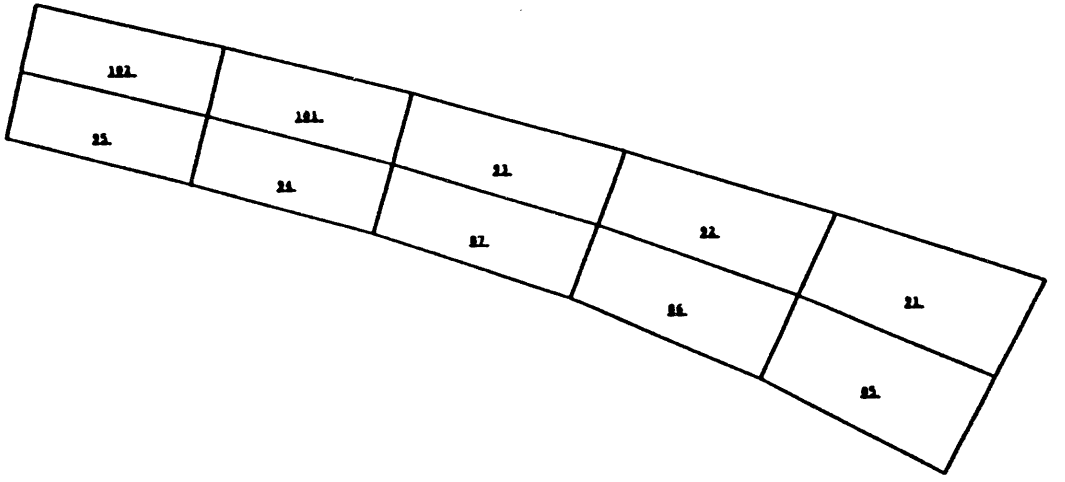


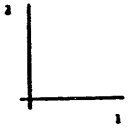


GENERIC TANK - Group 7 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Outer Dome Elements

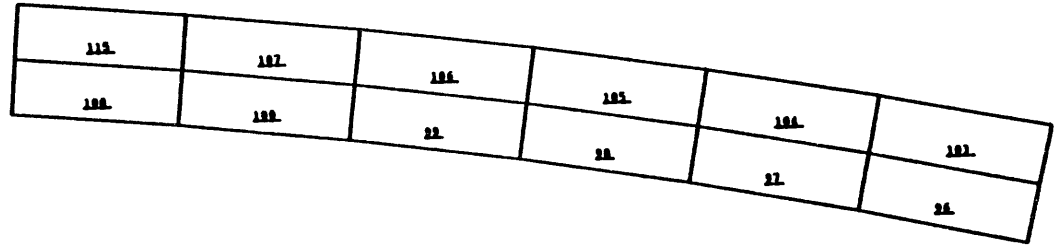


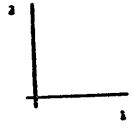


GENERIC TANK - Group 8 Elements

ABAQUS VERSION 6-5-1 DATE: 18-Apr-94 TIME: 10:47:15

Element I.D. Numbers for Intermediate Dome Elements

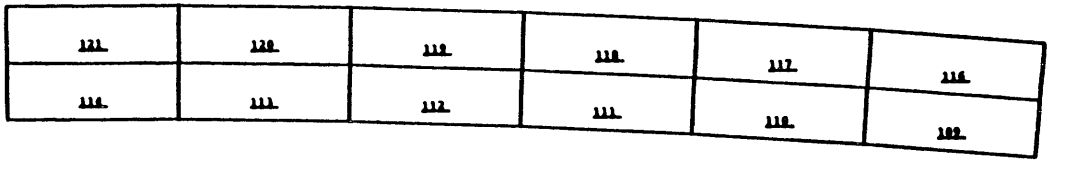


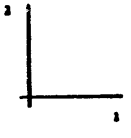


GENERIC TANK - Group 9 Elements

ABAQUS VERSION 6-9-1 DATE: 18-Apr-96 TIME: 10:47:15

Element I.D. Numbers for Center Dome Elements

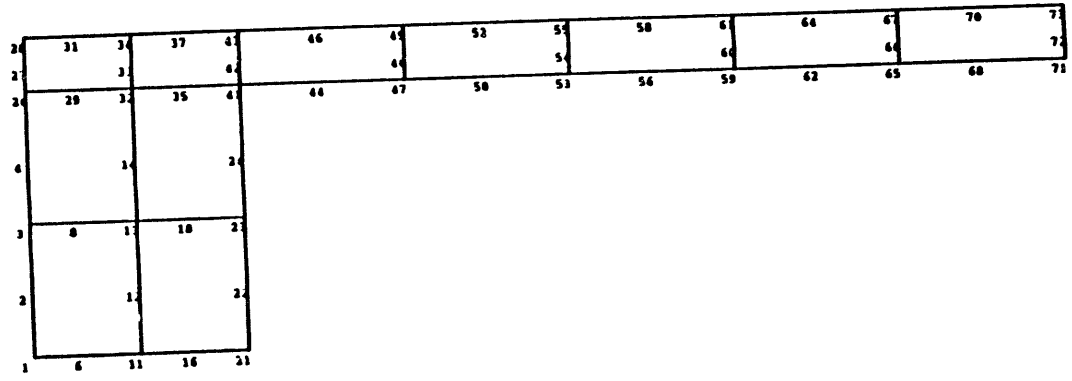


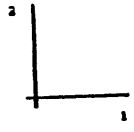


GENERIC TANK - Group 10 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Node I.D. Numbers for Center Floor Elements

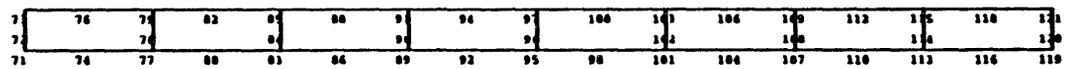


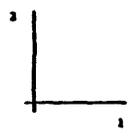


GENERIC TANK - Group 1 Elements

ABAQUS VERSION 4-8-1 DATE: 18-Apr-94 TIME: 10:47:15

Node I.D. Numbers for Intermediate Floor Elements

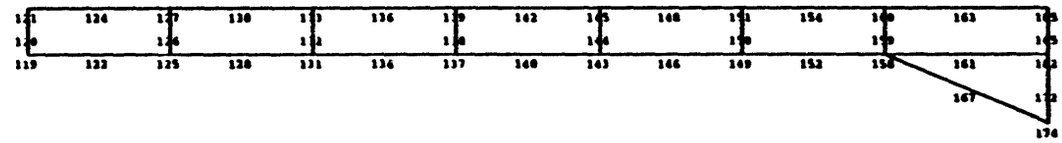




GENERIC TANK - Group 2 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

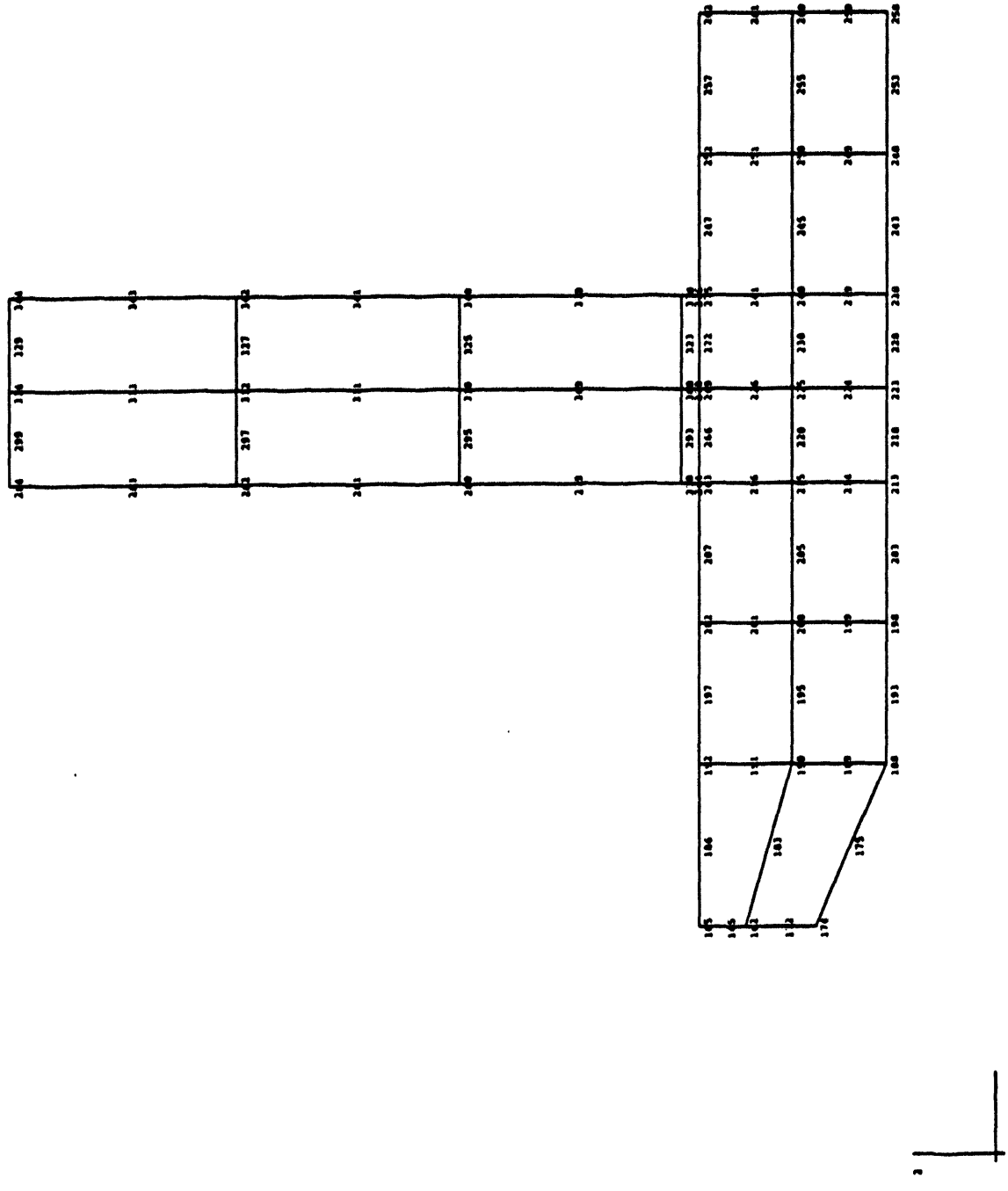
Node I.D. Numbers for Outer Floor Elements



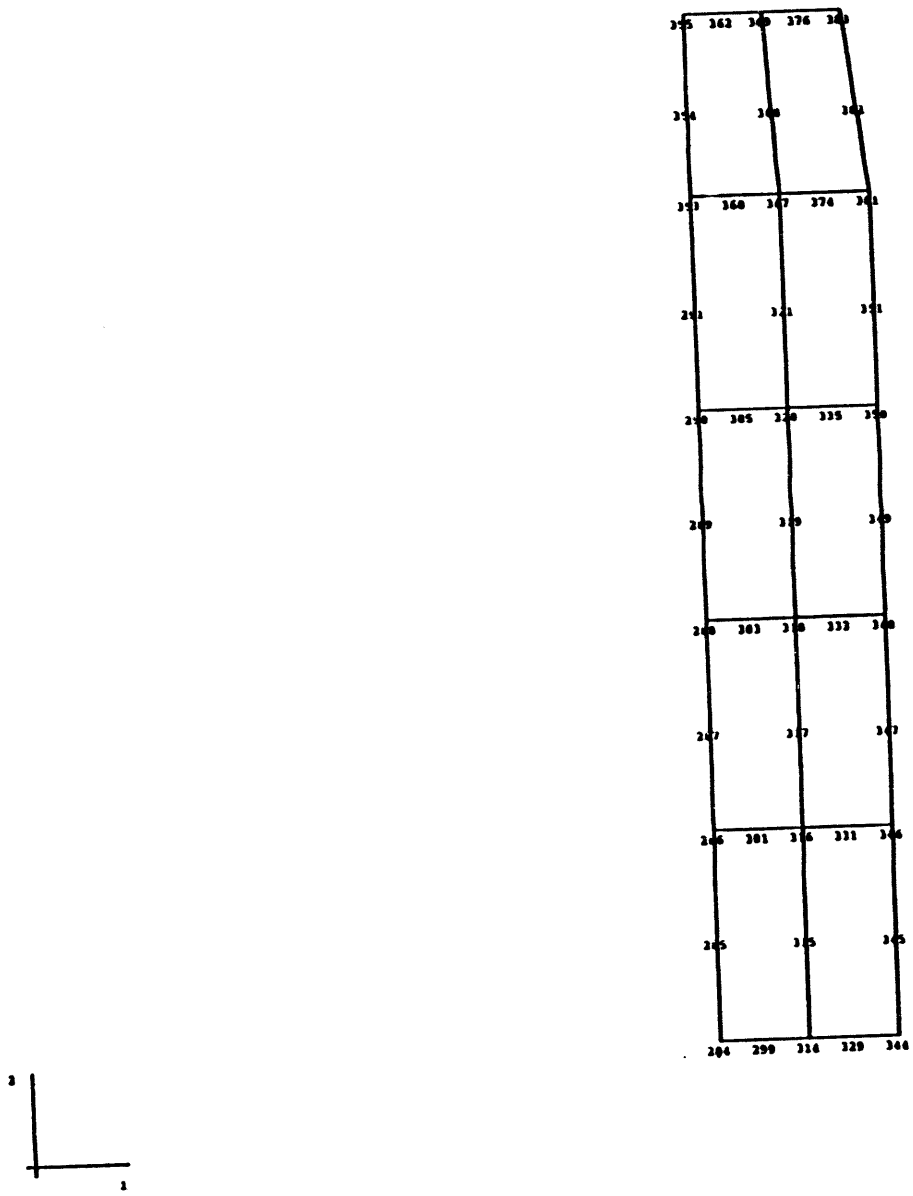
GENERIC TANK - Group 3 Elements

ABAQUS VERSION 6-5-1 DATE: 10-Apr-96 TIME: 10:47:15

Node I.D. Numbers for Footing and Lower Wall Elements



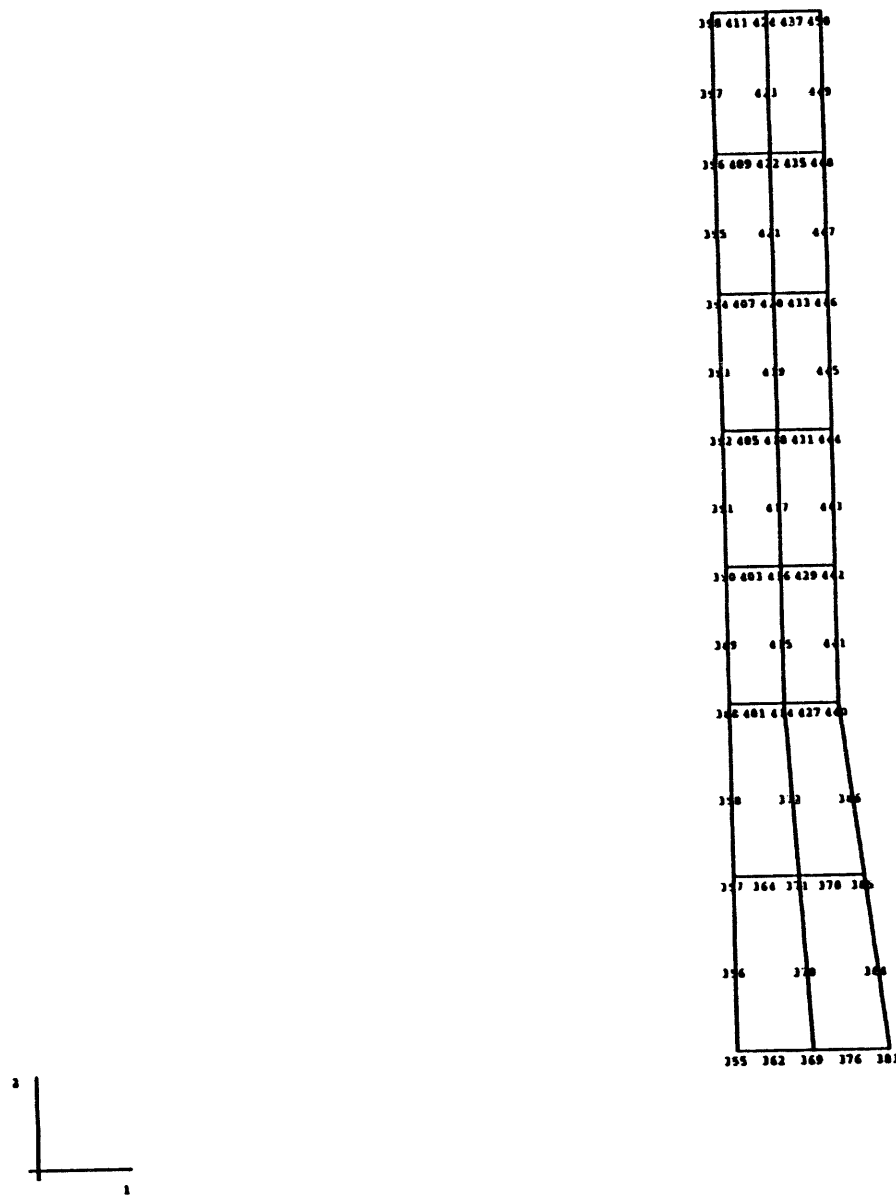
Node I.D. Numbers for Intermediate Wall Elements



GENERIC TANK - Group 5 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 18:07:15

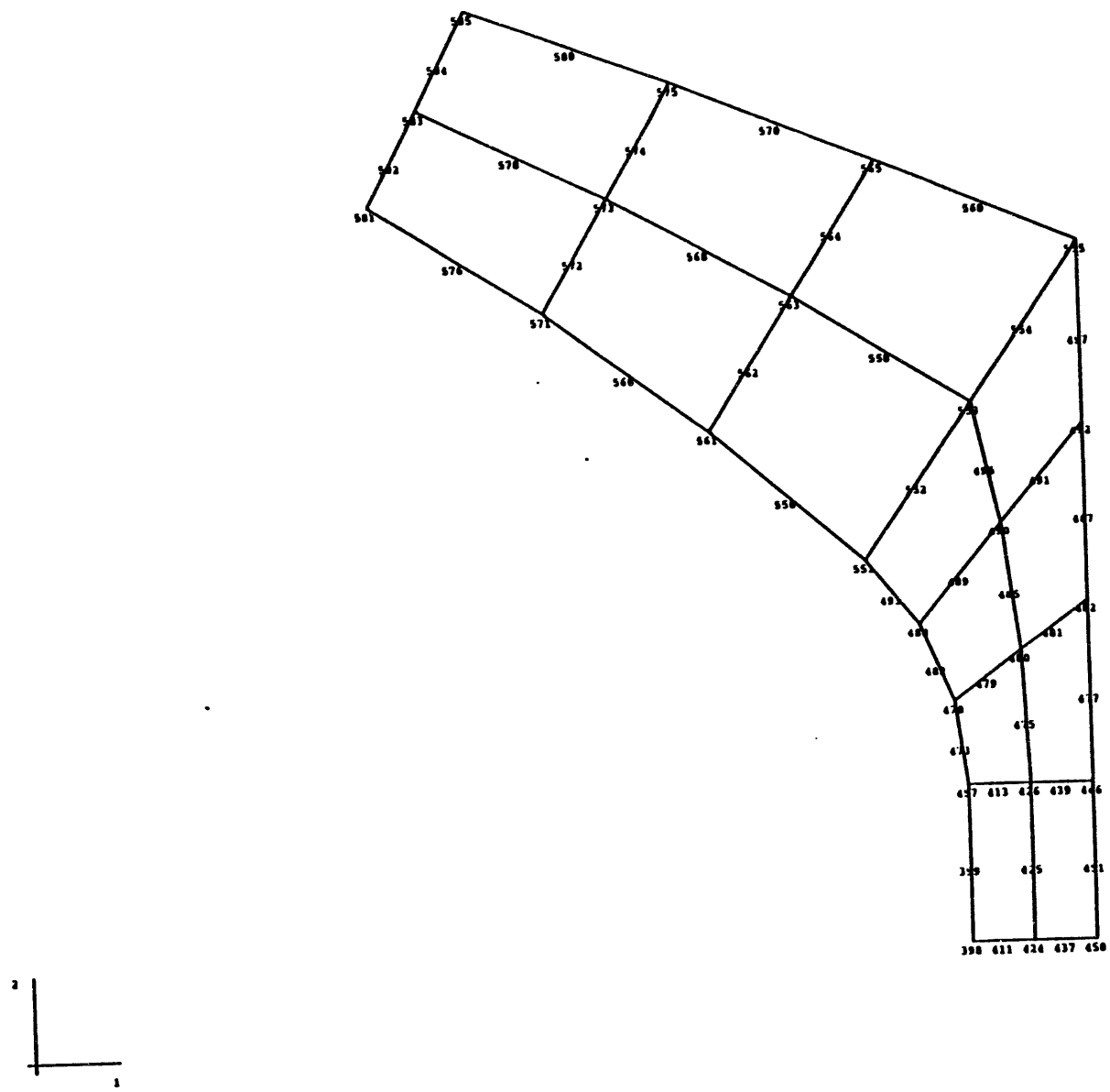
Node I.D. Numbers for Upper Wall Elements



GENERIC TANK - Group 6 Elements

ABAQUS VERSION 6-5-1 DATE: 18-Apr-96 TIME: 10:47:15

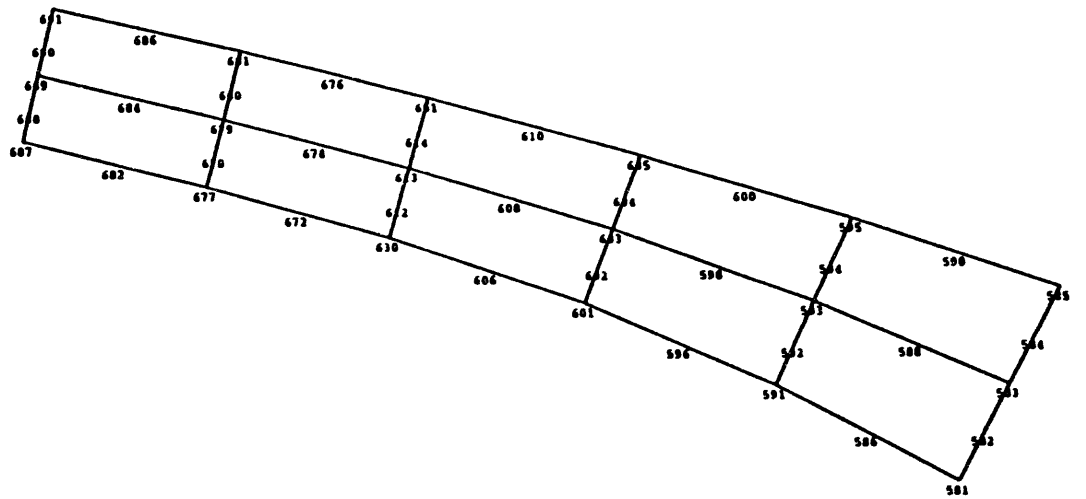
Node I.D. Numbers for Haunch Elements

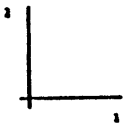


GENERIC TANK - Group 7 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

Node I.D. Numbers for Outer Dome Elements

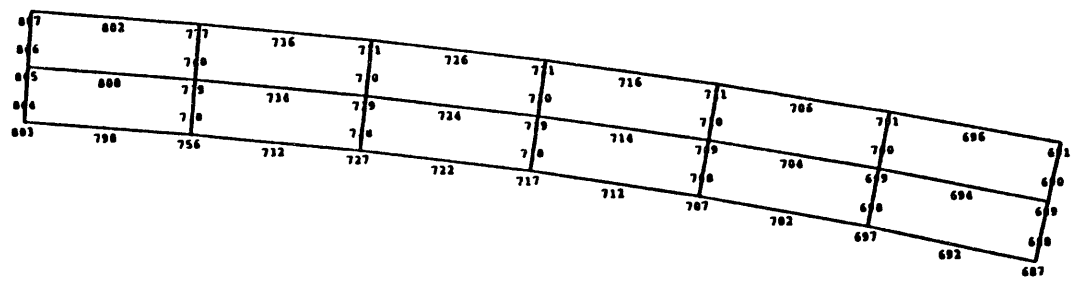




GENERIC TANK - Group 8 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

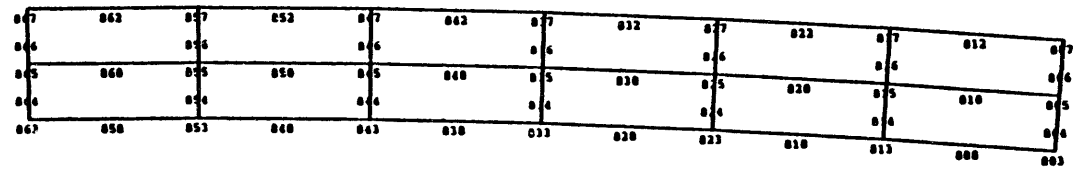
Node I.D. Numbers for Intermediate Dome Elements

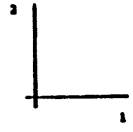


GENERIC TANK - Group 9 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-96 TIME: 10:47:15

Node I.D. Numbers for Center Dome Elements





GENERIC TANK - Group 10 Elements

ABAQUS VERSION 4-9-1 DATE: 18-Apr-94 TIME: 10:47:15

ATTACHMENT 2

ANACAP-U ANAGEN INPUT FILE FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: _____ Date 5/26/94

Checked by: _____ Date 5/27/94

GSST1.ana

```
TITLE=GENERIC SINGLE SHELL TANK NO.1 - ANACAP-U INPUT GSST1.ANA
GEO = AXISYMMETRIC
MAT = CONC1 CONCRETE UMAT=3 CRUS=3000. E=3.1E6
            NU=0.2 EPF=1.03-4 RHO=0.084
MAT = CONC2 CONCRETE UMAT=3 CRUS=3000. E=3.1E6
            NU=0.2 EPF=0.5E-4 RHO=0.084
ELE=Q8              $FOUNDATION
MAT=CONC1
REGION=FUND1 1,1 5,5 0.,-36. 24.,-36. 24.,-6. 0.,-6.
REGION=FUND1 1,5 5,7 * * 24.,0. 0.,0.
PLOT
REGION=FUND2 5,5 43,7 * 372.5,-6. 372.5,0. *
REGION=FUND3 43,5 45,7 * 393.5,-6. 393.5,0. *
NODE 44,4 383.,-10.5
NODE 45,3 393.5,-15.
NODE 47,3 414.5,-24.
NODE 47,7 414.5,0.
LINE  45,3 45,5
LINE  45,3 47,3
LINE  47,3 47,7
LINE  45,5 47,5
LINE  45,7 47,7
ELGEN=FUDN3 43,5 45,3 45,5 45,5 44,4 45,4 44,5 44,5
ELGEN=FUDN3 45,3 47,5 ILOOP=1  JLOOP=2
REGION=FUDN4 47,3 51,7 * 450.5,-24. 450.5,0 *
REGION=FUDN4 51,3 55,7 * 474.5,-24. 474.5,0 *
REGION=FUDN4 55,3 59,7 * 510.5,-24. 510.5,0 *
MAT=CONC2
REGION=WALL1 51,7 55,9 * * 474.5,2.4 450.5,2.4
MAT=CONC1
REGION=WALL2 51,9 55,23 * * 474.5,204. 450.5,204.
REGION=WALL3 51,23 55,29 * * 465.5,276. 450.5,276.
REGION=WALL4 51,29 55,41 * * 465.5,390.75 450.5,390.75
NODE 51,43 449.130,400.933
NODE 51,45 445.119,410.393
NODE 51,47 438.75,418.456
NODE 55,47 465.5,457.125
LINE  51,41 51,43
LINE  51,43 51,45
LINE  51,45 51,47
LINE  55,41 55,47
LINE  51,42 55,42
LINE  51,43 55,43
LINE  51,44 55,44
LINE  51,45 55,45
LINE  51,46 55,46
LINE  51,47 55,47
ELGEN=HAUNCH 51,41 53,43 ILOOP=2  JLOOP=3
NODE 51,49 420.284,434.969              $NODES FOR DOME 1
NODE 51,51 400.589,449.995
NODE 51,53 379.783,463.442
NODE 51,55 357.994,475.229
NODE 51,57 335.354,485.283
NODE 51,59 312.,493.545
NODE 55,49 441.344,467.561
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NODE 55,51 416.929,477.398
NODE 55,53 392.271,486.609
NODE 55,55 367.386,495.189
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NODE 55,59 317.000,510.431
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LINE  51,55 55,55
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LINE  51,57 55,57
LINE  51,58 55,58
LINE  51,59 55,59
ELGEN=DOME1 51,47 53,49 ILOOP=2  JLOOP=6
NODE 51,61 290.134,499.977                $NODES FOR DOME 2
NODE 51,63 268.102,505.842
NODE 51,65 245.918,511.107
NODE 51,67 223.599,515.768
NODE 51,69 201.162,519.821
NODE 51,71 178.624,523.264
NODE 51,73 156.,526.094
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NODE 55,69 203.648,534.833
NODE 55,71 180.688,538.176
NODE 55,73 157.660,541.002
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LINE  51,68 55,68
LINE  51,69 55,69
LINE  51,70 55,70
LINE  51,71 55,71
LINE  51,72 55,72
LINE  51,73 55,73
ELGEN=DOME2 51,59 53,61 ILOOP=2  JLOOP=7
NODE 51,75 133.787,528.388                $NODES FOR DOME3
NODE 51,77 111.540,530.331
NODE 51,79 89.266,531.921
NODE 51,81 66.969,533.159
NODE 51,83 44.655,534.043
NODE 51,85 22.330,534.573
NODE 51,87 0.,534.75
NODE 55,75 135.210,543.321
NODE 55,77 112.727,545.284
NODE 55,79 90.216,546.891
NODE 55,81 67.682,548.142
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LINE  51,83 55,83
LINE  51,84 55,84
LINE  51,85 55,85
```

```
LINE  51,86 55,86
LINE  51,87 55,87
ELGEN=DOME3 51,73 53,75  ILOOP=2  JLOOP=7
MAT=REBAR ISO E=29.E6 YIELD=60000.
SEC AREA=0.31           /REBAR    $FOUNDATION #5 HOOP
ELE REBAR  3.5,-2.625 43  507.5,-2.625
SEC AREA=0.31           /REBAR
ELE REBAR  381.,-4.8  3 405.,-15.
SEC AREA=0.31           /REBAR
ELE REBAR 417.,-19.2   8  501.,-19.2
SEC AREA=0.31  NUM=6    /REBAR    $FOUNDATION #5 RADIAL
ELE REBAR       0.,-3.25     24.,-3.25
SEC AREA=0.31  NUM=32   /REBAR
ELE REBAR      24.,-3.25  97.368,-3.25
SEC AREA=0.31  NUM=75   /REBAR
ELE REBAR   97.368,-3.25  189.079.-3.25
SEC AREA=0.31  NUM=123  /REBAR
ELE REBAR   189.079,-3.25 280.789,-3.25
SEC AREA=0.31  NUM=171  /REBAR
ELE REBAR   280.789,-3.25 372.50,-3.25
SEC AREA=0.44  NUM=396  /REBAR    $FOUNDATION #6 RADIAL
ELE REBAR   372.5,-3.25 510.,-3.25
SEC AREA=0.44  NUM=396  /REBAR
ELE REBAR   372.5,-3.25 414.5,-20.
SEC AREA=0.44  NUM=396  /REBAR
ELE REBAR   414.5,-20.  510.,-20.
SEC AREA=0.44  NUM=370  /REBAR    $SHELL #6 VERT, INTERIOR
ELE REBAR   452.625,-23.  452.625,175.2   $14.6' LONG, TO END OF EL
SEC AREA=0.44  NUM=185  /REBAR
ELE REBAR   452.625,175.2  452.625,390.75
SEC AREA=0.44  NUM=370  /REBAR    $SHELL #6 VERT, EXTERIOR
ELE REBAR   470.625,-23.  470.625,175.2
SEC AREA=0.44  NUM=185  /REBAR
ELE REBAR   470.625,175.2 470.625,204.
SEC AREA=0.44  NUM=185  /REBAR
ELE REBAR   470.625,204.  461.625,276.
SEC AREA=0.44  NUM=185  /REBAR
ELE REBAR   461.625,276.  461.625,390.75
SEC AREA=0.44  NUM=480  /REBAR    $HAUNCH AND DOME1 #6 VERT
ELE REBAR   461.625,390.75  451.625,455.
SEC AREA=0.31  NUM=120  /REBAR    $DOME1 #5 VERT
ELE REBAR   452.75,390.75 455.309,422.696  $ BENT TO FIT 53,45
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   455.309,422.969 452.75,462.0
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   455.25,413.    445.25,465.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   437.75,421.4   437.75,468.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   430.25,426.2   430.25,471.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   422.75,434.8   422.75,474.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   415.25,438.9   415.25,477.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   407.75,446.6   407.75,480.3
SEC AREA=0.79           /REBAR    $SHELL #8 HOOP, INTERIOR
```

```
ELE REBAR   453.5,4.80   54 453.5,256.55 $ SKIP ELEM EDGE
SEC AREA=0.79            /REBAR
ELE REBAR   453.5,262.5  7  453.5,298.5
SEC AREA=0.79            /REBAR
ELE REBAR   453.5,306.5  11 453.5,386.5
SEC AREA=0.79            /REBAR   $SHELL #8 HOOP, EXTERIOR
ELE REBAR   471.5,4.75   42 471.5,199.5
SEC AREA=0.79            /REBAR
ELE REBAR   471.48,204.30 12   464.95,256.55 $ SKIP ELEM EDGE
SEC AREA=0.79            /REBAR
ELE REBAR   464.25,262.5  3 462.65,274.5
SEC AREA=0.79            /REBAR
ELE REBAR   462.5,280.5   4 462.5,298.5
SEC AREA=0.79            /REBAR
ELE REBAR   462.5,306.5   11 462.5,386.5
SEC AREA=1.56            /REBAR    $HAUNCH #11 HOOP
ELE REBAR   461.25,392.75 11 461.25,454.
SEC AREA=1.56            /REBAR    $HAUNCH,DOME1 #11 HOOP
ELE REBAR   453.75,392.75 12 453.75,459.7  $ 3" FROM TOP SURFACE
SEC AREA=1.56            /REBAR    $DOME1 #11 HOOP
ELE REBAR   446.25,416.    8 446.25,459.7
SEC AREA=1.56            /REBAR
ELE REBAR   438.75,421.4   8 438.75,466.
SEC AREA=1.56            /REBAR
ELE REBAR   431.25,428.1   7 431.25,466.
SEC AREA=1.56            /REBAR
ELE REBAR   423.75,434.8   7 423.75,472.1
SEC AREA=1.00            /REBAR    $DOME1 #9 HOOP
ELE REBAR   416.25,440.8   5 416.25,475.1
SEC AREA=1.00            /REBAR
ELE REBAR   408.75,446.6   5 408.75,478.1
SEC AREA=1.00            /REBAR
ELE REBAR   399.75,452.5   4 399.75,480.9
SEC AREA=1.00            /REBAR
ELE REBAR   390.75,458.4   4 390.75,484.1
SEC AREA=1.00            /REBAR
ELE REBAR   378.75,466.0   4 378.75,488.3
SEC AREA=1.00            /REBAR
ELE REBAR   366.75,472.5   4 366.75,492.3
SEC AREA=0.44            /REBAR    $DOME #6 HOOP
ELE REBAR   354.75,478.7   2 354.75,496.2
SEC AREA=0.44            /REBAR
ELE REBAR   342.75,484.0   2 342.75,499.9
SEC AREA=0.44            /REBAR
ELE REBAR   330.75,488.9   2 330.75,503.5
SEC AREA=0.44            /REBAR
ELE REBAR   318.75,493.2   2 318.75,506.9
SEC AREA=0.44            /REBAR
ELE REBAR   306.75,497.1   4 270.75,507.1   $BOTTOM LAYER
SEC AREA=0.44            /REBAR
ELE REBAR   258.75,510.1   4 222.75,517.9
SEC AREA=0.44            /REBAR
ELE REBAR   210.75,520.1   5 162.75,527.3
SEC AREA=0.44            /REBAR
ELE REBAR   150.75,528.6   5 102.75,533.0
SEC AREA=0.44            /REBAR
ELE REBAR   90.75,533.8    7 18.75,536.6
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SEC AREA=0.44            /REBAR
ELE REBAR   306.75,510.2   4 270.75,519.    $TOP LAYER
SEC AREA=0.44            /REBAR
ELE REBAR   258.75,521.6   4 222.75,528.6
SEC AREA=0.44            /REBAR
ELE REBAR   210.75,530.7   5 162.75,537.4
SEC AREA=0.44            /REBAR
ELE REBAR   150.75,538.75  5 102.75,543.1
SEC AREA=0.44            /REBAR
ELE REBAR   90.75,544      7 18.75,546.6
SEC AREA=0.44  NUM=240  /REBAR    $DOME #6 RADIAL, BOTTOM LAYER
ELE REBAR   452.625,390.75   450.5,401.6
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   450.5,401.6      446.4,411.5   $ 1.2" FROM BOT SURFACE
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   446.4,411.5      440.0,419.6
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   440.05,419.6     420.28,436.2
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   420.28,436.2     400.59,451.2
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   400.59,451.2     379.78.464.7
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   379.78,464.7     358.0,476.5
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   358.0,476.5      335.35,486.5
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   335.35,486.5     290.13,501.2
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   290.13,501.2     245.92,512.4  $APPROX R-204"
SEC AREA=0.44  NUM=120  /REBAR
ELE REBAR   245.92,512.4     201.16,521.1
SEC AREA=0.44  NUM=120  /REBAR
ELE REBAR   201.16,521.1     156.00,527.3
SEC AREA=0.44  NUM=120  /REBAR
ELE REBAR   156.00,527.3     120.00,530.8
SEC AREA=0.44  NUM=60   /REBAR
ELE REBAR   120.00,530.8     60.00,534.7
SEC AREA=0.44  NUM=30   /REBAR
ELE REBAR   60.00,534.7      18.75,535.8
SEC AREA=0.44  NUM=15   /REBAR
ELE REBAR   18.75,535.8      0.,535.95
SEC AREA=0.44  NUM=480  /REBAR  $DOME #6 RADIAL, TOP LAYER
ELE REBAR   461.625,455.0    416.92.475.0  $ -2.38 FROM TOP SURFACE
SEC AREA=0.44  NUM=480  /REBAR
ELE REBAR   427.37,470.9     392.27,484.2
SEC AREA=0.44  NUM=360  /REBAR  $TRANSITION, USE AVE NO OF REBAR
ELE REBAR   392.27,484.2     367.38,492.8
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   367.38,492.8     317.00,508.1
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   317.00,508.1     271.99,519.4
SEC AREA=0.44  NUM=240  /REBAR
ELE REBAR   271.99,519.4     249.31,524.2
SEC AREA=0.44  NUM=120  /REBAR
ELE REBAR   249.31,524.2     180.68,535.8
SEC AREA=0.44  NUM=120  /REBAR
```

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ELE REBAR   180.68,535.8      135.21,541.0
SEC AREA=0.44  NUM=90   /REBAR  $TRANSITION, USE AVE NO OF REBAR
ELE REBAR   135.21,541.0      112.72,542.9
SEC AREA=0.44  NUM=60   /REBAR
ELE REBAR   112.72,542.9      67.68,545.8
SEC AREA=0.44  NUM=30   /REBAR
ELE REBAR   67.68,545.8       22.57,547.2
SEC AREA=0.44  NUM=15  /REBAR
ELE REBAR   22.57,547.1        0.0,547.4
SEC AREA=0.31  NUM=120  /REBAR   $DOME1 #5 DIAGONAL
ELE REBAR   441.60,415.       461.25,429.5
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   440.30,420.0      465.25,445.95
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   431.25,428.1      465.25,457.45
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   422.00,433.5      455.20,465.2
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   414.30,439.6      446.2,465.2
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   406.80,445.4      431.25,466.
SEC AREA=0.31  NUM=120  /REBAR
ELE REBAR   400.60,450.0      422.4,475.1
BC SYM  1,1  1,7
BC SYM  51,87  55,87
BC YDIS  1,1  5,1
BC YDIS  6,5  43,5
BC YDIS 44,4
BC YDIS 45,3  59,3
BC PRES  51,49  51,87 20.
PLOT
PLOT 43,1  59,7
PLOT 51,41  55,59
TRANSLATE=ABAQUS
STOP
```

ATTACHMENT 3

ABAQUS ANALYSIS INPUT FILE FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Kirk 5/27/94
Date

Checked by: S. B. Kok 6/2/94
Date

Note: Preparation and checking of the geometry-portion of this input file (including material properties and boundary conditions) was limited to the assurance of a one-to-one correspondance with the geometry input for a previously developed model used to evaluate static and dynamic pressure loadings. The input file for the previous model is located in Appendix F, pages F-45 through F-82 of the calculation for ADVENT Job No. 90005, File 90005.5.1, "Structural Integrity Evaluation of a Generic Single Shell Waste Tank under Postulated Hydrogen Burn."

The remainder of the input file (tank loading) is not intended to be identical to the previous input file and therefore is unique to this analysis.

GSST1H.abdat

```
*HEADING
GENERIC SINGLE SHELL TANK NO.1 - ANACAP-U INPUT GSST1H.ABDAT
12/29/93, PRESSURE TO 13.5 psi, 1700 INCREMENTS, PTOL = 100, CYCLE=3
          DEAD LOAD: INCREASE FROM 25 TO 200 MANUAL INCREMENTATIONS
1/7/94, Adjustments to some rebars

*NODE,NSET=ALLNODES
    1,  .00000E+00,-3.60000E+01,  .00000E+00
    2,  .00000E+00,-2.85000E+01,  .00000E+00
    3,  .00000E+00,-2.10000E+01,  .00000E+00
    4,  .00000E+00,-1.35000E+01,  .00000E+00
    6, 6.00000E+00,-3.60000E+01,  .00000E+00
    8, 6.00000E+00,-2.10000E+01,  .00000E+00
   11, 1.20000E+01,-3.60000E+01,  .00000E+00
   12, 1.20000E+01,-2.85000E+01,  .00000E+00
   13, 1.20000E+01,-2.10000E+01,  .00000E+00
   14, 1.20000E+01,-1.35000E+01,  .00000E+00
   16, 1.80000E+01,-3.60000E+01,  .00000E+00
   18, 1.80000E+01,-2.10000E+01,  .00000E+00
   21, 2.40000E+01,-3.60000E+01,  .00000E+00
   22, 2.40000E+01,-2.85000E+01,  .00000E+00
   23, 2.40000E+01,-2.10000E+01,  .00000E+00
   24, 2.40000E+01,-1.35000E+01,  .00000E+00
   26,  .00000E+00,-6.00000E+00,  .00000E+00
   27,  .00000E+00,-3.00000E+00,  .00000E+00
   28,  .00000E+00,  .00000E+00,  .00000E+00
   29, 6.00000E+00,-6.00000E+00,  .00000E+00
   31, 6.00000E+00,  .00000E+00,  .00000E+00
   32, 1.20000E+01,-6.00000E+00,  .00000E+00
   33, 1.20000E+01,-3.00000E+00,  .00000E+00
   34, 1.20000E+01,  .00000E+00,  .00000E+00
   35, 1.80000E+01,-6.00000E+00,  .00000E+00
   37, 1.80000E+01,  .00000E+00,  .00000E+00
   41, 2.40000E+01,-6.00000E+00,  .00000E+00
   42, 2.40000E+01,-3.00000E+00,  .00000E+00
   43, 2.40000E+01,  .00000E+00,  .00000E+00
   44, 3.31710E+01,-6.00000E+00,  .00000E+00
   46, 3.31710E+01,  .00000E+00,  .00000E+00
   47, 4.23420E+01,-6.00000E+00,  .00000E+00
   48, 4.23420E+01,-3.00000E+00,  .00000E+00
   49, 4.23420E+01,  .00000E+00,  .00000E+00
   50, 5.15131E+01,-6.00000E+00,  .00000E+00
   52, 5.15131E+01,  .00000E+00,  .00000E+00
   53, 6.06842E+01,-6.00000E+00,  .00000E+00
   54, 6.06842E+01,-3.00000E+00,  .00000E+00
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   56, 6.98552E+01,-6.00000E+00,  .00000E+00
   58, 6.98552E+01,  .00000E+00,  .00000E+00
   59, 7.90263E+01,-6.00000E+00,  .00000E+00
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   61, 7.90263E+01,  .00000E+00,  .00000E+00
   62, 8.81973E+01,-6.00000E+00,  .00000E+00
   64, 8.81973E+01,  .00000E+00,  .00000E+00
   65, 9.73684E+01,-6.00000E+00,  .00000E+00
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   68, 1.06539E+02,-6.00000E+00,  .00000E+00
   70, 1.06539E+02,  .00000E+00,  .00000E+00
   71, 1.15711E+02,-6.00000E+00,  .00000E+00
   72, 1.15711E+02,-3.00000E+00,  .00000E+00
   73, 1.15711E+02,  .00000E+00,  .00000E+00
   74, 1.24882E+02,-6.00000E+00,  .00000E+00
   76, 1.24882E+02,  .00000E+00,  .00000E+00
   77, 1.34053E+02,-6.00000E+00,  .00000E+00
   78, 1.34053E+02,-3.00000E+00,  .00000E+00
   79, 1.34053E+02,  .00000E+00,  .00000E+00
   80, 1.43224E+02,-6.00000E+00,  .00000E+00
   82, 1.43224E+02,  .00000E+00,  .00000E+00
   83, 1.52395E+02,-6.00000E+00,  .00000E+00
   84, 1.52395E+02,-3.00000E+00,  .00000E+00
   85, 1.52395E+02,  .00000E+00,  .00000E+00
   86, 1.61566E+02,-6.00000E+00,  .00000E+00
   88, 1.61566E+02,  .00000E+00,  .00000E+00
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 89, 1.70737E+02,-6.00000E+00,  .00000E+00
 90, 1.70737E+02,-3.00000E+00,  .00000E+00
 91, 1.70737E+02,  .00000E+00,  .00000E+00
 92, 1.79908E+02,-6.00000E+00,  .00000E+00
 94, 1.79908E+02,  .00000E+00,  .00000E+00
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128, 2.89961E+02,-6.00000E+00,  .00000E+00
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134, 3.08303E+02,-6.00000E+00,  .00000E+00
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146, 3.44987E+02,-6.00000E+00,  .00000E+00
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161, 3.83000E+02,-6.00000E+00,  .00000E+00
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165, 3.93500E+02,-3.00000E+00,  .00000E+00
167, 3.83000E+02,-1.05000E+01,  .00000E+00
172, 3.93500E+02,-1.05000E+01,  .00000E+00
174, 3.93500E+02,-1.50000E+01,  .00000E+00
175, 4.04000E+02,-1.95000E+01,  .00000E+00
182, 3.93500E+02,-6.00000E+00,  .00000E+00
183, 4.04000E+02,-9.00000E+00,  .00000E+00
185, 3.93500E+02,  .00000E+00,  .00000E+00
186, 4.04000E+02,  .00000E+00,  .00000E+00
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190, 4.14500E+02,-1.20000E+01,  .00000E+00
191, 4.14500E+02,-6.00000E+00,  .00000E+00
192, 4.14500E+02,  .00000E+00,  .00000E+00
193, 4.23500E+02,-2.40000E+01,  .00000E+00
195, 4.23500E+02,-1.20000E+01,  .00000E+00
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199, 4.32500E+02,-1.80000E+01,  .00000E+00
200, 4.32500E+02,-1.20000E+01,  .00000E+00
201, 4.32500E+02,-6.00000E+00,  .00000E+00
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730,	1.80172E+02,	5.34448E+02,	.00000E+00
731,	1.80688E+02,	5.38176E+02,	.00000E+00
732,	1.67312E+02,	5.24679E+02,	.00000E+00
734,	1.68243E+02,	5.32134E+02,	.00000E+00

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736, 1.69174E+02, 5.39589E+02,  .00000E+00
738, 1.56415E+02, 5.29821E+02,  .00000E+00
739, 1.56830E+02, 5.33548E+02,  .00000E+00
740, 1.57245E+02, 5.37275E+02,  .00000E+00
756, 1.56000E+02, 5.26094E+02,  .00000E+00
777, 1.57660E+02, 5.41002E+02,  .00000E+00
798, 1.44893E+02, 5.27241E+02,  .00000E+00
800, 1.45664E+02, 5.34701E+02,  .00000E+00
802, 1.46435E+02, 5.42161E+02,  .00000E+00
803, 1.33787E+02, 5.28388E+02,  .00000E+00
804, 1.34143E+02, 5.32121E+02,  .00000E+00
805, 1.34499E+02, 5.35854E+02,  .00000E+00
806, 1.34854E+02, 5.39588E+02,  .00000E+00
807, 1.35210E+02, 5.43321E+02,  .00000E+00
808, 1.22663E+02, 5.29359E+02,  .00000E+00
810, 1.23316E+02, 5.36831E+02,  .00000E+00
812, 1.23969E+02, 5.44302E+02,  .00000E+00
813, 1.11540E+02, 5.30331E+02,  .00000E+00
814, 1.11837E+02, 5.34069E+02,  .00000E+00
815, 1.12133E+02, 5.37807E+02,  .00000E+00
816, 1.12430E+02, 5.41546E+02,  .00000E+00
817, 1.12727E+02, 5.45284E+02,  .00000E+00
818, 1.00403E+02, 5.31126E+02,  .00000E+00
820, 1.00937E+02, 5.38607E+02,  .00000E+00
822, 1.01471E+02, 5.46088E+02,  .00000E+00
823, 8.92660E+01, 5.31921E+02,  .00000E+00
824, 8.95035E+01, 5.35664E+02,  .00000E+00
825, 8.97410E+01, 5.39406E+02,  .00000E+00
826, 8.99785E+01, 5.43148E+02,  .00000E+00
827, 9.02160E+01, 5.46891E+02,  .00000E+00
828, 7.81175E+01, 5.32540E+02,  .00000E+00
830, 7.85332E+01, 5.40028E+02,  .00000E+00
832, 7.89490E+01, 5.47516E+02,  .00000E+00
833, 6.69690E+01, 5.33159E+02,  .00000E+00
834, 6.71473E+01, 5.36905E+02,  .00000E+00
835, 6.73255E+01, 5.40651E+02,  .00000E+00
836, 6.75037E+01, 5.44396E+02,  .00000E+00
837, 6.76820E+01, 5.48142E+02,  .00000E+00
838, 5.58120E+01, 5.33601E+02,  .00000E+00
840, 5.61090E+01, 5.41095E+02,  .00000E+00
842, 5.64060E+01, 5.48589E+02,  .00000E+00
843, 4.46550E+01, 5.34043E+02,  .00000E+00
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845, 4.48925E+01, 5.41539E+02,  .00000E+00
846, 4.50112E+01, 5.45287E+02,  .00000E+00
847, 4.51300E+01, 5.49035E+02,  .00000E+00
848, 3.34925E+01, 5.34308E+02,  .00000E+00
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852, 3.38490E+01, 5.49303E+02,  .00000E+00
853, 2.23300E+01, 5.34573E+02,  .00000E+00
854, 2.23895E+01, 5.38323E+02,  .00000E+00
855, 2.24490E+01, 5.42072E+02,  .00000E+00
856, 2.25085E+01, 5.45821E+02,  .00000E+00
857, 2.25680E+01, 5.49571E+02,  .00000E+00
858, 1.11650E+01, 5.34661E+02,  .00000E+00
860, 1.12245E+01, 5.42161E+02,  .00000E+00
862, 1.12840E+01, 5.49661E+02,  .00000E+00
863,  .00000E+00, 5.34750E+02,  .00000E+00
864,  .00000E+00, 5.38500E+02,  .00000E+00
865,  .00000E+00, 5.42250E+02,  .00000E+00
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867,  .00000E+00, 5.49750E+02,  .00000E+00
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   4  13  23  41  32  18  24  35  14
   5  26  32  34  28  29  33  31  27
   6  32  41  43  34  35  42  37  33
   7  41  47  49  43  44  48  46  42
   8  47  53  55  49  50  54  52  48
   9  53  59  61  55  56  60  58  54
  10  59  65  67  61  62  66  64  60
  11  65  71  73  67  68  72  70  66
  12  71  77  79  73  74  78  76  72
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13	77	83	85	79	80	84	82	78
14	83	89	91	85	86	90	88	84
15	89	95	97	91	92	96	94	90
16	95	101	103	97	98	102	100	96
17	101	107	109	103	104	108	106	102
18	107	113	115	109	110	114	112	108
19	113	119	121	115	116	120	118	114
20	119	125	127	121	122	126	124	120
21	125	131	133	127	128	132	130	126
22	131	137	139	133	134	138	136	132
23	137	143	145	139	140	144	142	138
24	143	149	151	145	146	150	148	144
25	149	158	160	151	152	159	154	150
26	158	182	185	160	161	165	163	159
28	174	188	190	182	175	189	183	172
29	182	190	192	185	183	191	186	165
30	188	198	200	190	193	199	195	189
31	190	200	202	192	195	201	197	191
32	198	213	215	200	203	214	205	199
33	200	215	263	202	205	216	207	201
34	213	223	225	215	218	224	220	214
35	215	225	269	263	220	226	266	216
36	223	238	240	225	228	239	230	224
37	225	240	275	269	230	241	272	226
38	238	248	250	240	243	249	245	239
39	240	250	252	275	245	251	247	241
40	248	258	260	250	253	259	255	249
41	250	260	262	252	255	261	257	251
44	278	308	310	280	293	309	295	279
45	280	310	312	282	295	311	297	281
46	282	312	314	284	297	313	299	283
47	284	314	316	286	299	315	301	285
48	286	316	318	288	301	317	303	287
49	288	318	320	290	303	319	305	289
50	290	320	367	353	305	321	360	291
51	308	338	340	310	323	339	325	309
52	310	340	342	312	325	341	327	311
53	312	342	344	314	327	343	329	313
54	314	344	346	316	329	345	331	315
55	316	346	348	318	331	347	333	317
56	318	348	350	320	333	349	335	319
57	320	350	381	367	335	351	374	321
58	353	367	369	355	360	368	362	354
59	355	369	371	357	362	370	364	356
60	357	371	414	388	364	372	401	358
61	367	381	383	369	374	382	376	368
62	369	383	385	371	376	384	378	370
63	371	385	440	414	378	386	427	372
64	388	414	416	390	401	415	403	389
65	390	416	418	392	403	417	405	391
66	392	418	420	394	405	419	407	393
67	394	420	422	396	407	421	409	395
68	396	422	424	398	409	423	411	397
69	398	424	426	457	411	425	413	399
70	414	440	442	416	427	441	429	415
71	416	442	444	418	429	443	431	417
72	418	444	446	420	431	445	433	419
73	420	446	448	422	433	447	435	421
74	422	448	450	424	435	449	437	423
75	424	450	466	426	437	451	439	425
76	457	426	480	478	413	475	479	473
77	478	480	490	488	479	485	489	483
78	488	490	553	551	489	495	552	493
79	426	466	482	480	439	477	481	475
80	480	482	492	490	481	487	491	485
81	490	492	555	553	491	497	554	495
82	551	553	563	561	552	558	562	556
83	561	563	573	571	562	568	572	566
84	571	573	583	581	572	578	582	576
85	581	583	593	591	532	588	592	586
86	591	593	603	601	592	598	602	596
87	601	603	613	630	602	608	612	606
88	553	555	565	563	554	560	564	558
89	563	565	575	573	564	570	574	568
90	573	575	585	583	574	580	584	578
91	583	585	595	593	584	590	594	588

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  93  603  605  651  613  604  610  614  608
  94  630  613  679  677  612  674  678  672
  95  677  679  689  687  678  684  688  682
  96  687  689  699  697  688  694  698  692
  97  697  699  709  707  698  704  708  702
  98  707  709  719  717  708  714  718  712
  99  717  719  729  727  718  724  728  722
 100  727  729  739  756  728  734  738  732
 101  613  651  681  679  614  676  680  674
 102  679  681  691  689  680  686  690  684
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 104  699  701  711  709  700  706  710  704
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 107  729  731  777  739  730  736  740  734
 108  756  739  805  803  738  800  804  798
 109  803  805  815  813  804  810  814  808
 110  813  815  825  823  814  820  824  818
 111  823  825  835  833  824  830  834  828
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 114  853  855  865  863  854  860  864  858
 115  739  777  807  805  740  802  806  800
 116  805  807  817  815  806  812  816  810
 117  815  817  827  825  816  822  826  820
 118  825  827  837  835  826  832  836  830
 119  835  837  847  845  836  842  846  840
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   43  269  275  338  308  272  276  323  270
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*MATERIAL,NAME=CONC1
*DENSITY
 0.000225
*USER MATERIAL,CONSTANT=6
** BASIC PROPERTIES
**UMA,CRU,EPF,E,NU,ALP,TRE,DLF
3,3.00E+03,0.90E-04,3.10E+06,1.50E-01,0.
*DEPVAR
2
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*MATERIAL,NAME=CONC2
*DENSITY
 0.000225
*USER MATERIAL,CONSTANT=6
** BASIC PROPERTIES
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*DEPVAR
2
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*MATERIAL,NAME=REBAR
*ELASTIC
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*PLASTIC
 49078.
 50328.,0.02313
 66780.,0.05633
 83050.,0.09307
 88144.,0.11103
 89270.,0.11993
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   17   18   19   20   21   22   23   24   25   26   28   29   30   31   32   33
   34   35   36   37   38   39   40   41   44   45   46   47   48   49   50   51
   52   53   54   55   56   57   58   59   60   61   62   63   64   65   66   67
   68   69   70   71   72   73   74   75   76   77   78   79   80   81   82   83
   84   85   86   87   88   89   90   91   92   93   94   95   96   97   98   99
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  1.000E+00
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   27
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  1.00E+00
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**ELEMENT=CAX8R,MATERIAL=CONC2,SECTION=SO
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  1.000E+00
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5,3.10000E-01,6.28319E+00,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
6,3.10000E-01,2.91643E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
6,3.10000E-01,1.88496E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
7,3.10000E-01,1.90804E-01,5.62500E-01
7,3.10000E-01,8.45039E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
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.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
8,3.10000E-01,4.99273E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
8,3.10000E-01,1.01146E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
9,3.10000E-01,1.53506E-01,5.62500E-01
9,3.10000E-01,8.07738E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
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.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
10,3.10000E-01,4.61971E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
10,3.10000E-01,1.73175E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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11,3.10000E-01,7.70436E-01,5.62500E-01
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0.00000E+00,4.58333E-01,0.00000E+00,5.41667E-01
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12,3.10000E-01,1.04621E+01,0.00000E+00
0.00000E+00,4.58333E-01,0.00000E+00,5.41667E-01
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13,3.10000E-01,7.89012E-02,5.62500E-01
13,3.10000E-01,7.33135E-01,5.62500E-01
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13,3.10000E-01,1.19987E+01,0.00000E+00,
0.00000E+00,4.58333E-01,0.00000E+00,5.41667E-01
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14,3.10000E-01,3.87368E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
14,3.10000E-01,1.35353E+01,0.00000E+00,
0.00000E+00,4.58333E-01,0.00000E+00,5.41667E-01
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15,3.10000E-01,4.16005E-02,5.62500E-01
15,3.10000E-01,6.95834E-01,5.62501E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
15,3.10000E-01,1.50719E+01,0.00000E+00,
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0.00000E+00,4.58333E-01,0.00000E+00,5.41667E-01
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16,3.10000E-01,1.01272E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
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17,3.10000E-01,6.58534E-01,5.62500E-01
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17,3.10000E-01,1.10641E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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18,3.10000E-01,3.12766E-01,5.62500E-01
18,3.10000E-01,9.67000E-01,5.62499E-01
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18,3.10000E-01,1.20011E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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19,3.10000E-01,6.21234E-01,5.62499E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
19,3.10000E-01,1.29381E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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20,3.10000E-01,9.29698E-01,5.62500E-01
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21,3.10000E-01,5.83929E-01,5.62501E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
21,3.10000E-01,1.06542E+01,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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22,3.10000E-01,2.38164E-01,5.62500E-01
22,3.10000E-01,8.92399E-01,5.62501E-01
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22,3.10000E-01,1.13282E+01,.00000E+00
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23,3.10000E-01,5.46630E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
23,3.10000E-01,1.20022E+01,.00000E+00
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24,3.10000E-01,8.55095E-01,5.62501E-01
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.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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25,3.10000E-01,5.09327E-01,5.62500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
25,3.10000E-01,1.33501E+01,.00000E+00
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26,3.10000E-01,7.14288E-01,5.62500E-01
26,3.10000E-01,4.04762E-01,2.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
26,4.40000E-01,6.07692E+00,.00000E+00
.00000E+00,4.58333E-01,.00000E+00,5.41667E-01
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3.28359E-01,.00000E+00,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
27,3.10000E-01,9.52381E-01,5.42857E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
27,4.40000E-01,6.07692E+00,.00000E+00
.00000E+00,3.75000E-01,6.71641E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
28,0.31,0.619,0.44
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
28,4.40000E-01,6.41012E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.25000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
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29,3.10000E-01,2.85714E-01,7.05357E-01
29,3.10000E-01,8.57143E-01,7.45536E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
29,4.40000E-01,6.41012E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,5.41667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
30,3.10000E-01,1.38889E-01,4.00000E-01
30,3.10000E-01,8.05556E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
30,4.40000E-01,6.71952E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
31,3.10000E-01,5.00000E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
31,4.40000E-01,6.71952E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
32,3.10000E-01,4.72222E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
32,4.40000E-01,7.00512E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
33,3.10000E-01,1.66667E-01,7.81250E-01
33,3.10000E-01,8.33331E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
33,4.40000E-01,7.00512E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
34,3.10000E-01,2.08333E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
34,4.40000E-01,7.24312E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
34,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
35,3.10000E-01,7.50000E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
35,4.40000E-01,7.24312E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
35,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
36,3.10000E-01,2.08333E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
36,4.40000E-01,7.43352E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
36,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
37,3.10000E-01,7.50003E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
37,4.40000E-01,7.43352E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
37,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
38,3.10000E-01,1.38889E-01,4.00000E-01
38,3.10000E-01,8.05556E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
38,4.40000E-01,7.67152E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
39,3.10000E-01,5.00000E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
39,4.40000E-01,7.67152E+00,.00000E+00
.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
40,3.10000E-01,4.72222E-01,4.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
40,4.40000E-01,7.95712E+00,.00000E+00
.00000E+00,3.33333E-01,.00000E+00,6.66667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
41,3.10000E-01,1.66667E-01,7.81250E-01
41,3.10000E-01,8.33333E-01,7.81250E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
41,4.40000E-01,7.95712E+00,.00000E+00
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.00000E+00,7.29167E-01,.00000E+00,2.70833E-01
42,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
43,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
44,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
44,7.90000E-01,2.50001E-01,8.33326E-02
44,7.90000E-01,2.50001E-01,2.48268E-01
44,7.90000E-01,2.49999E-01,4.13198E-01
44,7.90000E-01,2.49999E-01,5.78129E-01
44,7.90000E-01,2.49999E-01,7.43060E-01
44,7.90000E-01,2.49999E-01,9.07991E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
45,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
45,7.90000E-01,2.49998E-01,7.29221E-02
45,7.90000E-01,2.49998E-01,2.37853E-01
45,7.90000E-01,2.50002E-01,4.02786E-01
45,7.90000E-01,2.50002E-01,5.67717E-01
45,7.90000E-01,2.50002E-01,7.32647E-01
45,7.90000E-01,2.50006E-01,8.97572E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
46,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
46,7.90000E-01,2.49995E-01,6.25107E-02
46,7.90000E-01,2.49995E-01,2.27442E-01
46,7.90000E-01,2.49998E-01,3.92373E-01
46,7.90000E-01,2.49998E-01,5.57301E-01
46,7.90000E-01,2.49998E-01,7.22229E-01
46,7.90000E-01,2.49994E-01,8.87163E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
47,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
47,7.90000E-01,2.50008E-01,5.20793E-02
47,7.90000E-01,2.50008E-01,2.17010E-01
47,7.90000E-01,2.50005E-01,3.81940E-01
47,7.90000E-01,2.50005E-01,5.46872E-01
47,7.90000E-01,2.50005E-01,7.11805E-01
47,7.90000E-01,2.50010E-01,8.76730E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
48,4.40000E-01,7.75209E+00,.00000E+00
1.77083E-01,.00000E+00,8.22920E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
48,7.90000E-01,2.49995E-01,4.16717E-02
48,7.90000E-01,2.49995E-01,2.06601E-01
48,7.90000E-01,2.50006E-01,3.71541E-01
48,7.90000E-01,2.50005E-01,5.36470E-01
48,7.90000E-01,2.50005E-01,7.01399E-01
48,7.90000E-01,2.50016E-01,8.66316E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
49,4.40000E-01,7.75209E+00,.00000E+00
1.77080E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
49,7.90000E-01,2.50006E-01,3.12487E-02
49,7.90000E-01,2.50007E-01,1.96183E-01
49,7.90000E-01,2.49989E-01,3.61098E-01
49,7.90000E-01,2.49990E-01,5.26029E-01
49,7.90000E-01,2.49990E-01,6.90961E-01
49,7.90000E-01,2.49976E-01,8.55909E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
50,4.40000E-01,1.55042E+01,.00000E+00
1.77083E-01,.00000E+00,8.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
50,7.90000E-01,2.49993E-01,2.08447E-02
50,7.90000E-01,2.49993E-01,1.85776E-01
50,7.90000E-01,2.50001E-01,3.50714E-01
50,7.90000E-01,2.49999E-01,5.15641E-01
50,7.90000E-01,2.50001E-01,6.80568E-01
50,7.90000E-01,2.50001E-01,8.45496E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
51,4.40000E-01,7.95587E+00,.00000E+00
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6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
51,7.90000E-01,7.50000E-01,8.15963E-02
51,7.90000E-01,7.50000E-01,2.46530E-01
51,7.90000E-01,7.50001E-01,4.11459E-01
51,7.90000E-01,7.50001E-01,5.76389E-01
51,7.90000E-01,7.50001E-01,7.41320E-01
51,7.90000E-01,7.50003E-01,9.06252E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
52,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
52,7.90000E-01,7.50002E-01,7.11839E-02
52,7.90000E-01,7.50002E-01,2.36115E-01
52,7.90000E-01,7.50001E-01,4.01046E-01
52,7.90000E-01,7.50001E-01,5.65976E-01
52,7.90000E-01,7.50001E-01,7.30906E-01
52,7.90000E-01,7.50000E-01,8.95835E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
53,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
53,7.90000E-01,7.50001E-01,6.07635E-02
53,7.90000E-01,7.50001E-01,2.25693E-01
53,7.90000E-01,7.50001E-01,3.90624E-01
53,7.90000E-01,7.50001E-01,5.55553E-01
53,7.90000E-01,7.50001E-01,7.20484E-01
53,7.90000E-01,7.50002E-01,8.85416E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
54,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
54,7.90000E-01,7.49988E-01,5.03546E-02
54,7.90000E-01,7.49988E-01,2.15284E-01
54,7.90000E-01,7.49995E-01,3.80209E-01
54,7.90000E-01,7.49995E-01,5.45142E-01
54,7.90000E-01,7.49995E-01,7.10075E-01
54,7.90000E-01,7.49994E-01,8.75006E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
55,4.40000E-01,7.95587E+00,.00000E+00
6.77083E-01,.00000E+00,3.22920E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
55,7.90000E-01,7.50015E-01,3.99244E-02
55,7.90000E-01,7.50015E-01,2.04857E-01
55,7.90000E-01,7.50004E-01,3.69802E-01
55,7.90000E-01,7.50003E-01,5.34734E-01
55,7.90000E-01,7.50003E-01,6.99667E-01
55,7.90000E-01,7.49990E-01,8.64588E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
56,4.40000E-01,7.95587E+00,.00000E+00
6.77080E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
56,7.90000E-01,7.49976E-01,2.95101E-02
56,7.90000E-01,7.49976E-01,1.94435E-01
56,7.90000E-01,7.49983E-01,3.59356E-01
56,7.90000E-01,7.49984E-01,5.24287E-01
56,7.90000E-01,7.49987E-01,6.89217E-01
56,7.90000E-01,7.50001E-01,8.54164E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
57,4.40000E-01,1.59117E+01,.00000E+00
6.77083E-01,.00000E+00,3.22917E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
57,7.90000E-01,7.49986E-01,1.90961E-02
57,7.90000E-01,7.49986E-01,1.84023E-01
57,7.90000E-01,7.49991E-01,3.48948E-01
57,7.90000E-01,7.49991E-01,5.13878E-01
57,7.90000E-01,7.49991E-01,6.78810E-01
57,7.90000E-01,7.49997E-01,8.43747E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
58,4.40000E-01,1.55042E+01,.00000E+00
1.77083E-01,.00000E+00,7.97619E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
58,7.90000E-01,2.50782E-01,1.24995E-02
58,7.90000E-01,2.63151E-01,2.10416E-01
58,7.90000E-01,2.66667E-01,4.08332E-01
58,7.90000E-01,2.66667E-01,6.06249E-01
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58,7.90000E-01,2.71726E-01,8.04166E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
59,4.40000E-01,1.54787E+01,.00000E+00
2.02381E-01,.00000E+00,7.63888E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
59,7.90000E-01,2.85863E-01,2.08247E-03
59,7.90000E-01,3.00000E-01,2.00000E-01
59,7.90000E-01,3.07696E-01,3.97920E-01
59,7.90000E-01,3.07696E-01,5.95837E-01
59,7.90000E-01,3.16154E-01,7.93755E-01
59,7.90000E-01,3.32644E-01,9.91669E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
60,4.40000E-01,1.54532E+01,.00000E+00
2.36112E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
60,7.90000E-01,3.49127E-01,1.89587E-01
60,7.90000E-01,3.63633E-01,4.37506E-01
60,7.90000E-01,3.68750E-01,6.87500E-01
60,7.90000E-01,3.93750E-01,9.37500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
61,4.40000E-01,1.59117E+01,.00000E+00
6.77083E-01,.00000E+00,3.69048E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
61,7.90000E-01,7.50679E-01,1.25003E-02
61,7.90000E-01,7.38316E-01,2.10417E-01
61,7.90000E-01,7.34913E-01,4.08333E-01
61,7.90000E-01,7.34920E-01,6.06250E-01
61,7.90000E-01,7.29985E-01,8.04167E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
62,4.40000E-01,1.58353E+01,.00000E+00
6.30952E-01,.00000E+00,4.30551E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
62,7.90000E-01,7.15860E-01,2.08294E-03
62,7.90000E-01,7.01727E-01,2.00000E-01
62,7.90000E-01,6.94190E-01,3.97915E-01
62,7.90000E-01,6.94202E-01,5.95831E-01
62,7.90000E-01,6.85915E-01,7.93746E-01
62,7.90000E-01,6.69434E-01,9.91662E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
63,4.40000E-01,1.57589E+01,.00000E+00
5.69449E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
63,7.90000E-01,6.52949E-01,1.89581E-01
63,7.90000E-01,6.43937E-01,4.37498E-01
63,7.90000E-01,6.32921E-01,6.87500E-01
63,7.90000E-01,6.01248E-01,9.37500E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
64,4.40000E-01,1.54278E+01,.00000E+00
2.83333E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
64,7.90000E-01,4.00000E-01,2.35294E-01
64,7.90000E-01,4.00000E-01,5.49020E-01
64,7.90000E-01,4.00000E-01,8.62745E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
65,4.40000E-01,1.54278E+01,.00000E+00
2.83333E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
65,7.90000E-01,4.00000E-01,1.76471E-01
65,7.90000E-01,4.00000E-01,5.94771E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
66,4.40000E-01,1.54278E+01,.00000E+00
2.83333E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
66,7.90000E-01,4.00000E-01,1.30719E-02
66,7.90000E-01,4.00000E-01,4.31373E-01
66,7.90000E-01,4.00000E-01,8.49673E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
67,4.40000E-01,1.54278E+01,.00000E+00
2.83333E-01,.00000E+00,7.16666E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
67,7.90000E-01,4.00000E-01,2.67974E-01
67,7.90000E-01,3.99994E-01,6.86306E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
68,4.40000E-01,1.54278E+01,.00000E+00
2.83334E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
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68,7.90000E-01,4.00002E-01,1.04593E-01
68,7.90000E-01,3.99989E-01,5.22889E-01
68,7.90000E-01,4.00000E-01,9.41176E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
69,4.40000E-01,1.54278E+01,.00000E+00
2.83333E-01,.00000E+00,7.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
69,7.90000E-01,4.00000E-01,3.59475E-01
69,7.90000E-01,4.00000E-01,7.77778E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
70,4.40000E-01,1.56825E+01,.00000E+00
4.83333E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
70,7.90000E-01,6.00000E-01,2.35294E-01
70,7.90000E-01,6.00000E-01,5.49020E-01
70,7.90000E-01,6.00000E-01,8.62745E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
71,4.40000E-01,1.56825E+01,.00000E+00
4.83333E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
71,7.90000E-01,6.00000E-01,1.76471E-01
71,7.90000E-01,6.00000E-01,5.94771E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
72,4.40000E-01,1.56825E+01,.00000E+00
4.83333E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
72,7.90000E-01,6.00000E-01,1.30719E-02
72,7.90000E-01,6.00000E-01,4.31373E-01
72,7.90000E-01,6.00000E-01,8.49673E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
73,4.40000E-01,1.56825E+01,.00000E+00
4.83333E-01,.00000E+00,5.16665E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
73,7.90000E-01,6.00000E-01,2.67974E-01
73,7.90000E-01,5.99990E-01,6.86249E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
74,4.40000E-01,1.56825E+01,.00000E+00
4.83335E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
74,7.90000E-01,6.00010E-01,1.04553E-01
74,7.90000E-01,5.99990E-01,5.22866E-01
74,7.90000E-01,6.00000E-01,9.41176E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
75,4.40000E-01,1.56825E+01,.00000E+00
4.83333E-01,.00000E+00,5.16667E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
75,7.90000E-01,6.00000E-01,3.59475E-01
75,7.90000E-01,6.00000E-01,7.77778E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
76,3.10000E-01,2.37845E+01,.00000E+00
2.99996E-01,.00000E+00,5.783E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
76,1.56000E+00,4.54227E-01,1.51790E-01
76,1.56000E+00,5.15157E-01,6.07029E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
76,4.40000E-01,1.18922E+01,0.00000E+00
2.83333E-01,0.00000E+00,7.71520E-01,0.00000E+00
77,3.10000E-01,2.37307E+01,0.00000E+00
4.21651E-01,0.00000E+00,2.88202E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
77,1.56000E+00,5.79862E-01,4.17582E-02
77,1.56000E+00,7.05881E-01,4.30134E-01
77,1.56000E+00,7.80572E-01,7.72318E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
77,4.40000E-01,1.18653E+01,.00000E+00
2.28459E-01,0.00000E+00,8.74135E-01,0.00000E+00
78,3.10000E-01,2.35732E+01,.00000E+00
7.11798E-01,0.00000E+00,1.02361E-05,0.00000E+00
78,3.10000E-01,2.35732E+01,0.00000E+00
1.28551E-02,0.00000E+00,5.14019E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
78,1.56000E+00,9.03630E-01,1.33150E-01
78,1.56000E+00,9.88556E-01,4.47377E-01
78,1.56000E+00,2.28988E-01,2.46000E-01
78,1.56000E+00,4.24395E-01,6.18292E-01
78,1.56000E+00,5.45026E-01,9.56064E-01
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
78,4.40000E-01,1.17866E+01,0.00000E+00
1.25330E-01,0.00000E+00,9.06079E-01,0.00000E+00
78,3.10000E-01,2.35732E+01,.00000E+00
.00000E+00,1.38729E-01,.00000E+00,4.35567E-01
78,3.10000E-01,2.35732E+01,.00000E+00
0.00000E+00,7.86180E-01,5.42640E-01,0.00000E+00
79,4.40000E-01,6.04429E+00,.00000E+00
4.83333E-01,0.00000E+00,4.73427E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
79,1.56000E+00,4.38127E-01,1.04516E-01
79,1.56000E+00,4.52745E-01,4.24561E-01
79,1.56000E+00,4.70343E-01,7.53825E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
80,4.40000E-01,6.03981E+00,.00000E+00
5.26573E-01,0.00000E+00,3.80256E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
80,1.56000E+00,4.89282E-01,6.85475E-02
80,1.56000E+00,5.27398E-01,3.79665E-01
80,1.56000E+00,5.51258E-01,6.78123E-01
80,1.56000E+00,5.81136E-01,9.81772E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
81,4.40000E-01,6.02668E+00,.00000E+00
6.19744E-01,0.00000E+00,2.89720E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
81,1.56000E+00,6.26764E-01,2.80343E-01
81,1.56000E+00,6.39332E-01,5.62929E-01
81,1.56000E+00,6.64604E-01,8.51413E-01
81,1.56000E+00,7.34966E-02,7.61610E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
81,3.10000E-01,2.41067E+01,.00000E+00
5.05867E-01,.00000E+00,.00000E+00,8.61271E-01
81,3.10000E-01,2.41067E+01,.00000E+00
.00000E+00,5.05255E-01,.00000E+00,2.13820E-01
82,3.10000E-01,2.33231E+01,.00000E+00
4.85981E-01,3.22603E-01,0.00000E+00,0.00000E+00
82,3.10000E-01,2.33231E+01,.00000E+00
.00000E+00,6.74535E-01,.00000E+00,9.45848E-01
82,0.31,22.83
0.,0.,0.0256,0.6
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
82,1.56000E+00,7.45347E-01,1.24151E-01
82,1.56000E+00,9.78961E-01,2.63872E-01
82,1.56000E+00,1.00071E-01,6.73031E-02
82,1.56000E+00,3.16654E-01,2.12954E-01
82,1.56000E+00,5.33236E-01,3.58606E-01
82,1.56000E+00,7.74047E-01,5.00870E-01
82,1.56000E+00,1.03038E-01,4.72847E-01
82,1.56000E+00,3.24647E-01,6.16287E-01
82,1.56000E+00,5.78990E-01,7.55160E-01
82,1.56000E+00,8.39642E-01,8.93163E-01
82,1.56000E+00,1.02799E-01,8.78841E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
82,4.40000E-01,1.16615E+01,.00000E+00
9.30290E-02,0.00000E+00,9.50519E-01,0.00000E+00
82,0.31,23.57
0.4574,0.,0.,0.82
82,3.100000E-01,2.33231E+01,0.00000E+00
0.00000E+00,2.56226E-01,0.00000E+00,5.08754E-01
82,3.100000E-01,2.33231E+01,0.00000E+00
0.00000E+00,7.18787E-01,0.00000E+00,5.90641E-03
83,3.10000E-01,2.22817E+01,.00000E+00
9.46438E-01,2.55728E-02,.00000E+00,.00000E+00
83,3.10000E-01,2.22817E+01,.00000E+00
2.34186E-01,3.65631E-01,.00000E+00,.00000E+00
83,3.10000E-01,2.22817E+01,0.00000E+00
0.00000E+00,7.05690E-01,0.00000E+00,7.44402E-01
83,0.31,21.617
0.,0.,0.1235,0.38
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
83,1.56000E+00,3.58601E-01,1.48364E-02
83,1.56000E+00,6.26304E-01,1.49874E-01
83,1.56000E+00,9.11335E-01,2.82686E-01
83,1.00000E+00,1.24409E-01,2.63859E-01
83,1.00000E+00,5.06124E-01,4.48518E-01
83,1.00000E+00,9.24783E-01,6.28444E-01
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83,1.00000E+00,1.27934E-01,6.46352E-01
83,1.00000E+00,5.16252E-01,8.11098E-01
83,1.00000E+00,9.29104E-01,9.72679E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
83,4.40000E-01,1.11408E+01,.00000E+00
5.04952E-02,.00000E+00,9.39483E-01,.00000E+00
83,3.10000E-01,2.22817E+01,0.00000E+00
0.00000E+00,5.23224E-02,0.00000E+00,7.03679E-01
83,3.10000E-01,2.22817E+01,0.00000E+00
0.00000E+00,4.09446E-01,0.00000E+00,3.17259E-01
83,3.10000E-01,2.22817E+01,0.00000E+00
0.00000E+00,9.55982E-01,2.03998E-01,0.00000E+00
84,3.10000E-01,2.11887E+01,.00000E+00
8.76502E-01,4.43854E-02,.00000E+00,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
84,1.00000E+00,1.10500E-01,8.00004E-02
84,1.00000E+00,6.26387E-01,2.73614E-01
84,1.00000E+00,1.18277E-01,5.13858E-01
84,1.00000E+00,6.45199E-01,6.81237E-01
85,1.00000E+00,1.40547E-01,8.46538E-02
85,1.00000E+00,6.48850E-01,2.25319E-01
85,1.00000E+00,1.46116E-01,6.34810E-01
85,1.00000E+00,6.63131E-01,7.49928E-01
*REBAR,ELEMENT=CONTIUUM,MATERIAL=REBAR,GEOMETRY=SKEW
84,4.40000E-01,1.05943E+01,0.00000E+00
6.34499E-02,0.00000E+00,9.19660E-01,0.00000E+00
84,3.100000E-01,2.11887E+01,0.00000E+00
7.96002E-01,0.00000E+00,0.00000E+00,8.27969E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
85,4.40000E-01,1.00244E+01,.00000E+00
8.39510E-02,.00000E+00,8.98257E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
86,4.40000E-01,1.79964E-01,1.75840E-01
86,4.40000E-01,1.77697E-01,7.05370E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
86,4.40000E-01,9.43373E+00,.00000E+00
1.05667E-01,.00000E+00,8.83766E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
87,4.40000E-01,2.04114E-01,2.23178E-01
87,4.40000E-01,2.09737E-01,7.37735E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
87,4.40000E-01,8.82494E+00,.00000E+00
1.20949E-01,.00000E+00,9.41058E-01,.00000E+00
88,3.10000E-01,2.40234E+01,.00000E+00
2.05153E-05,5.27785E-01,0.00000E+00,0.00000E+00
88,3.10000E-01,2.40234E+01,.00000E+00
0.00000E+00,8.38301E-01,0.0000E+00,6.77397E-01
88,0.31,23.16
0.,0.,0.3413,0.3355
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
88,1.56000E+00,7.96753E-01,6.73541E-02
88,1.56000E+00,1.70858E-01,2.90384E-02
88,1.56000E+00,4.01687E-01,1.64844E-01
88,1.56000E+00,6.32517E-01,3.00650E-01
88,1.56000E+00,8.91171E-01,4.32577E-01
88,1.56000E+00,2.25009E-01,4.01874E-01
88,1.56000E+00,4.72200E-01,5.39707E-01
88,1.56000E+00,7.50167E-01,6.73283E-01
88,1.56000E+00,2.51589E-02,6.41719E-01
88,1.56000E+00,2.82390E-01,7.81703E-01
88,1.56000E+00,5.74212E-01,9.16872E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
88,4.40000E-01,6.00584E+00,0.00000E+00
8.47596E-01,0.00000E+00,1.66029E-01,0.00000E+00
88,3.10000E-1,2.40234E+01,0.00000E+00
0.00000E+00,1.24894E-02,0.00000E+00,7.43774E-01
88,3.10000E-01,2.40234E+01,0.00000E+00
0.00000E+00,4.27262E-01,0.00000E+00,2.81213E-01
88,3.10000E-01,2.40234E+01,0.00000E+00
0.00000E+00,8.00193E-01,7.91015E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
89,1.56000E+00,8.68616E-01,5.21002E-02
89,1.56000E+00,1.08263E-01,3.03024E-02
89,1.56000E+00,4.04238E-01,1.64435E-01
89,1.56000E+00,7.00213E-01,2.98570E-01
89,1.56000E+00,2.18047E-01,4.12724E-01
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89,1.56000E+00,5.31905E-01,5.41824E-01
89,1.56000E+00,8.64132E-01,6.68585E-01
89,1.00000E+00,3.64313E-01,8.05694E-01
89,1.00000E+00,8.51085E-01,9.76854E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
89,3.10000E-01,2.28330E+01,0.00000E+00
6.58689E-01,1.47205E-01,0.00000E+00,0.00000E+00
89,3.10000E-01,2.28330E+01,0.00000E+00
0.00000E+00,4.54393E-01,0.00000E+00,9.74428E-01
89,3.10000E-01,2.28330E+01,0.00000E+00
0.00000E+00,7.61581E-01,0.00000E+00,6.34369E-01
89,0.31,22.28
0.,0.,0.27,0.2943
89,4.40000E-01,5.70826E+00,0.00000E+00
8.33971E-01,0.00000E+00,1.38393E-01,0.00000E+00
89,3.10000E-01,2.28330E+01,0.00000E+00
2.08985E-01,0.00000E+00,0.00000E+00,9.47678E-01
89,3.10000E-01,2.28330E+01,0.00000E+00
0.00000E+00,1.19810E-01,0.00000E+00,5.90554E-01
89,3.10000E-01,2.28330E+01,0.00000E+00
0.00000E+00,7.35259E-01,0.00000E+00,4.40185E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
90,1.00000E+00,3.78390E-01,1.30850E-01
90,1.00000E+00,8.46525E-01,2.86834E-01
90,1.00000E+00,2.00024E-01,4.59745E-01
90,1.00000E+00,8.09878E-01,6.41118E-01
90,1.00000E+00,1.78818E-01,8.47802E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
90,4.40000E-01,5.40412E+00,.00000E+00
8.48684E-01,.00000E+00,1.72724E-01,.00000E+00
90,3.10000E-01,2.16165E+01,0.00000E+00
7.94492E-01,6.80915E-02,0.00000E+00,0.00000E+00
90,3.10000E-01,2.16165E+01,0.00000E+00
0.00000E+00,3.72252E-01,0.00000E+00,9.55613E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
91,1.00000E+00,7.78695E-01,5.79947E-03
91,1.00000E+00,2.02409E-01,3.59294E-01
91,1.00000E+00,7.65483E-01,4.91777E-01
91,1.00000E+00,1.75382E-01,8.65756E-01
91,1.00000E+00,7.34370E-01,9.74627E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
91,4.40000E-01,6.79193E+00,.00000E+00
8.24657E-01,.00000E+00,2.06077E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
92,4.40000E-01,7.21867E-01,4.58245E-01
92,4.40000E-01,6.96556E-01,9.38233E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
92,4.40000E-01,9.55667E+00,.00000E+00
7.90392E-01,.00000E+00,2.71755E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
93,4.40000E-01,6.89676E-01,4.19673E-01
93,4.40000E-01,6.74164E-01,8.96598E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
93,4.40000E-01,8.91574E+00,.00000E+00
7.28245E-01,.00000E+00,2.53308E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
94,4.40000E-01,2.23258E-01,2.64182E-01
94,4.40000E-01,2.01696E-01,8.10491E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
94,4.40000E-01,8.20087E+00,.00000E+00
5.89418E-02,.00000E+00,8.62651E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
95,4.40000E-01,2.11814E-01,3.55100E-01
95,4.40000E-01,2.30269E-01,9.00745E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
95,4.40000E-01,7.62466E+00,.00000E+00
1.39876E-01,.00000E+00,8.88696E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
96,4.40000E-01,2.46347E-01,4.41832E-01
96,4.40000E-01,2.19395E-01,9.79405E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
96,4.40000E-01,7.04437E+00,.00000E+00
1.11304E-01,.00000E+00,8.41826E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
97,4.40000E-01,2.32456E-01,5.16821E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
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97,4.40000E-01,1.29207E+01,.00000E+00
1.60119E-01,.00000E+00,8.76950E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
98,4.40000E-01,2.51942E-01,5.40304E-02
98,4.40000E-01,2.57876E-01,5.88283E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
98,4.40000E-01,1.17459E+01,.00000E+00
1.23050E-01,.00000E+00,8.34972E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
99,4.40000E-01,2.22927E-01,1.18717E-01
99,4.40000E-01,2.19134E-01,6.50478E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
99,4.40000E-01,1.05654E+01,.00000E+00
1.66565E-01,.00000E+00,8.77594E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
100,4.40000E-01,2.31238E-01,1.80964E-01
100,4.40000E-01,2.70802E-01,7.12779E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
100,4.40000E-01,9.37975E+00,.00000E+00
1.22406E-01,.00000E+00,8.40640E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
101,4.40000E-01,6.72487E-01,4.22378E-01
101,4.40000E-01,6.41773E-01,9.55891E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
101,4.40000E-01,8.26632E+00,.00000E+00
7.43020E-01,.00000E+00,2.97131E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
102,4.40000E-01,6.39578E-01,4.90223E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
102,4.40000E-01,7.68260E+00,.00000E+00
7.02869E-01,.00000E+00,2.75402E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
103,4.40000E-01,6.42250E-01,2.42304E-02
103,4.40000E-01,6.39276E-01,5.54920E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
103,4.40000E-01,7.09531E+00,.00000E+00
7.22093E-01,.00000E+00,2.96461E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
104,4.40000E-01,6.07493E-01,8.36128E-02
104,4.40000E-01,6.07696E-01,6.11894E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
104,4.40000E-01,1.30095E+01,.00000E+00
7.00884E-01,.00000E+00,3.72335E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
105,4.40000E-01,6.15234E-01,1.41105E-01
105,4.40000E-01,6.22472E-01,6.67454E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
105,4.40000E-01,1.18226E+01,.00000E+00
6.27665E-01,.00000E+00,3.77799E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
106,4.40000E-01,5.86495E-01,1.91799E-01
106,4.40000E-01,5.75099E-01,7.15551E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
106,4.40000E-01,1.06304E+01,.00000E+00
6.22201E-01,.00000E+00,3.11558E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
107,4.40000E-01,5.80252E-01,2.40092E-01
107,4.40000E-01,6.06397E-01,7.63682E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
107,4.40000E-01,9.43379E+00,.00000E+00
6.86174E-01,.00000E+00,3.40367E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
108,4.40000E-01,2.60461E-01,2.45439E-01
108,4.40000E-01,2.42006E-01,7.84934E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
108,4.40000E-01,8.18987E+00,.00000E+00
1.60056E-01,.00000E+00,8.39083E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HIBAR
109,4.40000E-01,2.38756E-01,3.23335E-01
109,4.40000E-01,2.45665E-01,8.62640E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
109,4.40000E-01,9.36493E+00,.00000E+00
1.61160E-01,0.00000E+00,8.44016E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HIBAR
110,4.40000E-01,2.71517E-01,4.01152E-01
110,4.40000E-01,2.63991E-01,9.39166E-01
```

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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
110,4.40000E-01,1.17115E+01,.00000E+00
1.56083E-01,0.00000E+00,8.69440E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HIBAR
111,4.40000E-01,2.34541E-01,4.76009E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
111,4.40000E-01,9.37279E+00,.00000E+00
1.30560E-01,0.00000E+00,8.47889E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HIBAR
112,4.40000E-01,2.08607E-01,1.31081E-02
112,4.40000E-01,2.07426E-01,5.50348E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
112,4.40000E-01,1.40633E+01,.00000E+00
1.55552208E-01,0.00000E+00,8.72271E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME-HIBAR
113,4.40000E-01,2.10397E-01,5.73388E-02
113,4.40000E-01,2.34643E-01,6.24725E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
113,4.40000E-01,9.37739E+00,.00000E+00
1.27729E-01,0.00000E+00,8.49495E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HIBAR
114,4.40000E-01,2.66483E-01,1.61319E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MIBAR
114,4.40000E-01,9.37849E+00,.00000E+00
1.50364E-01,0.00000E+00,8.40000E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE
115,4.40000E-01,6.06664E-01,2.94051E-01
115,4.40000E-01,5.86532E-01,8.28746E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW
115,4.40000E-01,8.23333E+00,.00000E+00
6.59633E-01,.00000E+00,3.07502E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
116,4.40000E-01,5.83588E-01,3.64048E-01
116,4.40000E-01,5.88910E-01,8.98886E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
116,4.40000E-01,9.41460E+00,.00000E+00
6.91632E-01,.00000E+00,3.16813E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
117,4.40000E-01,6.14789E-01,4.34046E-01
117,4.40000E-01,6.20575E-01,9.68183E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
117,4.40000E-01,1.17737E+01,.00000E+00
6.82697E-01,.00000E+00,3.38234E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
118,4.40000E-01,5.88052E-01,5.01220E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
118,4.40000E-01,9.42253E+00,.00000E+00
6.61766E-01,.00000E+00,3.11689E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
119,4.40000E-01,5.58703E-01,3.44390E-02
119,4.40000E-01,5.53114E-01,5.67582E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
119,4.40000E-01,1.41380E+01,.00000E+00
6.87830E-01,.00000E+00,3.37860E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
120,4.40000E-01,5.52335E-01,1.01040E-01
120,4.40000E-01,5.72096E-01,6.34140E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
120,4.40000E-01,9.42714E+00,.00000E+00
6.62139E-01,.00000E+00,3.16011E-01,.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,SINGLE,NAME=HOBAR
121,4.40000E-01,5.99828E-01,1.67512E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REBAR,GEOMETRY=SKEW,NAME=MOBAR
121,4.40000E-01,9.42834E+00,.00000E+00
6.70560E-01,.00000E+00,3.13330E-01,.00000E+00
********************
*NSET,NSET=UX
    1    2    3    4    26    27    28    863  864  865  866  867  1001
**
**FOLLOWING INPUT FOR LINER, MASSES AND SPRINGS ARE BY HAND**
**
** LINER REMAINS ELASTIC AT 30 PSI INTERNAL PRESSURE **
** LINER PLATE MATERIAL **
*MATERIAL,NAME=STEEL
*DENSITY
0.000734
```

```
*ELASTIC
29.0E6
** NODES FOR STEEL LINER PLATE **
*NODE,NSET=LINER
1001,0.,2.4
1005,24.,2.4
1043,372.5,2.4
1047,414.5,2.4
1051,450.4,2.4
1065,450.4,204.
1071,450.4,276.
1083,450.4,390.75
*NGEN,NSET=LINER
1001,1005,1
1005,1043,1
1043,1047,1
1047,1051,1
1051,1065,1
1065,1071,1
1071,1083,1
** NODES FOR VERTICAL LIQUID MASSES **
** remove mass nodes for static run - prk **
**
** *NODE,NSET=VLM
** 1201,0.,2.5
** 1203,12.,2.5
** *NSET,NSET=BL,GENERATE
** 1005,1051,1
** *NCOPY,CHANGE NUMBER=200,OLD SET=BL,SHIFT,NEW SET=VLM
** 0.,0.1,0.
** 0.,0.,0.,0.,1.,0.,0.
** NODES FOR RADIAL SOIL SPRINGS **
*NODE,NSET=SIDE
1151,511.,-24.
1152,511.,-12.
1153,511.,0.
1154,475.,16.8
1167,475.,204.
1173,466.,276.
1185,466.,390.5
1191,466.,457.125
*NGEN,NSSET=SIDE
1154,1167,1
1167,1173,1
1173,1185,1
1185,1191,1
** NODES FOR SOIL MASSES **
** remove mass nodes for static run - prk **
**
** ** DEFINE NSET OF NODES TO BE COPIED **
** *NSET,NSET=T1,GENERATE
** 555,610,5
** *NSET,NSET=T2,GENERATE
** 676,736,5
** *NSET,NSET=T3,GENERATE
** 802,867,5
** *NCOPY,CHANGE NUMBER=946,OLD SET=T1,SHIFT,NEWSET=MG1
** 0.,1.0,0.
** 0.,0.,0.,0.,1.,0.,0.
** *NODE,NSET=MG1
** 1561,317.00,511.431
** *NCOPY,CHANGE NUMBER=890,OLD SET=T2,SHIFT,NEWSET=MG2
** 0.,1.0,0.
** 0.,0.,0.,0.,1.,0.,0.
** *NODE,NSET=MG2
** 1631,157.66,542.002
** *NCOPY,CHANGE NUMBER=834,OLD SET=T3,SHIFT,NEWSET=MG3
** 0.,1.0,0.
** 0.,0.,0.,0.,1.0.,0.
** LINER ELEMENTS **
*ELEMENT,TYPE=SAX1,ELSET=BLINER
131,1001,1002
*ELGEN,ELSET=BLINER
131,50,1,1
*ELEMENT,TYPE=SAX1,ELSET=WLINER
181,1051,1052
```

```
*ELGEN,ELSET=WLINER
181,32,1,1
** LINER  - BOTTOM AND WALL SECTIONS **
*SHELL SECTION, ELSET=BLINER, MATERIAL=STEEL
** CORROSION = 0.001*(1991-1953) = 0.038" **
0.337,3
*SHELL SECTION, ELSET=WLINER, MATERIAL=STEEL
** THICKNESS INCREASED TO CONSIDER STIFFENERS **
0.389,3
** VERTICAL SOIL SPRING CONSTANTS **
*SPRING,ELSET=VS1
2
1.84E4
*SPRING,ELSET=VS2
2
1.48E5
*SPRING,ELSET=VS3
2
2.45E5
*SPRING,ELSET=VS4
2
3.11E5
*SPRING,ELSET=VS5
2
3.98E5
*SPRING,ELSET=VS6
2
4.84E5
*SPRING,ELSET=VS7
2
5.70E5
*SPRING,ELSET=VS8
2
6.56E5
*SPRING,ELSET=VS9
2
7.42E5
*SPRING,ELSET=VS10
2
8.28E5
*SPRING,ELSET=VS11
2
9.15E5
*SPRING,ELSET=VS12
2
1.00E6
*SPRING,ELSET=VS13
2
1.09E6
*SPRING,ELSET=VS14
2
1.17E6
*SPRING,ELSET=VS15
2
1.26E6
*SPRING,ELSET=VS16
2
1.35E6
*SPRING,ELSET=VS17
2
1.43E6
*SPRING,ELSET=VS18
2
1.52E6
*SPRING,ELSET=VS19
2
1.60E6
*SPRING,ELSET=VS20
2
1.69E6
*SPRING,ELSET=VS21
2
1.78E6
*SPRING,ELSET=VS22
2
1.86E6
```

```
*SPRING,ELSET=VS23
2
1.95E6
*SPRING,ELSET=VS24
2
2.03E6
*SPRING,ELSET=VS25
2
2.12E6
*SPRING,ELSET=VS26
2
2.21E6
*SPRING,ELSET=VS27
2
2.29E6
*SPRING,ELSET=VS28
2
2.38E6
*SPRING,ELSET=VS29
2
2.47E6
*SPRING,ELSET=VS30
2
2.55E6
*SPRING,ELSET=VS31
2
2.64E6
*SPRING,ELSET=VS32
2
2.72E6
*SPRING,ELSET=VS33
2
2.81E6
*SPRING,ELSET=VS34
2
2.90E6
*SPRING,ELSET=VS35
2
2.98E6
*SPRING,ELSET=VS36
2
3.07E6
*SPRING,ELSET=VS37
2
3.15E6
*SPRING,ELSET=VS38
2
3.24E6
*SPRING,ELSET=VS39
2
3.33E6
*SPRING,ELSET=VS40
2
3.41E6
*SPRING,ELSET=VS41
2
3.76E6
*SPRING,ELSET=VS42
2
4.12E6
*SPRING,ELSET=VS43
2
4.23E6
*SPRING,ELSET=VS44
2
4.34E6
*SPRING,ELSET=VS45
2
4.13E6
*SPRING,ELSET=VS46
2
3.90E6
*SPRING,ELSET=VS47
2
3.99E6
*SPRING,ELSET=VS48
```

```
2
4.07E6
*SPRING,ELSET=VS49
2
4.86E6
*SPRING,ELSET=VS50
2
5.68E6
*SPRING,ELSET=VS51
2
5.09E6
*SPRING,ELSET=VS52
2
4.46E6
*SPRING,ELSET=VS53
2
4.54E6
*SPRING,ELSET=VS54
2
4.62E6
*SPRING,ELSET=VS55
2
2.33E6
** LATERAL SOIL SPRING CONSTANTS **
*SPRING,ELSET=RS1
1,1
7.48E5
*SPRING,ELSET=RS2
1,1
1.50E6
*SPRING,ELSET=RS3
1,1
1.80E6
*SPRING,ELSET=RS4
1,1
1.95E6
*SPRING,ELSET=RS5
1,1
1.65E6
*SPRING,ELSET=RS6
1,1
1.50E6
*SPRING,ELSET=RS7
1,1
1.34E6
*SPRING,ELSET=RS8
1,1
1.19E6
*SPRING,ELSET=RS9
1,1
1.29E6
*SPRING,ELSET=RS10
1,1
1.38E6
*SPRING,ELSET=RS11
1,1
6.90E5
** CONSTANTS FOR SPRINGS CONNECTING STEEL LINER AND CONCRETE **
*SPRING,ELSET=LS1
2,2
2.45E7
*SPRING,ELSET=LS2
2,2
6.56E7
*SPRING,ELSET=LS3
2,2
1.60E8
*SPRING,ELSET=LS4
2,2
2.47E8
*SPRING,ELSET=LS5
2,2
3.33E8
*SPRING,ELSET=LS6
2,2
5.68E8
```

```
*SPRING,ELSET=LS7
2,2
6.00E8
** CONSTANTS FOR SPRINGS CONNECTING VERT SOIL MASSES **
** remove mass springs for static run - prk **
**
** ** TENSION STIFFNESS = 10 LBS/IN **
** *SPRING,ELSET=MS1,NONLINEAR
** 2,2
** -9.7E7,-1.0
** 0.,0.
** 10.,1.0
** *SPRING,ELSET=MS2,NONLINEAR
** 2,2
** -4.0E7,-1.0
** 0.,0.
** 10.,1.0
** *SPRING,ELSET=MS3,NONLINEAR
** 2,2
** -1.7E7,-1.0
** 0.,0.
** 10.0,1.0
** *SPRING,ELSET=MS4,NONLINEAR
** 2,2
** -5.6E6,-1.0
** 0.,0.
** 10.,1.0
** VERTICAL SOIL SPRINGS **
*ELEMENT,TYPE=SPRING1,ELSET=VS1
241,1
*ELEMENT,TYPE=SPRING1,ELSET=VS2
242,11
*ELEMENT,TYPE=SPRING1,ELSET=VS3
243,21
*ELEMENT,TYPE=SPRING1,ELSET=VS4
244,44
*ELEMENT,TYPE=SPRING1,ELSET=VS5
245,47
*ELEMENT,TYPE=SPRING1,ELSET=VS6
246,50
*ELEMENT,TYPE=SPRING1,ELSET=VS7
247,53
*ELEMENT,TYPE=SPRING1,ELSET=VS8
248,56
*ELEMENT,TYPE=SPRING1,ELSET=VS9
249,59
*ELEMENT,TYPE=SPRING1,ELSET=VS10
250,62
*ELEMENT,TYPE=SPRING1,ELSET=VS11
251,65
*ELEMENT,TYPE=SPRING1,ELSET=VS12
252,68
*ELEMENT,TYPE=SPRING1,ELSET=VS13
253,71
*ELEMENT,TYPE=SPRING1,ELSET=VS14
254,74
*ELEMENT,TYPE=SPRING1,ELSET=VS15
255,77
*ELEMENT,TYPE=SPRING1,ELSET=VS16
256,80
*ELEMENT,TYPE=SPRING1,ELSET=VS17
257,83
*ELEMENT,TYPE=SPRING1,ELSET=VS18
258,86
*ELEMENT,TYPE=SPRING1,ELSET=VS19
259,89
*ELEMENT,TYPE=SPRING1,ELSET=VS20
260,92
*ELEMENT,TYPE=SPRING1,ELSET=VS21
261,95
*ELEMENT,TYPE=SPRING1,ELSET=VS22
262,98
*ELEMENT,TYPE=SPRING1,ELSET=VS23
263,101
*ELEMENT,TYPE=SPRING1,ELSET=VS24
264,104
```

```
*ELEMENT,TYPE=SPRING1,ELSET=VS25
265,107
*ELEMENT,TYPE=SPRING1,ELSET=VS26
266,110
*ELEMENT,TYPE=SPRING1,ELSET=VS27
267,113
*ELEMENT,TYPE=SPRING1,ELSET=VS28
268,116
*ELEMENT,TYPE=SPRING1,ELSET=VS29
269,119
*ELEMENT,TYPE=SPRING1,ELSET=VS30
271,122
*ELEMENT,TYPE=SPRING1,ELSET=VS31
272,125
*ELEMENT,TYPE=SPRING1,ELSET=VS32
273,128
*ELEMENT,TYPE=SPRING1,ELSET=VS33
274,131
*ELEMENT,TYPE=SPRING1,ELSET=VS34
275,134
*ELEMENT,TYPE=SPRING1,ELSET=VS35
276,137
*ELEMENT,TYPE=SPRING1,ELSET=VS36
277,140
*ELEMENT,TYPE=SPRING1,ELSET=VS37
278,143
*ELEMENT,TYPE=SPRING1,ELSET=VS38
279,146
*ELEMENT,TYPE=SPRING1,ELSET=VS39
280,149
*ELEMENT,TYPE=SPRING1,ELSET=VS40
281,152
*ELEMENT,TYPE=SPRING1,ELSET=VS41
282,158
*ELEMENT,TYPE=SPRING1,ELSET=VS42
283,167
*ELEMENT,TYPE=SPRING1,ELSET=VS43
284,174
*ELEMENT,TYPE=SPRING1,ELSET=VS44
285,175
*ELEMENT,TYPE=SPRING1,ELSET=VS45
286,188
*ELEMENT,TYPE=SPRING1,ELSET=VS46
287,193
*ELEMENT,TYPE=SPRING1,ELSET=VS47
288,198
*ELEMENT,TYPE=SPRING1,ELSET=VS48
289,203
*ELEMENT,TYPE=SPRING1,ELSET=VS49
290,213
*ELEMENT,TYPE=SPRING1,ELSET=VS50
291,223
*ELEMENT,TYPE=SPRING1,ELSET=VS51
292,238
*ELEMENT,TYPE=SPRING1,ELSET=VS52
293,243
*ELEMENT,TYPE=SPRING1,ELSET=VS53
294,248
*ELEMENT,TYPE=SPRING1,ELSET=VS54
295,253
*ELEMENT,TYPE=SPRING1,ELSET=VS55
296,258
** RADIAL SOIL SPRINGS **
*ELEMENT,TYPE=SPRING2,ELSET=RS1
301,1151,258
*ELEMENT,TYPE=SPRING2,ELSET=RS2
302,1152,260
*ELEMENT,TYPE=SPRING2,ELSET=RS3
303,1153,262
*ELEMENT,TYPE=SPRING2,ELSET=RS4
304,1154,339
*ELEMENT,TYPE=SPRING2,ELSET=RS3
305,1155,340
*ELGEN,ELSET=RS3
305,12,1,1
*ELEMENT,TYPE=SPRING2,ELSET=RS5
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317,1167,381
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*ELGEN,ELSET=RS6
318,5,1,1
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*ELEMENT,TYPE=SPRING2,ELSET=RS8
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*ELGEN,ELSET=RS8
324,11,1,1
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335,1185,466
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336,1186,477
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338,1188,487
339,1189,492
340,1190,497
*ELEMENT,TYPE=SPRING2,ELSET=RS11
341,1191,555
** SPRING CONNECTING LINER AND CONCRETE **
*ELEMENT,TYPE=SPRING2,ELSET=LS1
 401,1001,28
402,1002,31
403,1003,34
404,1004,37
405,1005,43
*ELEMENT,TYPE=SPRING2,ELSET=LS2
406,1006,46
407,1007,49
408,1008,52
409,1009,55
410,1010,58
*ELEMENT,TYPE=SPRING2,ELSET=LS3
411,1011,61
412,1012,64
413,1013,67
414,1014,70
415,1015,73
416,1016,76
417,1017,79
418,1018,82
419,1019,85
420,1020,88
421,1021,91
*ELEMENT,TYPE=SPRING2,ELSET=LS4
422,1022,94
423,1023,97
424,1024,100
425,1025,103
426,1026,106
427,1027,109
428,1028,112
429,1029,115
430,1030,118
431,1031,121
*ELEMENT,TYPE=SPRING2,ELSET=LS5
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433,1033,127
434,1034,130
435,1035,133
436,1036,136
437,1037,139
438,1038,142
439,1039,145
440,1040,148
441,1041,151
*ELEMENT,TYPE=SPRING2,ELSET=LS6
442,1042,154
443,1043,160
444,1044,163
445,1045,185
446,1046,186
447,1047,192
448,1048,197
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449,1049,202
450,1050,207
451,1051,263
*ELEMENT,TYPE=SPRING2,ELSET=LS7
452,278,1051
*ELGEN,ELSET=LS7
452,14,1,1
*ELEMENT,TYPE=SPRING2,ELSET=LS7
466,353,1065
*ELGEN,ELSET=LS7
466,6,1,1
*ELEMENT,TYPE=SPRING2,ELSET=LS7
472,388,1071
*ELGEN,ELSET=LS7
472,12,1,1
*ELEMENT,TYPE=SPRING2,ELSET=LS7
484,457,1083
** SPRINGS CONNECTING DOME AND SOIL **
** remove spring elements for static run - prk **
**
** *ELEMENT,TYPE=SPRING2,ELSET=MS
** 501,1501,555
** 513,1561,651
** 514,1566,676
** *ELGEN,ELSET=MS1
** 501,12,5,1
** *ELEMENT,TYPE=SPRING2,ELSET=MS2
** 515,1571,681
** *ELGEN,ELSET=MS2
** 515,12,5,1
** *ELEMENT,TYPE=SPRING2,ELSET=MS3
** 527,1631,777
** 528,1636,802
** *ELGEN,ELSET=MS3
** 528,8,5,1
** *ELEMENT,TYPE=SPRING2,ELSET=MS4
** 536,1676,842
** *ELGEN,ELSET=MS4
** 536,6,5,1
** SPRINGS CONNECTING VERTICAL LIQUID MASSES AND LINER **
** remove springs elements for static run - prk **
**
** *ELEMENT,TYPE=SPRING2,ELSET=LS1
** 543,1001,1201
** 544,1003,1203
** 545,1005,1205
** *ELGEN,ELSET=LS2
** 545,14,1,1
** *ELEMENT,TYPE=SPRING2,ELSET=LS4
** 559,1019,1219
** *ELGEN,ELSET=LS4
** 559,33,1,1
** VERTICAL SOIL MASS **
** remove mass for static run - prk **
**
** *MASS,ELSET=M1
** 2
** 507.
** *MASS,ELSET=M2
** 2
** 971.
** *MASS,ELSET=M3
** 2
** 921.
** *MASS,ELSET=M4
** 2
** 874.
** *MASS,ELSET=M5
** 2
** 827.
** *MASS,ELSET=M6
** 2
** 783.
** *MASS,ELSET=M7
** 2
** 740.
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Centimeter

Inches

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3 of 6

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** *MASS,ELSET=M8
** 2
** 699.
** *MASS,ELSET=M9
** 2
** 658.
** *MASS,ELSET=M10
** 2
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** 335.
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** 33.4
** *MASS,ELSET=M39
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** 22.2
** *MASS,ELSET=M40
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** 11.1
** *MASS,ELSET=M41
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** 2.8
** *MASS,ELSET=M42
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** 5654.
** *MASS,ELSET=M43
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** 2907.
** *MASS,ELSET=M44
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** 2960.
** *MASS,ELSET=M45
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** 1493.
** VERTICAL LIQUID MASSES **
** remove masses for static run - prk **
**
** *MASS,ELEST=LM1
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** 6.5
** *MASS,ELEST=LM2
** 2
** 52.2
** *MASS,ELEST=LM3
** 2
** 86.7
** *MASS,ELEST=LM4
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** 110.
** *MASS,ELEST=LM5
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** 141.
** *MASS,ELEST=LM6
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** 171.
** *MASS,ELEST=LM7
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** 202.
** *MASS,ELEST=LM8
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** *MASS,ELEST=LM9
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** 263.
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** 2
** 324.
** *MASS,ELEST=LM12
** 2
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** 354.
** *MASS,ELEST=LM13
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** *MASS,ELEST=LM14
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** *MASS,ELEST=LM16
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** *MASS,ELEST=LM17
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** 537.
** *MASS,ELEST=LM19
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** 568.
** *MASS,ELEST=LM20
** 2
** 598.
** *MASS,ELEST=LM21
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** 659.
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** 720.
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** *MASS,ELEST=LM41
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** *MASS,ELEST=LM42
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** *MASS,ELEST=LM43
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** 1498.
** *MASS,ELEST=LM44
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** 1538.
** *MASS,ELEST=LM45
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** 1463.
** *MASS,ELEST=LM46
** 2
** 1392.
** *MASS,ELEST=LM47
** 2
** 1411.
** *MASS,ELEST=LM48
** 2
** 1441.
** *MASS,ELEST=LM49
** 2
** 728.
** RADIAL LIQUID MASSES **
*MASS,ELEST=RLM1
1
314.
*MASS,ELEST=RLM2
1
627.
*MASS,ELEST=RLM3
1
575.
*MASS,ELEST=RLM4
1
523.
*MASS,ELEST=RLM5
1
470.
*MASS,ELEST=RLM6
1
417.
*MASS,ELEST=RLM7
1
255.
** VERTICAL SOIL MASSES **
** remove mass elements for static run - prk **
**
** *ELEMENT,TYPE=MASS,ELSET=M1
** 601,1501
** *ELEMENT,TYPE=MASS,ELSET=M2
** 602,1506
** *ELEMENT,TYPE=MASS,ELSET=M3
** 603,1511
** *ELEMENT,TYPE=MASS,ELSET=M4
** 604,1516
** *ELEMENT,TYPE=MASS,ELSET=M5
** 605,1521
** *ELEMENT,TYPE=MASS,ELSET=M6
** 606,1526
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** *ELEMENT,TYPE=MASS,ELSET=M8
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** 609,1541
** *ELEMENT,TYPE=MASS,ELSET=M10
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** 611,1551
** *ELEMENT,TYPE=MASS,ELSET=M12
** 612,1556
** *ELEMENT,TYPE=MASS,ELSET=M13
** 613,1561
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** 620,1596
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** *ELEMENT,TYPE=MASS,ELSET=M22
** 622,1606
** *ELEMENT,TYPE=MASS,ELSET=M23
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** *ELEMENT,TYPE=MASS,ELSET=M42
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** *ELEMENT,TYPE=MASS,ELSET=M43
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** *ELEMENT,TYPE=MASS,ELSET=M44
** 644,257
** *ELEMENT,TYPE=MASS,ELSET=M45
** 645,262
** VERTICAL LIQUID MASSES **
```

```
** remove mass elements for static run - prk **
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** *ELEMENT,TYPE=MASS,ELSET=LM1
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** *ELEMENT,TYPE=MASS,ELSET=LM7
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** 709,1211
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** 710,1212
** *ELEMENT,TYPE=MASS,ELSET=LM11
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** *ELEMENT,TYPE=MASS,ELSET=LM13
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** *ELEMENT,TYPE=MASS, LSET=LM14
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** *ELEMENT,TYPE=MASS,ELSET=LM32
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** *ELEMENT,TYPE=MASS,ELSET=LM35
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** *ELEMENT,TYPE=MASS,ELSET=LM36
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** *ELEMENT,TYPE=MASS,ELSET=LM37
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** 737,1239
** *ELEMENT,TYPE=MASS,ELSET=LM38
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** *ELEMENT,TYPE=MASS,ELSET=LM39
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** *ELEMENT,TYPE=MASS,ELSET=LM40
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** *ELEMENT,TYPE=MASS,ELSET=LM41
** 741,1243
** *ELEMENT,TYPE=MASS, LSET=LM42
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** *ELEMENT,TYPE=MASS,ELSET=LM43
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** *ELEMENT,TYPE=MASS,ELSET=LM44
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** 747,1249
** *ELEMENT,TYPE=MASS,ELSET=LM48
** 748,1250
** *ELEMENT,TYPE=MASS,ELSET=LM49
** 749,1251
** RADIAL LIQUID MASSES **
*ELEMENT,TYPE=MASS1,ELSET=RLM1
801,1051
*ELEMENT,TYPE=MASS1,ELSET=RLM2
802,1052
*ELGEN,ELSET=RLM2
802,13,1,1
*ELEMENT,TYPE=MASS1,ELSET=RLM3
815,1065
*ELEMENT,TYPE=MASS1,ELSET=RLM4
816,1066
*ELGEN,ELSET=RLM4
816,5,1,1
*ELEMENT,TYPE=MASS1,ELSET=RLM5
821,1071
*ELEMENT,TYPE=MASS1,ELSET=RLM6
822,1072
*ELGEN,ELSET=RLM6
822,8,1,1
*ELEMENT,TYPE=MASS1,ELSET=RLM7
830,1080
** NODE SET FOR DISPLACEMENT OUTPUT **
*NSET,NSET=DISP,GENERATE
565,605,20
681,721,20
807,867,20
1001,1051,5
1511,1611,20
1641,1701,20
*NSET,NSET=DISP
28,55,91,127,185,262,282,286,353,388,396,457
** ELEMENT SET FOR GRAVITY LOADING **
*ELSET,ELSET=ALLWT,GENERATE
1,121,1
131,212,1
** remove dome soil mass and vert liquid mass elements for static - prk **
** 601,645,1
** 701,749,1
** ELEMENT SET FOR EXPLOSION PRESSURE **
*ELSET,ELSET=CEP,GENERATE
76,78,1
82,87,1
94,100,1
108,114,1
*ELSET,ELSET=PP
114
** ELEMENT SET FOR HYDROSTATIC PRESSURE **
*ELSET,ELSET=LPRES,GENERATE
181,210,1
** ELEMENT SET FOR CONCRETE TANK **
*ELSET,ELSET=TANK,GENERATE
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1,121,1
*ELSET,ELSET=TDOME,GENERATE
108,121,1
*ELSET,ELSET=TMD,GENERATE
1,107,1
**ELSET FOR UPPER WALL, HAUNCH AND LOWER DOME **
*ELSET,ELSET=WHD,GENERATE
75,84,1
88,90,1
*ELSET,ELSET=WHD
69
** ELEMENT SET FOR FOUNDATION AND LOWER WALL **
*ELSET,ELSET=FW,GENERATE
25,45,1
*ELSET,ELSET=FW
51,52
** ELEMENT SET FOR LINER **
*ELSET,ELSET=LINER
BLINER,WLINER
** ELEMENT SET FOR VERTICAL SOIL SPRINGS **
*ELSET,ELSET=VSOIL,GENERATE
241,295,1
**ELEMENT SET FOR SOIL MASS SPRINGS AND RADIAL SOIL SPRINGS **
*ELSET,ELSET=SMR,GENERATE
301,341,5
501,541,5
558,588,5
*ELSET,ELSET=TL
TANK,LINER
** top dome elements for static run, hp load - prk **
*ELSET,ELSET=DOMESOIL,GENERATE
 88, 93, 1
101,107, 1
115,121, 1
**
** LOAD STEPS **
**
** DEFINE GRAVITY LOAD RATE - time, load% - 12/29/93
*AMPLITUDE,TIME=A,NAME=DEAD
0.,0.,      0.060,0.25,    0.080,0.43,   0.120,0.52
0.200,0.60,   0.400,0.75,   0.600,0.85,  1.000,1.0
**
** DEFINE PRESSURE LOAD RATE - 12/28/93
*AMPLITUDE,TIME=A,NAME=LIVE
0.,0.,   85,0.852,  700,0.933,   1700,1.0
*** REBAR PLOTS ***
*PLOT
tank rebar
15,,9,9,5,1,.1,.1
.3
*PLOT MODE,NODE=NO
*DETAIL,REBAR
*DRAW
*DETAIL,ELSET=WHD,REBAR
*DRAW
*DETAIL,ELSET=FW,REBAR
*DRAW
*DETAIL,ELSET=TDOME,REBAR
*DRAW
*STEP,INC=1000,CYCLE=4
*STATIC,PTOL=1.0E2, DIRECT=NOSTOP
0.005,1.00
*DLOAD,AMPLITUDE=DEAD
ALLWT,GRAV,386.4,0.,-1.,0.
LPRES,HP,-22.29,365.5,2.4
** add vert. liquid wt and dome soil wt for static run - prk **
BLINER,P,-22.29
DOMESOIL,HP2,11.24,633.75,457.125
** LATERAL SOIL RESTRAINT AND SOIL PRESSURE **
** SOIL PRESSURE MODELED BY INITIAL SOIL SPRING DEFORMATION **
*BOUNDARY
UX,1,1,0.
1001,6,6,0.
** remove dome soil and vertical liquid mass restrainsts for static run - prk
**
** MG1,1,1,0.
```

```
** MG2,1,1,0.
** MG3,1,1,0.
** VLM,1,1,0.
** MG1,3,3,0.
** MG2,3,3,0.
** MG3,3,3,0.
1151,1,1,-0.256
1152,1,1,-0.251
1153,1,1,-0.247
1154,1,1,-0.240
1155,1,1,-0.235
1156,1,1,-0.229
1157,1,1,-0.223
1158,1,1,-0.218
1159,1,1,-0.212
1160,1,1,-0.207
1161,1,1,-0.201
1162,1,1,-0.195
1163,1,1,-0.190
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1166,1,1,-0.173
1167,1,1,-0.167
1168,1,1,-0.163
1169,1,1,-0.158
1170,1,1,-0.154
1171,1,1,-0.149
1172,1,1,-0.144
1173,1,1,-0.139
1174,1,1,-0.136
1175,1,1,-0.132
1176,1,1,-0.128
1177,1,1,-0.124
1178,1,1,-0.121
1179,1,1,-0.117
1180,1,1,-0.113
1181,1,1,-0.110
1182,1,1,-0.106
1183,1,1,-0.102
1184,1,1,-0.098
1185,1,1,-0.095
1186,1,1,-0.090
1187,1,1,-0.086
1188,1,1,-0.082
1189,1,1,-0.077
1190,1,1,-0.073
1191,1,1,-0.069
*EL FILE, ELSET=TANK,FREQ=5
SDV
S
E
SINV
LOADS
*EL FILE, ELSET=LINER,FREQ=5
1,2,3
S
E
PE
SINV
LOADS
*NODE FILE, FREQ=5
U
*EL FILE, ELSET=TANK,FREQ=5,REBAR
S
E
PE
*NODE PRINT,FREQUENCY=5,NSET=DISP
U
*EL PRINT,FREQUENCY=5,ELSET=PP
LOADS
*EL PRINT,FREQUENCY=5,ELSET=VSOIL,TOTALS=YES
 S11,E11
*EL PRINT,FREQUENCY=999,ELSET=SMR
S11,E11
*EL PRINT,FREQUENCY=999,ELSET=TMD
S,E
```

```
*EL PRINT,FREQUENCY=5,ELSET=TDOME
S,E
*EL PRINT,FREQUENCY=999,ELSET=TANK,REBAR
S11,E11
*END STEP
** EXPLOSION PRESSURE **
*RESTART,WRITE,FREQUENCY=50
*STEP,INC=2000,CYCLE=3
*STATIC,PTOL=1.0E2,DIRECT=NO STOP
1.0,1700
*DLOAD, AMPLITUDE=LIVE
LINER,P,-13.50
CEP,P4,13.50
*EL FILE,ELSET=TANK,FREQ=5
SDV
S
E
SINV
LOADS
*EL FILE, ELSET=LINER,FREQ=5
1,2,3
S
E
PE
SINV
LOADS
*NODE FILE, FREQ=5
U
*EL FILE, ELSET=TANK,FREQ=5,REBAR
S
E
PE
*NODE PRINT,FREQUENCY=5,NSET=DISP
U
*EL PRINT,FREQUENCY=5,ELSET=PP
LOADS
*EL PRINT,FREQUENCY=5,ELSET=TDOME,REBAR
S11,E11
*EL PRINT,FREQUENCY=30,ELSET=VSOIL,TOTALS=YES
S11
*EL PRINT,FREQUENCY=999,ELSET=SMR
S11,E11
*EL PRINT,FREQUENCY=10,ELSET=TDOME
S,E
*EL PRINT,FREQUENCY=90,ELSET=TMD
S,E
*EL PRINT,FREQUENCY=30,ELSET=TMD,REBAR
S11,E11
*EL PRINT,FREQUENCY=999,ELSET=LINER
S,PRIN1,PRIN2,PRIN3
*END STEP
```

ATTACHMENT 4

FORCE TOLERANCE CONVERGENCE SUMMARY FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Kirch 5/27/94
Date

Checked by: Albert Dyer 5/23/94
Date

Typical output format:

```
1, 12, 3, CONVERGENT, 4.59, -5.19
|   |   |   |          |     |
|   |   |   |          |     └y-direction residual force
|   |   |   |          └x-direction residual force
|   |   |   └ convergent (or NO)
|   |   └iteration number
|   └increment number
└step number
```

GSST1H.sml

```
1, 1, 1, CONVERGENT, 4.443E-08, -2.087E-07
1, 2, 1, CONVERGENT, -3.519E-08, 2.792E-07
1, 3, 1, CONVERGENT, -3.091E-08, -2.215E-07
1, 4, 1, CONVERGENT, 3.487E-08, 2.756E-07
1, 5, 1, CONVERGENT, 3.813E-08, -1.922E-07
1, 6, 1, CONVERGENT, 3.192E-08, -2.448E-07
1, 7, 1, CONVERGENT, -4.061E-08, 2.694E-07
1, 8, 1, CONVERGENT, -7.038E-08, -1.750E-07
1, 9, 1, CONVERGENT, 4.342E-08, -2.302E-07
1, 10, 1, CONVERGENT, 3.328E-08, 2.599E-07
1, 11, 1, NO, 1.008E+04, 1.421E+04
1, 11, 2, NO, 331., -594.
1, 11, 3, NO, -95.9, -277.
1, 11, 4, NO, -43.7, -129.
1, 12, 1, NO, -9.828E+03, -2.533E+04
1, 12, 2, NO, 248., -177.
1, 12, 3, CONVERGENT, 4.59, -5.19
1, 13, 1, NO, 1.810E+04, -2.996E+04
1, 13, 2, NO, 550., -343.
1, 13, 3, CONVERGENT, 11.6, 7.73
1, 14, 1, NO, -1.791E+04, -4.792E+04
1, 14, 2, NO, 364., -495.
1, 14, 3, CONVERGENT, 7.62, -11.3
1, 15, 1, NO, -2.745E+04, -4.055E+04
1, 15, 2, NO, 804., 1.231E+03
1, 15, 3, NO, 114., 244.
1, 15, 4, CONVERGENT, 17.7, 39.8
1, 16, 1, NO, 3.959E+04, -5.204E+04
1, 16, 2, NO, 1.058E+03, -3.998E+03
1, 16, 3, NO, 334., -1.277E+03
1, 16, 4, NO, 109., -409.
1, 17, 1, NO, 1.000E+04, -1.335E+04
1, 17, 2, NO, 141., -167.
1, 17, 3, CONVERGENT, 3.53, -2.19
1, 18, 1, NO, 3.618E+03, -4.447E+03
1, 18, 2, CONVERGENT, 87.9, -54.1
1, 19, 1, NO, 3.130E+03, -2.440E+03
1, 19, 2, CONVERGENT, 78.3, 37.6
1, 20, 1, NO, 3.122E+03, -2.012E+03
1, 20, 2, CONVERGENT, 79.2, 37.6
1, 21, 1, NO, -2.794E+04, 2.583E+04
1, 21, 2, NO, -1.086E+04, 1.014E+04
1, 21, 3, NO, -3.993E+03, 3.716E+03
1, 21, 4, NO, -1.466E+03, 1.362E+03
1, 22, 1, NO, -1.146E+04, 1.019E+04
1, 22, 2, NO, -130., -112.
1, 22, 3, CONVERGENT, 2.79, 1.50
1, 23, 1, NO, 1.774E+04, -1.450E+04
1, 23, 2, NO, 6.617E+03, -5.478E+03
1, 23, 3, NO, 2.447E+03, -2.039E+03
1, 23, 4, NO, 907., -758.
1, 24, 1, NO, 2.388E+04, -1.964E+04
1, 24, 2, NO, -283., -272.
1, 24, 3, CONVERGENT, -3.82, -3.71
1, 25, 1, NO, 5.853E+03, -4.842E+03
1, 25, 2, CONVERGENT, 55.6, -50.2
1, 26, 1, NO, 1.743E+03, -1.445E+03
1, 26, 2, CONVERGENT, 44.2, 20.3
1, 27, 1, NO, -9.797E+03, -6.619E+03
1, 27, 2, NO, -4.118E+03, 2.721E+03
1, 27, 3, NO, -1.600E+03, 1.055E+03
1, 27, 4, NO, -620., 409.
1, 28, 1, NO, -1.233E+04, -8.189E+03
1, 28, 2, NO, -5.039E+03, 3.313E+03
1, 28, 3, NO, -1.964E+03, 1.288E+03
1, 28, 4, NO, -765., 501.
1, 29, 1, NO, -1.247E+04, -8.308E+03
1, 29, 2, NO, -965., -655.
1, 29, 3, CONVERGENT, -7.87, -7.34
1, 30, 1, NO, -2.984E+03, -2.177E+03
1, 30, 2, CONVERGENT, 45.2, 20.2
1, 31, 1, NO, 8.868E+03, -7.337E+03
1, 31, 2, NO, -3.564E+03, -2.944E+03
1, 31, 3, NO, -1.427E+03, -1.177E+03
1, 31, 4, NO, -570., -470.
1, 32, 1, NO, 1.065E+04, -8.853E+03
1, 32, 2, NO, -4.318E+03, -3.565E+03
1, 32, 3, NO, -1.734E+03, -1.431E+03
1, 32, 4, NO, -696., -574.
1, 33, 1, NO, 9.857E+03, -8.236E+03
1, 33, 2, CONVERGENT, -57.5, -55.7
1, 34, 1, NO, 2.508E+03, -2.103E+03
1, 34, 2, CONVERGENT, 48.5, 21.6
1, 35, 1, NO, 1.547E+03, 834.
1, 35, 2, CONVERGENT, 49.3, 21.9
1, 36, 1, NO, -4.498E+03, -3.427E+03
1, 36, 2, NO, -2.062E+03, -1.469E+03
1, 36, 3, NO, -867., -617.
1, 36, 4, NO, -364., -259.
1, 37, 1, NO, -1.059E+04, -7.707E+03
1, 37, 2, NO, -4.591E+03, -3.291E+03
1, 37, 3, NO, -1.936E+03, -1.392E+03
1, 37, 4, NO, -816., -588.
1, 38, 1, NO, -1.081E+04, -7.901E+03
1, 38, 2, NO, -918., -686.
1, 38, 3, CONVERGENT, 4.49, -4.50
1, 39, 1, NO, -2.600E+03, -2.058E+03
1, 39, 2, CONVERGENT, 52.8, 23.8
1, 40, 1, NO, -4.337E+03, -3.461E+03
1, 40, 2, NO, -2.048E+03, -1.514E+03
1, 40, 3, NO. -901., -665.
1, 40, 4, NO, -396., -293.
1, 41, 1, NO, -7.284E+03, -2.822E+04
1, 41, 2, NO, -3.164E+03, -2.339E+03
1, 41, 3, NO, -1.395E+03, -1.031E+03
1, 41, 4, NO, -616., -455.
1, 42, 1, NO, -7.454E+03, -6.415E+03
1, 42, 2, NO, -2.388E+03, -1.770E+03
1, 42, 3, CONVERGENT, 12.1, 14.2
1, 43, 1, NO, -2.306E+03, -1.734E+03
1, 43, 2, CONVERGENT, 40.2, 18.6
1, 44, 1, NO, -4.661E+03, -3.111E+03
1, 44, 2, NO, -208., 197.
1, 44, 3, CONVERGENT, -88.1, 99.3
1, 45, 1, NO, -4.118E+03, 3.888E+03
1, 45, 2, NO, -1.794E+03, 1.998E+03
1, 45, 3, NO, -797., 886.
1, 45, 4, NO, -353., 392.
1, 46, 1, NO, -4.531E+03, 4.641E+03
1, 46, 2, NO, -2.011E+03, 2.100E+03
1, 46, 3, NO, -331., 339.
1, 46, 4, CONVERGENT, -91.2, -78.4
1, 47, 1, NO, -6.877E+03, -5.989E+03
1, 47, 2, NO, -3.218E+03, -2.782E+03
1, 47, 3, NO, -1.501E+03, -1.299E+03
1, 47, 4, NO, -700., -607.
1, 48, 1, NO, -7.132E+03, -6.230E+03
1, 48, 2, NO, -1.290E+03, -1.727E+03
1, 48, 3, NO, -526., -700.
1, 48, 4, NO, -213., -283.
1, 49, 1, NO, -3.024E+03, -4.142E+03
1, 49, 2, NO, -1.290E+03, -1.746E+03
1, 49, 3, NO, -528., -711.
1, 49, 4, NO, -215., -289.
1, 50, 1, NO, -2.223E+03, -3.007E+03
1, 50, 2, CONVERGENT, 46.0, 20.7
1, 51, 1, NO, 1.235E+03, 650.
1, 51, 2, CONVERGENT, 45.1, 20.7
1, 52, 1, NO, 6.156E+03, 3.058E+04
1, 52, 2, NO, -1.853E+03, 1.761E+03
1, 52, 3, NO, -902., 856.
1, 52, 4, NO, -439., 417.
1, 53, 1, NO, -5.610E+03, 7.053E+03
1, 53, 2, NO, -121., 508.
1, 53, 3, NO, -42.5, 177.
1, 53, 4, CONVERGENT, -14.5, 60.0
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1, 54, 1, NO, -1.292E+03, 3.888E+03
1, 54, 2, NO, -371., 1.472E+03
1, 54, 3, NO, -129., 504.
1, 54, 4, NO, -44.2, 172.
1, 55, 1, NO, 1.270E+03, 3.934E+03
1, 55, 2, NO, -375., 1.446E+03
1, 55, 3, NO, -131., 497.
1, 55, 4, NO, -45.0, 170.
1, 56, 1, NO, 1.279E+03, 3.941E+03
1, 56, 2, NO, -385., 1.443E+03
1, 56, 3, NO, -135., 498.
1, 56, 4, NO, -46.4, 171.
1, 57, 1, NO, 1.288E+03, 3.949E+03
1, 57, 2, NO, -397., 1.448E+03
1, 57, 3, NO, -139., 501.
1, 57, 4, NO, -48.2, 173.
1, 58, 1, NO, 1.297E+03, 3.958E+03
1, 58, 2, NO, -410., 1.456E+03
1, 58, 3, NO, -144., 505.
1, 58, 4, NO, -50.0, 175.
1, 59, 1, NO, 1.306E+03, 2.970E+03
1, 59, 2, CONVERGENT, 52.2, 23.7
1, 60, 1, NO, 1.316E+03, -1.078E+03
1, 60, 2, CONVERGENT, 50.6, 23.6
1, 61, 1, NO, 1.324E+03, -1.029E+03
1, 61, 2, NO, 73.4, -279.
1, 61, 3, CONVERGENT, 14.8, -55.9
1, 62, 1, NO, 1.332E+03, -3.350E+03
1, 62, 2, NO, 197., -721.
1, 62, 3, NO, 39.3, -143.
1, 62, 4, CONVERGENT, 7.72, -28.0
1, 63, 1, NO, 1.341E+03, -3.352E+03
1, 63, 2, NO, 201., -723.
1, 63, 3, NO, 40.3, -144.
1, 63, 4, CONVERGENT, 7.93, -28.2
1, 64, 1, NO, 1.350E+03, -3.360E+03
1, 64, 2, NO, 206., -726.
1, 64, 3, NO, 41.3, -145.
1, 64, 4, CONVERGENT, 8.16, -28.5
1, 65, 1, NO, 6.805E+03, -3.209E+04
1, 65, 2, NO, -349., 453.
1, 65, 3, CONVERGENT, 14.9, -34.3
1, 66, 1, NO, 1.631E+03, -7.507E+03
1, 66, 2, NO, 185., -576.
1, 66, 3, NO, 35.1, -120.
1, 66, 4, CONVERGENT, 6.95, -24.0
1, 67, 1, NO, 1.380E+03, 5.230E+03
1, 67, 2, NO, -353., 1.904E+03
1, 67, 3, NO, -123., 677.
1, 67, 4, NO, -43.6, 239.
1, 68, 1, NO, 1.388E+03, 6.372E+03
1, 68, 2, NO, -423., 2.302E+03
1, 68, 3, NO, -150., 819.
1, 68, 4, NO, -53.0, 291.
1, 69, 1, NO, 1.396E+03, 5.450E+03
1, 69, 2, NO, 291., 1.172E+03
1, 69, 3, NO, 64.2, 253.
1, 69, 4, CONVERGENT, 13.9, 54.8
1, 70, 1, NO, 1.405E+03, 4.043E+03
1, 70, 2, NO, 224., 881.
1, 70, 3, NO, 49.3, 191.
1, 70, 4, CONVERGENT, 10.7, 41.4
1, 71, 1, NO, 1.413E+03, 3.736E+03
1, 71, 2, NO, 212., 819.
1, 71, 3, NO, 46.6, 178.
1, 71, 4, CONVERGENT, 10.2, 38.8
1, 72, 1, NO, 1.422E+03, 3.672E+03
1, 72, 2, NO, 212., 808.
1, 72, 3, NO, 46.8, 176.
1, 72, 4, CONVERGENT, 10.2, 38.5
1, 73, 1, NO, 1.431E+03, 3.662E+03
1, 73, 2, NO, 215., 809.
1, 73, 3, NO, 47.6, 177.
1, 73, 4, CONVERGENT, 10.4, 38.8
1, 74, 1, NO, 1.440E+03, 3.665E+03
1, 74, 2, NO, 218., 812.
1, 74, 3, NO, 48.5, 178.
1, 74, 4, CONVERGENT, 10.7, 39.2
1, 75, 1, NO, 1.449E+03, 1.570E+03
1, 75, 2, CONVERGENT, 61.6, 28.2
1, 76, 1, NO, 1.459E+03, 739.
1, 76, 2, CONVERGENT, 62.0, 28.9
1, 77, 1, NO, 1.468E+03, 742.
1, 77, 2, CONVERGENT, 62.6, 29.3
1, 78, 1, NO, 1.478E+03, 746.
1, 78, 2, CONVERGENT, 63.4, 29.7
1, 79, 1, NO, 4.428E+03, 3.716E+03
1, 79, 2, NO, 1.087E+03, 893.
1, 79, 3, NO, 237., 195.
1, 79, 4, CONVERGENT, 51.2, 42.0
1, 80, 1, NO, 5.523E+03, 4.612E+03
1, 80, 2, NO, 1.325E+03, 1.089E+03
1, 80, 3, NO, 289., 237.
1, 80, 4, CONVERGENT, 62.5, 51.3
1, 81, 1, NO, 3.472E+03, 2.909E+03
1, 81, 2, NO, 843., 693.
1, 81, 3, NO, 184., 151.
1, 81, 4, CONVERGENT, 39.8, 32.7
1, 82, 1, NO, 3.480E+03, 2.909E+03
1, 82, 2, NO, 837., 688.
1, 82, 3, NO, 183., 150.
1, 82, 4, CONVERGENT, 39.8, 32.7
1, 83, 1, NO, 3.486E+03, 2.913E+03
1, 83, 2, NO, -2.117E+04, -5.424E+04
1, 83, 3, NO, 339., -620.
1, 83, 4, CONVERGENT, 79.7, -74.4
1, 84, 1, NO, -5.003E+03, -1.234E+04
1, 84, 2, NO, 878., 722.
1, 84, 3, NO, 194., 159.
1, 84, 4, CONVERGENT, 42.3, 34.7
1, 85, 1, NO, 3.495E+03, -2.922E+03
1, 85, 2, NO, 851., 699.
1, 85, 3, NO, 187., 154.
1, 85, 4, CONVERGENT, 40.9, -43.8
1, 86, 1, NO, 3.500E+03, 2.925E+03
1, 86, 2, NO, 847., 696.
1, 86, 3, NO, 186., 153.
1, 86, 4, CONVERGENT, 40.7, -43.8
1, 87, 1, NO, 3.504E+03, 2.929E+03
1, 87, 2, NO, 847., 697.
1, 87, 3, NO, 187., 153.
1, 87, 4, CONVERGENT, 40.9, -44.0
1, 88, 1, NO, 2.562E+03, 2.161E+03
1, 88, 2, NO, 284., -355.
1, 88, 3, NO, 83.6, -121.
1, 88, 4, CONVERGENT, 25.2, -43.9
1, 89, 1, NO, -8.678E+03, 4.517E+04
1, 89, 2, NO, -3.959E+03, 2.584E+04
1, 89, 3, NO, -475., 400.
1, 89, 4, CONVERGENT, -10.3, -20.3
1, 90, 1, NO, -1.586E+03, -8.125E+03
1, 90, 2, NO, 323., -429.
1, 90, 3, NO, 93.9, -114.
1, 90, 4, CONVERGENT, 27.8, -40.5
1, 91, 1, NO, 985., 1.854E+03
1, 91, 2, NO, 303., -377.
1, 91, 3, NO, 89.7, -120.
1, 91, 4, CONVERGENT, 27.1, -44.0
1, 92, 1, NO, 4.193E+03, -2.468E+03
1, 92, 2, NO, 1.043E+03, -626.
1, 92, 3, NO, 246., -148.
1, 92, 4, CONVERGENT, 57.9, -45.0
1, 93, 1, NO, 4.209E+03, -2.475E+03
1, 93, 2, NO, 1.048E+03, -628.
1, 93, 3, NO, 247., -148.
1, 93, 4, CONVERGENT, 58.1, -37.1
1, 94, 1, NO, 4.212E+03, -2.474E+03
1, 94, 2, NO, 1.049E+03, -628.
1, 94, 3, NO, 248., -149.
1, 94, 4, CONVERGENT, 58.3, -34.9
1, 95, 1, NO, 4.215E+03, -2.474E+03
1, 95, 2, NO, 1.051E+03, -629.
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1, 95, 3, NO, 249., -149.
1, 95, 4, CONVERGENT, 58.6, -35.1
1, 96, 1, NO, 4.219E+03, -2.474E+03
1, 96, 2, NO, 1.054E+03, -630.
1, 96, 3, NO, 250., -149.
1, 96, 4, CONVERGENT, 58.9, -35.2
1, 97, 1, NO, 4.222E+03, -2.474E+03
1, 97, 2, NO, 1.056E+03, -631.
1, 97, 3, NO, 251., -150.
1, 97, 4, CONVERGENT, 59.2, -35.4
1, 98, 1, NO, 4.225E+03, -2.474E+03
1, 98, 2, NO, 1.059E+03, -632.
1, 98, 3, NO, 252., -150.
1, 98, 4, CONVERGENT, 59.5, -35.5
1, 99, 1, NO, 4.228E+03, -2.474E+03
1, 99, 2, NO, 1.061E+03, -633.
1, 99, 3, NO, 252., -151.
1, 99, 4, CONVERGENT, 59.8, -35.7
1, 100, 1, NO, 4.232E+03, -2.473E+03
1, 100, 2, NO, 1.063E+03, -634.
1, 100, 3, NO, 253., -151.
1, 100, 4, CONVERGENT, 60.1, -35.9
1, 101, 1, NO, 1.511E+04, 6.022E+04
1, 101, 2, NO, 653., 1.004E+03
1, 101, 3, NO, 57.4, -212.
1, 101, 4, CONVERGENT, 19.0, -70.3
1, 102, 1, NO, 3.658E+03, 1.368E+04
1, 102, 2, NO, 99.7, -369.
1, 102, 3, NO, 33.2, -122.
1, 102, 4, CONVERGENT, 11.0, -40.3
1, 103, 1, NO, 1.169E+03, 3.136E+03
1, 103, 2, NO, 354., -303.
1, 103, 3, CONVERGENT, 92.7, -99.8
1, 104, 1, NO, 3.412E+03, 2.485E+03
1, 104, 2, NO, 948., 691.
1, 104, 3, NO, 245., 178.
1, 104, 4, CONVERGENT, 62.8, 45.8
1, 105, 1, NO, 3.414E+03, 2.503E+03
1, 105, 2, NO, 949., 692.
1, 105, 3, NO, 245., 179.
1, 105, 4, CONVERGENT, 63.0, 45.9
1, 106, 1, NO, 3.419E+03, 2.510E+03
1, 106, 2, NO, 951., 694.
1, 106, 3, NO, 246., 180.
1, 106, 4, CONVERGENT, 63.4, 46.2
1, 107, 1, NO, 3.422E+03, 2.514E+03
1, 107, 2, NO, 954., 695.
1, 107, 3, NO, 247., 180.
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1, 108, 1, NO, 3.425E+03, 2.518E+03
1, 108, 2, NO, 956., 697.
1, 108, 3, NO, 248., 181.
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1, 109, 1, NO, 3.428E+03, 2.521E+03
1, 109, 2, NO, 958., 699.
1, 109, 3, NO, 249., 182.
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1, 110, 2, NO, 985., -706.
1, 110, 3, NO, 277., -184.
1, 110, 4, CONVERGENT, 78.2, -47.7
1, 111, 1, NO, 3.940E+03, -2.094E+03
1, 111, 2, NO, 1.153E+03, 757.
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1, 112, 2, NO, 1.181E+03, 776.
1, 112, 3, NO, 346., 229.
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1, 113, 1, NO, 3.826E+03, 2.511E+03
1, 113, 2, NO, 1.138E+03, 777.
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1, 114, 1, NO, -4.069E+03, -4.058E+03
1, 114, 2, NO, -1.341E+03, -1.337E+03
1, 114, 3, NO, -408., -424.
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1, 115, 1, NO, -4.091E+03, -4.097E+03
1, 115, 2, NO, 1.074E+03, -1.026E+03
1, 115, 3, CONVERGENT, 14.1, -17.4
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1, 116, 2, CONVERGENT, 54.6, 21.8
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1, 149, 1, NO, 1.294E+04, -1.207E+04
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1, 150, 1, NO, 3.002E+03, -2.764E+03
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1, 158, 3, NO, -2.597E+06, 4.799E+03
1, 158, 4, NO, -2.041E+06, 1.950E+04
1, 159, 1, NO, -5.484E+06, 7.260E+04
1, 159, 2, NO, -3.569E+06, 1.361E+05
1, 159, 3, NO, -2.372E+06, 1.625E+05
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1, 160, 1, NO, -2.693E+04, -1.283E+04
1, 160, 2, NO, -791., -560.
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1, 161, 2, NO, 4.002E+06, -8.033E+05
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1, 163, 3, NO, 3.351E+04, 3.104E+04
1, 163, 4, NO, -3.351E+04, -3.104E+04
1, 164, 1, NO, 2.656E+03, -1.571E+03
1, 164, 2, CONVERGENT, 58.9, -33.8
1, 165, 1, NO, 3.311E+04, 3.117E+04
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1, 175, 3, CONVERGENT, 17.4, 24.2
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2, 74, 2, NO, 106., 28.6
2, 74, 3, CONVERGENT, 3.58, 1.08
2, 75, 1, NO, 3.300E+03, 881.
2, 75, 2, NO, 132., 33.7
2, 75, 3, CONVERGENT, 5.94, 1.35
2, 76, 1, NO, 4.399E+03, 975.
2, 76, 2, NO, 194., 43.3
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2, 77, 2, NO, 251., 65.4
2, 77, 3, CONVERGENT, 11.5, 2.96
2, 78, 1, NO, 3.092E+03, -1.317E+03
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2, 79, 1, NO, 3.020E+03, -1.315E+03
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2, 324, 1, NO, 570., 568.
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2, 380, 2, NO, 4.767E+03, -2.908E+03
2, 380, 3, NO, 396., -225.
2, 381, 1, NO, 471., -17.2
2, 381, 2, NO, 128., -5.59
2, 381, 3, CONVERGENT, 29.5, -1.32
2, 382, 1, NO, 308., -17.2
2, 382, 2, CONVERGENT, 93.4, -4.05
2, 383, 1, NO, 359., -17.1
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2, 385, 1, NO, 367., -17.1
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2, 407, 3, NO, 1.436E+03, 63.5
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2, 408, 2, NO, 286., -12.5
2, 408, 3, CONVERGENT, 62.5, -2.83
2, 409, 1, NO, 337., -16.9
2, 409, 2, NO, 104., -4.54
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2, 580, 2, NO, -1.024E+04, -5.587E+03
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2, 1604, 1, NO, 662., -294.
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2, 1605, 3, NO, -184., -142.
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2, 1606, 2, NO, -714., 562.
2, 1606, 3, NO, -295., 195.
2, 1607, 1, NO, 563., -296.
2, 1607, 2, NO, -1.051E+03, 889.
2, 1607, 3, NO, -204., 105.
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2, 1608, 3, NO, -354., 249.
2, 1609, 1, NO, 562., -296.
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2, 1610, 3, NO, -357., 253.
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2, 1612, 1, NO, 579., -304.
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2, 1612, 3, NO, 502., -635.
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2, 1613, 3, NO, 824., -1.039E+03
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2, 1614, 2, NO, -839., -947.
2, 1614, 3, NO, 916., -1.156E+03
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2, 1615, 2, NO, -1.068E+03, 915.
2, 1615, 3, NO, 923., -1.166E+03
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2, 1616, 2, NO, -834., -997.
2, 1616, 3, NO, 941., -1.188E+03
2, 1617, 1, NO, 616., -774.
2, 1617, 2, NO, -1.062E+03, 912.
2, 1617, 3, NO, 930., -1.175E+03
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2, 1618, 3, NO, 943., -1.193E+03
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2, 1620, 3, NO, 944., -1.195E+03
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2, 1622, 3, NO, 945., -1.198E+03
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2, 1694, 1, NO, 572., -300.
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2, 1698, 3, NO, -155., -47.7
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2, 1699, 2, NO, 222., 53.8
2, 1699, 3, NO, -155., -50.0
2, 1700, 1, NO, -337., 65.8
2, 1700, 2, NO, -1.094E+03, -38.8
2, 1700, 3, NO, 860., -444.
step increm iter status resx resy
```

ATTACHMENT 5

DISPLACEMENT INCREMENT SUMMARY FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Kirch 5/27/94
Date

Checked by: Albert Ayer 5/28/94
Date

Typical output format:

```
1, 12, 3, CONVERGENT, 9.122E-03, -9.524E-03
|   |   |   |          |         |
|   |   |   |          |         └y-direction max. displacement incr.
|   |   |   |          └x-direction max. displacement increment
|   |   |   └convergent (or NO)
|   |   └iteration number
|   └increment number
└step number
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GSST1H.sm2

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GSST1H DISPLACEMENT INCREMENTS - PARTIAL FILE

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2,	1325,	3,	NO,	1.441E-03,	1.724E-02
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2,	1376,	3,	NO,	1.461E-03,	1.721E-02
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2, 1484, 3, NO, 1.217E-03, 1.316E-02
2, 1485, 1, NO, 5.511E-05, 5.887E-04
2, 1485, 2, NO, 8.017E-04, 8.661E-03
2, 1485, 3, NO, 1.216E-03, 1.314E-02
2, 1486, 1, NO, 5.510E-05, 5.886E-04
2, 1486, 2, NO, 8.085E-04, 8.729E-03
2, 1486, 3, NO, 1.221E-03, 1.319E-02
2, 1487, 1, NO, 5.507E-05, 5.882E-04
2, 1487, 2, NO, 8.092E-04, 8.736E-03
2, 1487, 3, NO, 1.222E-03, 1.320E-02
2, 1488, 1, NO, 5.506E-05, 5.881E-04
2, 1488, 2, NO, 8.089E-04, 8.733E-03
2, 1488, 3, NO, 1.221E-03, 1.319E-02
2, 1489, 1, NO, 5.506E-05, 5.880E-04
2, 1489, 2, NO, 8.087E-04, 8.730E-03
2, 1489, 3, NO, 1.221E-03, 1.319E-02
2, 1490, 1, NO, 5.506E-05, 5.880E-04
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2, 1492, 3, NO, 1.220E-03, 1.319E-02
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2, 1493, 3, NO, 1.220E-03, 1.319E-02
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2, 1494, 2, NO, 8.086E-04, 8.729E-03
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2, 1495, 2, NO, 8.086E-04, 8.729E-03
2, 1495, 3, NO, 1.221E-03, 1.319E-02
2, 1496, 1, NO, 5.505E-05, 5.879E-04
2, 1496, 2, NO, 8.086E-04, 8.729E-03
2, 1496, 3, NO, 1.221E-03, 1.319E-02
2, 1497, 1, NO, 5.506E-05, 5.879E-04

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2,	1497,	3,	NO,	1.221E-03,	1.319E-02
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2,	1498,	3,	NO,	1.221E-03,	1.319E-02
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2,	1501,	3,	NO,	1.221E-03,	1.319E-02
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2,	1503,	3,	NO,	1.221E-03,	1.319E-02
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2,	1505,	3,	NO,	1.221E-03,	1.319E-02
2,	1506,	1,	NO,	5.507E-05,	5.881E-04
2,	1506,	2,	NO,	8.091E-04,	8.733E-03
2,	1506,	3,	NO,	1.221E-03,	1.319E-02
2,	1507,	1,	NO,	5.507E-05,	5.881E-04
2,	1507,	2,	NO,	8.091E-04,	8.733E-03
2,	1507,	3,	NO,	1.221E-03,	1.319E-02
2,	1508,	1,	NO,	5.507E-05,	5.881E-04
2,	1508,	2,	NO,	8.091E-04,	8.733E-03
2,	1508,	3,	NO,	1.222E-03,	1.319E-02
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2,	1509,	3,	NO,	1.222E-03,	1.319E-02
2,	1510,	1,	NO,	5.507E-05,	5.881E-04
2,	1510,	2,	NO,	8.092E-04,	8.733E-03
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2,	1511,	3,	NO,	1.222E-03,	1.319E-02
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2,	1512,	3,	NO,	1.222E-03,	1.319E-02
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2,	1513,	3,	NO,	1.222E-03,	1.319E-02
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2,	1514,	2,	NO,	8.092E-04,	8.734E-03
2,	1514,	3,	NO,	1.222E-03,	1.319E-02
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2,	1515,	3,	NO,	1.222E-03,	1.319E-02
2,	1516,	1,	NO,	5.508E-05,	5.881E-04
2,	1516,	2,	NO,	8.093E-04,	8.734E-03
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2,	1521,	3,	NO,	1.164E-03,	1.238E-02
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2,	1522,	3,	NO,	1.164E-03,	1.238E-02
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2,	1523,	3,	NO,	1.164E-03,	1.238E-02
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2,	1524,	3,	NO,	1.163E-03,	1.238E-02
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2,	1525,	3,	NO,	1.163E-03,	1.238E-02
2,	1526,	1,	NO,	5.467E-05,	5.911E-04
2,	1526,	2,	NO,	7.562E-04,	8.085E-03
2,	1526,	3,	NO,	1.163E-03,	1.238E-02
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2,	1528,	3,	NO,	1.163E-03,	1.238E-02
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2,	1529,	3,	NO,	1.163E-03,	1.238E-02
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2,	1531,	3,	NO,	1.163E-03,	1.238E-02
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2,	1532,	3,	NO,	1.163E-03,	1.238E-02
2,	1533,	1,	NO,	5.467E-05,	5.911E-04
2,	1533,	2,	NO,	7.563E-04,	8.085E-03
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2,	1537,	1,	NO,	5.508E-05,	5.972E-04
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2,	1538,	3,	NO,	1.207E-03,	1.289E-02
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2, 1548, 3, NO, 1.927E-03, 2.028E-02
2, 1549, 1, NO, 6.137E-05, 6.781E-04
2, 1549, 2, NO, 1.133E-03, 1.198E-02
2, 1549, 3, NO, 1.928E-03, 2.028E-02
2, 1550, 1, NO, 6.137E-05, 6.781E-04
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2, 1551, 3, NO, 1.928E-03, 2.029E-02
2, 1552, 1, NO, 6.137E-05, 6.782E-04
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2, 1552, 3, NO, 1.928E-03, 2.029E-02
2, 1553, 1, NO, 6.138E-05, 6.782E-04
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2, 1553, 3, NO, 1.929E-03, 2.029E-02
2, 1554, 1, NO, 6.138E-05, 6.782E-04
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2, 1554, 3, NO, 1.929E-03, 2.029E-02
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2, 1555, 3, NO, 1.929E-03, 2.029E-02
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2, 1556, 3, NO, 1.929E-03, 2.029E-02
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2, 1557, 3, NO, 1.929E-03, 2.029E-02
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2, 1559, 3, NO, 1.929E-03, 2.029E-02
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2, 1561, 3, NO, 1.930E-03, 2.029E-02
2, 1562, 1, NO, 6.139E-05, 6.783E-04
2, 1562, 2, NO, 1.134E-03, 1.198E-02
2, 1562, 3, NO, 6.907E-03, 6.196E-02
2, 1563, 1, NO, -2.652E-03, 2.238E-02
2, 1563, 2, NO, 1.115E-02, .100
2, 1563, 3, NO, 2.265E-02, .210
2, 1564, 1, NO, 2.962E-04, 3.095E-03
2, 1564, 2, NO, 7.236E-03, 6.917E-02
2, 1564, 3, NO, 1.166E-02, .110
2, 1565, 1, NO, 1.402E-04, 1.406E-03
2, 1565, 2, NO, 3.520E-03, 3.242E-02
2, 1565, 3, NO, 5.541E-03, 5.107E-02
2, 1566, 1, NO, 8.532E-05, 9.103E-04
2, 1566, 2, NO, 2.006E-03, 1.840E-02
2, 1566, 3, NO, 3.204E-03, 2.954E-02
2, 1567, 1, NO, 6.871E-05, 7.439E-04
2, 1567, 2, NO, 1.430E-03, 1.316E-02
2, 1567, 3, NO, 2.347E-03, 2.147E-02
2, 1568, 1, NO, 6.338E-05, 6.834E-04
2, 1568, 2, NO, 1.178E-03, 1.083E-02
2, 1568, 3, NO, 2.015E-03, 1.821E-02
2, 1569, 1, NO, 6.220E-05, 6.648E-04
2, 1569, 2, NO, 1.132E-03, 1.030E-02
2, 1569, 3, NO, 1.934E-03, 1.731E-02
2, 1570, 1, NO, 6.162E-05, 6.568E-04
2, 1570, 2, NO, 1.125E-03, 1.034E-02
2, 1570, 3, NO, 1.912E-03, 1.722E-02
2, 1571, 1, NO, 6.134E-05, 6.535E-04
2, 1571, 2, NO, 1.119E-03, 1.030E-02
2, 1571, 3, NO, 1.900E-03, 1.713E-02
2, 1572, 1, NO, 6.132E-05, 6.525E-04
2, 1572, 2, NO, 1.116E-03, 1.036E-02
2, 1572, 3, NO, 1.897E-03, 1.725E-02
2, 1573, 1, NO, 6.117E-05, 6.527E-04
2, 1573, 2, NO, 1.115E-03, 1.038E-02
2, 1573, 3, NO, 1.894E-03, 1.728E-02
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2, 1574, 3, NO, 1.892E-03, 1.728E-02
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2, 1575, 2, NO, 1.114E-03, 1.038E-02
2, 1575, 3, NO, 1.891E-03, 1.727E-02
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2, 1576, 2, NO, 1.113E-03, 1.038E-02
2, 1576, 3, NO, 1.891E-03, 1.727E-02
2, 1577, 1, NO, 6.113E-05, 6.526E-04
2, 1577, 2, NO, 1.113E-03, 1.038E-02
2, 1577, 3, NO, 1.891E-03, 1.727E-02
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2, 1578, 2, NO, 1.113E-03, 1.038E-02
2, 1578, 3, NO, 1.891E-03, 1.727E-02
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2, 1579, 2, NO, 1.113E-03, 1.038E-02
2, 1579, 3, NO, 1.891E-03, 1.727E-02
2, 1580, 1, NO, 6.099E-05, 6.500E-04
2, 1580, 2, NO, 1.096E-03, 1.019E-02
2, 1580, 3, NO, 1.851E-03, 1.684E-02
2, 1581, 1, NO, 6.076E-05, 6.474E-04
2, 1581, 2, NO, 1.128E-03, 1.044E-02
2, 1581, 3, NO, 1.922E-03, 1.740E-02
2, 1582, 1, NO, 6.148E-05, 6.550E-04
2, 1582, 2, NO, 1.130E-03, 1.046E-02
2, 1582, 3, NO, 1.923E-03, 1.742E-02
2, 1583, 1, NO, 6.147E-05, 6.548E-04
2, 1583, 2, NO, 1.130E-03, 1.046E-02
2, 1583, 3, NO, 1.923E-03, 1.742E-02
2, 1584, 1, NO, 6.147E-05, 6.548E-04
2, 1584, 2, NO, 1.130E-03, 1.046E-02
2, 1584, 3, NO, 1.924E-03, 1.742E-02
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2, 1593, 3, NO, 1.934E-03, 1.757E-02
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2, 1613, 3, NO, 2.354E-03, 2.164E-02
2, 1614, 1, NO, 6.562E-05, 7.084E-04
2, 1614, 2, NO, 1.459E-03, 1.348E-02
2, 1614, 3, NO, 2.454E-03, 2.247E-02
2, 1615, 1, NO, 6.482E-05, 7.052E-04
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2, 1615, 3, NO, 2.355E-03, 2.166E-02
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2, 1616, 3, NO, 2.455E-03, 2.248E-02
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2, 1623, 3, NO, 2.357E-03, 2.167E-02
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2, 1636, 3, NO, 2.457E-03, 2.248E-02
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2, 1637, 3, NO, 2.357E-03, 2.166E-02
2, 1638, 1, NO, 6.564E-05, 7.092E-04
2, 1638, 2, NO, 1.461E-03, 1.349E-02
2, 1638, 3, NO, 2.457E-03, 2.248E-02
2, 1639, 1, NO, 6.482E-05, 7.060E-04
2, 1639, 2, NO, 1.330E-03, 1.245E-02
2, 1639, 3, NO, 2.358E-03, 2.167E-02
2, 1640, 1, NO, 6.565E-05, 7.093E-04
2, 1640, 2, NO, 1.461E-03, 1.349E-02
2, 1640, 3, NO, 2.457E-03, 2.248E-02
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2, 1641, 3, NO, 2.358E-03, 2.167E-02
2, 1642, 1, NO, 6.565E-05, 7.093E-04
2, 1642, 2, NO, 1.461E-03, 1.349E-02
2, 1642, 3, NO, 2.458E-03, 2.249E-02
2, 1643, 1, NO, 6.483E-05, 7.061E-04
2, 1643, 2, NO, 1.334E-03, 1.248E-02
2, 1643, 3, NO, 2.358E-03, 2.160E-02
2, 1644, 1, NO, 6.564E-05, 7.053E-04
2, 1644, 2, NO, 1.464E-03, 1.350E-02
2, 1644, 3, NO, 2.457E-03, 2.241E-02
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2, 1645, 3, NO, 2.427E-03, 2.216E-02
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2, 1646, 2, NO, 1.439E-03, 1.329E-02
2, 1646, 3, NO, 2.415E-03, 2.205E-02
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2, 1647, 2, NO, 1.436E-03, 1.327E-02
2, 1647, 3, NO, 2.411E-03, 2.201E-02
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2, 1653, 3, NO, 2.408E-03, 2.198E-02
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2, 1654, 3, NO, 2.391E-03, 2.174E-02
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2, 1657, 3, NO, 2.338E-03, 2.107E-02
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2, 1658, 3, NO, 2.335E-03, 2.105E-02
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2, 1662, 3, NO, 2.333E-03, 2.103E-02
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2, 1679, 3, NO, 2.336E-03, 2.104E-02
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2, 1680, 2, NO, 1.399E-03, 1.277E-02
2, 1680, 3, NO, 2.336E-03, 2.104E-02
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2, 1681, 3, NO, 2.336E-03, 2.104E-02
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2, 1682, 3, NO, 2.336E-03, 2.104E-02
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2, 1693, 2, NO, 1.249E-03, 1.153E-02
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2, 1698, 1, NO, 6.414E-05, 6.847E-04
2, 1698, 2, NO, 1.376E-03, 1.255E-02
2, 1698, 3, NO, 2.281E-03, 2.053E-02
2, 1699, 1, NO, 6.348E-05, 6.789E-04
2, 1699, 2, NO, 1.253E-03, 1.157E-02
2, 1699, 3, NO, 2.189E-03, 1.975E-02

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2, 1700, 1, NO, 2.172E-05, 1.885E-04
2, 1700, 2, NO, 1.937E-04, 1.389E-03
2, 1700, 3, NO, 4.384E-04, 4.211E-03
step increm iter status resx resy
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ATTACHMENT 6

SPREADSHEET FOR DETERMINATION OF CONVERGENCE INDICATOR FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Fitzl 5/27/94
Date

Checked by: Albert Ay 5/29/94
Date

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
890	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005096		
890	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002923	12.77
890	3	7.26E-04	7.77E-03					
891	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005096		
891	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002923	12.77
891	3	7.26E-04	7.77E-03					
892	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005096		
892	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002923	12.77
892	3	7.26E-04	7.77E-03					
893	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
893	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002173	0.002925	12.77
893	3	7.26E-04	7.77E-03					
894	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
894	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002173	0.002925	12.77
894	3	7.26E-04	7.77E-03					
895	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
895	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002173	0.002925	12.78
895	3	7.26E-04	7.77E-03					
896	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
896	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002924	12.78
896	3	7.26E-04	7.77E-03					
897	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
897	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002924	12.78
897	3	7.26E-04	7.77E-03					
898	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
898	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002924	12.78
898	3	7.26E-04	7.77E-03					
899	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005097		
899	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002924	12.78
899	3	7.26E-04	7.77E-03					
900	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005098		
900	2	5.19E-04	5.61E-03	4.28E-08	4.68E-06	0.002174	0.002924	12.78
900	3	7.26E-04	7.77E-03					
901	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005098		
901	2	5.19E-04	5.61E-03	4.28E-08	4.69E-06	0.002175	0.002923	12.78
901	3	7.26E-04	7.78E-03					
902	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005098		
902	2	5.19E-04	5.61E-03	4.28E-08	4.69E-06	0.002176	0.002922	12.78
902	3	7.26E-04	7.78E-03					
903	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005099		
903	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002923	12.78
903	3	7.26E-04	7.78E-03					
904	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
904	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002175	0.002925	12.78
904	3	7.26E-04	7.78E-03					
905	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
905	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.78
905	3	7.26E-04	7.78E-03					
906	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
906	2	5.19E-04	5.61E-03	4.28E-08	4.69E-06	0.002176	0.002924	12.79
906	3	7.26E-04	7.78E-03					
907	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
907	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.7[illegible]
907	3	7.26E-04	7.78E-03					
908	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
908	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
908	3	7.26E-04	7.78E-03					
909	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
909	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
909	3	7.26E-04	7.78E-03					
910	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
910	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
910	3	7.26E-04	7.78E-03					
911	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
911	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
911	3	7.26E-04	7.78E-03					
912	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
912	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
912	3	7.26E-04	7.78E-03					
913	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
913	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
913	3	7.26E-04	7.78E-03					
914	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
914	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
914	3	7.26E-04	7.78E-03					
915	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
915	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
915	3	7.26E-04	7.78E-03					
916	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
916	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.79
916	3	7.26E-04	7.78E-03					
917	1	5.23E-05	5.33E-04	2.18E-07	2.58E-05	0.005100		
917	2	5.19E-04	5.61E-03	4.29E-08	4.69E-06	0.002176	0.002924	12.80
917	3	7.26E-04	7.78E-03					
918	1	5.31E-05	5.37E-04	2.42E-07	2.85E-05	0.005365		
918	2	5.45E-04	5.88E-03	5.04E-08	5.54E-06	0.002364	0.003002	12.80
918	3	7.69E-04	8.23E-03					
919	1	5.25E-05	5.37E-04	2.45E-07	2.88E-05	0.005392		
919	2	5.47E-04	5.91E-03	5.11E-08	5.59E-06	0.002375	0.003017	12.80
919	3	7.73E-04	8.27E-03					
920	1	5.25E-05	5.37E-04	2.45E-07	2.89E-05	0.005397		
920	2	5.48E-04	5.91E-03	5.13E-08	5.60E-06	0.002377	0.003020	12.80
920	3	7.74E-04	8.28E-03					
921	1	5.26E-05	5.37E-04	2.45E-07	2.89E-05	0.005397		
921	2	5.48E-04	5.91E-03	5.13E-08	5.59E-06	0.002376	0.003021	12.80
921	3	7.75E-04	8.28E-03					
922	1	5.26E-05	5.37E-04	2.46E-07	2.89E-05	0.005396		
922	2	5.48E-04	5.91E-03	5.13E-08	5.58E-06	0.002374	0.003022	12.80
922	3	7.75E-04	8.27E-03					
923	1	5.26E-05	5.37E-04	2.46E-07	2.89E-05	0.005395		
923	2	5.48E-04	5.91E-03	5.13E-08	5.58E-06	0.002373	0.003022	12.80
923	3	7.75E-04	8.27E-03					
924	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005394		
924	2	5.48E-04	5.91E-03	5.13E-08	5.58E-06	0.002373	0.003021	12.80
924	3	7.75E-04	8.27E-03					
925	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005393		
925	2	5.48E-04	5.91E-03	5.13E-08	5.58E-06	0.002373	0.003020	12.80
925	3	7.75E-04	8.27E-03					
926	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005393		
926	2	5.48E-04	5.91E-03	5.13E-08	5.57E-06	0.002372	0.003021	12.80

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
926	3	7.75E-04	8.27E-03					
927	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005392		
927	2	5.48E-04	5.91E-03	5.13E-08	5.57E-06	0.002372	0.003020	12.80
927	3	7.75E-04	8.27E-03					
928	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005392		
928	2	5.48E-04	5.91E-03	5.14E-08	5.58E-06	0.002373	0.003019	12.81
928	3	7.75E-04	8.27E-03					
929	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005393		
929	2	5.48E-04	5.91E-03	5.14E-08	5.58E-06	0.002373	0.003020	12.81
929	3	7.75E-04	8.27E-03					
930	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005394		
930	2	5.48E-04	5.91E-03	5.14E-08	5.57E-06	0.002372	0.003022	12.81
930	3	7.75E-04	8.27E-03					
931	1	5.26E-05	5.37E-04	2.46E-07	2.88E-05	0.005394		
931	2	5.48E-04	5.91E-03	5.92E-08	6.38E-06	0.002538	0.002856	12.81
931	3	7.92E-04	8.43E-03					
932	1	5.28E-05	5.41E-04	2.54E-07	2.97E-05	0.005477		
932	2	5.56E-04	5.99E-03	6.64E-08	7.12E-06	0.002681	0.002795	12.81
932	3	8.14E-04	8.66E-03					
933	1	5.31E-05	5.44E-04	2.60E-07	3.05E-05	0.005547		
933	2	5.63E-04	6.07E-03	6.82E-08	7.31E-06	0.002717	0.002830	12.81
933	3	8.24E-04	8.77E-03					
934	1	5.31E-05	5.44E-04	2.62E-07	3.07E-05	0.005562		
934	2	5.65E-04	6.08E-03	6.87E-08	7.35E-06	0.002724	0.002839	12.81
934	3	8.27E-04	8.79E-03					
935	1	5.31E-05	5.45E-04	2.63E-07	3.07E-05	0.005564		
935	2	5.66E-04	6.09E-03	6.89E-08	7.35E-06	0.002725	0.002839	12.81
935	3	8.28E-04	8.80E-03					
936	1	5.31E-05	5.45E-04	2.63E-07	3.07E-05	0.005564		
936	2	5.66E-04	6.09E-03	6.89E-08	7.35E-06	0.002724	0.002840	12.81
936	3	8.28E-04	8.80E-03					
937	1	5.31E-05	5.45E-04	2.63E-07	3.07E-05	0.005563		
937	2	5.66E-04	6.08E-03	6.89E-08	7.34E-06	0.002723	0.002840	12.81
937	3	8.28E-04	8.79E-03					
938	1	5.31E-05	5.44E-04	2.63E-07	3.07E-05	0.005562		
938	2	5.66E-04	6.08E-03	6.89E-08	7.34E-06	0.002723	0.002840	12.81
938	3	8.28E-04	8.79E-03					
939	1	7.67E-04	1.53E-03	6.08E-06	8.83E-04	0.029809		
939	2	3.23E-03	3.12E-02	1.97E-06	2.28E-04	0.015165	0.014644	12.82
939	3	4.64E-03	4.63E-02					
940	1	7.00E-05	7.85E-04	1.18E-06	1.32E-04	0.011526		
940	2	1.16E-03	1.23E-02	2.78E-07	2.71E-05	0.005237	0.006289	12.82
940	3	1.68E-03	1.75E-02					
941	1	5.64E-05	5.93E-04	4.46E-07	4.76E-05	0.006932		
941	2	7.24E-04	7.49E-03	1.05E-07	9.47E-06	0.003094	0.003838	12.82
941	3	1.05E-03	1.06E-02					
942	1	5.40E-05	5.51E-04	3.20E-07	3.45E-05	0.005899		
942	2	6.20E-04	6.42E-03	7.44E-08	6.70E-06	0.002603	0.003296	12.82
942	3	8.93E-04	9.01E-03					
943	1	5.33E-05	5.42E-04	2.70E-07	2.97E-05	0.005474		
943	2	5.73E-04	5.99E-03	7.27E-08	6.75E-06	0.002612	0.002862	12.82
943	3	8.43E-04	8.59E-03					
944	1	5.33E-05	5.42E-04	2.90E-07	3.23E-05	0.005707		
944	2	5.91E-04	6.22E-03	6.67E-08	6.39E-06	0.002540	0.003167	12.82
944	3	8.50E-04	8.75E-03					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
945	1	5.30E-05	5.41E-04	2.63E-07	2.96E-05	0.005469		
945	2	5.66E-04	5.99E-03	7.00E-08	6.84E-06	0.002629	0.002840	12.82
945	3	8.30E-04	8.60E-03					
946	1	5.32E-05	5.43E-04	2.66E-07	3.03E-05	0.005528		
946	2	5.69E-04	6.05E-03	7.06E-08	7.04E-06	0.002666	0.002861	12.82
946	3	8.34E-04	8.70E-03					
947	1	5.33E-05	5.43E-04	2.66E-07	3.06E-05	0.005553		
947	2	5.69E-04	6.07E-03	7.07E-08	7.14E-06	0.002685	0.002868	12.82
947	3	8.35E-04	8.74E-03					
948	1	5.33E-05	5.44E-04	2.66E-07	3.07E-05	0.005568		
948	2	5.69E-04	6.09E-03	7.06E-08	7.20E-06	0.002697	0.002871	12.82
948	3	8.35E-04	8.77E-03					
949	1	5.33E-05	5.44E-04	2.66E-07	3.08E-05	0.005578		
949	2	5.69E-04	6.10E-03	7.06E-08	7.26E-06	0.002707	0.002871	12.82
949	3	8.35E-04	8.79E-03					
950	1	5.32E-05	5.44E-04	2.66E-07	3.09E-05	0.005586		
950	2	5.69E-04	6.11E-03	7.06E-08	7.29E-06	0.002713	0.002873	12.83
950	3	8.35E-04	8.81E-03					
951	1	5.32E-05	5.44E-04	2.66E-07	3.10E-05	0.005592		
951	2	5.69E-04	6.11E-03	7.05E-08	7.32E-06	0.002719	0.002873	12.83
951	3	8.35E-04	8.82E-03					
952	1	5.33E-05	5.43E-04	2.66E-07	3.08E-05	0.005574		
952	2	5.69E-04	6.09E-03	7.03E-08	7.39E-06	0.002731	0.002843	12.83
952	3	8.35E-04	8.81E-03					
953	1	5.32E-05	5.44E-04	2.66E-07	3.08E-05	0.005578		
953	2	5.69E-04	6.10E-03	7.04E-08	7.41E-06	0.002735	0.002843	12.83
953	3	8.35E-04	8.82E-03					
954	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005580		
954	2	5.69E-04	6.10E-03	7.03E-08	7.42E-06	0.002737	0.002844	12.83
954	3	8.34E-04	8.83E-03					
955	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005582		
955	2	5.69E-04	6.10E-03	7.03E-08	7.43E-06	0.002739	0.002844	12.83
955	3	8.34E-04	8.83E-03					
956	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005584		
956	2	5.69E-04	6.11E-03	7.04E-08	7.43E-06	0.002739	0.002845	12.83
956	3	8.34E-04	8.83E-03					
957	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005585		
957	2	5.69E-04	6.11E-03	7.03E-08	7.44E-06	0.002741	0.002845	12.83
957	3	8.34E-04	8.83E-03					
958	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005586		
958	2	5.69E-04	6.11E-03	7.03E-08	7.44E-06	0.002741	0.002845	12.83
958	3	8.34E-04	8.84E-03					
959	1	5.32E-05	5.45E-04	2.66E-07	3.09E-05	0.005586		
959	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002742	0.002844	12.83
959	3	8.34E-04	8.84E-03					
960	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005587		
960	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002742	0.002845	12.83
960	3	8.34E-04	8.84E-03					
961	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005587		
961	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002743	0.002844	12.83
961	3	8.34E-04	8.84E-03					
962	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005588		
962	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002743	0.002845	12.84
962	3	8.34E-04	8.84E-03					
963	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005588		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
963	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002743	0.002845	12.84
963	3	8.34E-04	8.84E-03					
964	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005588		
964	2	5.69E-04	6.11E-03	7.03E-08	7.46E-06	0.002744	0.002844	12.84
964	3	8.34E-04	8.84E-03					
965	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005588		
965	2	5.69E-04	6.11E-03	7.03E-08	7.46E-06	0.002744	0.002844	12.84
965	3	8.34E-04	8.84E-03					
966	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
966	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002743	0.002846	12.84
966	3	8.34E-04	8.84E-03					
967	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
967	2	5.69E-04	6.11E-03	7.03E-08	7.45E-06	0.002743	0.002846	12.84
967	3	8.34E-04	8.84E-03					
968	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
968	2	5.69E-04	6.11E-03	7.04E-08	7.45E-06	0.002743	0.002846	12.84
968	3	8.35E-04	8.84E-03					
969	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
969	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.84
969	3	8.35E-04	8.84E-03					
970	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
970	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.84
970	3	8.35E-04	8.84E-03					
971	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
971	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.84
971	3	8.35E-04	8.84E-03					
972	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
972	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.84
972	3	8.35E-04	8.84E-03					
973	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
973	2	5.69E-04	6.11E-03	7.03E-08	7.46E-06	0.002744	0.002845	12.85
973	3	8.35E-04	8.84E-03					
974	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
974	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.85
974	3	8.35E-04	8.84E-03					
975	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
975	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.85
975	3	8.35E-04	8.84E-03					
976	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
976	2	5.69E-04	6.11E-03	7.04E-08	7.46E-06	0.002744	0.002845	12.85
976	3	8.35E-04	8.84E-03					
977	1	5.32E-05	5.45E-04	2.66E-07	3.10E-05	0.005589		
977	2	5.69E-04	6.11E-03	9.14E-06	8.06E-04	0.028551	-0.022961	12.85
977	3	3.59E-03	3.45E-02					
978	1	1.16E-04	9.41E-04	4.30E-06	4.98E-04	0.022405		
978	2	2.19E-03	2.33E-02	1.01E-06	1.06E-04	0.010359	0.012046	12.85
978	3	3.20E-03	3.36E-02					
979	1	6.35E-05	6.90E-04	8.18E-07	8.80E-05	0.009424		
979	2	9.68E-04	1.01E-02	1.97E-07	1.83E-05	0.004303	0.005121	12.85
979	3	1.41E-03	1.44E-02					
980	1	5.56E-05	5.73E-04	3.99E-07	4.19E-05	0.006501		
980	2	6.87E-04	7.04E-03	9.46E-08	8.26E-06	0.002890	0.003611	12.85
980	3	9.95E-04	9.92E-03					
981	1	5.38E-05	5.47E-04	3.16E-07	3.37E-05	0.005829		
981	2	6.16E-04	6.35E-03	7.42E-08	6.57E-06	0.002578	0.003251	12.85

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
981	3	8.88E-04	8.91E-03					
982	1	5.34E-05	5.41E-04	2.95E-07	3.22E-05	0.005697		
982	2	5.97E-04	6.21E-03	6.92E-08	6.34E-06	0.002531	0.003166	12.85
982	3	8.60E-04	8.73E-03					
983	1	5.31E-05	5.41E-04	2.69E-07	2.97E-05	0.005476		
983	2	5.72E-04	5.99E-03	7.26E-08	6.87E-06	0.002636	0.002841	12.85
983	3	8.41E-04	8.62E-03					
984	1	5.34E-05	5.42E-04	2.94E-07	3.29E-05	0.005757		
984	2	5.95E-04	6.27E-03	6.76E-08	6.60E-06	0.002582	0.003175	12.86
984	3	8.55E-04	8.84E-03					
985	1	5.32E-05	5.41E-04	2.67E-07	3.03E-05	0.005527		
985	2	5.70E-04	6.04E-03	7.19E-08	7.12E-06	0.002681	0.002845	12.86
985	3	8.38E-04	8.71E-03					
986	1	5.33E-05	5.43E-04	2.93E-07	3.33E-05	0.005798		
986	2	5.94E-04	6.32E-03	6.73E-08	6.79E-06	0.002619	0.003179	12.86
986	3	8.54E-04	8.92E-03					
987	1	5.32E-05	5.41E-04	2.66E-07	3.06E-05	0.005559		
987	2	5.69E-04	6.08E-03	7.17E-08	7.27E-06	0.002709	0.002849	12.86
987	3	8.37E-04	8.77E-03					
988	1	5.33E-05	5.44E-04	2.92E-07	3.36E-05	0.005823		
988	2	5.94E-04	6.34E-03	6.71E-08	6.90E-06	0.002639	0.003184	12.86
988	3	8.53E-04	8.97E-03					
989	1	5.31E-05	5.42E-04	2.66E-07	3.08E-05	0.005577		
989	2	5.69E-04	6.10E-03	7.16E-08	7.35E-06	0.002724	0.002853	12.86
989	3	8.37E-04	8.81E-03					
990	1	5.33E-05	5.44E-04	2.92E-07	3.38E-05	0.005836		
990	2	5.94E-04	6.36E-03	6.70E-08	6.96E-06	0.002651	0.003186	12.86
990	3	8.53E-04	8.99E-03					
991	1	5.31E-05	5.42E-04	2.66E-07	3.10E-05	0.005588		
991	2	5.69E-04	6.11E-03	7.15E-08	7.40E-06	0.002733	0.002855	12.86
991	3	8.36E-04	8.83E-03					
992	1	5.33E-05	5.44E-04	2.92E-07	3.39E-05	0.005844		
992	2	5.94E-04	6.36E-03	6.70E-08	7.00E-06	0.002658	0.003186	12.86
992	3	8.53E-04	9.01E-03					
993	1	5.31E-05	5.42E-04	2.66E-07	3.10E-05	0.005594		
993	2	5.69E-04	6.11E-03	7.14E-08	7.43E-06	0.002738	0.002856	12.86
993	3	8.36E-04	8.84E-03					
994	1	5.33E-05	5.44E-04	2.92E-07	3.39E-05	0.005849		
994	2	5.94E-04	6.37E-03	6.70E-08	7.01E-06	0.002661	0.003188	12.86
994	3	8.52E-04	9.02E-03					
995	1	5.31E-05	5.42E-04	2.66E-07	3.11E-05	0.005597		
995	2	5.69E-04	6.12E-03	7.14E-08	7.44E-06	0.002741	0.002856	12.87
995	3	8.36E-04	8.84E-03					
996	1	5.33E-05	5.44E-04	2.92E-07	3.39E-05	0.005851		
996	2	5.94E-04	6.37E-03	6.70E-08	7.03E-06	0.002664	0.003187	12.87
996	3	8.52E-04	9.02E-03					
997	1	5.31E-05	5.42E-04	2.66E-07	3.11E-05	0.005599		
997	2	5.69E-04	6.12E-03	7.14E-08	7.45E-06	0.002743	0.002856	12.87
997	3	8.36E-04	8.85E-03					
998	1	5.33E-05	5.44E-04	2.92E-07	3.40E-05	0.005853		
998	2	5.94E-04	6.37E-03	6.70E-08	7.03E-06	0.002665	0.003188	12.87
998	3	8.52E-04	9.02E-03					
999	1	5.31E-05	5.42E-04	2.66E-07	3.11E-05	0.005600		
999	2	5.69E-04	6.12E-03	7.14E-08	7.46E-06	0.002744	0.002856	12.87
999	3	8.36E-04	8.85E-03					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1000	1	5.33E-05	5.44E-04	2.92E-07	3.40E-05	0.005854		
1000	2	5.94E-04	6.37E-03	6.70E-08	7.03E-06	0.002665	0.003189	12.87
1000	3	8.52E-04	9.03E-03					
1001	1	5.31E-05	5.42E-04	2.66E-07	3.11E-05	0.005601		
1001	2	5.69E-04	6.12E-03	7.14E-08	7.45E-06	0.002743	0.002858	12.87
1001	3	8.36E-04	8.85E-03					
1002	1	5.33E-05	5.45E-04	2.92E-07	3.37E-05	0.005827		
1002	2	5.94E-04	6.35E-03	6.68E-08	7.11E-06	0.002679	0.003147	12.87
1002	3	8.53E-04	9.01E-03					
1003	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005579		
1003	2	5.69E-04	6.10E-03	7.13E-08	7.52E-06	0.002755	0.002824	12.87
1003	3	8.36E-04	8.84E-03					
1004	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005831		
1004	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002680	0.003150	12.87
1004	3	8.53E-04	9.02E-03					
1005	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005580		
1005	2	5.69E-04	6.10E-03	7.13E-08	7.52E-06	0.002756	0.002824	12.87
1005	3	8.36E-04	8.84E-03					
1006	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005832		
1006	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002680	0.003151	12.88
1006	3	8.53E-04	9.02E-03					
1007	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005581		
1007	2	5.69E-04	6.10E-03	7.13E-08	7.52E-06	0.002756	0.002825	12.88
1007	3	8.36E-04	8.84E-03					
1008	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005832		
1008	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002681	0.003150	12.88
1008	3	8.53E-04	9.02E-03					
1009	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005581		
1009	2	5.69E-04	6.10E-03	7.13E-08	7.52E-06	0.002756	0.002825	12.88
1009	3	8.36E-04	8.84E-03					
1010	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005832		
1010	2	5.94E-04	6.35E-03	6.68E-08	7.13E-06	0.002682	0.003149	12.88
1010	3	8.53E-04	9.02E-03					
1011	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005581		
1011	2	5.69E-04	6.10E-03	7.13E-08	7.53E-06	0.002757	0.002824	12.88
1011	3	8.36E-04	8.84E-03					
1012	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005833		
1012	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002681	0.003151	12.88
1012	3	8.53E-04	9.02E-03					
1013	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005581		
1013	2	5.69E-04	6.10E-03	7.13E-08	7.53E-06	0.002757	0.002824	12.88
1013	3	8.36E-04	8.84E-03					
1014	1	5.33E-05	5.44E-04	2.92E-07	3.37E-05	0.005833		
1014	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002681	0.003151	12.88
1014	3	8.53E-04	9.02E-03					
1015	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005582		
1015	2	5.69E-04	6.10E-03	7.14E-08	7.52E-06	0.002756	0.002826	12.88
1015	3	8.37E-04	8.84E-03					
1016	1	5.33E-05	5.44E-04	2.93E-07	3.37E-05	0.005833		
1016	2	5.94E-04	6.35E-03	6.68E-08	7.12E-06	0.002681	0.003151	12.88
1016	3	8.53E-04	9.02E-03					
1017	1	5.31E-05	5.43E-04	2.66E-07	3.09E-05	0.005582		
1017	2	5.69E-04	6.10E-03	7.14E-08	7.52E-06	0.002756	0.002826	12.88
1017	3	8.37E-04	8.84E-03					
1018	1	5.33E-05	5.44E-04	2.93E-07	3.37E-05	0.005833		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
		radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
increment	iteration	{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1018	2	5.94E-04	6.35E-03	6.68E-08	7.13E-06	0.002682	0.003150	12.89
1018	3	8.53E-04	9.02E-03					
1019	1	5.31E-05	5.43E-04	2.67E-07	3.09E-05	0.005582		
1019	2	5.69E-04	6.10E-03	7.13E-08	7.53E-06	0.002757	0.002825	12.89
1019	3	8.37E-04	8.85E-03					
1020	1	5.33E-05	5.44E-04	2.93E-07	3.37E-05	0.005833		
1020	2	5.94E-04	6.35E-03	6.69E-08	7.13E-06	0.002682	0.003150	12.89
1020	3	8.53E-04	9.02E-03					
1021	1	5.31E-05	5.43E-04	2.67E-07	3.09E-05	0.005582		
1021	2	5.69E-04	6.10E-03	7.14E-08	7.53E-06	0.002757	0.002825	12.89
1021	3	8.37E-04	8.85E-03					
1022	1	5.33E-05	5.44E-04	2.93E-07	3.37E-05	0.005833		
1022	2	5.94E-04	6.35E-03	6.69E-08	7.13E-06	0.002682	0.003150	12.89
1022	3	8.53E-04	9.02E-03					
1023	1	5.31E-05	5.43E-04	2.67E-07	3.09E-05	0.005582		
1023	2	5.69E-04	6.10E-03	7.14E-08	7.53E-06	0.002757	0.002825	12.89
1023	3	8.37E-04	8.85E-03					
1024	1	5.33E-05	5.44E-04	2.93E-07	3.37E-05	0.005833		
1024	2	5.94E-04	6.35E-03	6.69E-08	7.13E-06	0.002682	0.003150	12.89
1024	3	8.53E-04	9.02E-03					
1025	1	5.31E-05	5.43E-04	2.67E-07	3.09E-05	0.005582		
1025	2	5.69E-04	6.10E-03	7.14E-08	7.53E-06	0.002757	0.002825	12.89
1025	3	8.37E-04	8.85E-03					
1026	1	5.33E-05	5.44E-04	2.70E-07	3.42E-05	0.005874		
1026	2	5.73E-04	6.40E-03	6.09E-08	7.77E-06	0.002798	0.003076	12.89
1026	3	8.20E-04	9.18E-03					
1027	1	5.28E-05	5.45E-04	2.46E-07	3.31E-05	0.005771		
1027	2	5.49E-04	6.30E-03	6.64E-08	8.86E-06	0.002988	0.002783	12.89
1027	3	8.07E-04	9.27E-03					
1028	1	5.30E-05	5.49E-04	2.54E-07	3.46E-05	0.005906		
1028	2	5.57E-04	6.43E-03	6.88E-08	9.39E-06	0.003076	0.002830	12.90
1028	3	8.19E-04	9.50E-03					
1029	1	5.30E-05	5.50E-04	2.57E-07	3.53E-05	0.005963		
1029	2	5.60E-04	6.49E-03	6.99E-08	9.63E-06	0.003114	0.002849	12.90
1029	3	8.24E-04	9.60E-03					
1030	1	5.31E-05	5.51E-04	2.58E-07	3.56E-05	0.005989		
1030	2	5.61E-04	6.52E-03	7.04E-08	9.73E-06	0.003131	0.002858	12.90
1030	3	8.26E-04	9.64E-03					
1031	1	5.31E-05	5.51E-04	2.59E-07	3.57E-05	0.005999		
1031	2	5.62E-04	6.53E-03	7.06E-08	9.78E-06	0.003139	0.002860	12.90
1031	3	8.27E-04	9.66E-03					
1032	1	5.31E-05	5.51E-04	2.59E-07	3.58E-05	0.006004		
1032	2	5.62E-04	6.53E-03	7.07E-08	9.81E-06	0.003143	0.002861	12.90
1032	3	8.28E-04	9.67E-03					
1033	1	5.31E-05	5.51E-04	2.59E-07	3.58E-05	0.006007		
1033	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003144	0.002863	12.90
1033	3	8.28E-04	9.67E-03					
1034	1	5.31E-05	5.51E-04	2.59E-07	3.58E-05	0.006008		
1034	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003144	0.002864	12.90
1034	3	8.28E-04	9.67E-03					
1035	1	5.31E-05	5.51E-04	2.59E-07	3.58E-05	0.006008		
1035	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003145	0.002863	12.90
1035	3	8.28E-04	9.67E-03					
1036	1	5.31E-05	5.51E-04	2.59E-07	3.58E-05	0.006008		
1036	2	5.62E-04	6.54E-03	7.08E-08	9.83E-06	0.003146	0.002862	12.90

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of.	disp . inc.	Internal
		radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
increment	iteration	{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^
1036	3	8.28E-04	9.67E-03					
1037	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1037	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003145	0.002864	12.90
1037	3	8.28E-04	9.67E-03					
1038	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1038	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003145	0.002864	12.90
1038	3	8.28E-04	9.67E-03					
1039	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1039	2	5.62E-04	6.54E-03	7.08E-08	9.82E-06	0.003145	0.002864	12.91
1039	3	8.28E-04	9.67E-03					
1040	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1040	2	5.62E-04	6.54E-03	7.09E-08	9.82E-06	0.003145	0.002864	12.91
1040	3	8.28E-04	9.67E-03					
1041	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1041	2	5.62E-04	6.54E-03	7.08E-08	9.83E-06	0.003146	0.002863	12.91
1041	3	8.28E-04	9.67E-03					
1042	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1042	2	5.62E-04	6.54E-03	7.08E-08	9.83E-06	0.003146	0.002863	12.91
1042	3	8.28E-04	9.67E-03					
1043	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1043	2	5.62E-04	6.54E-03	7.08E-08	9.83E-06	0.003146	0.002863	12.91
1043	3	8.28E-04	9.67E-03					
1044	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006009		
1044	2	5.62E-04	6.54E-03	7.08E-08	9.83E-06	0.003146	0.002863	12.91
1044	3	8.28E-04	9.67E-03					
1045	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006010		
1045	2	5.62E-04	6.54E-03	7.09E-08	9.83E-06	0.003146	0.002864	12.9
1045	3	8.28E-04	9.68E-03					
1046	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006011		
1046	2	5.62E-04	6.54E-03	7.09E-08	9.83E-06	0.003147	0.002864	12.91
1046	3	8.29E-04	9.68E-03					
1047	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1047	2	5.62E-04	6.54E-03	7.09E-08	9.83E-06	0.003147	0.002865	12.91
1047	3	8.29E-04	9.68E-03					
1048	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1048	2	5.62E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002864	12.91
1048	3	8.29E-04	9.68E-03					
1049	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1049	2	5.62E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002864	12.91
1049	3	8.29E-04	9.68E-03					
1050	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1050	2	5.62E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002864	12.92
1050	3	8.29E-04	9.68E-03					
1051	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1051	2	5.62E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002864	12.92
1051	3	8.29E-04	9.68E-03					
1052	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1052	2	5.62E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002864	12.92
1052	3	8.29E-04	9.68E-03					
1053	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1053	2	5.62E-04	6.54E-03	7.10E-08	9.85E-06	0.003149	0.002863	12.92
1053	3	8.29E-04	9.68E-03					
1054	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006012		
1054	2	5.62E-04	6.54E-03	7.10E-08	9.85E-06	0.003149	0.002863	12.9
1054	3	8.29E-04	9.68E-03					

HCONV.XLS

increment	iteration	Max. Increment Displ. radial {ux(i)}	vertical {uy(i)}	dx^2 {ux(i)-ux(i+1)}^2	dy^2 {uy(i)-uy(i+1)}^2	Sqrt of: dx^2+dy^2 {sqrt(i)}	disp . inc. change {sqrt(i)-sqrt(i+1)}	Internal Pressure (lbf/in^2)
1055	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1055	2	5.62E-04	6.54E-03	7.10E-08	9.84E-06	0.003148	0.002865	12.92
1055	3	8.29E-04	9.68E-03					
1056	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1056	2	5.62E-04	6.54E-03	7.10E-08	9.84E-06	0.003148	0.002865	12.92
1056	3	8.29E-04	9.68E-03					
1057	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1057	2	5.62E-04	6.54E-03	7.10E-08	9.84E-06	0.003148	0.002865	12.92
1057	3	8.29E-04	9.68E-03					
1058	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1058	2	5.63E-04	6.54E-03	7.09E-08	9.84E-06	0.003148	0.002865	12.92
1058	3	8.29E-04	9.68E-03					
1059	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1059	2	5.63E-04	6.54E-03	7.09E-08	9.85E-06	0.003149	0.002864	12.92
1059	3	8.29E-04	9.68E-03					
1060	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1060	2	5.63E-04	6.54E-03	7.09E-08	9.85E-06	0.003149	0.002864	12.92
1060	3	8.29E-04	9.68E-03					
1061	1	5.31E-05	5.51E-04	2.59E-07	3.59E-05	0.006013		
1061	2	5.63E-04	6.54E-03	7.09E-08	9.85E-06	0.003149	0.002864	12.92
1061	3	8.29E-04	9.68E-03					
1062	1	5.31E-05	5.51E-04	2.60E-07	3.75E-05	0.006148		
1062	2	5.63E-04	6.68E-03	7.12E-08	1.06E-05	0.003265	0.002883	12.93
1062	3	8.30E-04	9.93E-03					
1063	1	-3.35E-04	1.19E-03	8.44E-07	3.87E-05	0.006284		
1063	2	5.84E-04	7.40E-03	6.62E-08	9.34E-06	0.003067	0.003218	12.93
1063	3	8.41E-04	1.05E-02					
1064	1	5.29E-05	5.50E-04	2.55E-07	3.53E-05	0.005967		
1064	2	5.58E-04	6.50E-03	1.42E-07	2.13E-05	0.004630	0.001336	12.93
1064	3	9.35E-04	1.11E-02					
1065	1	5.45E-05	5.78E-04	5.23E-07	7.68E-05	0.008796		
1065	2	7.77E-04	9.34E-03	1.77E-07	2.62E-05	0.005133	0.003663	12.93
1065	3	1.20E-03	1.45E-02					
1066	1	5.51E-05	5.88E-04	5.54E-07	8.18E-05	0.009072		
1066	2	8.00E-04	9.63E-03	1.88E-07	2.79E-05	0.005298	0.003775	12.93
1066	3	1.23E-03	1.49E-02					
1067	1	5.52E-05	5.91E-04	5.65E-07	8.36E-05	0.009175		
1067	2	8.07E-04	9.74E-03	1.92E-07	2.86E-05	0.005363	0.003812	12.93
1067	3	1.25E-03	1.51E-02					
1068	1	5.53E-05	5.93E-04	5.70E-07	8.44E-05	0.009216		
1068	2	8.10E-04	9.78E-03	1.94E-07	2.89E-05	0.005390	0.003826	12.93
1068	3	1.25E-03	1.52E-02					
1069	1	5.53E-05	5.93E-04	5.72E-07	8.47E-05	0.009235		
1069	2	8.11E-04	9.80E-03	1.94E-07	2.90E-05	0.005401	0.003834	12.93
1069	3	1.25E-03	1.52E-02					
1070	1	5.53E-05	5.93E-04	5.73E-07	8.49E-05	0.009243		
1070	2	8.12E-04	9.81E-03	1.94E-07	2.91E-05	0.005413	0.003830	12.93
1070	3	1.25E-03	1.52E-02					
1071	1	5.53E-05	5.93E-04	5.73E-07	8.49E-05	0.009247		
1071	2	8.12E-04	9.81E-03	1.94E-07	2.92E-05	0.005419	0.003828	12.93
1071	3	1.25E-03	1.52E-02					
1072	1	5.53E-05	5.93E-04	5.73E-07	8.50E-05	0.009250		
1072	2	8.13E-04	9.81E-03	1.95E-07	2.91E-05	0.005416	0.003834	12.93
1072	3	1.25E-03	1.52E-02					
1073	1	5.53E-05	5.93E-04	5.74E-07	8.50E-05	0.009251		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of.	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1073	2	8.13E-04	9.81E-03	1.95E-07	2.91E-05	0.005415	0.003836	12.9[illegible]
1073	3	1.25E-03	1.52E-02					
1074	1	5.53E-05	5.94E-04	5.74E-07	8.50E-05	0.009253		
1074	2	8.13E-04	9.82E-03	1.95E-07	2.91E-05	0.005413	0.003840	12.94
1074	3	1.25E-03	1.52E-02					
1075	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009254		
1075	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005422	0.003832	12.94
1075	3	1.25E-03	1.52E-02					
1076	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009255		
1076	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005421	0.003834	12.94
1076	3	1.25E-03	1.52E-02					
1077	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009256		
1077	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005420	0.003836	12.94
1077	3	1.25E-03	1.52E-02					
1078	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009257		
1078	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005419	0.003838	12.94
1078	3	1.26E-03	1.52E-02					
1079	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009258		
1079	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005418	0.003840	12.94
1079	3	1.26E-03	1.52E-02					
1080	1	5.53E-05	5.94E-04	5.74E-07	8.51E-05	0.009259		
1080	2	8.13E-04	9.82E-03	1.95E-07	2.93E-05	0.005427	0.003832	12.94
1080	3	1.26E-03	1.52E-02					
1081	1	5.53E-05	5.94E-04	5.74E-07	8.52E-05	0.009259		
1081	2	8.13E-04	9.82E-03	1.95E-07	2.92E-05	0.005426	0.003833	12.94
1081	3	1.26E-03	1.52E-02					
1082	1	5.53E-05	5.94E-04	5.75E-07	8.52E-05	0.009259		
1082	2	8.13E-04	9.82E-03	1.74E-07	2.57E-05	0.005085	0.004174	12.[illegible]
1082	3	1.23E-03	1.49E-02					
1083	1	5.50E-05	5.87E-04	5.14E-07	7.46E-05	0.008665		
1083	2	7.72E-04	9.22E-03	1.61E-07	2.31E-05	0.004825	0.003840	12.94
1083	3	1.17E-03	1.40E-02					
1084	1	5.49E-05	5.82E-04	5.00E-07	7.19E-05	0.008511		
1084	2	7.62E-04	9.06E-03	1.56E-07	2.22E-05	0.004733	0.003779	12.95
1084	3	1.16E-03	1.38E-02					
1085	1	5.48E-05	5.81E-04	4.94E-07	7.10E-05	0.008453		
1085	2	7.58E-04	9.00E-03	1.54E-07	2.19E-05	0.004692	0.003760	12.95
1085	3	1.15E-03	1.37E-02					
1086	1	5.48E-05	5.80E-04	4.92E-07	7.06E-05	0.008430		
1086	2	7.57E-04	8.98E-03	1.54E-07	2.18E-05	0.004685	0.003745	12.95
1086	3	1.15E-03	1.37E-02					
1087	1	5.48E-05	5.80E-04	4.92E-07	7.04E-05	0.008423		
1087	2	7.56E-04	8.97E-03	1.54E-07	2.17E-05	0.004673	0.003749	12.95
1087	3	1.15E-03	1.36E-02					
1088	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008420		
1088	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004676	0.003743	12.95
1088	3	1.15E-03	1.36E-02					
1089	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008418		
1089	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004678	0.003739	12.95
1089	3	1.15E-03	1.36E-02					
1090	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008417		
1090	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004679	0.003737	12.95
1090	3	1.15E-03	1.36E-02					
1091	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008418		
1091	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004678	0.003739	12.[illegible]

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
		radial	vertical			dx^2+dy^2	change	Pressure
increment	iteration	{ux(i)}	{uy(i)}	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1091	3	1.15E-03	1.36E-02					
1092	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008418		
1092	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004678	0.003739	12.95
1092	3	1.15E-03	1.36E-02					
1093	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008419		
1093	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004677	0.003741	12.95
1093	3	1.15E-03	1.36E-02					
1094	1	5.48E-05	5.80E-04	4.91E-07	7.04E-05	0.008418		
1094	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004678	0.003739	12.95
1094	3	1.15E-03	1.36E-02					
1095	1	5.47E-05	5.79E-04	4.91E-07	7.04E-05	0.008417		
1095	2	7.56E-04	8.97E-03	1.53E-07	2.17E-05	0.004669	0.003747	12.96
1095	3	1.15E-03	1.36E-02					
1096	1	5.48E-05	5.80E-04	4.90E-07	6.99E-05	0.008393		
1096	2	7.55E-04	8.94E-03	1.52E-07	2.16E-05	0.004663	0.003729	12.96
1096	3	1.15E-03	1.36E-02					
1097	1	5.47E-05	5.79E-04	4.90E-07	6.99E-05	0.008392		
1097	2	7.55E-04	8.94E-03	1.52E-07	2.16E-05	0.004664	0.003727	12.96
1097	3	1.15E-03	1.36E-02					
1098	1	5.49E-05	5.80E-04	4.92E-07	7.02E-05	0.008408		
1098	2	7.56E-04	8.96E-03	1.53E-07	2.17E-05	0.004677	0.003731	12.96
1098	3	1.15E-03	1.36E-02					
1099	1	5.48E-05	5.80E-04	4.90E-07	7.00E-05	0.008397		
1099	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004669	0.003727	12.96
1099	3	1.15E-03	1.36E-02					
1100	1	5.47E-05	5.79E-04	4.90E-07	7.00E-05	0.008395		
1100	2	7.55E-04	8.95E-03	1.52E-07	2.17E-05	0.004671	0.003723	12.96
1100	3	1.15E-03	1.36E-02					
1101	1	5.47E-05	5.79E-04	4.90E-07	7.00E-05	0.008394		
1101	2	7.55E-04	8.94E-03	1.52E-07	2.17E-05	0.004672	0.003722	12.96
1101	3	1.15E-03	1.36E-02					
1102	1	5.47E-05	5.79E-04	4.90E-07	7.00E-05	0.008394		
1102	2	7.55E-04	8.94E-03	1.52E-07	2.17E-05	0.004672	0.003722	12.96
1102	3	1.15E-03	1.36E-02					
1103	1	5.47E-05	5.79E-04	4.90E-07	7.00E-05	0.008395		
1103	2	7.55E-04	8.95E-03	1.52E-07	2.17E-05	0.004671	0.003723	12.96
1103	3	1.15E-03	1.36E-02					
1104	1	5.47E-05	5.79E-04	4.90E-07	7.00E-05	0.008396		
1104	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004670	0.003725	12.96
1104	3	1.15E-03	1.36E-02					
1105	1	5.48E-05	5.79E-04	4.90E-07	7.00E-05	0.008397		
1105	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004669	0.003727	12.96
1105	3	1.15E-03	1.36E-02					
1106	1	5.48E-05	5.79E-04	4.90E-07	7.00E-05	0.008398		
1106	2	7.55E-04	8.95E-03	1.53E-07	2.16E-05	0.004668	0.003729	12.97
1106	3	1.15E-03	1.36E-02					
1107	1	5.48E-05	5.79E-04	4.90E-07	7.00E-05	0.008398		
1107	2	7.55E-04	8.95E-03	1.53E-07	2.16E-05	0.004668	0.003729	12.97
1107	3	1.15E-03	1.36E-02					
1108	1	5.48E-05	5.80E-04	4.90E-07	7.00E-05	0.008399		
1108	2	7.55E-04	8.95E-03	1.53E-07	2.16E-05	0.004667	0.003731	12.97
1108	3	1.15E-03	1.36E-02					
1109	1	5.48E-05	5.80E-04	4.90E-07	7.00E-05	0.008399		
1109	2	7.55E-04	8.95E-03	1.53E-07	2.16E-05	0.004667	0.003731	12.97
1109	3	1.15E-03	1.36E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1110	1	5.48E-05	5.80E-04	4.91E-07	7.01E-05	0.008400		
1110	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004676	0.003723	12.97
1110	3	1.15E-03	1.36E-02					
1111	1	5.48E-05	5.80E-04	4.91E-07	7.01E-05	0.008400		
1111	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004676	0.003723	12.97
1111	3	1.15E-03	1.36E-02					
1112	1	5.48E-05	5.80E-04	4.91E-07	7.01E-05	0.008401		
1112	2	7.55E-04	8.95E-03	1.53E-07	2.17E-05	0.004675	0.003725	12.97
1112	3	1.15E-03	1.36E-02					
1113	1	5.48E-05	5.80E-04	4.96E-07	7.08E-05	0.008441		
1113	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004706	0.003735	12.97
1113	3	1.15E-03	1.37E-02					
1114	1	8.07E-04	1.60E-03	5.54E-06	8.57E-04	0.029367		
1114	2	3.16E-03	3.09E-02	3.54E-06	5.33E-04	0.023167	0.006201	12.97
1114	3	5.04E-03	5.40E-02					
1115	1	7.72E-05	9.30E-04	2.32E-06	3.29E-04	0.018214		
1115	2	1.60E-03	1.91E-02	7.01E-07	1.01E-04	0.010105	0.008109	12.97
1115	3	2.44E-03	2.92E-02					
1116	1	6.03E-05	6.80E-04	9.29E-07	1.33E-04	0.011591		
1116	2	1.02E-03	1.22E-02	2.81E-07	4.10E-05	0.006422	0.005169	12.97
1116	3	1.55E-03	1.86E-02					
1117	1	5.65E-05	6.11E-04	6.27E-07	9.00E-05	0.009522		
1117	2	8.48E-04	1.01E-02	1.89E-07	2.75E-05	0.005258	0.004264	12.98
1117	3	1.28E-03	1.53E-02					
1118	1	5.53E-05	5.90E-04	5.31E-07	7.65E-05	0.008778		
1118	2	7.84E-04	9.34E-03	1.67E-07	2.38E-05	0.004900	0.003878	12.98
1118	3	1.19E-03	1.42E-02					
1119	1	5.50E-05	5.83E-04	5.09E-07	7.30E-05	0.008576		
1119	2	7.68E-04	9.13E-03	1.60E-07	2.27E-05	0.004777	0.003800	12.98
1119	3	1.17E-03	1.39E-02					
1120	1	5.49E-05	5.81E-04	5.00E-07	7.15E-05	0.008486		
1120	2	7.62E-04	9.04E-03	1.57E-07	2.22E-05	0.004729	0.003758	12.98
1120	3	1.16E-03	1.38E-02					
1121	1	5.49E-05	5.80E-04	4.97E-07	7.10E-05	0.008454		
1121	2	7.60E-04	9.01E-03	1.55E-07	2.20E-05	0.004712	0.003743	12.98
1121	3	1.15E-03	1.37E-02					
1122	1	5.48E-05	5.80E-04	4.96E-07	7.08E-05	0.008443		
1122	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004703	0.003741	12.98
1122	3	1.15E-03	1.37E-02					
1123	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008440		
1123	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004706	0.003733	12.98
1123	3	1.15E-03	1.37E-02					
1124	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008439		
1124	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003731	12.98
1124	3	1.15E-03	1.37E-02					
1125	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008438		
1125	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004708	0.003729	12.98
1125	3	1.15E-03	1.37E-02					
1126	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008439		
1126	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003731	12.98
1126	3	1.15E-03	1.37E-02					
1127	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008439		
1127	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003731	12.98
1127	3	1.15E-03	1.37E-02					
1128	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008440		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1128	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003733	12.99
1128	3	1.15E-03	1.37E-02					
1129	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008440		
1129	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003733	12.99
1129	3	1.15E-03	1.37E-02					
1130	1	5.48E-05	5.80E-04	4.95E-07	7.07E-05	0.008440		
1130	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004707	0.003733	12.99
1130	3	1.15E-03	1.37E-02					
1131	1	5.48E-05	5.80E-04	4.96E-07	7.07E-05	0.008441		
1131	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004706	0.003735	12.99
1131	3	1.15E-03	1.37E-02					
1132	1	5.48E-05	5.80E-04	4.96E-07	7.07E-05	0.008441		
1132	2	7.59E-04	8.99E-03	1.55E-07	2.20E-05	0.004706	0.003735	12.99
1132	3	1.15E-03	1.37E-02					
1133	1	5.49E-05	5.80E-04	4.96E-07	7.08E-05	0.008444		
1133	2	7.59E-04	8.99E-03	1.56E-07	2.21E-05	0.004713	0.003731	12.99
1133	3	1.15E-03	1.37E-02					
1134	1	5.50E-05	5.80E-04	4.98E-07	7.11E-05	0.008463		
1134	2	7.61E-04	9.01E-03	1.71E-07	2.40E-05	0.004914	0.003549	12.99
1134	3	1.17E-03	1.39E-02					
1135	1	5.53E-05	5.84E-04	5.24E-07	7.42E-05	0.008645		
1135	2	7.79E-04	9.20E-03	1.77E-07	2.50E-05	0.005020	0.003625	12.99
1135	3	1.20E-03	1.42E-02					
1136	1	5.53E-05	5.86E-04	5.16E-07	7.36E-05	0.008608		
1136	2	7.73E-04	9.16E-03	1.82E-07	2.56E-05	0.005074	0.003534	12.99
1136	3	1.20E-03	1.42E-02					
1137	1	5.54E-05	5.87E-04	5.86E-07	8.31E-05	0.009147		
1137	2	8.21E-04	9.70E-03	1.94E-07	2.73E-05	0.005247	0.003900	12.99
1137	3	1.26E-03	1.49E-02					
1138	1	5.56E-05	5.91E-04	5.79E-07	8.22E-05	0.009096		
1138	2	8.17E-04	9.66E-03	1.93E-07	2.73E-05	0.005242	0.003854	12.99
1138	3	1.26E-03	1.49E-02					
1139	1	5.55E-05	5.91E-04	5.79E-07	8.22E-05	0.009098		
1139	2	8.17E-04	9.66E-03	1.93E-07	2.73E-05	0.005241	0.003856	13.00
1139	3	1.26E-03	1.49E-02					
1140	1	5.55E-05	5.91E-04	5.80E-07	8.22E-05	0.009101		
1140	2	8.17E-04	9.66E-03	1.93E-07	2.72E-05	0.005238	0.003862	13.00
1140	3	1.26E-03	1.49E-02					
1141	1	5.56E-05	5.91E-04	5.80E-07	8.23E-05	0.009102		
1141	2	8.17E-04	9.66E-03	1.94E-07	2.73E-05	0.005247	0.003854	13.00
1141	3	1.26E-03	1.49E-02					
1142	1	5.56E-05	5.91E-04	5.80E-07	8.23E-05	0.009103		
1142	2	8.17E-04	9.66E-03	1.94E-07	2.73E-05	0.005246	0.003856	13.00
1142	3	1.26E-03	1.49E-02					
1143	1	5.56E-05	5.91E-04	5.80E-07	8.23E-05	0.009104		
1143	2	8.17E-04	9.66E-03	1.93E-07	2.73E-05	0.005245	0.003858	13.00
1143	3	1.26E-03	1.49E-02					
1144	1	5.56E-05	5.91E-04	5.80E-07	8.23E-05	0.009105		
1144	2	8.17E-04	9.66E-03	1.93E-07	2.73E-05	0.005244	0.003860	13.00
1144	3	1.26E-03	1.49E-02					
1145	1	5.56E-05	5.91E-04	5.80E-07	8.23E-05	0.009105		
1145	2	8.17E-04	9.66E-03	1.93E-07	2.73E-05	0.005244	0.003860	13.00
1145	3	1.26E-03	1.49E-02					
1146	1	5.56E-05	5.91E-04	6.88E-07	9.94E-05	0.010003		
1146	2	8.85E-04	1.06E-02	2.30E-07	3.26E-05	0.005730	0.004273	13.00

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1146	3	1.37E-03	1.63E-02					
1147	1	5.62E-05	6.02E-04	6.92E-07	9.94E-05	0.010003		
1147	2	8.88E-04	1.06E-02	2.31E-07	3.26E-05	0.005730	0.004273	13.00
1147	3	1.37E-03	1.63E-02					
1148	1	9.63E-04	-2.14E-03	1.32E-05	2.55E-03	0.050609		
1148	2	4.60E-03	4.83E-02	9.90E-06	1.41E-03	0.037731	0.012877	13.00
1148	3	7.74E-03	8.59E-02					
1149	1	-1.30E-03	4.47E-03	1.99E-05	1.01E-03	0.032149		
1149	2	3.16E-03	3.63E-02	1.05E-05	1.49E-03	0.038706	-0.006556	13.00
1149	3	6.40E-03	7.49E-02					
1150	1	1.05E-04	1.26E-03	5.43E-06	7.52E-04	0.027522		
1150	2	2.44E-03	2.87E-02	1.66E-06	2.37E-04	0.015444	0.012078	13.01
1150	3	3.72E-03	4.41E-02					
1151	1	6.81E-05	7.83E-04	1.73E-06	2.47E-04	0.015782		
1151	2	1.38E-03	1.65E-02	5.45E-07	7.89E-05	0.008911	0.006871	13.01
1151	3	2.12E-03	2.54E-02					
1152	1	6.03E-05	6.73E-04	9.64E-07	1.40E-04	0.011868		
1152	2	1.04E-03	1.25E-02	3.33E-07	4.76E-05	0.006924	0.004944	13.01
1152	3	1.62E-03	1.94E-02					
1153	1	5.76E-05	6.25E-04	7.93E-07	1.15E-04	0.010752		
1153	2	9.48E-04	1.13E-02	2.73E-07	3.87E-05	0.006242	0.004511	13.01
1153	3	1.47E-03	1.76E-02					
1154	1	5.69E-05	6.12E-04	7.39E-07	1.06E-04	0.010344		
1154	2	9.16E-04	1.09E-02	2.54E-07	3.58E-05	0.006001	0.004343	13.01
1154	3	1.42E-03	1.69E-02					
1155	1	5.67E-05	6.07E-04	7.19E-07	1.03E-04	0.010198		
1155	2	9.05E-04	1.08E-02	2.46E-07	3.47E-05	0.005911	0.004287	13.01
1155	3	1.40E-03	1.67E-02					
1156	1	5.66E-05	6.06E-04	7.13E-07	1.02E-04	0.010149		
1156	2	9.01E-04	1.07E-02	2.44E-07	3.42E-05	0.005871	0.004279	13.01
1156	3	1.40E-03	1.66E-02					
1157	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010130		
1157	2	8.99E-04	1.07E-02	2.44E-07	3.41E-05	0.005861	0.004269	13.01
1157	3	1.39E-03	1.65E-02					
1158	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1158	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004259	13.01
1158	3	1.39E-03	1.65E-02					
1159	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1159	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004259	13.01
1159	3	1.39E-03	1.65E-02					
1160	1	5.65E-05	6.04E-04	7.09E-07	1.02E-04	0.010111		
1160	2	8.98E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004250	13.01
1160	3	1.39E-03	1.65E-02					
1161	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010110		
1161	2	8.98E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004250	13.01
1161	3	1.39E-03	1.65E-02					
1162	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010110		
1162	2	8.98E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004250	13.02
1162	3	1.39E-03	1.65E-02					
1163	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010110		
1163	2	8.98E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004250	13.02
1163	3	1.39E-03	1.65E-02					
1164	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010110		
1164	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004250	1[illegible]
1164	3	1.39E-03	1.65E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1165	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1165	2	8.99E-04	1.07E-02	2.43E-07	3.40E-05	0.005851	0.004270	13.02
1165	3	1.39E-03	1.65E-02					
1166	1	5.65E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1166	2	8.99E-04	1.07E-02	2.42E-07	3.40E-05	0.005851	0.004270	13.02
1166	3	1.39E-03	1.65E-02					
1167	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1167	2	8.99E-04	1.07E-02	2.42E-07	3.40E-05	0.005851	0.004270	13.02
1167	3	1.39E-03	1.65E-02					
1168	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1168	2	8.99E-04	1.07E-02	2.42E-07	3.40E-05	0.005851	0.004270	13.02
1168	3	1.39E-03	1.65E-02					
1169	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1169	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.02
1169	3	1.39E-03	1.65E-02					
1170	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1170	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.02
1170	3	1.39E-03	1.65E-02					
1171	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1171	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.02
1171	3	1.39E-03	1.65E-02					
1172	1	5.66E-05	6.05E-04	7.09E-07	1.02E-04	0.010120		
1172	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.02
1172	3	1.39E-03	1.65E-02					
1173	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1173	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1173	3	1.39E-03	1.65E-02					
1174	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1174	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1174	3	1.39E-03	1.65E-02					
1175	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1175	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1175	3	1.39E-03	1.65E-02					
1176	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1176	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1176	3	1.39E-03	1.65E-02					
1177	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1177	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1177	3	1.39E-03	1.65E-02					
1178	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1178	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1178	3	1.39E-03	1.65E-02					
1179	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1179	2	8.99E-04	1.07E-02	2.43E-07	3.41E-05	0.005861	0.004260	13.03
1179	3	1.39E-03	1.65E-02					
1180	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1180	2	8.99E-04	1.07E-02	2.43E-07	3.42E-05	0.005871	0.004250	13.03
1180	3	1.39E-03	1.65E-02					
1181	1	5.66E-05	6.05E-04	7.10E-07	1.02E-04	0.010120		
1181	2	8.99E-04	1.07E-02	5.34E-06	6.41E-04	0.025425	-0.015305	13.03
1181	3	3.21E-03	3.60E-02					
1182	1	-6.02E-03	1.08E-02	2.45E-04	7.40E-03	0.087414		
1182	2	9.64E-03	9.68E-02	1.71E-04	2.32E-02	0.152730	-0.065316	13.03
1182	3	2.27E-02	0.249					
1183	1	-3.60E-03	8.35E-03	1.87E-04	1.07E-02	0.104553		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1183	2	1.01E-02	0.112	1.08E-04	1.49E-02	0.122442	-0.017890	13.0[illegible]
1183	3	2.05E-02	0.234					
1184	1	2.63E-04	2.92E-03	3.92E-05	5.44E-03	0.074043		
1184	2	6.53E-03	7.67E-02	1.23E-05	1.71E-03	0.041448	0.032595	13.04
1184	3	1.00E-02	0.118					
1185	1	1.07E-04	1.29E-03	6.69E-06	9.70E-04	0.031256		
1185	2	2.69E-03	3.24E-02	2.24E-06	3.31E-04	0.018251	0.013005	13.04
1185	3	4.19E-03	5.06E-02					
1186	1	1.38E-03	-3.76E-03	9.30E-06	2.56E-03	0.050719		
1186	2	4.43E-03	4.69E-02	6.24E-06	8.67E-04	0.029546	0.021173	13.04
1186	3	6.93E-03	7.63E-02					
1187	1	7.71E-04	1.40E-03	4.37E-05	5.59E-03	0.075047		
1187	2	7.38E-03	7.62E-02	1.76E-05	2.39E-03	0.049030	0.026017	13.04
1187	3	1.16E-02	0.125					
1188	1	1.24E-04	1.44E-03	8.91E-06	1.25E-03	0.035539		
1188	2	3.11E-03	3.69E-02	2.90E-06	4.12E-04	0.020381	0.015157	13.04
1188	3	4.81E-03	5.72E-02					
1189	1	7.53E-05	8.91E-04	2.52E-06	3.64E-04	0.019135		
1189	2	1.66E-03	2.00E-02	8.45E-07	1.23E-04	0.011138	0.007997	13.04
1189	3	2.58E-03	3.11E-02					
1190	1	6.25E-05	7.02E-04	1.21E-06	1.75E-04	0.013283		
1190	2	1.16E-03	1.39E-02	4.41E-07	6.30E-05	0.007968	0.005316	13.04
1190	3	1.83E-03	2.19E-02					
1191	1	5.93E-05	6.45E-04	9.09E-07	1.31E-04	0.011505		
1191	2	1.01E-03	1.21E-02	3.28E-07	4.64E-05	0.006834	0.004671	13.04
1191	3	1.59E-03	1.89E-02					
1192	1	5.82E-05	6.24E-04	8.22E-07	1.18E-04	0.010914		
1192	2	9.65E-04	1.15E-02	2.94E-07	4.13E-05	0.006453	0.004461	13.0[illegible]
1192	3	1.51E-03	1.79E-02					
1193	1	5.78E-05	6.16E-04	7.89E-07	1.13E-04	0.010681		
1193	2	9.46E-04	1.13E-02	2.82E-07	3.94E-05	0.006302	0.004378	13.04
1193	3	1.48E-03	1.75E-02					
1194	1	5.76E-05	6.14E-04	7.77E-07	1.11E-04	0.010593		
1194	2	9.39E-04	1.12E-02	2.78E-07	3.87E-05	0.006242	0.004351	13.04
1194	3	1.47E-03	1.74E-02					
1195	1	5.76E-05	6.13E-04	7.73E-07	1.11E-04	0.010554		
1195	2	9.37E-04	1.11E-02	2.76E-07	3.84E-05	0.006222	0.004332	13.05
1195	3	1.46E-03	1.73E-02					
1196	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1196	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004322	13.05
1196	3	1.46E-03	1.73E-02					
1197	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010515		
1197	2	9.34E-04	1.11E-02	2.73E-07	3.82E-05	0.006202	0.004312	13.05
1197	3	1.46E-03	1.73E-02					
1198	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1198	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.05
1198	3	1.46E-03	1.73E-02					
1199	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1199	2	9.34E-04	1.11E-02	2.73E-07	3.82E-05	0.006202	0.004303	13.05
1199	3	1.46E-03	1.73E-02					
1200	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1200	2	9.34E-04	1.11E-02	2.73E-07	3.81E-05	0.006192	0.004313	13.05
1200	3	1.46E-03	1.73E-02					
1201	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1201	2	9.34E-04	1.11E-02	2.73E-07	3.81E-05	0.006192	0.004313	13.0[illegible]

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1201	3	1.46E-03	1.73E-02					
1202	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1202	2	9.34E-04	1.11E-02	2.73E-07	3.82E-05	0.006202	0.004303	13.05
1202	3	1.46E-03	1.73E-02					
1203	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1203	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.05
1203	3	1.46E-03	1.73E-02					
1204	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1204	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.05
1204	3	1.46E-03	1.73E-02					
1205	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1205	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.05
1205	3	1.46E-03	1.73E-02					
1206	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1206	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.06
1206	3	1.46E-03	1.73E-02					
1207	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1207	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.06
1207	3	1.46E-03	1.73E-02					
1208	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010505		
1208	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004303	13.06
1208	3	1.46E-03	1.73E-02					
1209	1	5.76E-05	6.12E-04	7.68E-07	1.10E-04	0.010515		
1209	2	9.34E-04	1.11E-02	2.73E-07	3.81E-05	0.006192	0.004322	13.06
1209	3	1.46E-03	1.73E-02					
1210	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010515		
1210	2	9.34E-04	1.11E-02	2.73E-07	3.82E-05	0.006202	0.004312	13.06
1210	3	1.46E-03	1.73E-02					
1211	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1211	2	9.34E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1211	3	1.46E-03	1.73E-02					
1212	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1212	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1212	3	1.46E-03	1.73E-02					
1213	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1213	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1213	3	1.46E-03	1.73E-02					
1214	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1214	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1214	3	1.46E-03	1.73E-02					
1215	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1215	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1215	3	1.46E-03	1.73E-02					
1216	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1216	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004312	13.06
1216	3	1.46E-03	1.73E-02					
1217	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1217	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1217	3	1.46E-03	1.73E-02					
1218	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1218	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1218	3	1.46E-03	1.73E-02					
1219	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1219	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1219	3	1.46E-03	1.73E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1220	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1220	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1220	3	1.46E-03	1.73E-02					
1221	1	5.76E-05	6.12E-04	7.69E-07	1.10E-04	0.010514		
1221	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1221	3	1.46E-03	1.73E-02					
1222	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010514		
1222	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004302	13.07
1222	3	1.46E-03	1.73E-02					
1223	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1223	2	9.35E-04	1.11E-02	2.74E-07	3.82E-05	0.006202	0.004322	13.07
1223	3	1.46E-03	1.73E-02					
1224	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1224	2	9.35E-04	1.11E-02	2.75E-07	3.82E-05	0.006202	0.004322	13.07
1224	3	1.46E-03	1.73E-02					
1225	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1225	2	9.35E-04	1.11E-02	2.75E-07	3.82E-05	0.006202	0.004322	13.07
1225	3	1.46E-03	1.73E-02					
1226	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1226	2	9.35E-04	1.11E-02	2.75E-07	3.82E-05	0.006202	0.004322	13.07
1226	3	1.46E-03	1.73E-02					
1227	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1227	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004312	13.07
1227	3	1.46E-03	1.73E-02					
1228	1	5.76E-05	6.12E-04	7.70E-07	1.10E-04	0.010524		
1228	2	9.35E-04	1.11E-02	2.74E-07	3.83E-05	0.006212	0.004312	13.08
1228	3	1.46E-03	1.73E-02					
1229	1	5.76E-05	6.13E-04	7.71E-07	1.10E-04	0.010524		
1229	2	9.36E-04	1.11E-02	2.75E-07	3.84E-05	0.006222	0.004302	13.08
1229	3	1.46E-03	1.73E-02					
1230	1	5.76E-05	6.13E-04	7.71E-07	1.10E-04	0.010534		
1230	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1230	3	1.46E-03	1.73E-02					
1231	1	5.76E-05	6.13E-04	7.71E-07	1.10E-04	0.010534		
1231	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1231	3	1.46E-03	1.73E-02					
1232	1	5.76E-05	6.12E-04	7.71E-07	1.10E-04	0.010534		
1232	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1232	3	1.46E-03	1.73E-02					
1233	1	5.76E-05	6.12E-04	7.71E-07	1.10E-04	0.010534		
1233	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1233	3	1.46E-03	1.73E-02					
1234	1	5.76E-05	6.12E-04	7.71E-07	1.10E-04	0.010534		
1234	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1234	3	1.46E-03	1.73E-02					
1235	1	5.76E-05	6.12E-04	7.71E-07	1.10E-04	0.010534		
1235	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1235	3	1.46E-03	1.73E-02					
1236	1	5.76E-05	6.12E-04	7.72E-07	1.10E-04	0.010534		
1236	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1236	3	1.46E-03	1.73E-02					
1237	1	5.76E-05	6.12E-04	7.72E-07	1.10E-04	0.010534		
1237	2	9.36E-04	1.11E-02	2.75E-07	3.83E-05	0.006212	0.004322	13.08
1237	3	1.46E-03	1.73E-02					
1238	1	5.76E-05	6.12E-04	7.72E-07	1.10E-04	0.010534		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1238	2	9.36E-04	1.11E-02	2.76E-07	3.84E-05	0.006222	0.004312	13.08
1238	3	1.46E-03	1.73E-02					
1239	1	5.76E-05	6.13E-04	7.72E-07	1.10E-04	0.010534		
1239	2	9.36E-04	1.11E-02	2.76E-07	3.84E-05	0.006222	0.004312	13.09
1239	3	1.46E-03	1.73E-02					
1240	1	5.76E-05	6.13E-04	7.72E-07	1.10E-04	0.010534		
1240	2	9.36E-04	1.11E-02	2.80E-07	3.92E-05	0.006282	0.004252	13.09
1240	3	1.47E-03	1.74E-02					
1241	1	5.77E-05	6.14E-04	7.82E-07	1.12E-04	0.010623		
1241	2	9.42E-04	1.12E-02	2.81E-07	3.93E-05	0.006292	0.004331	13.09
1241	3	1.47E-03	1.75E-02					
1242	1	5.77E-05	6.14E-04	7.83E-07	1.12E-04	0.010633		
1242	2	9.43E-04	1.12E-02	2.82E-07	3.94E-05	0.006302	0.004330	13.09
1242	3	1.47E-03	1.75E-02					
1243	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010633		
1243	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004320	13.09
1243	3	1.47E-03	1.75E-02					
1244	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010633		
1244	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004320	13.09
1244	3	1.47E-03	1.75E-02					
1245	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010633		
1245	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004320	13.09
1245	3	1.47E-03	1.75E-02					
1246	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010643		
1246	2	9.43E-04	1.12E-02	2.83E-07	3.96E-05	0.006312	0.004330	13.09
1246	3	1.48E-03	1.75E-02					
1247	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1247	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.09
1247	3	1.48E-03	1.75E-02					
1248	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1248	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.09
1248	3	1.48E-03	1.75E-02					
1249	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1249	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.09
1249	3	1.48E-03	1.75E-02					
1250	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1250	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1250	3	1.48E-03	1.75E-02					
1251	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1251	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1251	3	1.48E-03	1.75E-02					
1252	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1252	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1252	3	1.48E-03	1.75E-02					
1253	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010643		
1253	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1253	3	1.47E-03	1.75E-02					
1254	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010643		
1254	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1254	3	1.47E-03	1.75E-02					
1255	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010643		
1255	2	9.43E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1255	3	1.47E-03	1.75E-02					
1256	1	5.77E-05	6.14E-04	7.84E-07	1.12E-04	0.010643		
1256	2	9.43E-04	1.12E-02	2.83E-07	3.96E-05	0.006312	0.004330	13.10

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1256	3	1.48E-03	1.75E-02					
1257	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1257	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1257	3	1.48E-03	1.75E-02					
1258	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1258	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1258	3	1.48E-03	1.75E-02					
1259	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1259	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1259	3	1.48E-03	1.75E-02					
1260	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1260	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1260	3	1.48E-03	1.75E-02					
1261	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1261	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.10
1261	3	1.48E-03	1.75E-02					
1262	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1262	2	9.44E-04	1.12E-02	2.82E-07	3.96E-05	0.006312	0.004330	13.11
1262	3	1.48E-03	1.75E-02					
1263	1	5.77E-05	6.14E-04	7.85E-07	1.12E-04	0.010643		
1263	2	9.44E-04	1.12E-02	2.82E-07	3.94E-05	0.006302	0.004340	13.11
1263	3	1.48E-03	1.75E-02					
1264	1	5.82E-05	6.24E-04	7.86E-07	1.13E-04	0.010653		
1264	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004351	13.11
1264	3	1.48E-03	1.75E-02					
1265	1	5.78E-05	6.16E-04	7.86E-07	1.13E-04	0.010661		
1265	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004358	13.11
1265	3	1.48E-03	1.75E-02					
1266	1	5.77E-05	6.14E-04	7.86E-07	1.13E-04	0.010663		
1266	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1266	3	1.48E-03	1.75E-02					
1267	1	5.77E-05	6.14E-04	7.86E-07	1.13E-04	0.010663		
1267	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1267	3	1.48E-03	1.75E-02					
1268	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1268	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1268	3	1.48E-03	1.75E-02					
1269	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1269	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1269	3	1.48E-03	1.75E-02					
1270	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1270	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1270	3	1.48E-03	1.75E-02					
1271	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1271	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.11
1271	3	1.48E-03	1.75E-02					
1272	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1272	2	9.45E-04	1.12E-02	2.82E-07	3.94E-05	0.006302	0.004361	13.11
1272	3	1.48E-03	1.75E-02					
1273	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1273	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.12
1273	3	1.48E-03	1.75E-02					
1274	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1274	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.12
1274	3	1.48E-03	1.75E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1275	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1275	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.12
1275	3	1.48E-03	1.75E-02					
1276	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1276	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.12
1276	3	1.48E-03	1.75E-02					
1277	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010663		
1277	2	9.45E-04	1.12E-02	2.81E-07	3.94E-05	0.006302	0.004361	13.12
1277	3	1.48E-03	1.75E-02					
1278	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010673		
1278	2	9.45E-04	1.13E-02	2.82E-07	3.93E-05	0.006292	0.004381	13.12
1278	3	1.48E-03	1.75E-02					
1279	1	5.77E-05	6.14E-04	7.87E-07	1.13E-04	0.010673		
1279	2	9.45E-04	1.13E-02	2.82E-07	3.94E-05	0.006302	0.004371	13.12
1279	3	1.48E-03	1.75E-02					
1280	1	5.55E-05	6.11E-04	7.51E-07	1.09E-04	0.010485		
1280	2	9.22E-04	1.11E-02	2.51E-07	3.59E-05	0.006011	0.004474	13.12
1280	3	1.42E-03	1.71E-02					
1281	1	5.53E-05	6.07E-04	7.29E-07	1.06E-04	0.010329		
1281	2	9.09E-04	1.09E-02	2.43E-07	3.49E-05	0.005931	0.004398	13.12
1281	3	1.40E-03	1.68E-02					
1282	1	5.52E-05	6.05E-04	7.22E-07	1.05E-04	0.010280		
1282	2	9.05E-04	1.09E-02	2.41E-07	3.46E-05	0.005900	0.004380	13.12
1282	3	1.40E-03	1.67E-02					
1283	1	5.52E-05	6.04E-04	7.20E-07	1.05E-04	0.010261		
1283	2	9.04E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004370	13.12
1283	3	1.39E-03	1.67E-02					
1284	1	5.52E-05	6.04E-04	7.19E-07	1.05E-04	0.010261		
1284	2	9.03E-04	1.08E-02	2.40E-07	3.43E-05	0.005880	0.004380	13.13
1284	3	1.39E-03	1.67E-02					
1285	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1285	2	9.03E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004361	13.13
1285	3	1.39E-03	1.67E-02					
1286	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1286	2	9.03E-04	1.08E-02	2.40E-07	3.43E-05	0.005880	0.004371	13.13
1286	3	1.39E-03	1.67E-02					
1287	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1287	2	9.03E-04	1.08E-02	2.40E-07	3.43E-05	0.005880	0.004371	13.13
1287	3	1.39E-03	1.67E-02					
1288	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1288	2	9.03E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004361	13.13
1288	3	1.39E-03	1.67E-02					
1289	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1289	2	9.03E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004361	13.13
1289	3	1.39E-03	1.67E-02					
1290	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1290	2	9.03E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004361	13.13
1290	3	1.39E-03	1.67E-02					
1291	1	5.52E-05	6.04E-04	7.19E-07	1.04E-04	0.010251		
1291	2	9.03E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004361	13.13
1291	3	1.39E-03	1.67E-02					
1292	1	5.52E-05	6.04E-04	7.19E-07	1.05E-04	0.010261		
1292	2	9.03E-04	1.08E-02	2.40E-07	3.43E-05	0.005880	0.004380	13.13
1292	3	1.39E-03	1.67E-02					
1293	1	5.52E-05	6.04E-04	7.20E-07	1.05E-04	0.010261		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^
1293	2	9.04E-04	1.08E-02	2.40E-07	3.43E-05	0.005880	0.004380	13.1
1293	3	1.39E-03	1.67E-02					
1294	1	5.52E-05	6.04E-04	7.20E-07	1.05E-04	0.010261		
1294	2	9.04E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004370	13.13
1294	3	1.39E-03	1.67E-02					
1295	1	5.52E-05	6.05E-04	7.20E-07	1.05E-04	0.010261		
1295	2	9.04E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004370	13.14
1295	3	1.39E-03	1.67E-02					
1296	1	5.52E-05	6.05E-04	7.20E-07	1.05E-04	0.010261		
1296	2	9.04E-04	1.08E-02	2.40E-07	3.46E-05	0.005900	0.004360	13.14
1296	3	1.39E-03	1.67E-02					
1297	1	5.52E-05	6.05E-04	7.20E-07	1.05E-04	0.010271		
1297	2	9.04E-04	1.08E-02	2.40E-07	3.45E-05	0.005890	0.004380	13.14
1297	3	1.39E-03	1.67E-02					
1298	1	5.52E-05	6.05E-04	7.21E-07	1.05E-04	0.010271		
1298	2	9.04E-04	1.08E-02	2.41E-07	3.45E-05	0.005890	0.004380	13.14
1298	3	1.40E-03	1.67E-02					
1299	1	5.52E-05	6.05E-04	7.21E-07	1.05E-04	0.010271		
1299	2	9.04E-04	1.08E-02	2.41E-07	3.45E-05	0.005890	0.004380	13.14
1299	3	1.40E-03	1.67E-02					
1300	1	5.52E-05	6.05E-04	7.21E-07	1.05E-04	0.010271		
1300	2	9.04E-04	1.08E-02	2.55E-07	3.62E-05	0.006041	0.004229	13.14
1300	3	1.41E-03	1.69E-02					
1301	1	5.55E-05	6.08E-04	7.32E-07	1.06E-04	0.010348		
1301	2	9.11E-04	1.09E-02	2.65E-07	3.77E-05	0.006162	0.004186	13.14
1301	3	1.43E-03	1.71E-02					
1302	1	5.57E-05	6.10E-04	7.42E-07	1.08E-04	0.010416		
1302	2	9.17E-04	1.10E-02	2.68E-07	3.81E-05	0.006192	0.004224	13.1
1302	3	1.44E-03	1.72E-02					
1303	1	5.57E-05	6.11E-04	7.45E-07	1.08E-04	0.010435		
1303	2	9.19E-04	1.10E-02	2.70E-07	3.83E-05	0.006212	0.004223	13.14
1303	3	1.44E-03	1.72E-02					
1304	1	5.57E-05	6.11E-04	7.46E-07	1.08E-04	0.010445		
1304	2	9.19E-04	1.10E-02	2.70E-07	3.83E-05	0.006212	0.004233	13.14
1304	3	1.44E-03	1.72E-02					
1305	1	5.57E-05	6.11E-04	7.46E-07	1.08E-04	0.010444		
1305	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004223	13.14
1305	3	1.44E-03	1.72E-02					
1306	1	5.57E-05	6.11E-04	7.47E-07	1.08E-04	0.010445		
1306	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004223	13.15
1306	3	1.44E-03	1.72E-02					
1307	1	5.57E-05	6.11E-04	7.47E-07	1.08E-04	0.010445		
1307	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004223	13.15
1307	3	1.44E-03	1.72E-02					
1308	1	5.57E-05	6.11E-04	7.47E-07	1.08E-04	0.010445		
1308	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004223	13.15
1308	3	1.44E-03	1.72E-02					
1309	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1309	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15
1309	3	1.44E-03	1.72E-02					
1310	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1310	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15
1310	3	1.44E-03	1.72E-02					
1311	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1311	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
		radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
increment	iteration	{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1311	3	1.44E-03	1.72E-02					
1312	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1312	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15
1312	3	1.44E-03	1.72E-02					
1313	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1313	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15
1313	3	1.44E-03	1.72E-02					
1314	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1314	2	9.20E-04	1.10E-02	2.70E-07	3.84E-05	0.006222	0.004233	13.15
1314	3	1.44E-03	1.72E-02					
1315	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1315	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.15
1315	3	1.44E-03	1.72E-02					
1316	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1316	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.15
1316	3	1.44E-03	1.72E-02					
1317	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1317	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.16
1317	3	1.44E-03	1.72E-02					
1318	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1318	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.16
1318	3	1.44E-03	1.72E-02					
1319	1	5.57E-05	6.11E-04	7.47E-07	1.09E-04	0.010454		
1319	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.16
1319	3	1.44E-03	1.72E-02					
1320	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1320	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.16
1320	3	1.44E-03	1.72E-02					
1321	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1321	2	9.20E-04	1.10E-02	2.71E-07	3.84E-05	0.006222	0.004233	13.16
1321	3	1.44E-03	1.72E-02					
1322	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1322	2	9.20E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1322	3	1.44E-03	1.72E-02					
1323	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1323	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1323	3	1.44E-03	1.72E-02					
1324	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1324	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1324	3	1.44E-03	1.72E-02					
1325	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1325	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1325	3	1.44E-03	1.72E-02					
1326	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1326	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1326	3	1.44E-03	1.72E-02					
1327	1	5.57E-05	6.11E-04	7.48E-07	1.09E-04	0.010454		
1327	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.16
1327	3	1.44E-03	1.72E-02					
1328	1	5.57E-05	6.12E-04	7.48E-07	1.09E-04	0.010454		
1328	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.17
1328	3	1.44E-03	1.72E-02					
1329	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010454		
1329	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.17
1329	3	1.44E-03	1.72E-02					

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1330	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010454		
1330	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004223	13.17
1330	3	1.44E-03	1.72E-02					
1331	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010464		
1331	2	9.21E-04	1.10E-02	2.72E-07	3.84E-05	0.006222	0.004242	13.17
1331	3	1.44E-03	1.72E-02					
1332	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010464		
1332	2	9.21E-04	1.10E-02	2.72E-07	3.84E-05	0.006222	0.004242	13.17
1332	3	1.44E-03	1.72E-02					
1333	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010464		
1333	2	9.21E-04	1.10E-02	2.72E-07	3.84E-05	0.006222	0.004242	13.17
1333	3	1.44E-03	1.72E-02					
1334	1	5.58E-05	6.12E-04	7.48E-07	1.09E-04	0.010464		
1334	2	9.21E-04	1.10E-02	2.76E-07	3.91E-05	0.006272	0.004192	13.17
1334	3	1.45E-03	1.73E-02					
1335	1	5.59E-05	6.13E-04	7.53E-07	1.09E-04	0.010493		
1335	2	9.24E-04	1.11E-02	2.73E-07	3.88E-05	0.006252	0.004241	13.17
1335	3	1.45E-03	1.73E-02					
1336	1	5.58E-05	6.12E-04	7.50E-07	1.09E-04	0.010474		
1336	2	9.22E-04	1.11E-02	2.72E-07	3.87E-05	0.006242	0.004232	13.17
1336	3	1.44E-03	1.73E-02					
1337	1	5.58E-05	6.12E-04	7.49E-07	1.09E-04	0.010464		
1337	2	9.21E-04	1.10E-02	2.71E-07	3.87E-05	0.006242	0.004223	13.17
1337	3	1.44E-03	1.73E-02					
1338	1	5.58E-05	6.12E-04	7.49E-07	1.09E-04	0.010464		
1338	2	9.21E-04	1.10E-02	2.71E-07	3.86E-05	0.006232	0.004233	13.17
1338	3	1.44E-03	1.73E-02					
1339	1	5.58E-05	6.12E-04	7.84E-07	1.09E-04	0.010456		
1339	2	9.41E-04	1.10E-02	2.60E-07	3.89E-05	0.006261	0.004195	13.18
1339	3	1.45E-03	1.73E-02					
1340	1	5.58E-05	6.12E-04	7.93E-07	1.09E-04	0.010486		
1340	2	9.46E-04	1.11E-02	2.64E-07	3.83E-05	0.006211	0.004275	13.18
1340	3	1.46E-03	1.73E-02					
1341	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010477		
1341	2	9.47E-04	1.11E-02	2.64E-07	3.81E-05	0.006191	0.004285	13.18
1341	3	1.46E-03	1.72E-02					
1342	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010467		
1342	2	9.47E-04	1.10E-02	2.63E-07	3.79E-05	0.006181	0.004286	13.18
1342	3	1.46E-03	1.72E-02					
1343	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1343	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.18
1343	3	1.46E-03	1.72E-02					
1344	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1344	2	9.47E-04	1.10E-02	2.62E-07	3.79E-05	0.006181	0.004276	13.18
1344	3	1.46E-03	1.72E-02					
1345	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1345	2	9.47E-04	1.10E-02	2.62E-07	3.79E-05	0.006181	0.004276	13.18
1345	3	1.46E-03	1.72E-02					
1346	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1346	2	9.47E-04	1.10E-02	2.62E-07	3.79E-05	0.006181	0.004276	13.18
1346	3	1.46E-03	1.72E-02					
1347	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1347	2	9.47E-04	1.10E-02	2.62E-07	3.79E-05	0.006181	0.004276	13.18
1347	3	1.46E-03	1.72E-02					
1348	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
		radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
increment	iteration	{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1348	2	9.47E-04	1.10E-02	2.62E-07	3.79E-05	0.006181	0.004276	13.18
1348	3	1.46E-03	1.72E-02					
1349	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1349	2	9.47E-04	1.10E-02	2.63E-07	3.79E-05	0.006181	0.004276	13.18
1349	3	1.46E-03	1.72E-02					
1350	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1350	2	9.47E-04	1.10E-02	2.63E-07	3.79E-05	0.006181	0.004276	13.19
1350	3	1.46E-03	1.72E-02					
1351	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1351	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1351	3	1.46E-03	1.72E-02					
1352	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1352	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1352	3	1.46E-03	1.72E-02					
1353	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1353	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1353	3	1.46E-03	1.72E-02					
1354	1	5.58E-05	6.11E-04	7.94E-07	1.09E-04	0.010457		
1354	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1354	3	1.46E-03	1.72E-02					
1355	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1355	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1355	3	1.46E-03	1.72E-02					
1356	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1356	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1356	3	1.46E-03	1.72E-02					
1357	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1357	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1357	3	1.46E-03	1.72E-02					
1358	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1358	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1358	3	1.46E-03	1.72E-02					
1359	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1359	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1359	3	1.46E-03	1.72E-02					
1360	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010457		
1360	2	9.47E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004266	13.19
1360	3	1.46E-03	1.72E-02					
1361	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1361	2	9.47E-04	1.10E-02	2.63E-07	3.79E-05	0.006181	0.004286	13.19
1361	3	1.46E-03	1.72E-02					
1362	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1362	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1362	3	1.46E-03	1.72E-02					
1363	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1363	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1363	3	1.46E-03	1.72E-02					
1364	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1364	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1364	3	1.46E-03	1.72E-02					
1365	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1365	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1365	3	1.46E-03	1.72E-02					
1366	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1366	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20

AIIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

301/587-8202

Centimeter

Inches

MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

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		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1366	3	1.46E-03	1.72E-02					
1367	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1367	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1367	3	1.46E-03	1.72E-02					
1368	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1368	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1368	3	1.46E-03	1.72E-02					
1369	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1369	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1369	3	1.46E-03	1.72E-02					
1370	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1370	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1370	3	1.46E-03	1.72E-02					
1371	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1371	2	9.48E-04	1.10E-02	2.64E-07	3.79E-05	0.006181	0.004286	13.20
1371	3	1.46E-03	1.72E-02					
1372	1	5.58E-05	6.11E-04	7.95E-07	1.09E-04	0.010467		
1372	2	9.48E-04	1.10E-02	2.63E-07	3.79E-05	0.006181	0.004286	13.20
1372	3	1.46E-03	1.72E-02					
1373	1	5.58E-05	6.11E-04	8.00E-07	1.09E-04	0.010487		
1373	2	9.50E-04	1.11E-02	2.66E-07	3.83E-05	0.006211	0.004276	13.21
1373	3	1.47E-03	1.73E-02					
1374	1	5.59E-05	6.11E-04	7.98E-07	1.09E-04	0.010477		
1374	2	9.49E-04	1.11E-02	2.64E-07	3.82E-05	0.006201	0.004275	13.21
1374	3	1.46E-03	1.72E-02					
1375	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1375	2	9.48E-04	1.10E-02	2.64E-07	3.81E-05	0.006191	0.004276	13.2
1375	3	1.46E-03	1.72E-02					
1376	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1376	2	9.48E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004276	13.21
1376	3	1.46E-03	1.72E-02					
1377	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1377	2	9.48E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004276	13.21
1377	3	1.46E-03	1.72E-02					
1378	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1378	2	9.48E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004276	13.21
1378	3	1.46E-03	1.72E-02					
1379	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1379	2	9.48E-04	1.10E-02	2.63E-07	3.81E-05	0.006191	0.004276	13.21
1379	3	1.46E-03	1.72E-02					
1380	1	5.58E-05	6.11E-04	7.96E-07	1.09E-04	0.010467		
1380	2	9.48E-04	1.10E-02	2.13E-07	3.06E-05	0.005549	0.004918	13.21
1380	3	1.41E-03	1.66E-02					
1381	1	5.54E-05	6.01E-04	6.94E-07	9.43E-05	0.009745		
1381	2	8.89E-04	1.03E-02	2.11E-07	3.06E-05	0.005549	0.004196	13.21
1381	3	1.35E-03	1.58E-02					
1382	1	5.53E-05	6.01E-04	6.92E-07	9.39E-05	0.009725		
1382	2	8.87E-04	1.03E-02	2.10E-07	3.04E-05	0.005529	0.004196	13.21
1382	3	1.35E-03	1.58E-02					
1383	1	5.53E-05	6.00E-04	6.91E-07	9.37E-05	0.009715		
1383	2	8.87E-04	1.03E-02	2.10E-07	3.03E-05	0.005519	0.004196	13.21
1383	3	1.35E-03	1.58E-02					
1384	1	5.53E-05	6.00E-04	6.91E-07	9.35E-05	0.009705		
1384	2	8.86E-04	1.03E-02	2.10E-07	3.04E-05	0.005529	0.004176	13
1384	3	1.35E-03	1.58E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1385	1	5.53E-05	6.00E-04	6.91E-07	9.35E-05	0.009706		
1385	2	8.86E-04	1.03E-02	2.10E-07	3.03E-05	0.005519	0.004186	13.22
1385	3	1.35E-03	1.58E-02					
1386	1	5.53E-05	6.00E-04	6.91E-07	9.35E-05	0.009706		
1386	2	8.86E-04	1.03E-02	2.10E-07	3.03E-05	0.005519	0.004186	13.22
1386	3	1.35E-03	1.58E-02					
1387	1	5.53E-05	6.00E-04	6.89E-07	9.33E-05	0.009696		
1387	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004187	13.22
1387	3	1.34E-03	1.58E-02					
1388	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1388	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1388	3	1.34E-03	1.57E-02					
1389	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1389	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1389	3	1.34E-03	1.57E-02					
1390	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1390	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1390	3	1.34E-03	1.57E-02					
1391	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1391	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1391	3	1.34E-03	1.57E-02					
1392	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1392	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1392	3	1.34E-03	1.57E-02					
1393	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1393	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1393	3	1.34E-03	1.57E-02					
1394	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1394	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.22
1394	3	1.34E-03	1.57E-02					
1395	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1395	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.23
1395	3	1.34E-03	1.57E-02					
1396	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1396	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.23
1396	3	1.34E-03	1.57E-02					
1397	1	5.52E-05	6.00E-04	6.88E-07	9.31E-05	0.009686		
1397	2	8.85E-04	1.03E-02	2.09E-07	3.01E-05	0.005509	0.004177	13.23
1397	3	1.34E-03	1.57E-02					
1398	1	5.48E-05	6.04E-04	5.45E-07	7.21E-05	0.008522		
1398	2	7.93E-04	9.09E-03	1.65E-07	2.29E-05	0.004803	0.003719	13.23
1398	3	1.20E-03	1.39E-02					
1399	1	5.42E-05	5.91E-04	5.22E-07	6.90E-05	0.008339		
1399	2	7.77E-04	8.90E-03	1.55E-07	2.14E-05	0.004648	0.003691	13.23
1399	3	1.17E-03	1.35E-02					
1400	1	5.40E-05	5.88E-04	5.15E-07	6.80E-05	0.008275		
1400	2	7.72E-04	8.83E-03	1.54E-07	2.11E-05	0.004615	0.003660	13.23
1400	3	1.16E-03	1.34E-02					
1401	1	5.39E-05	5.88E-04	5.14E-07	6.77E-05	0.008259		
1401	2	7.71E-04	8.82E-03	1.53E-07	2.11E-05	0.004612	0.003647	13.23
1401	3	1.16E-03	1.34E-02					
1402	1	5.39E-05	5.87E-04	5.13E-07	6.76E-05	0.008254		
1402	2	7.71E-04	8.81E-03	1.52E-07	2.11E-05	0.004607	0.003647	13.23
1402	3	1.16E-03	1.34E-02					
1403	1	5.39E-05	5.87E-04	5.13E-07	6.76E-05	0.008253		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1403	2	7.70E-04	8.81E-03	1.53E-07	2.11E-05	0.004608	0.003645	13.23
1403	3	1.16E-03	1.34E-02					
1404	1	5.39E-05	5.87E-04	5.13E-07	6.76E-05	0.008252		
1404	2	7.70E-04	8.81E-03	1.47E-07	1.99E-05	0.004478	0.003773	13.23
1404	3	1.15E-03	1.33E-02					
1405	1	5.38E-05	5.85E-04	4.97E-07	6.41E-05	0.008036		
1405	2	7.59E-04	8.59E-03	1.44E-07	1.91E-05	0.004386	0.003650	13.23
1405	3	1.14E-03	1.30E-02					
1406	1	5.38E-05	5.83E-04	4.94E-07	6.33E-05	0.007990		
1406	2	7.56E-04	8.54E-03	1.43E-07	1.89E-05	0.004364	0.003625	13.24
1406	3	1.13E-03	1.29E-02					
1407	1	8.37E-04	-1.72E-03	9.76E-06	1.61E-03	0.040302		
1407	2	3.96E-03	3.85E-02	2.89E-06	3.72E-04	0.019375	0.020928	13.24
1407	3	5.66E-03	5.78E-02					
1408	1	7.83E-05	8.93E-04	1.82E-06	2.39E-04	0.015526		
1408	2	1.43E-03	1.64E-02	4.48E-07	6.15E-05	0.007868	0.007658	13.24
1408	3	2.10E-03	2.42E-02					
1409	1	5.84E-05	6.54E-04	7.41E-07	9.73E-05	0.009904		
1409	2	9.20E-04	1.05E-02	2.12E-07	2.87E-05	0.005380	0.004524	13.24
1409	3	1.38E-03	1.59E-02					
1410	1	5.52E-05	6.04E-04	5.59E-07	7.27E-05	0.008562		
1410	2	8.03E-04	9.13E-03	1.69E-07	2.23E-05	0.004735	0.003827	13.24
1410	3	1.21E-03	1.39E-02					
1411	1	5.44E-05	5.91E-04	5.22E-07	6.72E-05	0.008229		
1411	2	7.77E-04	8.79E-03	1.57E-07	2.04E-05	0.004529	0.003699	13.24
1411	3	1.17E-03	1.33E-02					
1412	1	5.42E-05	5.87E-04	5.10E-07	6.54E-05	0.008118		
1412	2	7.68E-04	8.67E-03	1.53E-07	1.98E-05	0.004463	0.003655	13.2
1412	3	1.16E-03	1.31E-02					
1413	1	5.55E-05	5.93E-04	9.02E-07	1.08E-04	0.010450		
1413	2	1.01E-03	1.10E-02	3.88E-07	4.76E-05	0.006928	0.003522	13.24
1413	3	1.63E-03	1.79E-02					
1414	1	5.81E-05	6.38E-04	9.80E-07	1.20E-04	0.010977		
1414	2	1.05E-03	1.16E-02	4.10E-07	5.11E-05	0.007179	0.003799	13.24
1414	3	1.69E-03	1.87E-02					
1415	1	5.84E-05	6.42E-04	9.99E-07	1.22E-04	0.011113		
1415	2	1.06E-03	1.17E-02	4.19E-07	5.23E-05	0.007259	0.003854	13.24
1415	3	1.71E-03	1.89E-02					
1416	1	5.85E-05	6.44E-04	1.01E-06	1.24E-04	0.011161		
1416	2	1.06E-03	1.18E-02	4.23E-07	5.29E-05	0.007299	0.003862	13.24
1416	3	1.71E-03	1.90E-02					
1417	1	5.85E-05	6.45E-04	1.01E-06	1.24E-04	0.011190		
1417	2	1.06E-03	1.18E-02	4.24E-07	5.30E-05	0.007309	0.003881	13.25
1417	3	1.72E-03	1.91E-02					
1418	1	5.86E-05	6.45E-04	1.01E-06	1.24E-04	0.011200		
1418	2	1.07E-03	1.18E-02	4.25E-07	5.31E-05	0.007319	0.003881	13.25
1418	3	1.72E-03	1.91E-02					
1419	1	6.15E-05	6.32E-04	1.27E-06	1.45E-04	0.012101		
1419	2	1.19E-03	1.27E-02	4.86E-07	5.87E-05	0.007692	0.004409	13.25
1419	3	1.88E-03	2.03E-02					
1420	1	6.00E-05	6.59E-04	1.13E-06	1.34E-04	0.011630		
1420	2	1.13E-03	1.22E-02	5.40E-07	6.37E-05	0.008014	0.003616	13.25
1420	3	1.86E-03	2.02E-02					
1421	1	6.08E-05	6.67E-04	1.18E-06	1.39E-04	0.011833		
1421	2	1.15E-03	1.25E-02	2.39E-05	2.12E-03	0.046289	-0.034456	13

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1421	3	6.03E-03	5.85E-02					
1422	1	1.55E-04	1.35E-03	1.59E-05	1.80E-03	0.042613		
1422	2	4.15E-03	4.38E-02	5.64E-06	6.81E-04	0.026198	0.016415	13.25
1422	3	6.52E-03	6.99E-02					
1423	1	9.60E-05	1.06E-03	4.90E-06	5.84E-04	0.024277		
1423	2	2.31E-03	2.52E-02	1.86E-06	2.34E-04	0.015371	0.008906	13.25
1423	3	3.67E-03	4.06E-02					
1424	1	7.39E-05	8.01E-04	2.36E-06	2.80E-04	0.016809		
1424	2	1.61E-03	1.75E-02	9.90E-07	1.22E-04	0.011075	0.005734	13.25
1424	3	2.61E-03	2.86E-02					
1425	1	6.55E-05	7.32E-04	1.70E-06	2.00E-04	0.014208		
1425	2	1.37E-03	1.49E-02	7.07E-07	8.59E-05	0.009308	0.004900	13.25
1425	3	2.21E-03	2.42E-02					
1426	1	6.26E-05	6.94E-04	1.29E-06	1.52E-04	0.012368		
1426	2	1.20E-03	1.30E-02	6.50E-07	7.67E-05	0.008797	0.003571	13.25
1426	3	2.01E-03	2.18E-02					
1427	1	6.22E-05	6.85E-04	1.29E-06	1.53E-04	0.012408		
1427	2	1.20E-03	1.30E-02	6.27E-07	7.40E-05	0.008636	0.003771	13.25
1427	3	1.99E-03	2.16E-02					
1428	1	6.19E-05	6.81E-04	1.26E-06	1.49E-04	0.012251		
1428	2	1.19E-03	1.29E-02	6.13E-07	7.23E-05	0.008536	0.003715	13.26
1428	3	1.97E-03	2.14E-02					
1429	1	6.17E-05	6.78E-04	1.25E-06	1.47E-04	0.012193		
1429	2	1.18E-03	1.28E-02	6.08E-07	7.14E-05	0.008486	0.003707	13.26
1429	3	1.96E-03	2.13E-02					
1430	1	6.16E-05	6.77E-04	1.25E-06	1.47E-04	0.012164		
1430	2	1.18E-03	1.28E-02	6.05E-07	7.11E-05	0.008466	0.003698	13.26
1430	3	1.96E-03	2.12E-02					
1431	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012154		
1431	2	1.18E-03	1.28E-02	6.04E-07	7.09E-05	0.008456	0.003699	13.26
1431	3	1.95E-03	2.12E-02					
1432	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012154		
1432	2	1.18E-03	1.28E-02	6.04E-07	7.07E-05	0.008446	0.003709	13.26
1432	3	1.95E-03	2.12E-02					
1433	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1433	2	1.18E-03	1.28E-02	6.02E-07	7.09E-05	0.008456	0.003689	13.26
1433	3	1.95E-03	2.12E-02					
1434	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1434	2	1.18E-03	1.28E-02	6.02E-07	7.09E-05	0.008456	0.003689	13.26
1434	3	1.95E-03	2.12E-02					
1435	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1435	2	1.18E-03	1.28E-02	6.02E-07	7.09E-05	0.008456	0.003689	13.26
1435	3	1.95E-03	2.12E-02					
1436	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1436	2	1.18E-03	1.28E-02	6.04E-07	7.09E-05	0.008456	0.003689	13.26
1436	3	1.95E-03	2.12E-02					
1437	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1437	2	1.18E-03	1.28E-02	6.04E-07	7.09E-05	0.008456	0.003689	13.26
1437	3	1.95E-03	2.12E-02					
1438	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012145		
1438	2	1.18E-03	1.28E-02	6.04E-07	7.09E-05	0.008456	0.003689	13.26
1438	3	1.95E-03	2.12E-02					
1439	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1439	2	1.18E-03	1.28E-02	6.04E-07	7.07E-05	0.008446	0.003709	13.27
1439	3	1.95E-03	2.12E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1440	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1440	2	1.18E-03	1.28E-02	6.04E-07	7.07E-05	0.008446	0.003709	13.27
1440	3	1.95E-03	2.12E-02					
1441	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1441	2	1.18E-03	1.28E-02	6.04E-07	7.07E-05	0.008446	0.003709	13.27
1441	3	1.95E-03	2.12E-02					
1442	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1442	2	1.18E-03	1.28E-02	6.04E-07	7.07E-05	0.008446	0.003709	13.27
1442	3	1.95E-03	2.12E-02					
1443	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1443	2	1.18E-03	1.28E-02	6.05E-07	7.09E-05	0.008456	0.003699	13.27
1443	3	1.96E-03	2.12E-02					
1444	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1444	2	1.18E-03	1.28E-02	6.05E-07	7.09E-05	0.008456	0.003699	13.27
1444	3	1.96E-03	2.12E-02					
1445	1	6.16E-05	6.77E-04	1.24E-06	1.46E-04	0.012155		
1445	2	1.18E-03	1.28E-02	1.06E-05	9.04E-04	0.030236	-0.018081	13.27
1445	3	4.43E-03	4.28E-02					
1446	1	1.41E-04	1.29E-03	5.98E-06	6.97E-04	0.026522		
1446	2	2.59E-03	2.77E-02	2.66E-06	3.18E-04	0.017894	0.008628	13.27
1446	3	4.22E-03	4.55E-02					
1447	1	7.95E-05	8.83E-04	3.15E-06	3.69E-04	0.019279		
1447	2	1.85E-03	2.01E-02	1.14E-06	1.41E-04	0.011908	0.007371	13.27
1447	3	2.92E-03	3.19E-02					
1448	1	6.74E-05	7.53E-04	1.86E-06	2.17E-04	0.014790		
1448	2	1.43E-03	1.55E-02	7.74E-07	9.47E-05	0.009770	0.005020	13.27
1448	3	2.31E-03	2.52E-02					
1449	1	6.33E-05	7.04E-04	1.53E-06	1.81E-04	0.013493		
1449	2	1.30E-03	1.41E-02	6.51E-07	7.76E-05	0.008847	0.004646	13.27
1449	3	2.11E-03	2.30E-02					
1450	1	6.21E-05	6.85E-04	1.29E-06	1.53E-04	0.012408		
1450	2	1.20E-03	1.30E-02	6.32E-07	7.43E-05	0.008657	0.003751	13.28
1450	3	1.99E-03	2.17E-02					
1451	1	6.19E-05	6.81E-04	1.27E-06	1.50E-04	0.012291		
1451	2	1.19E-03	1.29E-02	6.21E-07	7.28E-05	0.008566	0.003725	13.28
1451	3	1.98E-03	2.15E-02					
1452	1	6.18E-05	6.79E-04	1.26E-06	1.48E-04	0.012233		
1452	2	1.19E-03	1.29E-02	6.15E-07	7.23E-05	0.008536	0.003697	13.28
1452	3	1.97E-03	2.14E-02					
1453	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012214		
1453	2	1.18E-03	1.28E-02	6.15E-07	7.19E-05	0.008516	0.003697	13.28
1453	3	1.97E-03	2.13E-02					
1454	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1454	2	1.18E-03	1.28E-02	6.12E-07	7.17E-05	0.008506	0.003698	13.28
1454	3	1.97E-03	2.13E-02					
1455	1	6.17E-05	6.78E-04	1.26E-06	1.47E-04	0.012194		
1455	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.28
1455	3	1.97E-03	2.13E-02					
1456	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1456	2	1.18E-03	1.28E-02	6.12E-07	7.17E-05	0.008506	0.003688	13.28
1456	3	1.96E-03	2.13E-02					
1457	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1457	2	1.18E-03	1.28E-02	6.12E-07	7.17E-05	0.008506	0.003688	13.28
1457	3	1.96E-03	2.13E-02					
1458	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1458	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.28
1458	3	1.97E-03	2.13E-02					
1459	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1459	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.28
1459	3	1.97E-03	2.13E-02					
1460	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1460	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.28
1460	3	1.97E-03	2.13E-02					
1461	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1461	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.28
1461	3	1.97E-03	2.13E-02					
1462	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1462	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.29
1462	3	1.97E-03	2.13E-02					
1463	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1463	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.29
1463	3	1.97E-03	2.13E-02					
1464	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1464	2	1.18E-03	1.28E-02	6.12E-07	7.17E-05	0.008506	0.003688	13.29
1464	3	1.97E-03	2.13E-02					
1465	1	6.17E-05	6.77E-04	1.26E-06	1.47E-04	0.012194		
1465	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.29
1465	3	1.97E-03	2.13E-02					
1466	1	6.17E-05	6.78E-04	1.26E-06	1.47E-04	0.012194		
1466	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003688	13.29
1466	3	1.97E-03	2.13E-02					
1467	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1467	2	1.18E-03	1.28E-02	6.13E-07	7.16E-05	0.008496	0.003708	13.29
1467	3	1.97E-03	2.13E-02					
1468	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1468	2	1.18E-03	1.28E-02	6.13E-07	7.16E-05	0.008496	0.003708	13.29
1468	3	1.97E-03	2.13E-02					
1469	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1469	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003698	13.29
1469	3	1.97E-03	2.13E-02					
1470	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1470	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003698	13.29
1470	3	1.97E-03	2.13E-02					
1471	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1471	2	1.18E-03	1.28E-02	6.13E-07	7.17E-05	0.008506	0.003698	13.29
1471	3	1.97E-03	2.13E-02					
1472	1	6.17E-05	6.78E-04	1.26E-06	1.48E-04	0.012204		
1472	2	1.18E-03	1.28E-02	6.15E-07	7.17E-05	0.008506	0.003698	13.29
1472	3	1.97E-03	2.13E-02					
1473	1	6.17E-05	6.78E-04	1.52E-06	2.00E-04	0.014196		
1473	2	1.30E-03	1.48E-02	4.69E-06	5.17E-04	0.022843	-0.008647	13.30
1473	3	3.46E-03	3.76E-02					
1474	1	-2.47E-03	5.24E-03	8.25E-05	3.92E-03	0.063298		
1474	2	6.61E-03	6.79E-02	4.30E-05	4.64E-03	0.068435	-0.005137	13.30
1474	3	1.32E-02	0.136					
1475	1	-4.17E-03	8.90E-03	5.29E-04	3.17E-02	0.179576		
1475	2	1.88E-02	0.187	1.15E-04	1.23E-02	0.111515	0.068060	13.30
1475	3	2.95E-02	0.298					
1476	1	-3.11E-03	6.37E-03	2.73E-04	1.68E-02	0.130684		
1476	2	1.34E-02	0.136	3.45E-05	4.10E-03	0.064269	0.066416	13.30

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1476	3	1.93E-02	0.2					
1477	1	1.01E-03	1.58E-03	2.89E-05	3.92E-03	0.062813		
1477	2	6.39E-03	6.42E-02	8.74E-06	1.07E-03	0.032883	0.029930	13.30
1477	3	9.35E-03	9.69E-02					
1478	1	1.07E-04	1.19E-03	4.23E-06	5.25E-04	0.023010		
1478	2	2.16E-03	2.41E-02	1.13E-06	1.47E-04	0.012167	0.010843	13.30
1478	3	3.23E-03	3.62E-02					
1479	1	6.61E-05	7.47E-04	1.21E-06	1.50E-04	0.012282		
1479	2	1.17E-03	1.30E-02	3.31E-07	4.26E-05	0.006555	0.005727	13.30
1479	3	1.74E-03	1.95E-02					
1480	1	5.76E-05	6.29E-04	6.91E-07	8.38E-05	0.009191		
1480	2	8.89E-04	9.78E-03	2.17E-07	2.63E-05	0.005148	0.004043	13.30
1480	3	1.35E-03	1.49E-02					
1481	1	5.59E-05	6.01E-04	5.98E-07	7.10E-05	0.008459		
1481	2	8.30E-04	9.03E-03	1.85E-07	2.20E-05	0.004715	0.003744	13.30
1481	3	1.26E-03	1.37E-02					
1482	1	5.54E-05	5.93E-04	5.70E-07	6.70E-05	0.008221		
1482	2	8.11E-04	8.78E-03	1.76E-07	2.07E-05	0.004570	0.003651	13.30
1482	3	1.23E-03	1.33E-02					
1483	1	5.52E-05	5.90E-04	5.61E-07	6.57E-05	0.008143		
1483	2	8.04E-04	8.70E-03	1.73E-07	2.03E-05	0.004521	0.003621	13.30
1483	3	1.22E-03	1.32E-02					
1484	1	5.51E-05	5.89E-04	5.58E-07	6.53E-05	0.008115		
1484	2	8.02E-04	8.67E-03	1.72E-07	2.02E-05	0.004509	0.003606	13.31
1484	3	1.22E-03	1.32E-02					
1485	1	5.51E-05	5.89E-04	5.57E-07	6.52E-05	0.008107		
1485	2	8.02E-04	8.66E-03	1.72E-07	2.01E-05	0.004498	0.003609	13.[illegible]
1485	3	1.22E-03	1.31E-02					
1486	1	5.51E-05	5.89E-04	5.68E-07	6.63E-05	0.008175		
1486	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004480	0.003695	13.31
1486	3	1.22E-03	1.32E-02					
1487	1	5.51E-05	5.88E-04	5.69E-07	6.64E-05	0.008183		
1487	2	8.09E-04	8.74E-03	1.70E-07	1.99E-05	0.004483	0.003700	13.31
1487	3	1.22E-03	1.32E-02					
1488	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008180		
1488	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.31
1488	3	1.22E-03	1.32E-02					
1489	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008177		
1489	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004479	0.003698	13.31
1489	3	1.22E-03	1.32E-02					
1490	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1490	2	8.09E-04	8.73E-03	1.69E-07	1.99E-05	0.004480	0.003695	13.31
1490	3	1.22E-03	1.32E-02					
1491	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1491	2	8.09E-04	8.73E-03	1.69E-07	1.99E-05	0.004480	0.003696	13.31
1491	3	1.22E-03	1.32E-02					
1492	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1492	2	8.09E-04	8.73E-03	1.69E-07	1.99E-05	0.004480	0.003696	13.31
1492	3	1.22E-03	1.32E-02					
1493	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1493	2	8.09E-04	8.73E-03	1.69E-07	1.99E-05	0.004480	0.003696	13.31
1493	3	1.22E-03	1.32E-02					
1494	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1494	2	8.09E-04	8.73E-03	1.69E-07	1.99E-05	0.004480	0.003696	13[illegible]
1494	3	1.22E-03	1.32E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1495	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1495	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004480	0.003696	13.32
1495	3	1.22E-03	1.32E-02					
1496	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1496	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004480	0.003696	13.32
1496	3	1.22E-03	1.32E-02					
1497	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1497	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004480	0.003696	13.32
1497	3	1.22E-03	1.32E-02					
1498	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008176		
1498	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004480	0.003696	13.32
1498	3	1.22E-03	1.32E-02					
1499	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008177		
1499	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004479	0.003698	13.32
1499	3	1.22E-03	1.32E-02					
1500	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008179		
1500	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004477	0.003702	13.32
1500	3	1.22E-03	1.32E-02					
1501	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008179		
1501	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004477	0.003702	13.32
1501	3	1.22E-03	1.32E-02					
1502	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008180		
1502	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.32
1502	3	1.22E-03	1.32E-02					
1503	1	5.51E-05	5.88E-04	5.68E-07	6.63E-05	0.008180		
1503	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.32
1503	3	1.22E-03	1.32E-02					
1504	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1504	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.32
1504	3	1.22E-03	1.32E-02					
1505	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1505	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.32
1505	3	1.22E-03	1.32E-02					
1506	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1506	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1506	3	1.22E-03	1.32E-02					
1507	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1507	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1507	3	1.22E-03	1.32E-02					
1508	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1508	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1508	3	1.22E-03	1.32E-02					
1509	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1509	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1509	3	1.22E-03	1.32E-02					
1510	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1510	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1510	3	1.22E-03	1.32E-02					
1511	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1511	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1511	3	1.22E-03	1.32E-02					
1512	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		
1512	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004476	0.003704	13.33
1512	3	1.22E-03	1.32E-02					
1513	1	5.51E-05	5.88E-04	5.69E-07	6.63E-05	0.008180		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1513	2	8.09E-04	8.73E-03	70E-07	1.99E-05	0.004476	0.003704	13.33
1513	3	1.22E-03	1.32E-02					
1514	1	5.51E-05	5.88E-04	5.69E-07	6.64E-05	0.008181		
1514	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004475	0.003706	13.33
1514	3	1.22E-03	1.32E-02					
1515	1	5.51E-05	5.88E-04	5.69E-07	6.64E-05	0.008181		
1515	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004475	0.003706	13.33
1515	3	1.22E-03	1.32E-02					
1516	1	5.51E-05	5.88E-04	5.69E-07	6.64E-05	0.008181		
1516	2	8.09E-04	8.73E-03	1.70E-07	1.99E-05	0.004475	0.003706	13.33
1516	3	1.22E-03	1.32E-02					
1517	1	5.45E-05	5.93E-04	4.91E-07	5.61E-05	0.007525		
1517	2	7.56E-04	8.09E-03	1.69E-07	1.89E-05	0.004364	0.003161	13.34
1517	3	1.17E-03	1.24E-02					
1518	1	5.47E-05	5.92E-04	4.95E-07	5.65E-05	0.007552		
1518	2	7.58E-04	8.11E-03	1.66E-07	1.86E-05	0.004328	0.003224	13.34
1518	3	1.17E-03	1.24E-02					
1519	1	5.47E-05	5.92E-04	4.93E-07	5.63E-05	0.007536		
1519	2	7.57E-04	8.10E-03	1.66E-07	1.84E-05	0.004314	0.003222	13.34
1519	3	1.16E-03	1.24E-02					
1520	1	5.47E-05	5.91E-04	4.93E-07	5.62E-05	0.007531		
1520	2	7.57E-04	8.09E-03	1.66E-07	1.85E-05	0.004319	0.003212	13.34
1520	3	1.16E-03	1.24E-02					
1521	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007530		
1521	2	7.56E-04	8.09E-03	1.66E-07	1.84E-05	0.004310	0.003220	13.34
1521	3	1.16E-03	1.24E-02					
1522	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007529		
1522	2	7.56E-04	8.09E-03	1.66E-07	1.84E-05	0.004311	0.003218	13.34
1522	3	1.16E-03	1.24E-02					
1523	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007529		
1523	2	7.56E-04	8.09E-03	1.66E-07	1.84E-05	0.004311	0.003218	13.34
1523	3	1.16E-03	1.24E-02					
1524	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007528		
1524	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004313	0.003214	13.34
1524	3	1.16E-03	1.24E-02					
1525	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1525	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.34
1525	3	1.16E-03	1.24E-02					
1526	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1526	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.34
1526	3	1.16E-03	1.24E-02					
1527	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1527	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.34
1527	3	1.16E-03	1.24E-02					
1528	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1528	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35
1528	3	1.16E-03	1.24E-02					
1529	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1529	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35
1529	3	1.16E-03	1.24E-02					
1530	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1530	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35
1530	3	1.16E-03	1.24E-02					
1531	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1531	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1531	3	1.16E-03	1.24E-02					
1532	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1532	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35
1532	3	1.16E-03	1.24E-02					
1533	1	5.47E-05	5.91E-04	4.92E-07	5.62E-05	0.007527		
1533	2	7.56E-04	8.09E-03	1.65E-07	1.84E-05	0.004314	0.003212	13.35
1533	3	1.16E-03	1.24E-02					
1534	1	5.53E-05	5.94E-04	5.29E-07	5.96E-05	0.007756		
1534	2	7.83E-04	8.32E-03	1.73E-07	1.95E-05	0.004434	0.003323	13.35
1534	3	1.20E-03	1.27E-02					
1535	1	5.50E-05	5.94E-04	4.99E-07	5.72E-05	0.007598		
1535	2	7.62E-04	8.16E-03	1.88E-07	2.11E-05	0.004611	0.002987	13.35
1535	3	1.20E-03	1.28E-02					
1536	1	5.50E-05	5.97E-04	5.08E-07	5.82E-05	0.007661		
1536	2	7.68E-04	8.22E-03	1.91E-07	2.14E-05	0.004647	0.003014	13.35
1536	3	1.21E-03	1.29E-02					
1537	1	5.51E-05	5.97E-04	5.10E-07	5.84E-05	0.007676		
1537	2	7.69E-04	8.24E-03	1.92E-07	2.15E-05	0.004661	0.003015	13.35
1537	3	1.21E-03	1.29E-02					
1538	1	5.51E-05	5.97E-04	5.10E-07	5.85E-05	0.007681		
1538	2	7.70E-04	8.25E-03	1.91E-07	2.16E-05	0.004666	0.003015	13.35
1538	3	1.21E-03	1.29E-02					
1539	1	5.51E-05	5.98E-04	5.11E-07	5.85E-05	0.007682		
1539	2	7.70E-04	8.25E-03	1.92E-07	2.16E-05	0.004665	0.003017	13.36
1539	3	1.21E-03	1.29E-02					
1540	1	5.51E-05	5.98E-04	5.11E-07	5.85E-05	0.007683		
1540	2	7.70E-04	8.25E-03	1.92E-07	2.16E-05	0.004664	0.003019	13.36
1540	3	1.21E-03	1.29E-02					
1541	1	5.57E-05	6.01E-04	8.61E-07	9.46E-05	0.009773		
1541	2	9.84E-04	1.03E-02	4.79E-07	5.20E-05	0.007243	0.002530	13.36
1541	3	1.68E-03	1.75E-02					
1542	1	5.96E-05	6.54E-04	1.04E-06	1.15E-04	0.010764		
1542	2	1.08E-03	1.14E-02	5.69E-07	6.19E-05	0.007906	0.002858	13.36
1542	3	1.83E-03	1.92E-02					
1543	1	6.07E-05	6.69E-04	1.11E-06	1.22E-04	0.011111		
1543	2	1.11E-03	1.17E-02	6.05E-07	6.61E-05	0.008167	0.002944	13.36
1543	3	1.89E-03	1.99E-02					
1544	1	6.11E-05	6.74E-04	1.13E-06	1.26E-04	0.011256		
1544	2	1.13E-03	1.19E-02	6.19E-07	6.77E-05	0.008268	0.002989	13.36
1544	3	1.91E-03	2.01E-02					
1545	1	6.13E-05	6.77E-04	1.14E-06	1.27E-04	0.011314		
1545	2	1.13E-03	1.19E-02	6.26E-07	6.84E-05	0.008308	0.003006	13.36
1545	3	1.92E-03	2.02E-02					
1546	1	6.13E-05	6.78E-04	1.15E-06	1.27E-04	0.011333		
1546	2	1.13E-03	1.20E-02	6.29E-07	6.87E-05	0.008328	0.003005	13.36
1546	3	1.93E-03	2.03E-02					
1547	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011343		
1547	2	1.13E-03	1.20E-02	6.30E-07	6.89E-05	0.008338	0.003005	13.36
1547	3	1.93E-03	2.03E-02					
1548	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1548	2	1.13E-03	1.20E-02	6.30E-07	6.89E-05	0.008338	0.003015	13.36
1548	3	1.93E-03	2.03E-02					
1549	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1549	2	1.13E-03	1.20E-02	6.32E-07	6.89E-05	0.008338	0.003015	13.36
1549	3	1.93E-03	2.03E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1550	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1550	2	1.13E-03	1.20E-02	6.30E-07	6.89E-05	0.008338	0.003015	13.37
1550	3	1.93E-03	2.03E-02					
1551	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1551	2	1.13E-03	1.20E-02	6.30E-07	6.91E-05	0.008348	0.003005	13.37
1551	3	1.93E-03	2.03E-02					
1552	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1552	2	1.13E-03	1.20E-02	6.30E-07	6.91E-05	0.008348	0.003005	13.37
1552	3	1.93E-03	2.03E-02					
1553	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1553	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1553	3	1.93E-03	2.03E-02					
1554	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1554	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1554	3	1.93E-03	2.03E-02					
1555	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1555	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1555	3	1.93E-03	2.03E-02					
1556	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1556	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1556	3	1.93E-03	2.03E-02					
1557	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011353		
1557	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1557	3	1.93E-03	2.03E-02					
1558	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011352		
1558	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1558	3	1.93E-03	2.03E-02					
1559	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011352		
1559	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1559	3	1.93E-03	2.03E-02					
1560	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011352		
1560	2	1.13E-03	1.20E-02	6.32E-07	6.91E-05	0.008348	0.003005	13.37
1560	3	1.93E-03	2.03E-02					
1561	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011352		
1561	2	1.13E-03	1.20E-02	6.34E-07	6.91E-05	0.008348	0.003004	13.37
1561	3	1.93E-03	2.03E-02					
1562	1	6.14E-05	6.78E-04	1.15E-06	1.28E-04	0.011352		
1562	2	1.13E-03	1.20E-02	3.33E-05	2.50E-03	0.050312	-0.038960	13.38
1562	3	6.91E-03	6.20E-02					
1563	1	-2.65E-03	2.24E-02	1.90E-04	6.02E-03	0.078838		
1563	2	1.12E-02	0.1	1.32E-04	1.21E-02	0.110600	-0.031762	13.38
1563	3	2.27E-02	0.21					
1564	1	2.96E-04	3.10E-03	4.82E-05	4.37E-03	0.066438		
1564	2	7.24E-03	6.92E-02	1.96E-05	1.67E-03	0.041069	0.025369	13.38
1564	3	1.17E-02	0.11					
1565	1	1.40E-04	1.41E-03	1.14E-05	9.62E-04	0.031198		
1565	2	3.52E-03	3.24E-02	4.08E-06	3.48E-04	0.018759	0.012438	13.38
1565	3	5.54E-03	5.11E-02					
1566	1	8.53E-05	9.10E-04	3.69E-06	3.06E-04	0.017595		
1566	2	2.01E-03	1.84E-02	1.44E-06	1.24E-04	0.011204	0.006391	13.38
1566	3	3.20E-03	2.95E-02					
1567	1	6.87E-05	7.44E-04	1.85E-06	1.54E-04	0.012491		
1567	2	1.43E-03	1.32E-02	8.41E-07	6.91E-05	0.008360	0.004130	13.38
1567	3	2.35E-03	2.15E-02					
1568	1	6.34E-05	6.83E-04	1.24E-06	1.03E-04	0.010208		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1568	2	1.18E-03	1.08E-02	7.01E-07	5.45E-05	0.007427	0.002780	13.38
1568	3	2.02E-03	1.82E-02					
1569	1	6.22E-05	6.65E-04	1.14E-06	9.28E-05	0.009694		
1569	2	1.13E-03	1.03E-02	6.43E-07	4.91E-05	0.007056	0.002639	13.38
1569	3	1.93E-03	1.73E-02					
1570	1	6.16E-05	6.57E-04	1.13E-06	9.38E-05	0.009741		
1570	2	1.13E-03	1.03E-02	6.19E-07	4.73E-05	0.006925	0.002817	13.38
1570	3	1.91E-03	1.72E-02					
1571	1	6.13E-05	6.54E-04	1.12E-06	9.31E-05	0.009704		
1571	2	1.12E-03	1.03E-02	6.10E-07	4.66E-05	0.006875	0.002830	13.38
1571	3	1.90E-03	1.71E-02					
1572	1	6.13E-05	6.53E-04	1.11E-06	9.42E-05	0.009765		
1572	2	1.12E-03	1.04E-02	6.10E-07	4.75E-05	0.006934	0.002831	13.38
1572	3	1.90E-03	1.73E-02					
1573	1	6.12E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1573	2	1.12E-03	1.04E-02	6.07E-07	4.76E-05	0.006944	0.002840	13.39
1573	3	1.89E-03	1.73E-02					
1574	1	6.12E-05	6.53E-04	1.11E-06	9.48E-05	0.009794		
1574	2	1.11E-03	1.04E-02	6.05E-07	4.75E-05	0.006934	0.002860	13.39
1574	3	1.89E-03	1.73E-02					
1575	1	6.11E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1575	2	1.11E-03	1.04E-02	6.04E-07	4.75E-05	0.006934	0.002850	13.39
1575	3	1.89E-03	1.73E-02					
1576	1	6.11E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1576	2	1.11E-03	1.04E-02	6.05E-07	4.75E-05	0.006934	0.002850	13.39
1576	3	1.89E-03	1.73E-02					
1577	1	6.11E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1577	2	1.11E-03	1.04E-02	6.05E-07	4.75E-05	0.006934	0.002850	13.39
1577	3	1.89E-03	1.73E-02					
1578	1	6.11E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1578	2	1.11E-03	1.04E-02	6.05E-07	4.75E-05	0.006934	0.002850	13.39
1578	3	1.89E-03	1.73E-02					
1579	1	6.11E-05	6.53E-04	1.11E-06	9.46E-05	0.009784		
1579	2	1.11E-03	1.04E-02	6.05E-07	4.75E-05	0.006934	0.002850	13.39
1579	3	1.89E-03	1.73E-02					
1580	1	6.10E-05	6.50E-04	1.07E-06	9.10E-05	0.009596		
1580	2	1.10E-03	1.02E-02	5.70E-07	4.42E-05	0.006693	0.002903	13.39
1580	3	1.85E-03	1.68E-02					
1581	1	6.08E-05	6.47E-04	1.14E-06	9.59E-05	0.009851		
1581	2	1.13E-03	1.04E-02	6.30E-07	4.84E-05	0.007005	0.002845	13.39
1581	3	1.92E-03	1.74E-02					
1582	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1582	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.39
1582	3	1.92E-03	1.74E-02					
1583	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1583	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.39
1583	3	1.92E-03	1.74E-02					
1584	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1584	2	1.13E-03	1.05E-02	6.30E-07	4.84E-05	0.007005	0.002858	13.40
1584	3	1.92E-03	1.74E-02					
1585	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1585	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.40
1585	3	1.92E-03	1.74E-02					
1586	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1586	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.40

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1586	3	1.92E-03	1.74E-02					
1587	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1587	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.40
1587	3	1.92E-03	1.74E-02					
1588	1	6.15E-05	6.55E-04	1.14E-06	9.61E-05	0.009863		
1588	2	1.13E-03	1.05E-02	6.29E-07	4.84E-05	0.007005	0.002858	13.40
1588	3	1.92E-03	1.74E-02					
1589	1	6.15E-05	6.55E-04	1.14E-06	9.63E-05	0.009873		
1589	2	1.13E-03	1.05E-02	6.29E-07	4.83E-05	0.006995	0.002878	13.40
1589	3	1.92E-03	1.74E-02					
1590	1	6.15E-05	6.55E-04	1.14E-06	9.63E-05	0.009873		
1590	2	1.13E-03	1.05E-02	6.30E-07	4.84E-05	0.007005	0.002868	13.40
1590	3	1.93E-03	1.74E-02					
1591	1	6.15E-05	6.55E-04	1.14E-06	9.63E-05	0.009873		
1591	2	1.13E-03	1.05E-02	6.30E-07	4.84E-05	0.007005	0.002868	13.40
1591	3	1.93E-03	1.74E-02					
1592	1	6.15E-05	6.55E-04	1.14E-06	9.63E-05	0.009873		
1592	2	1.13E-03	1.05E-02	6.30E-07	4.84E-05	0.007005	0.002868	13.40
1592	3	1.93E-03	1.74E-02					
1593	1	6.15E-05	6.56E-04	1.15E-06	9.75E-05	0.009932		
1593	2	1.14E-03	1.05E-02	6.38E-07	4.96E-05	0.007085	0.002847	13.40
1593	3	1.93E-03	1.76E-02					
1594	1	6.16E-05	6.57E-04	1.16E-06	9.81E-05	0.009962		
1594	2	1.14E-03	1.06E-02	6.42E-07	4.98E-05	0.007105	0.002856	13.40
1594	3	1.94E-03	1.76E-02					
1595	1	6.16E-05	6.57E-04	1.16E-06	9.83E-05	0.009971		
1595	2	1.14E-03	1.06E-02	6.42E-07	5.00E-05	0.007115	0.002856	13.41
1595	3	1.94E-03	1.76E-02					
1596	1	6.16E-05	6.57E-04	1.16E-06	9.83E-05	0.009971		
1596	2	1.14E-03	1.06E-02	6.56E-07	5.21E-05	0.007265	0.002706	13.41
1596	3	1.95E-03	1.78E-02					
1597	1	6.17E-05	6.60E-04	1.18E-06	1.02E-04	0.010178		
1597	2	1.15E-03	1.08E-02	6.67E-07	5.34E-05	0.007356	0.002823	13.41
1597	3	1.97E-03	1.81E-02					
1598	1	6.19E-05	6.62E-04	1.19E-06	1.04E-04	0.010236		
1598	2	1.15E-03	1.08E-02	6.72E-07	5.39E-05	0.007386	0.002851	13.41
1598	3	1.97E-03	1.82E-02					
1599	1	6.19E-05	6.63E-04	1.20E-06	1.04E-04	0.010256		
1599	2	1.16E-03	1.09E-02	6.76E-07	5.42E-05	0.007406	0.002850	13.41
1599	3	1.98E-03	1.82E-02					
1600	1	6.19E-05	6.63E-04	1.20E-06	1.04E-04	0.010265		
1600	2	1.16E-03	1.09E-02	6.76E-07	5.42E-05	0.007406	0.002860	13.41
1600	3	1.98E-03	1.82E-02					
1601	1	6.20E-05	6.63E-04	1.20E-06	1.04E-04	0.010265		
1601	2	1.16E-03	1.09E-02	6.77E-07	5.43E-05	0.007416	0.002849	13.41
1601	3	1.98E-03	1.82E-02					
1602	1	6.20E-05	6.63E-04	1.20E-06	1.04E-04	0.010265		
1602	2	1.16E-03	1.09E-02	6.77E-07	5.45E-05	0.007426	0.002840	13.41
1602	3	1.98E-03	1.83E-02					
1603	1	6.20E-05	6.63E-04	1.20E-06	1.04E-04	0.010265		
1603	2	1.16E-03	1.09E-02	6.77E-07	5.45E-05	0.007426	0.002840	13.41
1603	3	1.98E-03	1.83E-02					
1604	1	6.20E-05	6.63E-04	1.20E-06	1.04E-04	0.010275		
1604	2	1.16E-03	1.09E-02	6.77E-07	5.43E-05	0.007416	0.002859	13.4
1604	3	1.98E-03	1.83E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1605	1	6.30E-05	6.75E-04	1.44E-06	1.24E-04	0.011179		
1605	2	1.26E-03	1.18E-02	9.41E-07	7.50E-05	0.008714	0.002465	13.41
1605	3	2.23E-03	2.05E-02					
1606	1	6.49E-05	6.91E-04	1.84E-06	1.54E-04	0.012503		
1606	2	1.42E-03	1.31E-02	9.35E-07	7.62E-05	0.008783	0.003720	13.42
1606	3	2.39E-03	2.19E-02					
1607	1	6.43E-05	6.99E-04	1.56E-06	1.34E-04	0.011649		
1607	2	1.31E-03	1.23E-02	1.02E-06	8.26E-05	0.009146	0.002502	13.42
1607	3	2.32E-03	2.14E-02					
1608	1	6.53E-05	7.06E-04	1.92E-06	1.61E-04	0.012770		
1608	2	1.45E-03	1.34E-02	9.74E-07	7.96E-05	0.008974	0.003795	13.42
1608	3	2.44E-03	2.23E-02					
1609	1	6.47E-05	7.04E-04	1.59E-06	1.37E-04	0.011763		
1609	2	1.32E-03	1.24E-02	1.04E-06	8.43E-05	0.009237	0.002527	13.42
1609	3	2.35E-03	2.16E-02					
1610	1	6.55E-05	7.08E-04	1.93E-06	1.63E-04	0.012827		
1610	2	1.46E-03	1.35E-02	9.86E-07	8.05E-05	0.009025	0.003803	13.42
1610	3	2.45E-03	2.24E-02					
1611	1	6.47E-05	7.05E-04	1.59E-06	1.37E-04	0.011792		
1611	2	1.33E-03	1.24E-02	1.05E-06	8.46E-05	0.009257	0.002536	13.42
1611	3	2.35E-03	2.16E-02					
1612	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012847		
1612	2	1.46E-03	1.35E-02	9.88E-07	8.05E-05	0.009025	0.003822	13.42
1612	3	2.45E-03	2.25E-02					
1613	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011802		
1613	2	1.33E-03	1.24E-02	1.05E-06	8.46E-05	0.009257	0.002545	13.42
1613	3	2.35E-03	2.16E-02					
1614	1	6.56E-05	7.08E-04	1.94E-06	1.63E-04	0.012847		
1614	2	1.46E-03	1.35E-02	9.90E-07	8.08E-05	0.009045	0.003802	13.42
1614	3	2.45E-03	2.25E-02					
1615	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011803		
1615	2	1.33E-03	1.24E-02	1.05E-06	8.50E-05	0.009277	0.002526	13.42
1615	3	2.36E-03	2.17E-02					
1616	1	6.56E-05	7.08E-04	1.94E-06	1.63E-04	0.012857		
1616	2	1.46E-03	1.35E-02	9.90E-07	8.08E-05	0.009045	0.003813	13.42
1616	3	2.46E-03	2.25E-02					
1617	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011803		
1617	2	1.33E-03	1.24E-02	1.05E-06	8.50E-05	0.009277	0.002526	13.43
1617	3	2.36E-03	2.17E-02					
1618	1	6.57E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1618	2	1.46E-03	1.35E-02	9.90E-07	8.08E-05	0.009045	0.003812	13.43
1618	3	2.46E-03	2.25E-02					
1619	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011813		
1619	2	1.33E-03	1.25E-02	1.05E-06	8.48E-05	0.009267	0.002545	13.43
1619	3	2.36E-03	2.17E-02					
1620	1	6.57E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1620	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.43
1620	3	2.46E-03	2.25E-02					
1621	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011812		
1621	2	1.33E-03	1.25E-02	1.06E-06	8.50E-05	0.009277	0.002535	13.43
1621	3	2.36E-03	2.17E-02					
1622	1	6.57E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1622	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.43
1622	3	2.46E-03	2.25E-02					
1623	1	6.48E-05	7.05E-04	1.60E-06	1.38E-04	0.011813		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1623	2	1.33E-03	1.25E-02	1.05E-06	8.50E-05	0.009277	0.002536	13.43
1623	3	2.36E-03	2.17E-02					
1624	1	6.57E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1624	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.43
1624	3	2.46E-03	2.25E-02					
1625	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1625	2	1.33E-03	1.24E-02	1.05E-06	8.50E-05	0.009277	0.002525	13.43
1625	3	2.36E-03	2.17E-02					
1626	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1626	2	1.46E-03	1.35E-02	9.90E-07	8.06E-05	0.009035	0.003822	13.43
1626	3	2.46E-03	2.25E-02					
1627	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1627	2	1.33E-03	1.24E-02	1.05E-06	8.50E-05	0.009277	0.002525	13.43
1627	3	2.36E-03	2.17E-02					
1628	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1628	2	1.46E-03	1.35E-02	9.90E-07	8.06E-05	0.009035	0.003822	13.44
1628	3	2.46E-03	2.25E-02					
1629	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1629	2	1.33E-03	1.24E-02	1.05E-06	8.50E-05	0.009277	0.002525	13.44
1629	3	2.36E-03	2.17E-02					
1630	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1630	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.44
1630	3	2.46E-03	2.25E-02					
1631	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1631	2	1.33E-03	1.24E-02	1.06E-06	8.50E-05	0.009277	0.002525	13.44
1631	3	2.36E-03	2.17E-02					
1632	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1632	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.4
1632	3	2.46E-03	2.25E-02					
1633	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1633	2	1.33E-03	1.24E-02	1.06E-06	8.50E-05	0.009277	0.002525	13.44
1633	3	2.36E-03	2.17E-02					
1634	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1634	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.44
1634	3	2.46E-03	2.25E-02					
1635	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011802		
1635	2	1.33E-03	1.24E-02	1.06E-06	8.50E-05	0.009277	0.002525	13.44
1635	3	2.36E-03	2.17E-02					
1636	1	6.56E-05	7.09E-04	1.94E-06	1.63E-04	0.012857		
1636	2	1.46E-03	1.35E-02	9.94E-07	8.08E-05	0.009045	0.003812	13.44
1636	3	2.46E-03	2.25E-02					
1637	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011812		
1637	2	1.33E-03	1.25E-02	1.05E-06	8.48E-05	0.009267	0.002545	13.44
1637	3	2.36E-03	2.17E-02					
1638	1	6.56E-05	7.09E-04	1.95E-06	1.63E-04	0.012857		
1638	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.44
1638	3	2.46E-03	2.25E-02					
1639	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011812		
1639	2	1.33E-03	1.25E-02	1.06E-06	8.50E-05	0.009277	0.002535	13.45
1639	3	2.36E-03	2.17E-02					
1640	1	6.57E-05	7.09E-04	1.95E-06	1.63E-04	0.012857		
1640	2	1.46E-03	1.35E-02	9.92E-07	8.08E-05	0.009045	0.003812	13.45
1640	3	2.46E-03	2.25E-02					
1641	1	6.48E-05	7.06E-04	1.60E-06	1.38E-04	0.011812		
1641	2	1.33E-03	1.25E-02	1.06E-06	8.50E-05	0.009277	0.002535	13.45

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1641	3	2.36E-03	2.17E-02					
1642	1	6.57E-05	7.09E-04	1.95E-06	1.63E-04	0.012857		
1642	2	1.46E-03	1.35E-02	9.94E-07	8.10E-05	0.009055	0.003802	13.45
1642	3	2.46E-03	2.25E-02					
1643	1	6.48E-05	7.06E-04	1.61E-06	1.39E-04	0.011842		
1643	2	1.33E-03	1.25E-02	1.05E-06	8.32E-05	0.009177	0.002665	13.45
1643	3	2.36E-03	2.16E-02					
1644	1	6.56E-05	7.05E-04	1.96E-06	1.64E-04	0.012871		
1644	2	1.46E-03	1.35E-02	9.86E-07	7.94E-05	0.008965	0.003906	13.45
1644	3	2.46E-03	2.24E-02					
1645	1	6.50E-05	6.99E-04	1.91E-06	1.60E-04	0.012726		
1645	2	1.45E-03	1.34E-02	9.62E-07	7.76E-05	0.008864	0.003862	13.45
1645	3	2.43E-03	2.22E-02					
1646	1	6.47E-05	6.97E-04	1.89E-06	1.59E-04	0.012668		
1646	2	1.44E-03	1.33E-02	9.53E-07	7.67E-05	0.008814	0.003854	13.45
1646	3	2.42E-03	2.21E-02					
1647	1	6.47E-05	6.96E-04	1.88E-06	1.58E-04	0.012649		
1647	2	1.44E-03	1.33E-02	9.51E-07	7.64E-05	0.008794	0.003855	13.45
1647	3	2.41E-03	2.20E-02					
1648	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012639		
1648	2	1.44E-03	1.33E-02	9.49E-07	7.62E-05	0.008784	0.003855	13.45
1648	3	2.41E-03	2.20E-02					
1649	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1649	2	1.43E-03	1.33E-02	9.49E-07	7.64E-05	0.008794	0.003835	13.45
1649	3	2.41E-03	2.20E-02					
1650	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1650	2	1.43E-03	1.33E-02	9.49E-07	7.62E-05	0.008784	0.003845	13.46
1650	3	2.41E-03	2.20E-02					
1651	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1651	2	1.43E-03	1.33E-02	9.49E-07	7.62E-05	0.008784	0.003845	13.46
1651	3	2.41E-03	2.20E-02					
1652	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1652	2	1.43E-03	1.33E-02	9.49E-07	7.62E-05	0.008784	0.003845	13.46
1652	3	2.41E-03	2.20E-02					
1653	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1653	2	1.43E-03	1.33E-02	9.49E-07	7.62E-05	0.008784	0.003845	13.46
1653	3	2.41E-03	2.20E-02					
1654	1	6.46E-05	6.95E-04	1.88E-06	1.58E-04	0.012629		
1654	2	1.43E-03	1.33E-02	9.16E-07	7.21E-05	0.008544	0.004086	13.46
1654	3	2.39E-03	2.17E-02					
1655	1	6.43E-05	6.90E-04	1.81E-06	1.49E-04	0.012294		
1655	2	1.41E-03	1.29E-02	8.95E-07	6.97E-05	0.008403	0.003890	13.46
1655	3	2.36E-03	2.13E-02					
1656	1	6.41E-05	6.87E-04	1.79E-06	1.47E-04	0.012216		
1656	2	1.40E-03	1.28E-02	8.84E-07	6.89E-05	0.008353	0.003863	13.46
1656	3	2.34E-03	2.11E-02					
1657	1	6.41E-05	6.86E-04	1.78E-06	1.47E-04	0.012177		
1657	2	1.40E-03	1.28E-02	8.80E-07	6.86E-05	0.008333	0.003844	13.46
1657	3	2.34E-03	2.11E-02					
1658	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1658	2	1.40E-03	1.28E-02	8.76E-07	6.84E-05	0.008323	0.003845	13.46
1658	3	2.34E-03	2.11E-02					
1659	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1659	2	1.40E-03	1.28E-02	8.76E-07	6.84E-05	0.008323	0.003835	13.46
1659	3	2.33E-03	2.10E-02					

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1660	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1660	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.46
1660	3	2.33E-03	2.10E-02					
1661	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1661	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.46
1661	3	2.33E-03	2.10E-02					
1662	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1662	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1662	3	2.33E-03	2.10E-02					
1663	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1663	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1663	3	2.33E-03	2.10E-02					
1664	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1664	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1664	3	2.33E-03	2.10E-02					
1665	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1665	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1665	3	2.33E-03	2.10E-02					
1666	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1666	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1666	3	2.33E-03	2.10E-02					
1667	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1667	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1667	3	2.33E-03	2.10E-02					
1668	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1668	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1668	3	2.33E-03	2.10E-02					
1669	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1669	2	1.40E-03	1.28E-02	8.76E-07	6.82E-05	0.008313	0.003845	13.47
1669	3	2.33E-03	2.10E-02					
1670	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1670	2	1.40E-03	1.28E-02	8.76E-07	6.84E-05	0.008323	0.003835	13.47
1670	3	2.33E-03	2.10E-02					
1671	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1671	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.47
1671	3	2.34E-03	2.10E-02					
1672	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1672	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.47
1672	3	2.34E-03	2.10E-02					
1673	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1673	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1673	3	2.34E-03	2.10E-02					
1674	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1674	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1674	3	2.34E-03	2.10E-02					
1675	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1675	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1675	3	2.34E-03	2.10E 02					
1676	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1676	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1676	3	2.34E-03	2.10E-02					
1677	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1677	2	1.40E-03	1.28E-02	8.76E-07	6.84E-05	0.008323	0.003835	13.48
1677	3	2.34E-03	2.10E-02					
1678	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1678	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1678	3	2.34E-03	2.10E-02					
1679	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1679	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1679	3	2.34E-03	2.10E-02					
1680	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1680	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1680	3	2.34E-03	2.10E-02					
1681	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1681	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1681	3	2.34E-03	2.10E-02					
1682	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1682	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1682	3	2.34E-03	2.10E-02					
1683	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1683	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.48
1683	3	2.34E-03	2.10E-02					
1684	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012158		
1684	2	1.40E-03	1.28E-02	8.78E-07	6.84E-05	0.008323	0.003835	13.49
1684	3	2.34E-03	2.10E-02					
1685	1	6.40E-05	6.85E-04	1.78E-06	1.46E-04	0.012168		
1685	2	1.40E-03	1.28E-02	8.80E-07	6.86E-05	0.008333	0.003835	13.49
1685	3	2.34E-03	2.11E-02					
1686	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1686	2	1.40E-03	1.28E-02	8.80E-07	6.84E-05	0.008323	0.003845	13.49
1686	3	2.34E-03	2.11E-02					
1687	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1687	2	1.40E-03	1.28E-02	8.80E-07	6.84E-05	0.008323	0.003845	13.49
1687	3	2.34E-03	2.11E-02					
1688	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1688	2	1.40E-03	1.28E-02	8.80E-07	6.84E-05	0.008323	0.003845	13.49
1688	3	2.34E-03	2.11E-02					
1689	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1689	2	1.40E-03	1.28E-02	8.80E-07	6.84E-05	0.008323	0.003845	13.49
1689	3	2.34E-03	2.11E-02					
1690	1	6.40E-05	6.86E-04	1.78E-06	1.46E-04	0.012168		
1690	2	1.40E-03	1.28E-02	8.32E-07	6.48E-05	0.008101	0.004067	13.49
1690	3	2.31E-03	2.08E-02					
1691	1	6.36E-05	6.81E-04	1.58E-06	1.32E-04	0.011538		
1691	2	1.32E-03	1.22E-02	8.34E-07	6.40E-05	0.008052	0.003486	13.49
1691	3	2.23E-03	2.02E-02					
1692	1	6.37E-05	6.80E-04	1.69E-06	1.39E-04	0.011841		
1692	2	1.36E-03	1.25E-02	8.05E-07	6.26E-05	0.007961	0.003881	13.49
1692	3	2.26E-03	2.04E-02					
1693	1	6.34E-05	6.77E-04	1.41E-06	1.18E-04	0.010917		
1693	2	1.25E-03	1.15E-02	8.69E-07	6.66E-05	0.008213	0.002704	13.49
1693	3	2.18E-03	1.97E-02					
1694	1	6.41E-05	6.84E-04	1.72E-06	1.41E-04	0.011928		
1694	2	1.37E-03	1.25E-02	8.17E-07	6.34E-05	0.008011	0.003917	13.49
1694	3	2.28E-03	2.05E-02					
1695	1	6.35E-05	6.79E-04	1.41E-06	1.18E-04	0.010946		
1695	2	1.25E-03	1.16E-02	8.74E-07	6.69E-05	0.008233	0.002713	13.50
1695	3	2.19E-03	1.97E-02					
1696	1	6.41E-05	6.85E-04	1.72E-06	1.41E-04	0.011938		
1696	2	1.38E-03	1.26E-02	8.19E-07	6.35E-05	0.008021	0.003916	13.50

HCONV.XLS

		Max. Increment Displ.		dx^2	dy^2	Sqrt of:	disp . inc.	Internal
increment	iteration	radial	vertical	{ux(i)-ux(i+1)}^2	{uy(i)-uy(i+1)}^2	dx^2+dy^2	change	Pressure
		{ux(i)}	{uy(i)}			{sqrt(i)}	{sqrt(i)-sqrt(i+1)}	(lbf/in^2)
1696	3	2.28E-03	2.05E-02					
1697	1	6.35E-05	6.79E-04	1.41E-06	1.19E-04	0.010956		
1697	2	1.25E-03	1.16E-02	8.74E-07	6.69E-05	0.008233	0.002723	13.50
1697	3	2.19E-03	1.98E-02					
1698	1	6.41E-05	6.85E-04	1.72E-06	1.41E-04	0.011938		
1698	2	1.38E-03	1.26E-02	8.19E-07	6.37E-05	0.008031	0.003906	13.50
1698	3	2.28E-03	2.05E-02					
1699	1	6.35E-05	6.79E-04	1.41E-06	1.19E-04	0.010956		
1699	2	1.25E-03	1.16E-02	8.76E-07	6.69E-05	0.008233	0.002722	13.50
1699	3	2.19E-03	1.98E-02					
1700	1	2.17E-05	1.89E-04	2.96E-08	1.44E-06	0.001213		
1700	2	1.94E-04	1.39E-03	5.99E-08	7.96E-06	0.002833	-0.001620	13.50
1700	3	4.38E-04	4.21E-03					

HCONV.XLS

ATTACHMENT 7

INPUT AND OUTPUT FILES FOR DOME DISPLACEMENTS FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Kaeb 5/27/94
Date

Checked by: Albert Ryan 5/28/94
Date

GHDISP.abdat

```
*** Postprocess .fil File to Tabulate Displacement History Data
*** Must temporarily rename original file.fil to g_disp.fil
*** Results are found in g_disp.about
*POST FILE,INPUT=BINARY
**
**   vertical displacements
*PRINT HISTORY
U2, N865-APEX, 865
U2, N553-HAUNCH, 553
```

GHDISP.about

ABAQUS PRODUCTION VERSION 4-9-1 DATE 10-Jan-94 TIME 10:59:00 PAGE 1
FOR USE BY WESTINGHOUSE HANFORD COMPANY UNDER LICENSE FROM HKS, INC.

STEP 0 INCREMENT 0
TIME COMPLETED IN THIS STEP .000E+00

P O S T - P L O T T I N G

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	N865-APEX	22.6	1.701E+03	-.458	1.00
2	N553-HAUNCH	-2.647E-02	2.500E-02	-.260	1.00

TIME	VARIABLE 1	VARIABLE 2
2.5000E-02	-4.7573E-02	-2.6467E-02
5.0000E-02	-9.5146E-02	-5.2933E-02
7.5000E-02	-.1761	-9.7919E-02
.1000	-.2173	-.1208
.1250	-.2401	-.1335
.1500	-.2513	-.1397
.1750	-.2626	-.1460
.2000	-.2738	-.1523
.2250	-.2822	-.1570
.2500	-.2905	-.1617
.2750	-.2989	-.1664
.3000	-.3073	-.1710
.3250	-.3156	-.1757
.3500	-.3240	-.1804
.3750	-.3323	-.1851
.4000	-.3407	-.1898
.4250	-.3462	-.1929
.4500	-.3517	-.1960
.4750	-.3571	-.1991
.5000	-.3626	-.2022
.5250	-.3681	-.2053
.5500	-.3736	-.2083
.5750	-.3791	-.2114
.6000	-.3846	-.2145
.6250	-.3886	-.2168
.6500	-.3926	-.2191
.6750	-.3967	-.2214
.7000	-.4007	-.2237
.7250	-.4047	-.2260
.7500	-.4088	-.2283
.7750	-.4128	-.2306
.8000	-.4225	-.2384
.8250	-.4289	-.2432
.8500	-.4330	-.2455
.8750	-.4371	-.2479
.9000	-.4413	-.2503
.9250	-.4454	-.2526
.9500	-.4495	-.2550
.9750	-.4536	-.2574
1.000	-.4577	-.2598
6.000	-.4253	-.2513
11.00	-.3984	-.2443
16.00	-.3714	-.2372
21.00	-.3444	-.2302
26.00	-.3175	-.2231
31.00	-.2905	-.2161
36.00	-.2635	-.2090
41.00	-.2366	-.2020
46.00	-.2096	-.1949
51.00	-.1826	-.1879
56.00	-.1557	-.1808
61.00	-.1287	-.1738

66.00	-.1020	-.1670
71.00	-7.5620E-02	-.1606
76.00	-4.9287E-02	-.1542
81.00	-2.2953E-02	-.1478
86.00	-1.8136E-03	-.1426
91.00	-1.4675E-03	-.1425
96.00	-1.1215E-03	-.1424
101.0	-7.7545E-04	-.1423
106.0	-4.2942E-04	-.1423
111.0	-8.3399E-05	-.1422
116.0	2.6262E-04	-.1421
121.0	6.0865E-04	-.1420
126.0	.3897	-.1420
131.0	3.045	-.1418
136.0	3.085	-.1417
141.0	3.090	-.1416
146.0	3.101	-.1415
151.0	3.153	-.1415
156.0	3.162	-.1414
161.0	3.171	-.1413
166.0	3.180	-.1412
171.0	3.189	-.1412
176.0	3.198	-.1411
181.0	3.207	-.1410
186.0	3.217	-.1409
191.0	3.226	-.1408
196.0	3.235	-.1407
201.0	3.244	-.1406
206.0	3.253	-.1406
211.0	3.262	-.1405
216.0	3.271	-.1404
221.0	3.280	-.1403
226.0	3.289	-.1402
231.0	3.298	-.1401
236.0	3.307	-.1401
241.0	3.316	-.1400
246.0	3.325	-.1399
251.0	3.334	-.1398
256.0	3.344	-.1397
261.0	3.353	-.1396
266.0	3.363	-.1395
271.0	3.366	-.1395
276.0	3.376	-.1394
281.0	3.385	-.1393
286.0	3.395	-.1392
291.0	3.409	-.1391
296.0	3.418	-.1390
301.0	3.428	-.1389
306.0	3.437	-.1388
311.0	3.447	-.1388
316.0	3.456	-.1387
321.0	3.466	-.1386
326.0	3.479	-.1385
331.0	3.488	-.1384
336.0	3.498	-.1383
341.0	3.509	-.1382
346.0	3.520	-.1382
351.0	3.531	-.1381
356.0	3.542	-.1380
361.0	3.553	-.1379
366.0	3.564	-.1378
371.0	3.575	-.1377
376.0	3.586	-.1376
381.0	3.619	-.1376
386.0	3.631	-.1375
391.0	3.642	-.1374
396.0	3.653	-.1373
401.0	3.664	-.1372
406.0	3.675	-.1371
411.0	3.701	-.1370
416.0	3.713	-.1369
421.0	3.724	-.1369
426.0	3.736	-.1368
431.0	3.748	-.1367
436.0	3.760	-.1366
441.0	3.771	-.1365

446.0	3.783	-.1364
451.0	3.794	-.1364
456.0	3.806	-.1363
461.0	3.818	-.1362
466.0	3.832	-.1361
471.0	3.854	-.1360
476.0	3.876	-.1359
481.0	3.898	-.1358
486.0	3.920	-.1358
491.0	3.942	-.1357
496.0	3.964	-.1356
501.0	3.986	-.1355
506.0	4.009	-.1354
511.0	4.032	-.1353
516.0	4.055	-.1352
521.0	4.078	-.1352
526.0	4.101	-.1351
531.0	4.124	-.1350
536.0	4.147	-.1349
541.0	4.171	-.1348
546.0	4.194	-.1347
551.0	4.218	-.1346
556.0	4.243	-.1345
561.0	4.269	-.1345
566.0	4.296	-.1344
571.0	4.345	-.1343
576.0	4.385	-.1342
581.0	4.488	-.1341
586.0	4.533	-.1340
591.0	4.576	-.1339
596.0	4.620	-.1339
601.0	4.664	-.1338
606.0	5.043	-.1337
611.0	5.118	-.1337
616.0	5.135	-.1336
621.0	5.152	-.1335
626.0	5.171	-.1334
631.0	5.196	-.1333
636.0	5.235	-.1332
641.0	5.276	-.1331
646.0	5.322	-.1331
651.0	5.541	-.1331
656.0	5.596	-.1330
661.0	5.650	-.1329
666.0	5.705	-.1328
671.0	5.759	-.1327
676.0	5.814	-.1327
681.0	5.871	-.1326
686.0	5.929	-.1325
691.0	5.980	-.1324
696.0	6.030	-.1323
701.0	6.076	-.1322
706.0	6.100	-.1322
711.0	6.182	-.1321
716.0	6.213	-.1321
721.0	6.239	-.1320
726.0	6.266	-.1320
731.0	6.294	-.1319
736.0	6.322	-.1319
741.0	6.361	-.1318
746.0	6.399	-.1318
751.0	6.438	-.1317
756.0	6.477	-.1317
761.0	6.557	-.1316
766.0	6.595	-.1316
771.0	6.634	-.1315
776.0	6.673	-.1315
781.0	6.712	-.1315
786.0	6.751	-.1314
791.0	6.789	-.1314
796.0	6.828	-.1313
801.0	6.867	-.1313
806.0	6.906	-.1312
811.0	6.945	-.1312
816.0	6.984	-.1311
821.0	7.022	-.1311

826.0	7.061	-.1311
831.0	7.100	-.1310
836.0	7.139	-.1310
841.0	7.178	-.1309
846.0	7.217	-.1309
851.0	7.255	-.1308
856.0	7.294	-.1308
861.0	7.333	-.1307
866.0	7.372	-.1307
871.0	7.411	-.1307
876.0	7.450	-.1306
881.0	7.489	-.1306
886.0	7.527	-.1305
891.0	7.566	-.1305
896.0	7.605	-.1304
901.0	7.644	-.1304
906.0	7.683	-.1303
911.0	7.722	-.1303
916.0	7.761	-.1302
921.0	7.801	-.1302
926.0	7.842	-.1302
931.0	7.884	-.1301
936.0	7.927	-.1301
941.0	8.017	-.1300
946.0	8.063	-.1299
951.0	8.107	-.1299
956.0	8.151	-.1298
961.0	8.195	-.1298
966.0	8.239	-.1298
971.0	8.283	-.1297
976.0	8.328	-.1297
981.0	8.429	-.1296
986.0	8.473	-.1295
991.0	8.517	-.1295
996.0	8.562	-.1294
1001.	8.606	-.1294
1006.	8.651	-.1294
1011.	8.696	-.1293
1016.	8.740	-.1293
1021.	8.785	-.1292
1026.	8.830	-.1292
1031.	8.877	-.1291
1036.	8.925	-.1291
1041.	8.973	-.1290
1046.	9.022	-.1290
1051.	9.070	-.1289
1056.	9.119	-.1289
1061.	9.167	-.1288
1066.	9.223	-.1279
1071.	9.298	-.1278
1076.	9.374	-.1278
1081.	9.450	-.1278
1086.	9.522	-.1277
1091.	9.590	-.1277
1096.	9.658	-.1276
1101.	9.726	-.1276
1106.	9.794	-.1275
1111.	9.862	-.1275
1116.	9.986	-.1274
1121.	10.06	-.1273
1126.	10.13	-.1273
1131.	10.20	-.1272
1136.	10.27	-.1272
1141.	10.34	-.1271
1146.	10.42	-.1271
1151.	10.65	-.1270
1156.	10.75	-.1270
1161.	10.83	-.1269
1166.	10.91	-.1269
1171.	11.00	-.1268
1176.	11.08	-.1268
1181.	11.16	-.1267
1186.	11.85	-.1268
1191.	12.16	-.1267
1196.	12.25	-.1267
1201.	12.34	-.1266

1206.	12.42	-.1266
1211.	12.51	-.1265
1216.	12.60	-.1265
1221.	12.68	-.1264
1226.	12.77	-.1264
1231.	12.86	-.1263
1236.	12.94	-.1263
1241.	13.03	-.1262
1246.	13.12	-.1262
1251.	13.20	-.1261
1256.	13.29	-.1261
1261.	13.38	-.1260
1266.	13.47	-.1260
1271.	13.55	-.1259
1276.	13.64	-.1259
1281.	13.73	-.1258
1286.	13.81	-.1258
1291.	13.90	-.1257
1296.	13.98	-.1257
1301.	14.06	-.1257
1306.	14.15	-.1256
1311.	14.24	-.1256
1316.	14.32	-.1255
1321.	14.41	-.1255
1326.	14.49	-.1254
1331.	14.58	-.1254
1336.	14.67	-.1253
1341.	14.75	-.1253
1346.	14.84	-.1252
1351.	14.92	-.1252
1356.	15.01	-.1251
1361.	15.10	-.1251
1366.	15.18	-.1250
1371.	15.27	-.1250
1376.	15.36	-.1249
1381.	15.44	-.1249
1386.	15.52	-.1248
1391.	15.60	-.1248
1396.	15.68	-.1247
1401.	15.75	-.1247
1406.	15.82	-.1246
1411.	15.94	-.1245
1416.	16.02	-.1245
1421.	16.12	-.1244
1426.	16.34	-.1244
1431.	16.45	-.1243
1436.	16.55	-.1243
1441.	16.66	-.1242
1446.	16.79	-.1242
1451.	16.94	-.1241
1456.	17.04	-.1241
1461.	17.15	-.1240
1466.	17.26	-.1240
1471.	17.36	-.1239
1476.	17.88	-.1240
1481.	18.24	-.1240
1486.	18.31	-.1239
1491.	18.38	-.1239
1496.	18.44	-.1238
1501.	18.51	-.1238
1506.	18.57	-.1237
1511.	18.64	-.1237
1516.	18.70	-.1237
1521.	18.77	-.1236
1526.	18.83	-.1236
1531.	18.89	-.1235
1536.	18.95	-.1235
1541.	19.02	-.1234
1546.	19.12	-.1234
1551.	19.22	-.1233
1556.	19.32	-.1233
1561.	19.42	-.1232
1566.	19.87	-.1231
1571.	19.98	-.1230
1576.	20.06	-.1230
1581.	20.15	-.1229

1586.	20.24	-.1229
1591.	20.32	-.1228
1596.	20.41	-.1228
1601.	20.50	-.1227
1606.	20.59	-.1227
1611.	20.70	-.1227
1616.	20.81	-.1226
1621.	20.92	-.1226
1626.	21.03	-.1225
1631.	21.14	-.1225
1636.	21.25	-.1224
1641.	21.37	-.1224
1646.	21.48	-.1223
1651.	21.59	-.1223
1656.	21.69	-.1222
1661.	21.80	-.1222
1666.	21.91	-.1221
1671.	22.01	-.1221
1676.	22.12	-.1220
1681.	22.22	-.1220
1686.	22.33	-.1220
1691.	22.43	-.1219
1696.	22.53	-.1219
1701.	22.62	-.1218

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

ATTACHMENT 8

SPREADSHEETS FOR DETERMINATION OF RELATIVE DOME DISPLACEMENTS FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R Keil 5/27/94
Date

Checked by: Albert Dyer 5/25/94
Date

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
				0.000	0.0	-0.2
6.000	-0.4253	-0.2513		5.000	0.68	-0.1740
11.000	-0.3984	-0.2443		10.000	1.35	-0.1541
16.000	-0.3714	-0.2372		15.000	2.03	-0.1342
21.000	-0.3444	-0.2302		20.000	2.71	-0.1142
26.000	-0.3175	-0.2231		25.000	3.38	-0.0944
31.000	-0.2905	-0.2161		30.000	4.06	-0.0744
36.000	-0.2635	-0.2090		35.000	4.74	-0.0545
41.000	-0.2366	-0.2020		40.000	5.41	-0.0346
46.000	-0.2096	-0.1949		45.000	6.09	-0.0147
51.000	-0.1826	-0.1879		50.000	6.76	0.0053
56.000	-0.1557	-0.1808		55.000	7.44	0.0251
61.000	-0.1287	-0.1738		60.000	8.12	0.0451
66.000	-0.1020	-0.1670		65.000	8.79	0.0650
71.000	-0.0756	-0.1606		70.000	9.47	0.0850
76.000	-0.0493	-0.1542		75.000	10.15	0.1049
81.000	-0.0230	-0.1478		80.000	10.82	0.1248
86.000	-0.0018	-0.1426		85.000	11.50	0.1408
91.000	-0.0015	-0.1425		90.000	11.51	0.1410
96.000	-0.0011	-0.1424		95.000	11.52	0.1413
101.000	-0.0008	-0.1423		100.000	11.53	0.1415
106.000	-0.0004	-0.1423		105.000	11.54	0.1419
111.000	-0.0001	-0.1422		110.000	11.54	0.1421
116.000	0.0003	-0.1421		115.000	11.55	0.1424
121.000	0.0006	-0.1420		120.000	11.56	0.1426
126.000	0.3897	-0.1420		125.000	11.57	0.5317
131.000	3.0450	-0.1418		130.000	11.58	3.1868
136.000	3.0850	-0.1417		135.000	11.59	3.2267
141.000	3.0900	-0.1416		140.000	11.60	3.2316
146.000	3.1010	-0.1415		145.000	11.61	3.2425
151.000	3.1530	-0.1415		150.000	11.62	3.2945
156.000	3.1620	-0.1414		155.000	11.63	3.3034
161.000	3.1710	-0.1413		160.000	11.63	3.3123
166.000	3.1800	-0.1412		165.000	11.64	3.3212
171.000	3.1890	-0.1412		170.000	11.65	3.3302
176.000	3.1980	-0.1411		175.000	11.66	3.3391
181.000	3.2070	-0.1410		180.000	11.67	3.3480
186.000	3.2170	-0.1409		185.000	11.68	3.3579
191.000	3.2260	-0.1408		190.000	11.69	3.3668
196.000	3.2350	-0.1407		195.000	11.70	3.3757
201.000	3.2440	-0.1406		200.000	11.71	3.3846
206.000	3.2530	-0.1406		205.000	11.72	3.3936
211.000	3.2620	-0.1405		210.000	11.72	3.4025
216.000	3.2710	-0.1404		215.000	11.73	3.4114
221.000	3.2800	-0.1403		220.000	11.74	3.4203
226.000	3.2890	-0.1402		225.000	11.75	3.4292
231.000	3.2980	-0.1401		230.000	11.76	3.4381
236.000	3.3070	-0.1401		235.000	11.77	3.4471
241.000	3.3160	-0.1400		240.000	11.78	3.4560
246.000	3.3250	-0.1399		245.000	11.79	3.4649
251.000	3.3340	-0.1398		250.000	11.80	3.4738

GHDISP.XLS

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
256.000	3.3440	-0.1397		255.000	11.80	3.4837
261.000	3.3530	-0.1396		260.000	11.81	3.4926
266.000	3.3630	-0.1395		265.000	11.82	3.5025
271.000	3.3660	-0.1395		270.000	11.83	3.5055
276.000	3.3760	-0.1394		275.000	11.84	3.5154
281.000	3.3850	-0.1393		280.000	11.85	3.5243
286.000	3.3950	-0.1392		285.000	11.86	3.5342
291.000	3.4090	-0.1391		290.000	11.87	3.5481
296.000	3.4180	-0.1390		295.000	11.88	3.5570
301.000	3.4280	-0.1389		300.000	11.89	3.5669
306.000	3.4370	-0.1388		305.000	11.89	3.5758
311.000	3.4470	-0.1388		310.000	11.90	3.5858
316.000	3.4560	-0.1387		315.000	11.91	3.5947
321.000	3.4660	-0.1386		320.000	11.92	3.6046
326.000	3.4790	-0.1385		325.000	11.93	3.6175
331.000	3.4880	-0.1384		330.000	11.94	3.6264
336.000	3.4980	-0.1383		335.000	11.95	3.6363
341.000	3.5090	-0.1382		340.000	11.96	3.6472
346.000	3.5200	-0.1382		345.000	11.97	3.6582
351.000	3.5310	-0.1381		350.000	11.98	3.6691
356.000	3.5420	-0.1380		355.000	11.98	3.6800
361.000	3.5530	-0.1379		360.000	11.99	3.6909
366.000	3.5640	-0.1378		365.000	12.00	3.7018
371.000	3.5750	-0.1377		370.000	12.01	3.7127
376.000	3.5860	-0.1376		375.000	12.02	3.7236
381.000	3.6190	-0.1376		380.000	12.03	3.7566
386.000	3.6310	-0.1375		385.000	12.04	3.7685
391.000	3.6420	-0.1374		390.000	12.05	3.7794
396.000	3.6530	-0.1373		395.000	12.06	3.7903
401.000	3.6640	-0.1372		400.000	12.07	3.8012
406.000	3.6750	-0.1371		405.000	12.07	3.8121
411.000	3.7010	-0.1370		410.000	12.08	3.8380
416.000	3.7130	-0.1369		415.000	12.09	3.8499
421.000	3.7240	-0.1369		420.000	12.10	3.8609
426.000	3.7360	-0.1368		425.000	12.11	3.8728
431.000	3.7480	-0.1367		430.000	12.12	3.8847
436.000	3.7600	-0.1366		435.000	12.13	3.8966
441.000	3.7710	-0.1365		440.000	12.14	3.9075
446.000	3.7830	-0.1364		445.000	12.15	3.9194
451.000	3.7940	-0.1364		450.000	12.15	3.9304
456.000	3.8060	-0.1363		455.000	12.16	3.9423
461.000	3.8180	-0.1362		460.000	12.17	3.9542
466.000	3.8320	-0.1361		465.000	12.18	3.9681
471.000	3.8540	-0.1360		470.000	12.19	3.9900
476.000	3.8760	-0.1359		475.000	12.20	4.0119
481.000	3.8980	-0.1358		480.000	12.21	4.0338
486.000	3.9200	-0.1358		485.000	12.22	4.0558
491.000	3.9420	-0.1357		490.000	12.23	4.0777
496.000	3.9640	-0.1356		495.000	12.24	4.0996
501.000	3.9860	-0.1355		500.000	12.24	4.1215
506.000	4.0090	-0.1354		505.000	12.25	4.1444

GHDISP.XLS

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
511.000	4.0320	-0.1353		510.000	12.26	4.1673
516.000	4.0550	-0.1352		515.000	12.27	4.1902
521.000	4.0780	-0.1352		520.000	12.28	4.2132
526.000	4.1010	-0.1351		525.000	12.29	4.2361
531.000	4.1240	-0.1350		530.000	12.30	4.2590
536.000	4.1470	-0.1349		535.000	12.31	4.2819
541.000	4.1710	-0.1348		540.000	12.32	4.3058
546.000	4.1940	-0.1347		545.000	12.33	4.3287
551.000	4.2180	-0.1346		550.000	12.33	4.3526
556.000	4.2430	-0.1345		555.000	12.34	4.3775
561.000	4.2690	-0.1345		560.000	12.35	4.4035
566.000	4.2960	-0.1344		565.000	12.36	4.4304
571.000	4.3450	-0.1343		570.000	12.37	4.4793
576.000	4.3850	-0.1342		575.000	12.38	4.5192
581.000	4.4880	-0.1341		580.000	12.39	4.6221
586.000	4.5330	-0.1340		585.000	12.40	4.6670
591.000	4.5760	-0.1339		590.000	12.41	4.7099
596.000	4.6200	-0.1339		595.000	12.41	4.7539
601.000	4.6640	-0.1338		600.000	12.42	4.7978
606.000	5.0430	-0.1337		605.000	12.43	5.1767
611.000	5.1180	-0.1337		610.000	12.44	5.2517
616.000	5.1350	-0.1336		615.000	12.45	5.2686
621.000	5.1520	-0.1335		620.000	12.46	5.2855
626.000	5.1710	-0.1334		625.000	12.47	5.3044
631.000	5.1960	-0.1333		630.000	12.48	5.3293
636.000	5.2350	-0.1332		635.000	12.49	5.3682
641.000	5.2760	-0.1331		640.000	12.50	5.4091
646.000	5.3220	-0.1331		645.000	12.50	5.4551
651.000	5.5410	-0.1331		650.000	12.51	5.6741
656.000	5.5960	-0.1330		655.000	12.52	5.7290
661.000	5.6500	-0.1329		660.000	12.53	5.7829
666.000	5.7050	-0.1328		665.000	12.54	5.8378
671.000	5.7590	-0.1327		670.000	12.55	5.8917
676.000	5.8140	-0.1327		675.000	12.56	5.9467
681.000	5.8710	-0.1326		680.000	12.57	6.0036
686.000	5.9290	-0.1325		685.000	12.58	6.0615
691.000	5.9800	-0.1324		690.000	12.59	6.1124
696.000	6.0300	-0.1323		695.000	12.59	6.1623
701.000	6.0760	-0.1322		700.000	12.60	6.2082
706.000	6.1000	-0.1322		705.000	12.60	6.2322
711.000	6.1820	-0.1321		710.000	12.61	6.3141
716.000	6.2130	-0.1321		715.000	12.61	6.3451
721.000	6.2390	-0.1320		720.000	12.62	6.3710
726.000	6.2660	-0.1320		725.000	12.62	6.3980
731.000	6.2940	-0.1319		730.000	12.63	6.4259
736.000	6.3220	-0.1319		735.000	12.63	6.4539
741.000	6.3610	-0.1318		740.000	12.64	6.4928
746.000	6.3990	-0.1318		745.000	12.64	6.5308
751.000	6.4380	-0.1317		750.000	12.65	6.5697
756.000	6.4770	-0.1317		755.000	12.65	6.6087
761.000	6.5570	-0.1316		760.000	12.65	6.6886

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	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
766.000	6.5950	-0.1316		765.000	12.66	6.7266
771.000	6.6340	-0.1315		770.000	12.66	6.7655
776.000	6.6730	-0.1315		775.000	12.67	6.8045
781.000	6.7120	-0.1315		780.000	12.67	6.8435
786.000	6.7510	-0.1314		785.000	12.68	6.8824
791.000	6.7890	-0.1314		790.000	12.68	6.9204
796.000	6.8280	-0.1313		795.000	12.69	6.9593
801.000	6.8670	-0.1313		800.000	12.69	6.9983
806.000	6.9060	-0.1312		805.000	12.69	7.0372
811.000	6.9450	-0.1312		810.000	12.70	7.0762
816.000	6.9840	-0.1311		815.000	12.70	7.1151
821.000	7.0220	-0.1311		820.000	12.71	7.1531
826.000	7.0610	-0.1311		825.000	12.71	7.1921
831.000	7.1000	-0.1310		830.000	12.72	7.2310
836.000	7.1390	-0.1310		835.000	12.72	7.2700
841.000	7.1780	-0.1309		840.000	12.73	7.3089
846.000	7.2170	-0.1309		845.000	12.73	7.3479
851.000	7.2550	-0.1308		850.000	12.74	7.3858
856.000	7.2940	-0.1308		855.000	12.74	7.4248
861.000	7.3330	-0.1307		860.000	12.74	7.4637
866.000	7.3720	-0.1307		865.000	12.75	7.5027
871.000	7.4110	-0.1307		870.000	12.75	7.5417
876.000	7.4500	-0.1306		875.000	12.76	7.5806
881.000	7.4890	-0.1306		880.000	12.76	7.6196
886.000	7.5270	-0.1305		885.000	12.77	7.6575
891.000	7.5660	-0.1305		890.000	12.77	7.6965
896.000	7.6050	-0.1304		895.000	12.78	7.7354
901.000	7.6440	-0.1304		900.000	12.78	7.7744
906.000	7.6830	-0.1303		905.000	12.78	7.8133
911.000	7.7220	-0.1303		910.000	12.79	7.8523
916.000	7.7610	-0.1302		915.000	12.79	7.8912
921.000	7.8010	-0.1302		920.000	12.80	7.9312
926.000	7.8420	-0.1302		925.000	12.80	7.9722
931.000	7.8840	-0.1301		930.000	12.81	8.0141
936.000	7.9270	-0.1301		935.000	12.81	8.0571
941.000	8.0170	-0.1300		940.000	12.82	8.1470
946.000	8.0630	-0.1299		945.000	12.82	8.1929
951.000	8.1070	-0.1299		950.000	12.83	8.2369
956.000	8.1510	-0.1298		955.000	12.83	8.2808
961.000	8.1950	-0.1298		960.000	12.83	8.3248
966.000	8.2390	-0.1298		965.000	12.84	8.3688
971.000	8.2830	-0.1297		970.000	12.84	8.4127
976.000	8.3280	-0.1297		975.000	12.85	8.4577
981.000	8.4290	-0.1296		980.000	12.85	8.5586
986.000	8.4730	-0.1295		985.000	12.86	8.6025
991.000	8.5170	-0.1295		990.000	12.86	8.6465
996.000	8.5620	-0.1294		995.000	12.87	8.6914
1001.000	8.6060	-0.1294		1000.000	12.87	8.7354
1006.000	8.6510	-0.1294		1005.000	12.87	8.7804
1011.000	8.6960	-0.1293		1010.000	12.88	8.8253
1016.000	8.7400	-0.1293		1015.000	12.88	8.8693

GHDISP.XLS

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
1021.000	8.7850	-0.1292		1020.000	12.89	8.9142
1026.000	8.8300	-0.1292		1025.000	12.89	8.9592
1031.000	8.8770	-0.1291		1030.000	12.90	9.0061
1036.000	8.9250	-0.1291		1035.000	12.90	9.0541
1041.000	8.9730	-0.1290		1040.000	12.91	9.1020
1046.000	9.0220	-0.1290		1045.000	12.91	9.1510
1051.000	9.0700	-0.1289		1050.000	12.92	9.1989
1056.000	9.1190	-0.1289		1055.000	12.92	9.2479
1061.000	9.1670	-0.1288		1060.000	12.92	9.2958
1066.000	9.2230	-0.1279		1065.000	12.93	9.3509
1071.000	9.2980	-0.1278		1070.000	12.93	9.4258
1076.000	9.3740	-0.1278		1075.000	12.94	9.5018
1081.000	9.4500	-0.1278		1080.000	12.94	9.5778
1086.000	9.5220	-0.1277		1085.000	12.95	9.6497
1091.000	9.5900	-0.1277		1090.000	12.95	9.7177
1096.000	9.6580	-0.1276		1095.000	12.96	9.7856
1101.000	9.7260	-0.1276		1100.000	12.96	9.8536
1106.000	9.7940	-0.1275		1105.000	12.96	9.9215
1111.000	9.8620	-0.1275		1110.000	12.97	9.9895
1116.000	9.9860	-0.1274		1115.000	12.97	10.1134
1121.000	10.0600	-0.1273		1120.000	12.98	10.1873
1126.000	10.1300	-0.1273		1125.000	12.98	10.2573
1131.000	10.2000	-0.1272		1130.000	12.99	10.3272
1136.000	10.2700	-0.1272		1135.000	12.99	10.3972
1141.000	10.3400	-0.1271		1140.000	13.00	10.4671
1146.000	10.4200	-0.1271		1145.000	13.00	10.5471
1151.000	10.6500	-0.1270		1150.000	13.01	10.7770
1156.000	10.7500	-0.1270		1155.000	13.01	10.8770
1161.000	10.8300	-0.1269		1160.000	13.01	10.9569
1166.000	10.9100	-0.1269		1165.000	13.02	11.0369
1171.000	11.0000	-0.1268		1170.000	13.02	11.1268
1176.000	11.0800	-0.1268		1175.000	13.03	11.2068
1181.000	11.1600	-0.1267		1180.000	13.03	11.2867
1186.000	11.8500	-0.1268		1185.000	13.04	11.9768
1191.000	12.1600	-0.1267		1190.000	13.04	12.2867
1196.000	12.2500	-0.1267		1195.000	13.05	12.3767
1201.000	12.3400	-0.1266		1200.000	13.05	12.4666
1206.000	12.4200	-0.1266		1205.000	13.05	12.5466
1211.000	12.5100	-0.1265		1210.000	13.06	12.6365
1216.000	12.6000	-0.1265		1215.000	13.06	12.7265
1221.000	12.6800	-0.1264		1220.000	13.07	12.8064
1226.000	12.7700	-0.1264		1225.000	13.07	12.8964
1231.000	12.8600	-0.1263		1230.000	13.08	12.9863
1236.000	12.9400	-0.1263		1235.000	13.08	13.0663
1241.000	13.0300	-0.1262		1240.000	13.09	13.1562
1246.000	13.1200	-0.1262		1245.000	13.09	13.2462
1251.000	13.2000	-0.1261		1250.000	13.10	13.3261
1256.000	13.2900	-0.1261		1255.000	13.10	13.4161
1261.000	13.3800	-0.1260		1260.000	13.10	13.5060
1266.000	13.4700	-0.1260		1265.000	13.11	13.5960
1271.000	13.5500	-0.1259		1270.000	13.11	13.6759

GHDISP.XLS

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
1276.000	13.6400	-0.1259		1275.000	13.12	13.7659
1281.000	13.7300	-0.1258		1280.000	13.12	13.8558
1286.000	13.8100	-0.1258		1285.000	13.13	13.9358
1291.000	13.9000	-0.1257		1290.000	13.13	14.0257
1296.000	13.9800	-0.1257		1295.000	13.14	14.1057
1301.000	14.0600	-0.1257		1300.000	13.14	14.1857
1306.000	14.1500	-0.1256		1305.000	13.14	14.2756
1311.000	14.2400	-0.1256		1310.000	13.15	14.3656
1316.000	14.3200	-0.1255		1315.000	13.15	14.4455
1321.000	14.4100	-0.1255		1320.000	13.16	14.5355
1326.000	14.4900	-0.1254		1325.000	13.16	14.6154
1331.000	14.5800	-0.1254		1330.000	13.17	14.7054
1336.000	14.6700	-0.1253		1335.000	13.17	14.7953
1341.000	14.7500	-0.1253		1340.000	13.18	14.8753
1346.000	14.8400	-0.1252		1345.000	13.18	14.9652
1351.000	14.9200	-0.1252		1350.000	13.19	15.0452
1356.000	15.0100	-0.1251		1355.000	13.19	15.1351
1361.000	15.1000	-0.1251		1360.000	13.19	15.2251
1366.000	15.1800	-0.1250		1365.000	13.20	15.3050
1371.000	15.2700	-0.1250		1370.000	13.20	15.3950
1376.000	15.3600	-0.1249		1375.000	13.21	15.4849
1381.000	15.4400	-0.1249		1380.000	13.21	15.5649
1386.000	15.5200	-0.1248		1385.000	13.22	15.6448
1391.000	15.6000	-0.1248		1390.000	13.22	15.7248
1396.000	15.6800	-0.1247		1395.000	13.23	15.8047
1401.000	15.7500	-0.1247		1400.000	13.23	15.8747
1406.000	15.8200	-0.1246		1405.000	13.23	15.9446
1411.000	15.9400	-0.1245		1410.000	13.24	16.0645
1416.000	16.0200	-0.1245		1415.000	13.24	16.1445
1421.000	16.1200	-0.1244		1420.000	13.25	16.2444
1426.000	16.3400	-0.1244		1425.000	13.25	16.4644
1431.000	16.4500	-0.1243		1430.000	13.26	16.5743
1436.000	16.5500	-0.1243		1435.000	13.26	16.6743
1441.000	16.6600	-0.1242		1440.000	13.27	16.7842
1446.000	16.7900	-0.1242		1445.000	13.27	16.9142
1451.000	16.9400	-0.1241		1450.000	13.28	17.0641
1456.000	17.0400	-0.1241		1455.000	13.28	17.1641
1461.000	17.1500	-0.1240		1460.000	13.28	17.2740
1466.000	17.2600	-0.1240		1465.000	13.29	17.3840
1471.000	17.3600	-0.1239		1470.000	13.29	17.4839
1476.000	17.8800	-0.1240		1475.000	13.30	18.0040
1481.000	18.2400	-0.1240		1480.000	13.30	18.3640
1486.000	18.3100	-0.1239		1485.000	13.31	18.4339
1491.000	18.3800	-0.1239		1490.000	13.31	18.5039
1496.000	18.4400	-0.1238		1495.000	13.32	18.5638
1501.000	18.5100	-0.1238		1500.000	13.32	18.6338
1506.000	18.5700	-0.1237		1505.000	13.32	18.6937
1511.000	18.6400	-0.1237		1510.000	13.33	18.7637
1516.000	18.7000	-0.1237		1515.000	13.33	18.8237
1521.000	18.7700	-0.1236		1520.000	13.34	18.8936
1526.000	18.8300	-0.1236		1525.000	13.34	18.9536

GHDISP.XLS

	U vert (in)			step 2	Pressure	Relative
total time	Apex	Haunch		time	psi	U vert (in)
1531.000	18.8900	-0.1235		1530.000	13.35	19.0135
1536.000	18.9500	-0.1235		1535.000	13.35	19.0735
1541.000	19.0200	-0.1234		1540.000	13.36	19.1434
1546.000	19.1200	-0.1234		1545.000	13.36	19.2434
1551.000	19.2200	-0.1233		1550.000	13.37	19.3433
1556.000	19.3200	-0.1233		1555.000	13.37	19.4433
1561.000	19.4200	-0.1232		1560.000	13.37	19.5432
1566.000	19.8700	-0.1231		1565.000	13.38	19.9931
1571.000	19.9800	-0.1230		1570.000	13.38	20.1030
1576.000	20.0600	-0.1230		1575.000	13.39	20.1830
1581.000	20.1500	-0.1229		1580.000	13.39	20.2729
1586.000	20.2400	-0.1229		1585.000	13.40	20.3629
1591.000	20.3200	-0.1228		1590.000	13.40	20.4428
1596.000	20.4100	-0.1228		1595.000	13.41	20.5328
1601.000	20.5000	-0.1227		1600.000	13.41	20.6227
1606.000	20.5900	-0.1227		1605.000	13.41	20.7127
1611.000	20.7000	-0.1227		1610.000	13.42	20.8227
1616.000	20.8100	-0.1226		1615.000	13.42	20.9326
1621.000	20.9200	-0.1226		1620.000	13.43	21.0426
1626.000	21.0300	-0.1225		1625.000	13.43	21.1525
1631.000	21.1400	-0.1225		1630.000	13.44	21.2625
1636.000	21.2500	-0.1224		1635.000	13.44	21.3724
1641.000	21.3700	-0.1224		1640.000	13.45	21.4924
1646.000	21.4800	-0.1223		1645.000	13.45	21.6023
1651.000	21.5900	-0.1223		1650.000	13.46	21.7123
1656.000	21.6900	-0.1222		1655.000	13.46	21.8122
1661.000	21.8000	-0.1222		1660.000	13.46	21.9222
1666.000	21.9100	-0.1221		1665.000	13.47	22.0321
1671.000	22.0100	-0.1221		1670.000	13.47	22.1321
1676.000	22.1200	-0.1220		1675.000	13.48	22.2420
1681.000	22.2200	-0.1220		1680.000	13.48	22.3420
1686.000	22.3300	-0.1220		1685.000	13.49	22.4520
1691.000	22.4300	-0.1219		1690.000	13.49	22.5519
1696.000	22.5300	-0.1219		1695.000	13.50	22.6519
1701.000	22.6200	-0.1218		1700.000	13.50	22.7418

GHDISP.XLS

ATTACHMENT 9

INPUT AND OUTPUT FILES FOR DOME REBAR STRESS FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Kirk 5/27/94
Date

Checked by: Albert Hyun 5/23/94
Date

HBARSTRS.abdat

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*** Postprocess .fil File to Tabulate Rebar Stress History Data
*** Must temporarily rename original file.fil to this filename.fil
*** Results are found in filename.about.about
*POST FILE,INPUT=BINARY
**
**   rebar stresses
*PRINT HISTORY,BSTEP=2(INC=600),ESTEP=2(INC=1700)
*** meridional bars
S11,M121-S11,121,1,,3,MOBAR
S11,M120-S11,120,1,,3,MOBAR
S11,M119-S11,119,2,,3,MOBAR
S11,M118-S11,118,1,,3,MOBAR
*** hoop bars
S11,H121-S11,121,1,,3,HOBAR
S11,H120-S11,120,1,,3,HOBAR
S11,H119-S11,119,2,,3,HOBAR
S11,H118-S11,118,1,,3,HOBAR
```

HBARSTRS.about

ABAQUS PRODUCTION VERSION 4-9-1 DATE 10-Jan-94 TIME 11:49:10 PAGE 1
FOR USE BY WESTINGHOUSE HANFORD COMPANY UNDER LICENSE FROM HKS, INC.

STEP 0 INCREMENT 0
TIME COMPLETED IN THIS STEP .000E+00

P O S T - P L O T T I N G

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	M121-S11	7.031E+04	1.701E+03	-2.510E+03	6.00
2	M120-S11	4.572E+04	1.701E+03	-2.500E+03	6.00
3	M119-S11	6.280E+04	1.701E+03	-2.558E+03	6.00
4	M118-S11	5.011E+04	1.701E+03	-2.427E+03	6.00
5	H121-S11	-1.000E+40	.000E+00	1.000E+40	.000E+00
6	H120-S11	5.098E+04	1.701E+03	-2.456E+03	6.00
7	H119-S11	5.210E+04	1.701E+03	-2.448E+03	6.00
8	H118-S11	-1.000E+40	.000E+00	1.000E+40	.000E+00

TIME	VARIABLE 1	2	3	4	5	6	7	8
6.000	-2510.	-2500.	-2558.	-2427.		-2456.	-2448.	
11.00	-2217.	-2207.	-2260.	-2154.		-2173.	-2168.	
16.00	-1923.	-1915.	-1962.	-1881.		-1891.	-1889.	
21.00	-1629.	-1622.	-1664.	-1608.		-1608.	-1609.	
26.00	-1335.	-1330.	-1365.	-1335.		-1325.	-1330.	
31.00	-1042.	-1037.	-1067.	-1062.		-1043.	-1050.	
36.00	-748.0	-744.6	-769.1	-788.6		-760.2	-770.5	
41.00	-454.2	-452.1	-470.9	-515.4		-477.5	-491.0	
46.00	-160.5	-159.5	-172.8	-242.3		-194.9	-211.4	
51.00	133.2	133.0	125.4	30.89		87.70	68.15	
56.00	427.0	425.5	423.5	304.0		370.3	347.7	
61.00	720.7	718.1	721.6	577.2		653.0	627.3	
66.00	1014.	1011.	1020.	850.3		935.6	906.8	
71.00	1308.	1303.	1318.	1124.		1218.	1186.	
76.00	1602.	1596.	1616.	1397.		1501.	1466.	
81.00	1896.	1888.	1914.	1670.		1783.	1746.	
86.00	2131.	2123.	2154.	1889.		2010.	1970.	
91.00	2135.	2127.	2157.	1893.		2014.	1974.	
96.00	2139.	2131.	2161.	1896.		2018.	1977.	
101.0	2143.	2135.	2165.	1900.		2021.	1981.	
106.0	2147.	2138.	2169.	1903.		2025.	1985.	
111.0	2151.	2142.	2173.	1907.		2029.	1988.	
116.0	2155.	2146.	2177.	1911.		2033.	1992.	
121.0	2158.	2150.	2181.	1914.		2036.	1996.	
126.0	4.9104E+04	690.7	66.76	1.2185E+04		2.4457E+04	1.8561E+04	
131.0	4.6332E+04	2.8502E+04	4.8311E+04	4.9125E+04		4.9211E+04	4.9177E+04	
136.0	4.5329E+04	2.8345E+04	4.7501E+04	4.9130E+04		4.8719E+04	4.8748E+04	
141.0	4.5526E+04	2.8448E+04	4.7686E+04	4.9130E+04		4.8858E+04	4.8892E+04	
146.0	4.6105E+04	2.8800E+04	4.8282E+04	4.9131E+04		4.9211E+04	4.9177E+04	
151.0	4.7511E+04	2.9645E+04	4.9104E+04	4.9136E+04		4.9190E+04	4.9183E+04	
156.0	4.7518E+04	2.9684E+04	4.9109E+04	4.9136E+04		4.9211E+04	4.9184E+04	
161.0	4.7533E+04	2.9726E+04	4.9114E+04	4.9137E+04		4.9214E+04	4.9185E+04	
166.0	4.7545E+04	2.9767E+04	4.9118E+04	4.9137E+04		4.9214E+04	4.9185E+04	
171.0	4.7574E+04	2.9805E+04	4.9123E+04	4.9138E+04		4.9214E+04	4.9186E+04	
176.0	4.7605E+04	2.9841E+04	4.9128E+04	4.9139E+04		4.9214E+04	4.9187E+04	
181.0	4.7637E+04	2.9876E+04	4.9133E+04	4.9139E+04		4.9214E+04	4.9188E+04	
186.0	4.7669E+04	2.9910E+04	4.9137E+04	4.9140E+04		4.9214E+04	4.9189E+04	
191.0	4.7700E+04	2.9945E+04	4.9142E+04	4.9141E+04		4.9214E+04	4.9189E+04	
196.0	4.7732E+04	2.9979E+04	4.9147E+04	4.9141E+04		4.9214E+04	4.9190E+04	
201.0	4.7763E+04	3.0012E+04	4.9152E+04	4.9142E+04		4.9214E+04	4.9191E+04	
206.0	4.7794E+04	3.0045E+04	4.9156E+04	4.9142E+04		4.9214E+04	4.9192E+04	
216.0	4.7856E+04	3.0111E+04	4.9166E+04	4.9144E+04		4.9214E+04	4.9194E+04	
226.0	4.7917E+04	3.0176E+04	4.9175E+04	4.9145E+04		4.9215E+04	4.9195E+04	
236.0	4.7978E+04	3.0239E+04	4.9185E+04	4.9146E+04		4.9215E+04	4.9197E+04	
241.0	4.8008E+04	3.0270E+04	4.9190E+04	4.9147E+04		4.9215E+04	4.9198E+04	
246.0	4.8038E+04	3.0301E+04	4.9195E+04	4.9147E+04		4.9215E+04	4.9199E+04	

251.0	4.8068E+04	3.0332E+04	4.9199E+04	4.9148E+04	4.9215E+04	4.9199E+04
256.0	4.8100E+04	3.0364E+04	4.9204E+04	4.9149E+04	4.9215E+04	4.9200E+04
261.0	4.8130E+04	3.0395E+04	4.9209E+04	4.9149E+04	4.9215E+04	4.9201E+04
266.0	4.8160E+04	3.0427E+04	4.9214E+04	4.9150E+04	4.9215E+04	4.9202E+04
271.0	4.8179E+04	3.0490E+04	4.9223E+04	4.9151E+04	4.9208E+04	4.9203E+04
276.0	4.8212E+04	3.0523E+04	4.9227E+04	4.9152E+04	4.9215E+04	4.9204E+04
281.0	4.8242E+04	3.0554E+04	4.9233E+04	4.9153E+04	4.9215E+04	4.9205E+04
286.0	4.8272E+04	3.0584E+04	4.9238E+04	4.9153E+04	4.9215E+04	4.9206E+04
291.0	4.8308E+04	3.0649E+04	4.9248E+04	4.9155E+04	4.9218E+04	4.9208E+04
296.0	4.8336E+04	3.0678E+04	4.9253E+04	4.9155E+04	4.9215E+04	4.9209E+04
301.0	4.8365E+04	3.0708E+04	4.9258E+04	4.9156E+04	4.9216E+04	4.9210E+04
306.0	4.8394E+04	3.0737E+04	4.9263E+04	4.9157E+04	4.9216E+04	4.9210E+04
311.0	4.8424E+04	3.0766E+04	4.9268E+04	4.9157E+04	4.9216E+04	4.9211E+04
316.0	4.8453E+04	3.0795E+04	4.9273E+04	4.9158E+04	4.9216E+04	4.9212E+04
321.0	4.8482E+04	3.0824E+04	4.9278E+04	4.9159E+04	4.9216E+04	4.9213E+04
326.0	4.8514E+04	3.0883E+04	4.9288E+04	4.9160E+04	4.9216E+04	4.9215E+04
331.0	4.8543E+04	3.0911E+04	4.9293E+04	4.9161E+04	4.9216E+04	4.9216E+04
336.0	4.8573E+04	3.0939E+04	4.9298E+04	4.9161E+04	4.9216E+04	4.9217E+04
341.0	4.8596E+04	3.0961E+04	4.9304E+04	4.9162E+04	4.9212E+04	4.9218E+04
346.0	4.8648E+04	3.0989E+04	4.9309E+04	4.9163E+04	4.9216E+04	4.9218E+04
351.0	4.8674E+04	3.1011E+04	4.9315E+04	4.9163E+04	4.9212E+04	4.9219E+04
356.0	4.8726E+04	3.1039E+04	4.9320E+04	4.9164E+04	4.9216E+04	4.9220E+04
361.0	4.8751E+04	3.1060E+04	4.9326E+04	4.9165E+04	4.9213E+04	4.9221E+04
366.0	4.8803E+04	3.1088E+04	4.9331E+04	4.9166E+04	4.9216E+04	4.9222E+04
371.0	4.8828E+04	3.1109E+04	4.9337E+04	4.9166E+04	4.9213E+04	4.9223E+04
376.0	4.8879E+04	3.1136E+04	4.9342E+04	4.9167E+04	4.9216E+04	4.9224E+04
381.0	4.8987E+04	3.1215E+04	4.9359E+04	4.9169E+04	4.9217E+04	4.9227E+04
386.0	4.8983E+04	3.1229E+04	4.9366E+04	4.9170E+04	4.9214E+04	4.9228E+04
391.0	4.9034E+04	3.1255E+04	4.9371E+04	4.9171E+04	4.9217E+04	4.9229E+04
396.0	4.9059E+04	3.1275E+04	4.9377E+04	4.9172E+04	4.9213E+04	4.9230E+04
401.0	4.9110E+04	3.1301E+04	4.9382E+04	4.9172E+04	4.9217E+04	4.9231E+04
406.0	4.9135E+04	3.1320E+04	4.9388E+04	4.9173E+04	4.9213E+04	4.9232E+04
411.0	4.9267E+04	3.1398E+04	4.9405E+04	4.9175E+04	4.9180E+04	4.9235E+04
416.0	4.9282E+04	3.1417E+04	4.9411E+04	4.9176E+04	4.9189E+04	4.9236E+04
421.0	4.9305E+04	3.1441E+04	4.9417E+04	4.9177E+04	4.9206E+04	4.9237E+04
426.0	4.9328E+04	3.1460E+04	4.9423E+04	4.9178E+04	4.9212E+04	4.9238E+04
431.0	4.9381E+04	3.1486E+04	4.9428E+04	4.9178E+04	4.9217E+04	4.9239E+04
436.0	4.9405E+04	3.1505E+04	4.9434E+04	4.9179E+04	4.9213E+04	4.9240E+04
441.0	4.9457E+04	3.1530E+04	4.9440E+04	4.9180E+04	4.9217E+04	4.9241E+04
446.0	4.9484E+04	3.1549E+04	4.9446E+04	4.9181E+04	4.9214E+04	4.9242E+04
451.0	4.9507E+04	3.1574E+04	4.9452E+04	4.9182E+04	4.9217E+04	4.9243E+04
456.0	4.9500E+04	3.1593E+04	4.9458E+04	4.9182E+04	4.9213E+04	4.9244E+04
461.0	4.9508E+04	3.1617E+04	4.9463E+04	4.9183E+04	4.9217E+04	4.9245E+04
466.0	4.9508E+04	3.1641E+04	4.9470E+04	4.9184E+04	4.9217E+04	4.9246E+04
471.0	4.9508E+04	3.1677E+04	4.9480E+04	4.9185E+04	4.9218E+04	4.9248E+04
476.0	4.9508E+04	3.1714E+04	4.9491E+04	4.9187E+04	4.9218E+04	4.9250E+04
481.0	4.9509E+04	3.1749E+04	4.9501E+04	4.9188E+04	4.9218E+04	4.9252E+04
486.0	4.9509E+04	3.1785E+04	4.9512E+04	4.9190E+04	4.9218E+04	4.9253E+04
491.0	4.9509E+04	3.1820E+04	4.9522E+04	4.9191E+04	4.9218E+04	4.9255E+04
496.0	4.9509E+04	3.1855E+04	4.9532E+04	4.9192E+04	4.9218E+04	4.9257E+04
501.0	4.9509E+04	3.1889E+04	4.9543E+04	4.9194E+04	4.9218E+04	4.9259E+04
506.0	4.9510E+04	3.1925E+04	4.9554E+04	4.9195E+04	4.9218E+04	4.9261E+04
511.0	4.9510E+04	3.1960E+04	4.9565E+04	4.9197E+04	4.9218E+04	4.9263E+04
516.0	4.9510E+04	3.1995E+04	4.9576E+04	4.9198E+04	4.9218E+04	4.9265E+04
521.0	4.9510E+04	3.2029E+04	4.9587E+04	4.9200E+04	4.9219E+04	4.9267E+04
526.0	4.9511E+04	3.2063E+04	4.9599E+04	4.9201E+04	4.9219E+04	4.9269E+04
531.0	4.9511E+04	3.2097E+04	4.9610E+04	4.9203E+04	4.9219E+04	4.9271E+04
536.0	4.9511E+04	3.2131E+04	4.9621E+04	4.9204E+04	4.9219E+04	4.9273E+04
541.0	4.9511E+04	3.2164E+04	4.9632E+04	4.9206E+04	4.9219E+04	4.9274E+04
546.0	4.9511E+04	3.2197E+04	4.9643E+04	4.9207E+04	4.9219E+04	4.9276E+04
551.0	4.9512E+04	3.2232E+04	4.9655E+04	4.9209E+04	4.9219E+04	4.9278E+04
556.0	4.9512E+04	3.2267E+04	4.9667E+04	4.9210E+04	4.9219E+04	4.9281E+04
561.0	4.9512E+04	3.2304E+04	4.9680E+04	4.9212E+04	4.9219E+04	4.9283E+04
566.0	4.9512E+04	3.2341E+04	4.9694E+04	4.9214E+04	4.9220E+04	4.9285E+04
571.0	4.9518E+04	3.2383E+04	4.9709E+04	4.9217E+04	4.9222E+04	4.9289E+04
576.0	4.9525E+04	3.2399E+04	4.9713E+04	4.9219E+04	4.9224E+04	4.9292E+04
581.0	4.9545E+04	3.2451E+04	4.9723E+04	4.9224E+04	4.9232E+04	4.9300E+04
586.0	4.9555E+04	3.2450E+04	4.9688E+04	4.9226E+04	4.9236E+04	4.9303E+04
591.0	4.9565E+04	3.2457E+04	4.9647E+04	4.9228E+04	4.9239E+04	4.9306E+04
596.0	4.9575E+04	3.2465E+04	4.9561E+04	4.9230E+04	4.9243E+04	4.9309E+04
601.0	4.9586E+04	3.2472E+04	4.9535E+04	4.9232E+04	4.9247E+04	4.9312E+04
606.0	4.9625E+04	3.3617E+04	4.9482E+04	4.9240E+04	4.9261E+04	4.9322E+04
611.0	4.9644E+04	3.3910E+04	4.9653E+04	4.9244E+04	4.9269E+04	4.9328E+04
616.0	4.9648E+04	3.3941E+04	4.9670E+04	4.9245E+04	4.9270E+04	4.9330E+04
621.0	4.9652E+04	3.3968E+04	4.9676E+04	4.9246E+04	4.9272E+04	4.9331E+04
626.0	4.9656E+04	3.3996E+04	4.9678E+04	4.9247E+04	4.9274E+04	4.9332E+04

631.0	4.9662E+04	3.4035E+04	4.9687E+04	4.9248E+04	4.9276E+04	4.9334E+04
636.0	4.9671E+04	3.4093E+04	4.9694E+04	4.9249E+04	4.9279E+04	4.9336E+04
641.0	4.9680E+04	3.4160E+04	4.9725E+04	4.9251E+04	4.9283E+04	4.9339E+04
646.0	4.9690E+04	3.4191E+04	4.9726E+04	4.9253E+04	4.9287E+04	4.9342E+04
651.0	4.9735E+04	3.4302E+04	4.9651E+04	4.9265E+04	4.9303E+04	4.9359E+04
656.0	4.9748E+04	3.4312E+04	4.9586E+04	4.9268E+04	4.9308E+04	4.9363E+04
661.0	4.9760E+04	3.4322E+04	4.9588E+04	4.9270E+04	4.9313E+04	4.9367E+04
666.0	4.9773E+04	3.4333E+04	4.9606E+04	4.9273E+04	4.9318E+04	4.9371E+04
671.0	4.9786E+04	3.4346E+04	4.9610E+04	4.9275E+04	4.9323E+04	4.9374E+04
676.0	4.9799E+04	3.4358E+04	4.9614E+04	4.9278E+04	4.9328E+04	4.9378E+04
681.0	4.9812E+04	3.4371E+04	4.9731E+04	4.9280E+04	4.9333E+04	4.9382E+04
686.0	4.9826E+04	3.4388E+04	4.9749E+04	4.9283E+04	4.9338E+04	4.9386E+04
691.0	4.9835E+04	3.4416E+04	4.9755E+04	4.9286E+04	4.9341E+04	4.9390E+04
696.0	4.9843E+04	3.4445E+04	4.9764E+04	4.9288E+04	4.9344E+04	4.9394E+04
701.0	4.9850E+04	3.4470E+04	4.9772E+04	4.9291E+04	4.9347E+04	4.9397E+04
706.0	4.9854E+04	3.4485E+04	4.9777E+04	4.9292E+04	4.9348E+04	4.9399E+04
711.0	4.9868E+04	3.4550E+04	4.9793E+04	4.9297E+04	4.9354E+04	4.9406E+04
716.0	4.9871E+04	3.4561E+04	4.9804E+04	4.9299E+04	4.9355E+04	4.9409E+04
721.0	4.9875E+04	3.4578E+04	4.9810E+04	4.9301E+04	4.9356E+04	4.9411E+04
726.0	4.9879E+04	3.4595E+04	4.9816E+04	4.9302E+04	4.9358E+04	4.9413E+04
731.0	4.9883E+04	3.4611E+04	4.9821E+04	4.9304E+04	4.9359E+04	4.9415E+04
736.0	4.9887E+04	3.4628E+04	4.9827E+04	4.9305E+04	4.9361E+04	4.9417E+04
741.0	4.9892E+04	3.4645E+04	4.9834E+04	4.9307E+04	4.9363E+04	4.9420E+04
746.0	4.9897E+04	3.4661E+04	4.9841E+04	4.9309E+04	4.9365E+04	4.9422E+04
751.0	4.9902E+04	3.4678E+04	4.9848E+04	4.9311E+04	4.9366E+04	4.9425E+04
756.0	4.9907E+04	3.4694E+04	4.9856E+04	4.9312E+04	4.9368E+04	4.9428E+04
761.0	4.9917E+04	3.4731E+04	4.9873E+04	4.9317E+04	4.9372E+04	4.9433E+04
766.0	4.9922E+04	3.4748E+04	4.9881E+04	4.9318E+04	4.9374E+04	4.9436E+04
771.0	4.9927E+04	3.4765E+04	4.9889E+04	4.9320E+04	4.9376E+04	4.9439E+04
776.0	4.9932E+04	3.4781E+04	4.9896E+04	4.9322E+04	4.9378E+04	4.9441E+04
781.0	4.9937E+04	3.4797E+04	4.9904E+04	4.9324E+04	4.9380E+04	4.9444E+04
786.0	4.9942E+04	3.4813E+04	4.9911E+04	4.9326E+04	4.9382E+04	4.9447E+04
791.0	4.9947E+04	3.4829E+04	4.9919E+04	4.9327E+04	4.9383E+04	4.9449E+04
796.0	4.9952E+04	3.4845E+04	4.9926E+04	4.9329E+04	4.9385E+04	4.9452E+04
801.0	4.9957E+04	3.4861E+04	4.9933E+04	4.9331E+04	4.9387E+04	4.9454E+04
806.0	4.9962E+04	3.4877E+04	4.9941E+04	4.9333E+04	4.9389E+04	4.9457E+04
811.0	4.9967E+04	3.4892E+04	4.9948E+04	4.9335E+04	4.9391E+04	4.9460E+04
816.0	4.9972E+04	3.4908E+04	4.9956E+04	4.9336E+04	4.9393E+04	4.9462E+04
821.0	4.9977E+04	3.4924E+04	4.9963E+04	4.9338E+04	4.9395E+04	4.9465E+04
826.0	4.9982E+04	3.4939E+04	4.9971E+04	4.9340E+04	4.9397E+04	4.9468E+04
831.0	4.9987E+04	3.4954E+04	4.9978E+04	4.9342E+04	4.9399E+04	4.9470E+04
836.0	4.9992E+04	3.4970E+04	4.9986E+04	4.9344E+04	4.9401E+04	4.9473E+04
841.0	4.9997E+04	3.4985E+04	4.9993E+04	4.9346E+04	4.9402E+04	4.9475E+04
846.0	5.0002E+04	3.5001E+04	5.0000E+04	4.9347E+04	4.9404E+04	4.9478E+04
851.0	5.0007E+04	3.5016E+04	5.0008E+04	4.9349E+04	4.9406E+04	4.9481E+04
856.0	5.0012E+04	3.5031E+04	5.0015E+04	4.9351E+04	4.9408E+04	4.9483E+04
861.0	5.0017E+04	3.5046E+04	5.0023E+04	4.9353E+04	4.9410E+04	4.9486E+04
866.0	5.0022E+04	3.5061E+04	5.0030E+04	4.9355E+04	4.9412E+04	4.9489E+04
871.0	5.0027E+04	3.5076E+04	5.0038E+04	4.9356E+04	4.9414E+04	4.9491E+04
876.0	5.0032E+04	3.5091E+04	5.0045E+04	4.9358E+04	4.9416E+04	4.9494E+04
881.0	5.0037E+04	3.5106E+04	5.0053E+04	4.9360E+04	4.9418E+04	4.9497E+04
886.0	5.0042E+04	3.5121E+04	5.0060E+04	4.9362E+04	4.9419E+04	4.9499E+04
891.0	5.0047E+04	3.5136E+04	5.0068E+04	4.9364E+04	4.9421E+04	4.9502E+04
896.0	5.0052E+04	3.5151E+04	5.0075E+04	4.9365E+04	4.9423E+04	4.9504E+04
901.0	5.0057E+04	3.5166E+04	5.0083E+04	4.9367E+04	4.9425E+04	4.9507E+04
906.0	5.0062E+04	3.5180E+04	5.0090E+04	4.9369E+04	4.9427E+04	4.9510E+04
911.0	5.0067E+04	3.5195E+04	5.0098E+04	4.9371E+04	4.9429E+04	4.9512E+04
916.0	5.0072E+04	3.5210E+04	5.0105E+04	4.9373E+04	4.9431E+04	4.9515E+04
921.0	5.0077E+04	3.5225E+04	5.0113E+04	4.9375E+04	4.9433E+04	4.9518E+04
926.0	5.0083E+04	3.5241E+04	5.0121E+04	4.9377E+04	4.9435E+04	4.9520E+04
931.0	5.0088E+04	3.5256E+04	5.0129E+04	4.9378E+04	4.9437E+04	4.9523E+04
936.0	5.0093E+04	3.5273E+04	5.0138E+04	4.9381E+04	4.9439E+04	4.9526E+04
941.0	5.0106E+04	3.5311E+04	5.0156E+04	4.9385E+04	4.9444E+04	4.9533E+04
946.0	5.0110E+04	3.5327E+04	5.0168E+04	4.9387E+04	4.9445E+04	4.9536E+04
951.0	5.0116E+04	3.5345E+04	5.0177E+04	4.9389E+04	4.9447E+04	4.9539E+04
956.0	5.0121E+04	3.5362E+04	5.0186E+04	4.9391E+04	4.9449E+04	4.9542E+04
961.0	5.0126E+04	3.5378E+04	5.0195E+04	4.9394E+04	4.9451E+04	4.9545E+04
966.0	5.0132E+04	3.5394E+04	5.0204E+04	4.9396E+04	4.9453E+04	4.9548E+04
971.0	5.0138E+04	3.5411E+04	5.0213E+04	4.9398E+04	4.9456E+04	4.9551E+04
976.0	5.0143E+04	3.5427E+04	5.0222E+04	4.9400E+04	4.9458E+04	4.9554E+04
981.0	5.0156E+04	3.5466E+04	5.0244E+04	4.9405E+04	4.9463E+04	4.9561E+04
986.0	5.0161E+04	3.5484E+04	5.0255E+04	4.9407E+04	4.9464E+04	4.9564E+04
991.0	5.0166E+04	3.5500E+04	5.0264E+04	4.9409E+04	4.9466E+04	4.9567E+04
996.0	5.0172E+04	3.5517E+04	5.0273E+04	4.9411E+04	4.9469E+04	4.9570E+04
1001.	5.0177E+04	3.5534E+04	5.0282E+04	4.9413E+04	4.9471E+04	4.9574E+04
1006.	5.0183E+04	3.5550E+04	5.0292E+04	4.9416E+04	4.9473E+04	4.9577E+04

1011.	5.0188E+04	3.5566E+04	5.0301E+04	4.9418E+04	4.9475E+04	4.9580E+04
1016.	5.0194E+04	3.5582E+04	5.0310E+04	4.9420E+04	4.9477E+04	4.9583E+04
1021.	5.0200E+04	3.5598E+04	5.0319E+04	4.9422E+04	4.9479E+04	4.9586E+04
1026.	5.0205E+04	3.5614E+04	5.0328E+04	4.9424E+04	4.9481E+04	4.9589E+04
1031.	5.0214E+04	3.5633E+04	5.0359E+04	4.9426E+04	4.9484E+04	4.9592E+04
1036.	5.0223E+04	3.5650E+04	5.0381E+04	4.9428E+04	4.9488E+04	4.9595E+04
1041.	5.0233E+04	3.5667E+04	5.0403E+04	4.9430E+04	4.9492E+04	4.9598E+04
1046.	5.0242E+04	3.5684E+04	5.0425E+04	4.9432E+04	4.9495E+04	4.9601E+04
1051.	5.0252E+04	3.5700E+04	5.0447E+04	4.9434E+04	4.9499E+04	4.9604E+04
1056.	5.0261E+04	3.5717E+04	5.0469E+04	4.9436E+04	4.9502E+04	4.9607E+04
1061.	5.0271E+04	3.5734E+04	5.0491E+04	4.9438E+04	4.9506E+04	4.9610E+04
1066.	5.0281E+04	3.5755E+04	5.0517E+04	4.9441E+04	4.9510E+04	4.9614E+04
1071.	5.0295E+04	3.5782E+04	5.0554E+04	4.9444E+04	4.9515E+04	4.9619E+04
1076.	5.0310E+04	3.5808E+04	5.0589E+04	4.9447E+04	4.9521E+04	4.9623E+04
1081.	5.0324E+04	3.5835E+04	5.0625E+04	4.9450E+04	4.9526E+04	4.9628E+04
1086.	5.0404E+04	3.5870E+04	5.0671E+04	4.9453E+04	4.9531E+04	4.9632E+04
1091.	5.0507E+04	3.5909E+04	5.0726E+04	4.9456E+04	4.9535E+04	4.9637E+04
1096.	5.0610E+04	3.5949E+04	5.0781E+04	4.9459E+04	4.9540E+04	4.9641E+04
1101.	5.0713E+04	3.5989E+04	5.0837E+04	4.9461E+04	4.9544E+04	4.9645E+04
1106.	5.0816E+04	3.6029E+04	5.0892E+04	4.9464E+04	4.9548E+04	4.9650E+04
1111.	5.0919E+04	3.6069E+04	5.0948E+04	4.9467E+04	4.9553E+04	4.9654E+04
1116.	5.1112E+04	3.6153E+04	5.1063E+04	4.9473E+04	4.9561E+04	4.9662E+04
1121.	5.1229E+04	3.6191E+04	5.1120E+04	4.9476E+04	4.9566E+04	4.9667E+04
1126.	5.1332E+04	3.6231E+04	5.1175E+04	4.9479E+04	4.9570E+04	4.9671E+04
1131.	5.1436E+04	3.6271E+04	5.1231E+04	4.9482E+04	4.9574E+04	4.9675E+04
1136.	5.1541E+04	3.6312E+04	5.1288E+04	4.9485E+04	4.9579E+04	4.9680E+04
1141.	5.1653E+04	3.6355E+04	5.1348E+04	4.9488E+04	4.9583E+04	4.9684E+04
1146.	5.1765E+04	3.6399E+04	5.1410E+04	4.9491E+04	4.9588E+04	4.9689E+04
1151.	5.2126E+04	3.6557E+04	5.1631E+04	4.9501E+04	4.9603E+04	4.9705E+04
1156.	5.2276E+04	3.6602E+04	5.1701E+04	4.9505E+04	4.9610E+04	4.9711E+04
1161.	5.2401E+04	3.6650E+04	5.1769E+04	4.9509E+04	4.9615E+04	4.9716E+04
1166.	5.2525E+04	3.6698E+04	5.1837E+04	4.9512E+04	4.9620E+04	4.9721E+04
1171.	5.2650E+04	3.6746E+04	5.1905E+04	4.9516E+04	4.9625E+04	4.9726E+04
1176.	5.2775E+04	3.6794E+04	5.1974E+04	4.9519E+04	4.9631E+04	4.9732E+04
1181.	5.2900E+04	3.6842E+04	5.2042E+04	4.9523E+04	4.9636E+04	4.9737E+04
1186.	5.3965E+04	3.7292E+04	5.2691E+04	4.9554E+04	4.9681E+04	4.9783E+04
1191.	5.4467E+04	3.7477E+04	5.2962E+04	4.9568E+04	4.9702E+04	4.9804E+04
1196.	5.4603E+04	3.7526E+04	5.3032E+04	4.9572E+04	4.9708E+04	4.9809E+04
1201.	5.4734E+04	3.7575E+04	5.3104E+04	4.9576E+04	4.9713E+04	4.9815E+04
1206.	5.4864E+04	3.7625E+04	5.3176E+04	4.9579E+04	4.9719E+04	4.9820E+04
1211.	5.4995E+04	3.7675E+04	5.3247E+04	4.9583E+04	4.9724E+04	4.9826E+04
1216.	5.5125E+04	3.7725E+04	5.3319E+04	4.9587E+04	4.9730E+04	4.9831E+04
1221.	5.5256E+04	3.7774E+04	5.3391E+04	4.9590E+04	4.9735E+04	4.9836E+04
1226.	5.5387E+04	3.7824E+04	5.3463E+04	4.9594E+04	4.9741E+04	4.9842E+04
1231.	5.5518E+04	3.7874E+04	5.3535E+04	4.9598E+04	4.9746E+04	4.9847E+04
1236.	5.5648E+04	3.7924E+04	5.3607E+04	4.9601E+04	4.9752E+04	4.9853E+04
1241.	5.5780E+04	3.7973E+04	5.3679E+04	4.9605E+04	4.9757E+04	4.9858E+04
1246.	5.5913E+04	3.8022E+04	5.3749E+04	4.9609E+04	4.9763E+04	4.9864E+04
1251.	5.6047E+04	3.8070E+04	5.3819E+04	4.9613E+04	4.9769E+04	4.9869E+04
1256.	5.6181E+04	3.8118E+04	5.3889E+04	4.9616E+04	4.9774E+04	4.9875E+04
1261.	5.6314E+04	3.8167E+04	5.3959E+04	4.9620E+04	4.9780E+04	4.9880E+04
1266.	5.6448E+04	3.8215E+04	5.4029E+04	4.9624E+04	4.9785E+04	4.9886E+04
1271.	5.6582E+04	3.8263E+04	5.4100E+04	4.9627E+04	4.9791E+04	4.9891E+04
1276.	5.6716E+04	3.8311E+04	5.4170E+04	4.9631E+04	4.9797E+04	4.9897E+04
1281.	5.6849E+04	3.8359E+04	5.4239E+04	4.9635E+04	4.9802E+04	4.9902E+04
1286.	5.6977E+04	3.8407E+04	5.4305E+04	4.9638E+04	4.9808E+04	4.9908E+04
1291.	5.7104E+04	3.8454E+04	5.4372E+04	4.9642E+04	4.9813E+04	4.9913E+04
1296.	5.7231E+04	3.8501E+04	5.4438E+04	4.9645E+04	4.9818E+04	4.9918E+04
1301.	5.7358E+04	3.8549E+04	5.4505E+04	4.9649E+04	4.9824E+04	4.9924E+04
1306.	5.7489E+04	3.8598E+04	5.4574E+04	4.9653E+04	4.9829E+04	4.9929E+04
1311.	5.7621E+04	3.8647E+04	5.4642E+04	4.9656E+04	4.9835E+04	4.9934E+04
1316.	5.7752E+04	3.8696E+04	5.4711E+04	4.9660E+04	4.9840E+04	4.9940E+04
1321.	5.7884E+04	3.8745E+04	5.4780E+04	4.9664E+04	4.9846E+04	4.9945E+04
1326.	5.8015E+04	3.8793E+04	5.4849E+04	4.9667E+04	4.9851E+04	4.9951E+04
1331.	5.8147E+04	3.8842E+04	5.4918E+04	4.9671E+04	4.9857E+04	4.9956E+04
1336.	5.8278E+04	3.8891E+04	5.4987E+04	4.9675E+04	4.9863E+04	4.9962E+04
1341.	5.8408E+04	3.8942E+04	5.5054E+04	4.9678E+04	4.9868E+04	4.9967E+04
1346.	5.8531E+04	3.8997E+04	5.5116E+04	4.9682E+04	4.9873E+04	4.9972E+04
1351.	5.8655E+04	3.9052E+04	5.5179E+04	4.9686E+04	4.9878E+04	4.9977E+04
1356.	5.8779E+04	3.9108E+04	5.5241E+04	4.9690E+04	4.9884E+04	4.9982E+04
1361.	5.8902E+04	3.9163E+04	5.5304E+04	4.9693E+04	4.9889E+04	4.9987E+04
1366.	5.9026E+04	3.9218E+04	5.5366E+04	4.9697E+04	4.9894E+04	4.9993E+04
1371.	5.9149E+04	3.9273E+04	5.5429E+04	4.9701E+04	4.9899E+04	4.9998E+04
1376.	5.9273E+04	3.9329E+04	5.5491E+04	4.9705E+04	4.9904E+04	5.0003E+04
1381.	5.9396E+04	3.9383E+04	5.5553E+04	4.9708E+04	4.9910E+04	5.0008E+04
1386.	5.9511E+04	3.9435E+04	5.5611E+04	4.9712E+04	4.9914E+04	5.0013E+04

1391.	5.9626E+04	3.9486E+04	5.5669E+04	4.9715E+04	4.9919E+04	5.0018E+04
1396.	5.9741E+04	3.9538E+04	5.5727E+04	4.9719E+04	4.9924E+04	5.0022E+04
1401.	5.9848E+04	3.9585E+04	5.5780E+04	4.9722E+04	4.9929E+04	5.0027E+04
1406.	5.9946E+04	3.9631E+04	5.5831E+04	4.9725E+04	4.9933E+04	5.0031E+04
1411.	6.0127E+04	3.9736E+04	5.5948E+04	4.9732E+04	4.9940E+04	5.0039E+04
1416.	6.0243E+04	3.9805E+04	5.6023E+04	4.9736E+04	4.9945E+04	5.0044E+04
1421.	6.0385E+04	3.9888E+04	5.6113E+04	4.9740E+04	4.9951E+04	5.0051E+04
1426.	6.0719E+04	4.0092E+04	5.6336E+04	4.9752E+04	4.9965E+04	5.0066E+04
1431.	6.0878E+04	4.0185E+04	5.6439E+04	4.9758E+04	4.9972E+04	5.0073E+04
1436.	6.1035E+04	4.0276E+04	5.6541E+04	4.9763E+04	4.9979E+04	5.0080E+04
1441.	6.1191E+04	4.0368E+04	5.6642E+04	4.9769E+04	4.9985E+04	5.0087E+04
1446.	6.1381E+04	4.0503E+04	5.6769E+04	4.9776E+04	4.9993E+04	5.0096E+04
1451.	6.1602E+04	4.0613E+04	5.6913E+04	4.9783E+04	5.0003E+04	5.0106E+04
1456.	6.1759E+04	4.0705E+04	5.7015E+04	4.9789E+04	5.0009E+04	5.0113E+04
1461.	6.1916E+04	4.0797E+04	5.7117E+04	4.9794E+04	5.0016E+04	5.0120E+04
1466.	6.2073E+04	4.0889E+04	5.7219E+04	4.9800E+04	5.0023E+04	5.0127E+04
1471.	6.2230E+04	4.0981E+04	5.7320E+04	4.9805E+04	5.0029E+04	5.0134E+04
1476.	6.2967E+04	4.1568E+04	5.7848E+04	4.9834E+04	5.0061E+04	5.0169E+04
1481.	6.3529E+04	4.1813E+04	5.8246E+04	4.9853E+04	5.0085E+04	5.0195E+04
1486.	6.3624E+04	4.1869E+04	5.8309E+04	4.9857E+04	5.0089E+04	5.0200E+04
1491.	6.3719E+04	4.1926E+04	5.8372E+04	4.9860E+04	5.0093E+04	5.0204E+04
1496.	6.3813E+04	4.1982E+04	5.8435E+04	4.9863E+04	5.0097E+04	5.0208E+04
1501.	6.3907E+04	4.2038E+04	5.8498E+04	4.9867E+04	5.0101E+04	5.0213E+04
1506.	6.4002E+04	4.2094E+04	5.8562E+04	4.9870E+04	5.0105E+04	5.0217E+04
1511.	6.4096E+04	4.2151E+04	5.8625E+04	4.9873E+04	5.0109E+04	5.0221E+04
1516.	6.4190E+04	4.2207E+04	5.8688E+04	4.9877E+04	5.0113E+04	5.0225E+04
1521.	6.4281E+04	4.2261E+04	5.8749E+04	4.9880E+04	5.0117E+04	5.0230E+04
1526.	6.4371E+04	4.2316E+04	5.8809E+04	4.9883E+04	5.0120E+04	5.0234E+04
1531.	6.4461E+04	4.2370E+04	5.8869E+04	4.9886E+04	5.0124E+04	5.0238E+04
1536.	6.4552E+04	4.2425E+04	5.8930E+04	4.9889E+04	5.0128E+04	5.0242E+04
1541.	6.4645E+04	4.2480E+04	5.8993E+04	4.9893E+04	5.0132E+04	5.0246E+04
1546.	6.4784E+04	4.2569E+04	5.9090E+04	4.9898E+04	5.0138E+04	5.0253E+04
1551.	6.4931E+04	4.2660E+04	5.9192E+04	4.9903E+04	5.0144E+04	5.0259E+04
1556.	6.5078E+04	4.2750E+04	5.9294E+04	4.9908E+04	5.0150E+04	5.0266E+04
1561.	6.5224E+04	4.2841E+04	5.9396E+04	4.9914E+04	5.0157E+04	5.0273E+04
1566.	6.5939E+04	4.3311E+04	5.9925E+04	4.9941E+04	5.0188E+04	5.0307E+04
1571.	6.6135E+04	4.3387E+04	6.0033E+04	4.9947E+04	5.0197E+04	5.0316E+04
1576.	6.6284E+04	4.3467E+04	6.0128E+04	4.9953E+04	5.0203E+04	5.0323E+04
1581.	6.6432E+04	4.3547E+04	6.0223E+04	4.9958E+04	5.0210E+04	5.0342E+04
1586.	6.6579E+04	4.3631E+04	6.0320E+04	4.9964E+04	5.0216E+04	5.0404E+04
1591.	6.6727E+04	4.3714E+04	6.0417E+04	4.9969E+04	5.0223E+04	5.0466E+04
1596.	6.6866E+04	4.3796E+04	6.0513E+04	4.9974E+04	5.0230E+04	5.0529E+04
1601.	6.7009E+04	4.3874E+04	6.0604E+04	4.9980E+04	5.0237E+04	5.0593E+04
1606.	6.7157E+04	4.3955E+04	6.0697E+04	4.9986E+04	5.0244E+04	5.0659E+04
1611.	6.7330E+04	4.4050E+04	6.0806E+04	4.9992E+04	5.0253E+04	5.0738E+04
1616.	6.7505E+04	4.4144E+04	6.0915E+04	4.9999E+04	5.0261E+04	5.0816E+04
1621.	6.7681E+04	4.4239E+04	6.1025E+04	5.0006E+04	5.0270E+04	5.0895E+04
1626.	6.7856E+04	4.4333E+04	6.1134E+04	5.0013E+04	5.0279E+04	5.0974E+04
1631.	6.8032E+04	4.4428E+04	6.1244E+04	5.0020E+04	5.0287E+04	5.1053E+04
1636.	6.8207E+04	4.4523E+04	6.1352E+04	5.0026E+04	5.0296E+04	5.1131E+04
1641.	6.8383E+04	4.4618E+04	6.1462E+04	5.0033E+04	5.0305E+04	5.1210E+04
1646.	6.8558E+04	4.4713E+04	6.1571E+04	5.0040E+04	5.0314E+04	5.1289E+04
1651.	6.8733E+04	4.4807E+04	6.1680E+04	5.0047E+04	5.0322E+04	5.1368E+04
1656.	6.8905E+04	4.4901E+04	6.1790E+04	5.0054E+04	5.0353E+04	5.1446E+04
1661.	6.9066E+04	4.4995E+04	6.1906E+04	5.0060E+04	5.0425E+04	5.1521E+04
1666.	6.9226E+04	4.5089E+04	6.2022E+04	5.0067E+04	5.0497E+04	5.1596E+04
1671.	6.9386E+04	4.5184E+04	6.2138E+04	5.0073E+04	5.0569E+04	5.1671E+04
1676.	6.9546E+04	4.5278E+04	6.2253E+04	5.0080E+04	5.0641E+04	5.1746E+04
1681.	6.9705E+04	4.5373E+04	6.2369E+04	5.0087E+04	5.0712E+04	5.1821E+04
1686.	6.9865E+04	4.5467E+04	6.2485E+04	5.0093E+04	5.0784E+04	5.1895E+04
1691.	7.0025E+04	4.5562E+04	6.2600E+04	5.0100E+04	5.0856E+04	5.1970E+04
1696.	7.0177E+04	4.5652E+04	6.2709E+04	5.0106E+04	5.0924E+04	5.2041E+04
1701.	7.0309E+04	4.5722E+04	6.2797E+04	5.0111E+04	5.0983E+04	5.2102E+04

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

ATTACHMENT 10

PARAMETRIC STUDY FOR LATERAL SOIL SPRING REPLACEMENT FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R Kirk 5/27/94
Date

Checked by: [illegible] 5/28/94
Date

The analysis input file was modified to replace the lateral soil springs with a hydrostatic distributed load. This load configuration represents the precompression of the lateral soil springs, but does not vary the pressure with changes lateral wall displacements.

The distributed load was applied to the outer wall and the outer footing elements, which corresponds to the nodes for which lateral soil spring were previously defined. The ABAQUS inputs for the hydrostatic pressure definition are as follows:

- Magnitude of distributed load = $0.26(110)[633.75 - (-24)]/12^3 = 10.89$ lbf/in^2
- Z-coordinate of zero pressure level = 633.75"
- Z-coordinate of point at which pressure is defined = -24" (node 258, bottom of footing).

where

Coefficient of Active Soil Pressure = 0.26
Soil Weight Density = 110 lbf/ft^3

Included in this attachment is a summary of the changes made to the input file and the resulting displacement output file. The following tables compare displacement results at key time increments for the two analyses.

GHDISP.about: Soil Modelled with Precompressed Springs

Time	Description	Displacement @ Apex	Displacement @ Haunch	Relative Displacement
1.0	Full deadload application	-.4577	-.2598	-.1979
126.0	Just prior to displ. jump	.3897	-.1420	.5317
131.0	Just after displ. jump	3.045	-.1418	3.187
1701.0	Last pressure increment	22.62	-.1218	22.74

GIDISP.about: Soil Modelled with Hydrostatic Distributed Load

Time	Description	Displacement @ Apex	Displacement @ Haunch	Relative Displacement
1.0	Full deadload application	-.4633	-.2629	-.2004
131.0	Just prior to displ. jump	.3891	-.1443	.5324
136.0	Just after displ. jump	3.058	-.1441	3.202
1701.0	Last pressure increment	22.64	-.1241	22.76

The comparison shows that the two methods of modelling the soil produce nearly identical results. The displacement jump is shown to occur 5 increments later, which corresponds to a pressure increase of only about 0.01 lbf/in^2.

GSST1I.abdat (changes only, compared to GSST1H.abdat)

```
*HEADING
GENERIC SINGLE SHELL TANK NO.1 - ANACAP-U INPUT GSST1I.ABDAT
4/25/94, REPLACE LATERAL SOIL SPRINGS WITH HYDROSTATIC DISTR. LOAD

** remove lateral spring constants - replace with hp load - 4/25/94
** LATERAL SOIL SPRING CONSTANTS **
** *SPRING,ELSET=RS1
** 1,1
** 7.48E5
** *SPRING,ELSET=RS2
** 1,1
** 1.50E6
** *SPRING,ELSET=RS3
** 1,1
** 1.80E6
** *SPRING,ELSET=RS4
** 1,1
** 1.95E6
** *SPRING,ELSET=RS5
** 1,1
** 1.65E6
** *SPRING,ELSET=RS6
** 1,1
** 1.50E6
** *SPRING,ELSET=RS7
** 1,1
** 1.34E6
** *SPRING,ELSET=RS8
** 1,1
** 1.19E6
** *SPRING,ELSET=RS9
** 1,1
** 1.29E6
** *SPRING,ELSET=RS10
** 1,1
** 1.38E6
** *SPRING,ELSET=RS11
** 1,1
** 6.90E5

** remove radial soil springs - replace with hp load - 4/25/94
** RADIAL SOIL SPRINGS **
** *ELEMENT,TYPE=SPRING2,ELSET=RS1
** 301,1151,258
** *ELEMENT,TYPE=SPRING2,ELSET=RS2
** 302,1152,260
** *ELEMENT,TYPE=SPRING2,ELSET=RS3
** 303,1153,262
** *ELEMENT,TYPE=SPRING2,ELSET=RS4
** 304,1154,339
** *ELEMENT,TYPE=SPRING2,ELSET=RS3
** 305,1155,340
** *ELGEN,ELSET=RS3
** 305,12,1,1
** *ELEMENT,TYPE=SPRING2,ELSET=RS5
```

```
** 317,1167,381
** *ELEMENT,TYPE=SPRING2,ELSET=RS6
** 318,1168,382
** *ELGEN,ELSET=RS6
** 318,5,1,1
** *ELEMENT,TYPE=SPRING2,ELSET=RS7
** 323,1173,440
** *ELEMENT,TYPE=SPRING2,ELSET=RS8
** 324,1174,441
** *ELGEN,ELSET=RS8
** 324,11,1,1
** *ELEMENT,TYPE=SPRING2,ELSET=RS9
** 335,1185,466
** *ELEMENT,TYPE=SPRING2,ELSET=RS10
** 336,1186,477
** 337,1187,482
** 338,1188,487
** 339,1189,492
** 340,1190,497
** *ELEMENT,TYPE=SPRING2,ELSET=RS11
** 341,1191,555

** outer wall elements for static run - lateral soil pressure - 4/25/94
*ELSET,ELSET=WALLSOIL
40, 41, 43, 51, 52, 53, 54, 55
56, 57, 61, 62, 63, 70, 71, 72
73, 74, 75, 79, 80, 81


** LOAD STEPS **

** add lateral soil pressure in place of soil springs - 4/25/94
WALLSOIL,HP2,10.89,633.75,-24.00


**  remove wall spring precompression boundaries - 4/25/94
** 1151,1,1,-0.256
** 1152,1,1,-0.251
** 1153,1,1,-0.247
** 1154,1,1,-0.240
** 1155,1,1,-0.235
** 1156,1,1,-0.229
** 1157,1,1,-0.223
** 1158,1,1,-0.218
** 1159,1,1,-0.212
** 1160,1,1,-0.207
** 1161,1,1,-0.201
** 1162,1,1,-0.195
** 1163,1,1,-0.190
** 1164,1,1,-0.184
** 1165,1,1,-0.178
** 1166,1,1,-0.173
** 1167,1,1,-0.167
** 1168,1,1,-0.163
** 1169,1,1,-0.158
** 1170,1,1,-0.154
** 1171,1,1,-0.149
```

```
** 1172,1,1,-0.144
** 1173,1,1,-0.139
** 1174,1,1,-0.136
** 1175,1,1,-0.132
** 1176,1,1,-0.128
** 1177,1,1,-0.124
** 1178,1,1,-0.121
** 1179,1,1,-0.117
** 1180,1,1,-0.113
** 1181,1,1,-0.110
** 1182,1,1,-0.106
** 1183,1,1,-0.102
** 1184,1,1,-0.098
** 1185,1,1,-0.095
** 1186,1,1,-0.090
** 1187,1,1,-0.086
** 1188,1,1,-0.082
** 1189,1,1,-0.077
** 1190,1,1,-0.073
** 1191,1,1,-0.069

** remove print command for elset SMR (elements removed) - 4/25/94
** *EL PRINT,FREQUENCY=999,ELSET=SMR
** S11,E11

** remove print command for elset SMR (elements removed) - 4/25/94
** *EL PRINT,FREQUENCY=999,ELSET=SMR
** S11,E11
```

GIDISP.about

ABAQUS PRODUCTION VERSION 4-9-1 DATE 28-Apr-94 TIME 08:00:22 PAGE 1
FOR USE BY WESTINGHOUSE HANFORD COMPANY UNDER LICENSE FROM HKS, INC.

STEP 0 INCREMENT 0
TIME COMPLETED IN THIS STEP .000E+00

P O S T - P L O T T I N G

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	N865-APEX	22.6	1.701E+03	-.463	1.00
2	N553-HAUNCH	-2.645E-02	2.500E-02	-.263	1.00

TIME	VARIABLE 1	VARIABLE 2
2.5000E-02	-4.7212E-02	-2.6451E-02
5.0000E-02	-9.4424E-02	-5.2901E-02
7.5000E-02	-.1746	-9.7781E-02
.1000	-.2154	-.1207
.1250	-.2382	-.1334
.1500	-.2496	-.1397
.1750	-.2610	-.1461
.2000	-.2724	-.1524
.2250	-.2809	-.1572
.2500	-.2895	-.1620
.2750	-.2980	-.1667
.3000	-.3065	-.1715
.3250	-.3150	-.1762
.3500	-.3235	-.1810
.3750	-.3321	-.1858
.4000	-.3406	-.1906
.4500	-.3520	-.1969
.5250	-.3691	-.2064
.5500	-.3748	-.2096
.5750	-.3805	-.2128
.6000	-.3862	-.2160
.6250	-.3905	-.2184
.6500	-.3947	-.2207
.6750	-.3990	-.2231
.7000	-.4088	-.2311
.7250	-.4132	-.2335
.7500	-.4175	-.2360
.7750	-.4242	-.2408
.8250	-.4329	-.2457
.8750	-.4416	-.2506
.9250	-.4503	-.2555
.9500	-.4546	-.2580
.9750	-.4590	-.2605
1.000	-.4633	-.2629
6.000	-.4307	-.2544
11.00	-.4035	-.2474
16.00	-.3763	-.2403
21.00	-.3492	-.2332
26.00	-.3220	-.2262
31.00	-.2948	-.2191
36.00	-.2676	-.2120
41.00	-.2404	-.2050
46.00	-.2133	-.1979
51.00	-.1861	-.1908
56.00	-.1589	-.1838
61.00	-.1317	-.1767
66.00	-.1045	-.1696
71.00	-7.7858E-02	-.1631
76.00	-5.1310E-02	-.1566
81.00	-2.4761E-02	-.1502
86.00	-3.4530E-03	-.1450
91.00	-3.1041E-03	-.1449

96.00	-2.7553E-03	-.1448
101.0	-2.4064E-03	-.1448
106.0	-2.0574E-03	-.1447
111.0	-1.7083E-03	-.1446
116.0	-1.3592E-03	-.1445
121.0	-1.0101E-03	-.1444
126.0	-6.6107E-04	-.1443
131.0	.3891	-.1443
136.0	3.058	-.1441
141.0	3.137	-.1441
146.0	3.146	-.1440
151.0	3.155	-.1439
156.0	3.164	-.1438
161.0	3.173	-.1437
166.0	3.182	-.1436
171.0	3.192	-.1436
176.0	3.201	-.1435
181.0	3.210	-.1434
186.0	3.219	-.1433
191.0	3.228	-.1432
196.0	3.237	-.1431
201.0	3.246	-.1430
206.0	3.255	-.1430
211.0	3.264	-.1429
216.0	3.273	-.1428
221.0	3.282	-.1427
226.0	3.291	-.1426
231.0	3.300	-.1425
236.0	3.309	-.1425
241.0	3.318	-.1424
246.0	3.327	-.1423
251.0	3.336	-.1422
256.0	3.346	-.1421
261.0	3.355	-.1420
266.0	3.359	-.1419
271.0	3.369	-.1419
276.0	3.378	-.1418
281.0	3.388	-.1417
286.0	3.402	-.1416
291.0	3.411	-.1415
296.0	3.421	-.1414
301.0	3.430	-.1413
306.0	3.440	-.1412
311.0	3.449	-.1412
316.0	3.459	-.1411
321.0	3.471	-.1410
326.0	3.481	-.1409
331.0	3.491	-.1408
336.0	3.501	-.1407
341.0	3.512	-.1406
346.0	3.523	-.1405
351.0	3.534	-.1405
356.0	3.545	-.1404
361.0	3.556	-.1403
366.0	3.567	-.1402
371.0	3.578	-.1401
376.0	3.589	-.1400
381.0	3.600	-.1399
386.0	3.634	-.1399
391.0	3.645	-.1398
396.0	3.656	-.1397
401.0	3.682	-.1396
406.0	3.693	-.1395
411.0	3.705	-.1394
416.0	3.716	-.1393
421.0	3.728	-.1392
426.0	3.740	-.1392
431.0	3.751	-.1391
436.0	3.763	-.1390
441.0	3.774	-.1389
446.0	3.786	-.1388
451.0	3.798	-.1387
456.0	3.810	-.1386
461.0	3.821	-.1386
466.0	3.837	-.1385
471.0	3.859	-.1384

476.0	3.881	-.1383
481.0	3.903	-.1382
486.0	3.925	-.1381
491.0	3.947	-.1380
496.0	3.969	-.1380
501.0	3.992	-.1379
506.0	4.015	-.1378
511.0	4.038	-.1377
516.0	4.061	-.1376
521.0	4.084	-.1375
526.0	4.107	-.1374
531.0	4.131	-.1374
536.0	4.154	-.1373
541.0	4.177	-.1372
546.0	4.200	-.1371
551.0	4.225	-.1370
556.0	4.250	-.1369
561.0	4.277	-.1368
566.0	4.318	-.1367
571.0	4.351	-.1366
576.0	4.391	-.1366
581.0	4.432	-.1365
586.0	4.539	-.1364
591.0	4.755	-.1363
596.0	4.997	-.1363
601.0	5.013	-.1362
606.0	5.030	-.1361
611.0	5.047	-.1360
616.0	5.065	-.1359
621.0	5.096	-.1359
626.0	5.135	-.1358
631.0	5.175	-.1357
636.0	5.222	-.1356
641.0	5.272	-.1355
646.0	5.326	-.1354
651.0	5.379	-.1353
656.0	5.433	-.1353
661.0	5.655	-.1353
666.0	5.712	-.1352
671.0	5.766	-.1351
676.0	5.821	-.1350
681.0	5.879	-.1349
686.0	5.936	-.1349
691.0	5.988	-.1348
696.0	6.038	-.1347
701.0	6.083	-.1346
706.0	6.108	-.1346
711.0	6.195	-.1345
716.0	6.221	-.1344
721.0	6.248	-.1344
726.0	6.275	-.1343
731.0	6.302	-.1343
736.0	6.334	-.1343
741.0	6.373	-.1342
746.0	6.411	-.1342
751.0	6.450	-.1341
756.0	6.531	-.1341
761.0	6.570	-.1340
766.0	6.608	-.1340
771.0	6.647	-.1339
776.0	6.686	-.1339
781.0	6.725	-.1338
786.0	6.764	-.1338
791.0	6.802	-.1337
796.0	6.841	-.1337
801.0	6.880	-.1336
806.0	6.919	-.1336
811.0	6.958	-.1336
816.0	6.997	-.1335
821.0	7.036	-.1335
826.0	7.075	-.1334
831.0	7.114	-.1334
836.0	7.153	-.1333
841.0	7.191	-.1333
846.0	7.230	-.1332
851.0	7.269	-.1332

856.0	7.308	-.1331
861.0	7.347	-.1331
866.0	7.386	-.1330
871.0	7.425	-.1330
876.0	7.464	-.1330
881.0	7.503	-.1329
886.0	7.542	-.1329
891.0	7.581	-.1328
896.0	7.620	-.1328
901.0	7.659	-.1327
906.0	7.698	-.1327
911.0	7.737	-.1326
916.0	7.776	-.1326
921.0	7.817	-.1325
926.0	7.859	-.1325
931.0	7.901	-.1324
936.0	7.969	-.1324
941.0	8.038	-.1323
946.0	8.081	-.1323
951.0	8.126	-.1322
956.0	8.170	-.1322
961.0	8.214	-.1321
966.0	8.259	-.1321
971.0	8.303	-.1320
976.0	8.405	-.1320
981.0	8.448	-.1319
986.0	8.493	-.1319
991.0	8.538	-.1318
996.0	8.582	-.1318
1001.	8.627	-.1317
1006.	8.672	-.1317
1011.	8.717	-.1316
1016.	8.761	-.1316
1021.	8.806	-.1315
1026.	8.852	-.1315
1031.	8.901	-.1314
1036.	8.949	-.1314
1041.	8.998	-.1313
1046.	9.046	-.1313
1051.	9.094	-.1312
1056.	9.143	-.1312
1061.	9.191	-.1311
1066.	9.253	-.1311
1071.	9.329	-.1310
1076.	9.405	-.1310
1081.	9.481	-.1309
1086.	9.550	-.1309
1091.	9.618	-.1309
1096.	9.686	-.1308
1101.	9.754	-.1308
1106.	9.822	-.1307
1111.	9.942	-.1306
1116.	10.02	-.1306
1121.	10.09	-.1305
1126.	10.16	-.1305
1131.	10.23	-.1304
1136.	10.30	-.1304
1141.	10.37	-.1303
1146.	10.51	-.1303
1151.	10.60	-.1302
1156.	10.79	-.1302
1161.	10.87	-.1301
1166.	10.95	-.1301
1171.	11.04	-.1300
1176.	11.36	-.1301
1181.	11.96	-.1300
1186.	12.11	-.1300
1191.	12.20	-.1299
1196.	12.28	-.1299
1201.	12.37	-.1298
1206.	12.45	-.1298
1211.	12.54	-.1297
1216.	12.63	-.1297
1221.	12.71	-.1296
1226.	12.80	-.1296
1231.	12.89	-.1295

1236.	12.97	-.1295
1241.	13.06	-.1294
1246.	13.15	-.1294
1251.	13.24	-.1293
1256.	13.32	-.1293
1261.	13.41	-.1292
1266.	13.50	-.1292
1271.	13.59	-.1291
1276.	13.67	-.1291
1281.	13.76	-.1290
1286.	13.84	-.1290
1291.	13.93	-.1289
1296.	14.01	-.1289
1301.	14.10	-.1288
1306.	14.18	-.1288
1311.	14.27	-.1287
1316.	14.35	-.1287
1321.	14.44	-.1286
1326.	14.53	-.1286
1331.	14.61	-.1286
1336.	14.70	-.1285
1341.	14.79	-.1285
1346.	14.87	-.1284
1351.	14.96	-.1284
1356.	15.04	-.1283
1361.	15.13	-.1283
1366.	15.21	-.1282
1371.	15.30	-.1282
1376.	15.39	-.1281
1381.	15.47	-.1281
1386.	15.55	-.1280
1391.	15.63	-.1280
1396.	15.71	-.1279
1401.	15.82	-.1279
1406.	15.90	-.1278
1411.	15.97	-.1278
1416.	16.16	-.1277
1421.	16.29	-.1276
1426.	16.40	-.1276
1431.	16.50	-.1275
1436.	16.61	-.1275
1441.	17.19	-.1276
1446.	17.54	-.1276
1451.	17.61	-.1275
1456.	17.67	-.1275
1461.	17.74	-.1274
1466.	17.85	-.1273
1471.	17.92	-.1273
1476.	17.99	-.1273
1481.	18.05	-.1272
1486.	18.12	-.1272
1491.	18.18	-.1262
1496.	18.25	-.1262
1501.	18.32	-.1261
1506.	18.39	-.1261
1511.	18.49	-.1260
1516.	18.59	-.1260
1521.	18.68	-.1259
1526.	18.78	-.1259
1531.	18.87	-.1258
1536.	18.97	-.1258
1541.	19.07	-.1258
1546.	19.17	-.1257
1551.	19.27	-.1257
1556.	19.38	-.1256
1561.	19.48	-.1256
1566.	19.80	-.1254
1571.	20.04	-.1254
1576.	20.12	-.1253
1581.	20.21	-.1253
1586.	20.29	-.1252
1591.	20.37	-.1252
1596.	20.46	-.1251
1601.	20.55	-.1251
1606.	20.63	-.1250
1611.	20.73	-.1250

1616.	20.84	-.1249
1621.	20.95	-.1249
1626.	21.06	-.1248
1631.	21.17	-.1248
1636.	21.28	-.1247
1641.	21.39	-.1247
1646.	21.50	-.1247
1651.	21.61	-.1246
1656.	21.72	-.1246
1661.	21.83	-.1245
1666.	21.93	-.1245
1671.	22.04	-.1244
1676.	22.14	-.1244
1681.	22.25	-.1243
1686.	22.35	-.1243
1691.	22.45	-.1242
1696.	22.56	-.1242
1701.	22.64	-.1241

ATTACHMENT 11

PARAMETRIC STUDY FOR REDUCED SOIL DEPTH FOR ONE-MILLION-GALLON GENERIC TANK

Prepared by: Phillip R. Keil 5/27/94
Date

Checked by: Albert Ayer 5/28/94
Date

The analysis input file was modified to investigate the effect of reducing the soil overburden depth. The analysis documented in the main body of this appendix considers a soil depth of 7'-0" to the dome apex, which is dimensioned in drawing H-2-55911 for tanks in Farm A. As shown on the following sheet, soil depths may vary from 6.14' to 6.5'. Since the soil overburden pressure opposes the internal pressure loading, an overburden depth of 6.0' is considered here.

The analysis input file used in Attachment 10 (GSST1I.abdat) was used as the baseline model for this study. Included in this attachment is a summary of the changes made to the Attachment 10 input file and the resulting displacement output file. Both the soil overburden pressure as well as the lateral soil pressure were modified as follows:

<u>Soil Overburden Pressure</u>

- Magnitude of distributed load = $(110)(621.75 - 457.125)/12^3 = 10.48$ lbf/in^2
- Z-coordinate of zero pressure level = 621.75" (previously 633.75")
- Z-coordinate of point at which pressure is defined = 457.125" (node 555, corner of haunch).

where

Soil Weight Density = 110 lbf/ft^3

<u>Lateral Soil Pressure</u>

- Magnitude of distributed load = $0.26(110)[621.75 - (-24)]/12^3 = 10.69$ lbf/in^2
- Z-coordinate of zero pressure level = 621.75"
- Z-coordinate of point at which pressure is defined = -24" (node 258, bottom of footing).

where

Coefficient of Active Soil Pressure = 0.26
Soil Weight Density = 110 lbf/ft^3

The reduced soil overburden depth causes the jump in relative dome displacement to occur at increment 85 (total time = 86), which corresponds to an internal pressure of 11.5 lbf/in^2. This compares to 11.6 lbf/in^2 reported for the 7'0" overburden depth.

The following soil depth data was obtained from Ed Pianka (ADVENT):

4/25/94 1:45 pm

Reference: Un-numbered report dated 8/90

Farm A: Average = 6.5' (78")

Farm AX: Average = 7.0' (84")

Tank	Depth (ft.)
101	6.5
102	7.5
103	6.5
104	7.5

Farm SX: Average = 6.3' (75.6")

Tank	Depth (ft.)
101	6.14
102	6.55
103	6.14
104	6.14
105	6.14
106	6.14
107	6.14
108	6.14
110	6.14
111	6.63
112	6.14
114	6.83

4/17/94 11:30 am

Reference: Drawings, identified below provide, provide soil surface elevation. Drawing H-2-44562 provides tank elevation.

Farm AX:

Tank	Depth (ft.)	Drawing
101	6.5	H-2-73376
102	7.5	H-2-73380
103	6.5	H-2-73378
104	7.5	H-2-73382

GSST2I.abdat (changes only, compared to GSST1I.abdat)

```
*HEADING
GENERIC SINGLE SHELL TANK NO.1 - ANACAP-U INPUT GSST2I.ABDAT
4/28/94, REDUCE SOIL DEPTH TO 6.0 FT., REDUCE EL FILE COMMANDS
4/25/94, replace lateral soil springs with hydrostatic distr. load
12/29/93, pressure to 13.5 psi, 1700 increments, ptol = 100, cycle=3
          dead load: increase from 25 to 200 manual incrementations

** reduce soil depth from 7' to 6' - 4/28/94
DOMESOIL,HP2,10.48,621.75,457.125
** add lateral soil pressure in place of soil springs - 4/25/94
** reduce soil depth from 7' to 6' - 4/28/94
WALLSOIL,HP2,10.69,621.75,-24.00

*EL FILE, ELSET=TANK,FREQ=5
SDV
** reduce el file commands - 4/28/94
** S
** E
** SINV
** LOADS
** *EL FILE, ELSET=LINER,FREQ=5
** 1,2,3
** S
** E
** PE
** SINV
** LOADS
*NODE FILE, FREQ=5
U
*EL FILE, ELSET=TANK,FREQ=5,REBAR
S
E
PE

*EL FILE,ELSET=TANK,FREQ=5
SDV
** reduce el file commands - 4/28/94
** S
** E
** SINV
** LOADS
** *EL FILE, ELSET=LINER,FREQ=5
** 1,2,3
** S
** E
** PE
** SINV
** LOADS
*NODE FILE, FREQ=5
U
*EL FILE, ELSET=TANK,FREQ=5,REBAR
S
E
PE
```

G2IDISP.about

ABAQUS PRODUCTION VERSION 4-9-1 DATE 28-Apr-94 TIME 16:49:17 PAGE 1
FOR USE BY WESTINGHOUSE HANFORD COMPANY UNDER LICENSE FROM HKS, INC.

STEP 0 INCREMENT 0
TIME COMPLETED IN THIS STEP .000E+00

P O S T - P L O T T I N G

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	N865-APEX	53.7	1.701E+03	-.429	1.00
2	N553-HAUNCH	-2.540E-02	2.500E-02	-.252	1.00

TIME	VARIABLE 1	VARIABLE 2
2.5000E-02	-4.3701E-02	-2.5398E-02
5.0000E-02	-8.7402E-02	-5.0796E-02
7.5000E-02	-.1616	-9.3884E-02
.1000	-.1994	-.1158
.1250	-.2204	-.1280
.1500	-.2309	-.1342
.1750	-.2415	-.1403
.2000	-.2520	-.1463
.2250	-.2599	-.1509
.2500	-.2678	-.1555
.2750	-.2757	-.1601
.3000	-.2836	-.1646
.3250	-.2915	-.1692
.3500	-.2994	-.1738
.3750	-.3073	-.1784
.4000	-.3152	-.1829
.4250	-.3205	-.1860
.4500	-.3257	-.1891
.4750	-.3310	-.1921
.5000	-.3362	-.1952
.5250	-.3415	-.1982
.5500	-.3468	-.2013
.5750	-.3521	-.2043
.6000	-.3574	-.2074
.6250	-.3613	-.2097
.6500	-.3653	-.2119
.6750	-.3692	-.2142
.7000	-.3732	-.2165
.7250	-.3771	-.2188
.7500	-.3811	-.2211
.7750	-.3851	-.2234
.8000	-.3890	-.2257
.8250	-.3930	-.2280
.8500	-.3969	-.2303
.8750	-.4023	-.2340
.9000	-.4104	-.2404
.9250	-.4144	-.2428
.9500	-.4184	-.2451
.9750	-.4248	-.2498
1.000	-.4288	-.2521
6.000	-.3962	-.2437
11.00	-.3690	-.2366
16.00	-.3418	-.2295
21.00	-.3146	-.2225
26.00	-.2875	-.2154
31.00	-.2603	-.2083
36.00	-.2331	-.2012
41.00	-.2059	-.1942
46.00	-.1788	-.1871
51.00	-.1516	-.1800
56.00	-.1244	-.1730
61.00	-9.7208E-02	-.1659

66.00	-7.0651E-02	-.1595
71.00	-4.4102E-02	-.1530
76.00	-1.7552E-02	-.1466
81.00	.1012	-.1402
86.00	4.161	-.1348
91.00	4.395	-.1348
96.00	4.409	-.1347
101.0	4.447	-.1347
106.0	4.478	-.1346
111.0	4.506	-.1345
116.0	4.535	-.1344
121.0	4.564	-.1343
126.0	4.595	-.1342
131.0	4.625	-.1341
136.0	4.656	-.1341
141.0	4.703	-.1340
146.0	4.733	-.1339
151.0	4.766	-.1338
156.0	4.801	-.1337
161.0	4.836	-.1336
166.0	4.996	-.1337
171.0	5.033	-.1336
176.0	5.071	-.1335
181.0	5.109	-.1334
186.0	5.148	-.1333
191.0	5.186	-.1332
196.0	5.225	-.1331
201.0	5.264	-.1330
206.0	5.303	-.1330
211.0	5.342	-.1329
216.0	5.381	-.1328
221.0	5.420	-.1327
226.0	5.459	-.1326
231.0	5.498	-.1325
236.0	5.559	-.1324
241.0	5.601	-.1323
246.0	5.642	-.1322
251.0	5.691	-.1322
256.0	5.747	-.1321
261.0	5.807	-.1320
266.0	5.867	-.1319
271.0	5.927	-.1318
276.0	5.990	-.1317
281.0	6.082	-.1316
286.0	6.176	-.1315
291.0	6.271	-.1315
296.0	6.471	-.1313
301.0	6.582	-.1312
306.0	6.692	-.1311
311.0	6.802	-.1311
316.0	6.912	-.1310
321.0	7.022	-.1309
326.0	7.132	-.1308
331.0	7.282	-.1307
336.0	7.368	-.1306
341.0	7.530	-.1304
346.0	7.634	-.1304
351.0	7.743	-.1303
356.0	7.852	-.1302
361.0	7.962	-.1301
366.0	8.071	-.1300
371.0	8.186	-.1299
376.0	8.302	-.1298
381.0	8.418	-.1297
386.0	8.535	-.1296
391.0	8.651	-.1295
396.0	8.768	-.1294
401.0	8.884	-.1293
406.0	9.001	-.1292
411.0	9.117	-.1291
416.0	9.282	-.1290
421.0	9.419	-.1289
426.0	9.606	-.1288
431.0	9.725	-.1287
436.0	9.843	-.1286
441.0	9.954	-.1285

446.0	10.06	-.1284
451.0	10.17	-.1283
456.0	10.31	-.1282
461.0	10.46	-.1281
466.0	10.62	-.1280
471.0	10.78	-.1279
476.0	10.97	-.1278
481.0	11.13	-.1278
486.0	11.29	-.1277
491.0	11.45	-.1276
496.0	11.60	-.1275
501.0	11.76	-.1274
506.0	11.91	-.1273
511.0	12.07	-.1272
516.0	12.22	-.1271
521.0	13.01	-.1270
526.0	14.46	-.1270
531.0	14.69	-.1269
536.0	14.86	-.1269
541.0	15.03	-.1268
546.0	15.24	-.1266
551.0	15.46	-.1265
556.0	15.61	-.1264
561.0	15.77	-.1263
566.0	15.92	-.1262
571.0	16.07	-.1261
576.0	16.22	-.1260
581.0	16.37	-.1260
586.0	16.52	-.1259
591.0	16.68	-.1258
596.0	16.84	-.1257
601.0	16.99	-.1256
606.0	17.19	-.1255
611.0	17.68	-.1254
616.0	17.88	-.1253
621.0	18.07	-.1252
626.0	18.26	-.1251
631.0	18.46	-.1250
636.0	18.70	-.1249
641.0	19.08	-.1247
646.0	19.33	-.1246
651.0	19.57	-.1245
656.0	19.80	-.1244
661.0	20.05	-.1243
666.0	20.30	-.1242
671.0	20.56	-.1242
676.0	20.81	-.1241
681.0	21.07	-.1240
686.0	21.32	-.1239
691.0	21.58	-.1238
696.0	21.84	-.1237
701.0	22.08	-.1236
706.0	22.22	-.1236
711.0	22.35	-.1235
716.0	22.48	-.1235
721.0	22.60	-.1234
726.0	22.73	-.1225
731.0	22.86	-.1225
736.0	22.98	-.1224
741.0	23.11	-.1224
746.0	23.23	-.1223
751.0	23.36	-.1223
756.0	23.48	-.1222
761.0	23.61	-.1222
766.0	23.84	-.1221
771.0	23.97	-.1221
776.0	24.08	-.1220
781.0	24.20	-.1220
786.0	24.32	-.1219
791.0	24.43	-.1219
796.0	24.55	-.1218
801.0	24.67	-.1218
806.0	24.92	-.1217
811.0	25.06	-.1217
816.0	25.19	-.1216
821.0	25.32	-.1216

826.0	25.56	-.1215
831.0	25.69	-.1214
836.0	25.81	-.1214
841.0	25.94	-.1213
846.0	26.07	-.1213
851.0	26.20	-.1212
856.0	26.33	-.1212
861.0	26.46	-.1211
866.0	26.59	-.1211
871.0	26.72	-.1211
876.0	26.86	-.1210
881.0	26.99	-.1210
886.0	27.12	-.1209
891.0	27.25	-.1209
896.0	27.38	-.1208
901.0	27.51	-.1208
906.0	27.65	-.1207
911.0	27.78	-.1207
916.0	27.91	-.1206
921.0	28.05	-.1206
926.0	28.18	-.1205
931.0	28.32	-.1205
936.0	28.45	-.1204
941.0	28.59	-.1204
946.0	28.72	-.1203
951.0	28.86	-.1203
956.0	28.99	-.1203
961.0	29.13	-.1202
966.0	29.26	-.1202
971.0	29.40	-.1201
976.0	29.53	-.1201
981.0	29.67	-.1200
986.0	29.81	-.1200
991.0	29.94	-.1199
996.0	30.08	-.1199
1001.	30.22	-.1198
1006.	30.36	-.1198
1011.	30.50	-.1197
1016.	30.64	-.1197
1021.	30.77	-.1196
1026.	30.92	-.1196
1031.	31.06	-.1195
1036.	31.21	-.1195
1041.	31.36	-.1194
1046.	31.51	-.1194
1051.	31.66	-.1193
1056.	31.81	-.1193
1061.	31.96	-.1192
1066.	32.11	-.1192
1071.	32.26	-.1191
1076.	32.41	-.1191
1081.	32.56	-.1191
1086.	32.72	-.1190
1091.	32.88	-.1190
1096.	33.04	-.1189
1101.	33.21	-.1189
1106.	33.37	-.1188
1111.	33.53	-.1188
1116.	33.70	-.1187
1121.	33.86	-.1187
1126.	34.02	-.1186
1131.	34.22	-.1185
1136.	34.36	-.1185
1141.	34.50	-.1184
1146.	34.64	-.1184
1151.	34.78	-.1183
1156.	34.92	-.1183
1161.	35.05	-.1182
1166.	35.18	-.1182
1171.	35.31	-.1181
1176.	35.44	-.1181
1181.	35.57	-.1181
1186.	35.70	-.1180
1191.	35.83	-.1180
1196.	35.96	-.1179
1201.	36.09	-.1179

1206.	36.22	-.1178
1211.	36.35	-.1178
1216.	36.48	-.1177
1221.	36.61	-.1177
1226.	36.74	-.1176
1231.	36.87	-.1176
1236.	37.01	-.1175
1241.	37.14	-.1175
1246.	37.27	-.1174
1251.	37.41	-.1174
1256.	37.54	-.1173
1261.	37.67	-.1173
1266.	37.80	-.1172
1271.	37.94	-.1172
1276.	38.08	-.1171
1281.	38.22	-.1171
1286.	38.36	-.1170
1291.	38.50	-.1170
1296.	38.64	-.1169
1301.	38.78	-.1169
1306.	38.93	-.1168
1311.	39.07	-.1168
1316.	39.21	-.1167
1321.	39.35	-.1167
1326.	39.54	-.1167
1331.	39.71	-.1166
1336.	39.88	-.1166
1341.	40.04	-.1165
1346.	40.21	-.1165
1351.	40.38	-.1164
1356.	40.54	-.1164
1361.	40.70	-.1163
1366.	40.87	-.1163
1371.	41.03	-.1162
1376.	41.20	-.1162
1381.	41.36	-.1161
1386.	41.53	-.1161
1391.	41.71	-.1160
1396.	41.90	-.1160
1401.	42.11	-.1159
1406.	42.31	-.1159
1411.	42.51	-.1158
1416.	42.70	-.1158
1421.	42.89	-.1157
1426.	43.08	-.1157
1431.	43.26	-.1156
1436.	43.45	-.1156
1441.	43.66	-.1155
1446.	43.85	-.1155
1451.	44.05	-.1154
1456.	44.25	-.1154
1461.	44.45	-.1153
1466.	44.65	-.1153
1471.	44.85	-.1153
1476.	45.09	-.1134
1481.	45.28	-.1134
1486.	45.48	-.1133
1491.	45.68	-.1133
1496.	45.88	-.1132
1501.	46.08	-.1132
1506.	46.28	-.1131
1511.	46.48	-.1131
1516.	46.67	-.1130
1521.	46.87	-.1130
1526.	47.10	-.1128
1531.	47.29	-.1128
1536.	47.48	-.1127
1541.	47.68	-.1127
1546.	47.87	-.1126
1551.	48.07	-.1126
1556.	48.26	-.1125
1561.	48.45	-.1125
1566.	48.65	-.1124
1571.	48.84	-.1124
1576.	49.04	-.1123
1581.	49.23	-.1123

1586.	49.43	-.1122
1591.	49.63	-.1122
1596.	49.83	-.1121
1601.	50.02	-.1121
1606.	50.22	-.1120
1611.	50.42	-.1120
1616.	50.62	-.1119
1621.	50.81	-.1119
1626.	51.00	-.1118
1631.	51.19	-.1118
1636.	51.38	-.1117
1641.	51.56	-.1117
1646.	51.75	-.1116
1651.	51.93	-.1116
1656.	52.11	-.1115
1661.	52.31	-.1114
1666.	52.48	-.1113
1671.	52.67	-.1113
1676.	52.86	-.1112
1681.	53.04	-.1112
1686.	53.22	-.1111
1691.	53.40	-.1111
1696.	53.57	-.1110
1701.	53.72	-.1110

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

ATTACHMENT 12
(12a through 12h)

REFERENCE SHEETS
FOR ONE-MILLION-GALLON GENERIC TANK ANALYSIS

CONTENTS FOR REFERENCE SHEETS

Attachment	Description
12a	Soil Properties: 241-SY Analysis
12b	Waste Tank Watch List Status Report
12c	Document Transmittal - Tank Analysis
12d	Telecon - Modeling of Single Shell Tank
12e	Telecon - Rebars to be used in Modeling of Single Shell Tank
12f	Telecon - Equivalent Radial Reinforcement
12g	Typical Stress - Strain Curves
12h	Telecon - Typical Stress - Strain Curves

Westinghouse Hanford Company

TYW
JSS
Project File:

Internal Memo

From: Structural Qualification
Phone: 6-6226 H5-57
Date: September 17, 1990
Subject: SOIL PROPERTIES: 241-SY TANK ANALYSIS

ADVENT
Project No. 90005
File No. 5.6
Log No. 1 TI

To: D. M. Chenault H5-57

cc: R. Baliga H5-56
A. D. Dyrness H5-56
L. J. Julyk H5-56
JAR File/LB

References:

1. "Soil Mechanics in Engineering Practice", Terzaghi and Peck, 1968, Table 46.1.
2. ARH-C-19, "Analysis and Evaluation of the 241-U Concrete Waste Storage Tank with Added Access Holes in the Top", V. B. Watwood, May 1977, Page 18.
3. "Foundation Investigation Proposed 241-SY Storage Tanks", Shannon & Wilson, Inc., March 1974.
4. Slope Retaining Investigation for Additional Tanks at PUREX 241 Tank Farm", Shannon & Wilson, Inc., April 1968.
5. Informal Data Package, A. M. Tallman, 1988.

The lateral soil pressure exerted on the buried cylindrical tank wall is a function of the soil depth, soil density and shear angle, ϕ. Reference 1 gives the following expression for the lateral soil pressure:

$$P_1 = \gamma h \frac{(1 - \sin \phi)}{(1 + \sin \phi)}$$

where γ = soil density (lbs/cu. in)
h = soil depth (inches)
ϕ = soil shear angle.

The expression $(1 - \sin \phi)/(1 + \sin \phi)$ is the Rankine coefficient, and is dependent upon the shear angle of the soil. The shear angle of 200-Area soil is addressed in several reports and in some informal data provided by A. M. Tallman. Reference 2 cites the work of Reference 3 as the basis for using a shear angle of $\phi = 26^o$. Reference 4 reporting the investigation of soil properties in 200-E indicates a range of values of $34^o < \phi < 47^o$. Reference 5 stated that Skagit/Hanford Plant soil tests should be generally applicable to 200-Area soil for the first 40 foot of soil depth. These data gave a range of $39^o < \phi < 47^o$.

Hanford Operations and Engineering Contractor for the US Department of Energy

From the above data a range of Rankine coefficients are calculated ranging from 0.38 (ϕ = 27°) to 0.16 (ϕ = 47°). The question of which value of the Rankine coefficient would be most conservative in the analysis is not immediately obvious. Averaging the above referenced values as shown below may provide the best estimate for use now. The data are grouped by the source and repeat values represents reported test samples. The single value for 241-SY represents an average from a report that I do not presently have available (Reference 3). I have requested a key word search to find a copy for our references.

ϕ	R_c	
26	0.39	(241-SY)
39.5	0.22	(241-AY/AZ)
38	0.24	
34	0.28	
34	0.28	
42	0.20	
42	0.20	
39	0.23	(Skagit/Hanford)
45	0.17	
47	0.16	
	0.24	(R_c averaged of 10 samples)

If one disregards the Skagit/Hanford data an average value of R_c would be 0.25. The difference in the applied lateral pressure using either value would be insignificant; however, I recommend that we use the value of 0.26 which agrees with the reported data from the 241-SY site tests.

J. A. Ryan
Structural Qualifications

rw

Westinghouse Hanford Company

TYW
JSS
File!

Internal Memo

From: Structural Analysis
Phone: 6-6230 H5-55
Date: September 17, 1990
Subject: WASTE TANK WATCH LIST STATUS REPORT - WEEK ENDING SEPTEMBER 14, 1990

SA:DMC:90-95

ADVENT
Project No. 90005
File No. 5.5
Log No. 2

To: D. J. Green H5-53

cc:	T. J. Conrads	H5-55	R. B. Pan	S2-03
	G. L. Dunford	R1-51	R. S. Popielarczyk	H5-07
	A. W. Graves	H5-61	D. D. Stepnewski	N1-31
	R. D. Leggett	H0-32	J. B. Truitt	H5-56
			DMC/File/LB	

Ryan
Julyk
Dyrness
Blackburn
Rodgers
Weiner
Voss
Fisher
Baugh
Sue

As of todays date, the engineering analysis milestones to support the Watch List effort had fifteen items due. Of these 15, 11 were met on schedule, with the other four delayed one week at my request.

The four delayed items were due to the selection of a generic model for the single shell tank design. I wanted to assure myself that the team selected the proper enveloping design before charging ahead. This design has now been selected as: (The formal justification matrix is being prepared)

1. A 1,000,000 gallon tank design
2. Tank dome design ("AX" design) per H-2-44562 and H-2-44565
3. Cylindrical wall, base fasting, and steel liner ("A" design) per H-2-55911 and H-2-55912
4. Concrete strength @ 3000 psi ("A" and "SX" design)
5. Corrosion rate 1 mil/year on liner
6. Hydrostatic loading = TBD
7. Specific dynamic loading = safety organizations to supply
8. Soil over-burden at 6.5 feet.

With this selection in hand, the four milestones will now be completed.

The progress of the support effort is very satisfactory as of this writing.

The intense effort to complete the analyses of Tank 241-SY-101 continued with the following progress noted.

The static analysis effort had work completed of:

- Review of ANACAP Model
- Modifications to the model
- Preliminary analysis with static pressure up to 60 psi
- Review of backup calculations for the ABAQUS model
- Review of ABAQUS listing

Hanford Operations and Engineering Contractor for the US Department of Energy

and work in progress of:

- Backup calculations to support the ANACAP model
- Evaluation of differences between the ABAQUS and ANACAP models Required changes, if any, to the ANACAP model to be incorporated and a final run made
- Review report write-up

The transient (dynamic) analysis effort for the week consisted of:

Burn above the crust-

Features:

- pressure calculation checks-out (4,200 and 10,000)
- soil projectiles incorporated
- side wall compression model incorporated
- concrete material model verification continuing

Accomplishments with unchecked model:

- 4,200 cu. ft. @ 1 sec.
- 10,000 cu. ft. @ 1 sec.
- 4,200 cu. ft. @ 1 sec. with soil projectiles

and work in process of:

- make corrections to checked model accounting for newest information (corrosion allowance, fluid height, soil pressure coefficient...)
- establish final comparison
- run 5 cases:

1) 4,200 below crust 1 sec.
2) 4.200 below crust .01 sec.
3) 10,000 below crust .01 sec.
4) 10,000 below crust 1 sec.
5) 4,200 above crust .01 sec.

A transmittal letter was prepared to allow transfer of drawings and data to the Advent Corp. facility. They will use this information to do the ABAQUS dynamic portion of the single shell tank analysis. This is for the selected enveloping design in the 1,000,000 gallon tank case.

A conference call was setup with DOE-EH, a Mr. Gerald Meyers. This call will take place September 17, 1990 to discuss the requirement for an independent third party review of the latest work on SY-101 tank.

Hours spent this week were 178 against WBAG4, 26 hours against W1BSE.

Tony Chenault

D. M. Chenault
Structural Analysis

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

R. Baliga
Advent Engineering Services, Inc.
2500 Old Crow Canyon Road
Suite 420
San Ramon, CA 94583

ADVENT
Project No. 4005
File No. 5.5
Log No. 3

DOCUMENT TRANSMITTAL - TANK ANALYSIS

Reference: Purchase Order MSF-SVV-666873, Line Item 2

The following drawings are transmitted to support the analyses requested in the referenced Purchase Order.

DRAWING	SHEETS	TITLE
H-2-44562	1	Structural Waste Storage Tanks - Composite Section and Details
H-2-44565	1	Structural Waste Storage Tanks - Dome Reinforcement Plan and Details
H-2-55911	1	Waste Storage Tanks - Composite Section
H-2-55912	1	Waste Storage Tanks - Base Footing & Wall Reinforcing
H-2-55913	1	Waste Storage Tanks - Dome Reinforcing

The generic tank configuration will be developed from the above drawings with the following specific geometry and material references.

1. The tank dome configurations are detailed on drawings H-2-44562 and H-2-44565 (Tank 241-AX).
2. The cylindrical wall, base footing and steel liner are detailed on drawings H-2-55911 and H-2-55912 (Tank 241-A).
3. Concrete properties are defined on drawing H-2-55913, $f_c' = 3000$ psi.
4. The corrosion rate is 1 mil/year, and the initial tank fill was 1953.
5. The specific dynamic loadings are not presently available and will be provided as they become available.
6. The specific hydrostatic loading will be provided at a later date.

Specific material properties for the reinforcing steel and the steel liner will be transmitted later. Questions with respect to coordination of your effort with this transmittal and subsequent information should be addressed to L. J. Julyk, (509) 376-4608 for the dynamic analysis and J. A. Ryan, (509) 376-5046 for the static analysis.

These items contain applied technology information requiring conformance to DOE Program Policy and the following Applied Technology legend.

Hanford Operations and Engineering Contractor for the US Department of Energy

54 7600-075

APPLIED TECHNOLOGY

Any further distribution by any holder of this document or of the data therein to third parties representing foreign interests, foreign governments, foreign companies and foreign subsidiaries of foreign divisions of the U. S. companies shall be coordinated with the DOE, Deputy Assistant Secretary for Reactor Systems Development and Technology. Further, foreign party release may require DOE approval pursuant to Federal Regulation 10 CFR 810, and/or may be subject to Section 127 of the Atomic Energy Act.

J. A. Ryan
Structural Qualification

Concurrence: J. B. Truitt, Manager
Component Stress Analysis

DOE-RL -- D. M. Collado (w/o Attachment)
R. O. Puthoff (w/o Attachment)

Westinghouse Hanford Company

Westinghouse Hanford Company
A subsidiary of Westinghouse Electric Corporation
P.O. Box 1970 Richland, WA 99352

TELEPHONE CONFERENCE MEMORANDUM

☐ INCOMING ☒ OUTGOING

DATE 21 SEP 90 TIME 2:00P

WITH T. Y. WANG, J. SHULMAN OF ADVENT PHONE

WITH T. W. EISHER OF WHC PHONE 6-6199

COPIES TO: D M CHENAULT, L J JULYK, J B TRUITT, T J CONRADS, J A RYAN, A D DYRNESS, L A RODGERS

SUBJECT: STATUS OF SINGLE SHELL GENERIC TANK MODEL

ADVENT
Project No. 90005
File No. 5.5
Log No. 4

WATCH TANK LIST — DEPARTMENT

SIGNATURE

6-6199 — TELEPHONE NUMBER

SUMMARY OF CONFERENCE

THE MODELLING OF THE TANK HAS STARTED. ATTACHED THE CONCRETE MODEL. THE STEEL LINER WILL BE INCLUDED IN THE MODEL. THE SOIL WILL BE MODELLED AS A SPRING SINCE THE CONCRETE SLAB IS SIX INCHES THICK AT THE THINNEST SECTION WITH ONLY ONE ROW OF REINFORCEMENT. THE GROUT UNDER THE STEEL LINER WILL BE MODELLED AS A SPRING TO MAINTAIN GOOD ELEMENT ASPECT RATIO. THOUGHT WAS GIVEN TO ELIMINATING THE STEEL LINER CIRCUMFERENTIAL STIFFENERS AS A TRADE-OFF TO NOT INCLUDE CORROSION ALLOWANCE. ALSO, SHOULD CORROSION BE CONSIDERED TO A FUTURE DATE. TANK "A" HAS AN ADDITIONAL VERTICAL SECTION OF REBAR WHICH T.Y. WANG WAS GOING TO MODEL. I SAID THE CENTER REBAR SHOULD NOT BE MODELLED SINCE THIS IS A GENERIC MODEL AND ONLY ONE TANK OF THE 3 CONSIDERED HAS THE CENTER REBAR.

54-7600-038 (7/87)

Westinghouse Hanford Company

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A subsidiary of Westinghouse Electric Corporation
P.O. Box 1970 Richland, WA 99352

TELEPHONE CONFERENCE MEMORANDUM

☐ INCOMING ☒ OUTGOING

DATE 28 SEP 90 TIME 2:17 P

WITH T.Y. WANG OF ADVENT PHONE

WITH OF PHONE

COPIES TO: CHENAULT, D.M. JULYK, L.J. TRUITT, J.B.
CONRADS, T.J. RYAN, J.A.
DYRNESS, A.D. ROGERS, L.A.

SUBJECT: TRANSMITTAL OF DATA FOR SINGLE SHELL TANK ANALYSIS

ADVENT
Project No. 90005
File No. 55
Log No. 5

WATCH TANK LIST — DEPARTMENT
FISHER, J.T. — SIGNATURE
(509) 376-6199 — TELEPHONE NUMBER

SUMMARY OF CONFERENCE

THE FOLLOWING ITEMS WERE DISCUSSED CONCERNING THE GENERIC SINGLE SHELL TANK MODEL.

1) THE CENTER REINFORCEMENT IN THE LOWER SHELL IS NOT TO BE INCLUDED IN THE MODEL, (DWG H2-55912).

2) THE CONCRETE SLAB REINFORCEMENT HAS A 1 FOOT SQUARE PATERN. WHICH EXTENDS TO 32'6" RADIUS. AN EQUIVALENT RADIAL PATERN WILL BE AGREED UPON. WE EXCHANGED IDEALIZATIONS FOR REVIEW. A TELEPHONE CALL ON TUESDAY, 2 OCT. WILL RESOLVE THE ISSUE.

THE EXISTING RADIAL REINFORCEMENT FROM 32'6" WILL CHANGE TO #6 REBAR HAVING 396 BARS. THE CIRCUMFERENTIAL REBAR REMAINS AS IN DWG H2 55912. THE CHANGE IN REINFORCEMENT YIELDS THE LEAST AREA PER VOLUME OF CONCRETE.

3) THE SHELL VERTICAL REINFORCEMENT SHOULD BE #6 REBAR (370 BARS) FROM THE SLAB TO ABOUT 14' AND #6 REBAR (185 BARS) FROM 14' TO THE DOME. THE DIMENSIONS ARE SHOWN ON DWG 55912. THE HORIZONTAL REBAR (SIZE AND SPACING) IS AS

SHOWN ON DWG 55912.

4) THE STIFFENERS WILL BE MODELLED ON THE LINER.

5) CORROSION ALLOWANCE WILL BE CONSIDERED TO THE PRESENT YEAR.

Westinghouse Hanford Company

Westinghouse Hanford Company
A subsidiary of Westinghouse Electric Corporation
P.O. Box 1970 Richland, WA 99352

TELEPHONE CONFERENCE MEMORANDUM

☐ INCOMING ☒ OUTGOING

DATE 2 OCT 90 TIME 2:30 P

WITH T.Y. WANG OF ADVENT PHONE (415) 743-0410

WITH T. FISHER OF WHC PHONE 376 4926

COPIES TO: CHENAULT, DM JULYK LJ TRUITT JB
CONRADS, TJ RYAN JA
DYRNESS, AD ROGERS LA

ADVENT
Project No. 90005
File No. 5.5
Log No. 6

SUBJECT: SINGLE SHELL TANK MODEL

W T L	FISHER T	376-4926
DEPARTMENT	SIGNATURE	TELEPHONE NUMBER

SUMMARY OF CONFERENCE

THE PURPOSE OF THE TELECON WAS TO CLOSE THE ISSUE OF EQUIVALENT RADIAL REINFORCEMENT SPACING IN THE SLAB OUT TO A RADIUS OF 32'6" FOR THE GENERIC SINGLE SHELL TANK MODEL. THE SPACING T.Y. WANG HAD DETERMINED WILL BE USED. T.Y. WANG IS TO SEND THE SUPPORTING DOCUMENTATION TO WHC FOR REFERENCE.

54-7600-088 (7/87)

DATE 10/28/90

TOTAL PAGES 2
(INCLUDING THIS COVER SHEET)

WHC FACSIMILE TRANSMITTAL COVER SHEET

TO T Y WANG PHONE NO. 415 743 0410

COMPANY ADVENT ENGINEERING

LOCATION

MACHINE NO. FTS

VERIFICATION NO. FTS

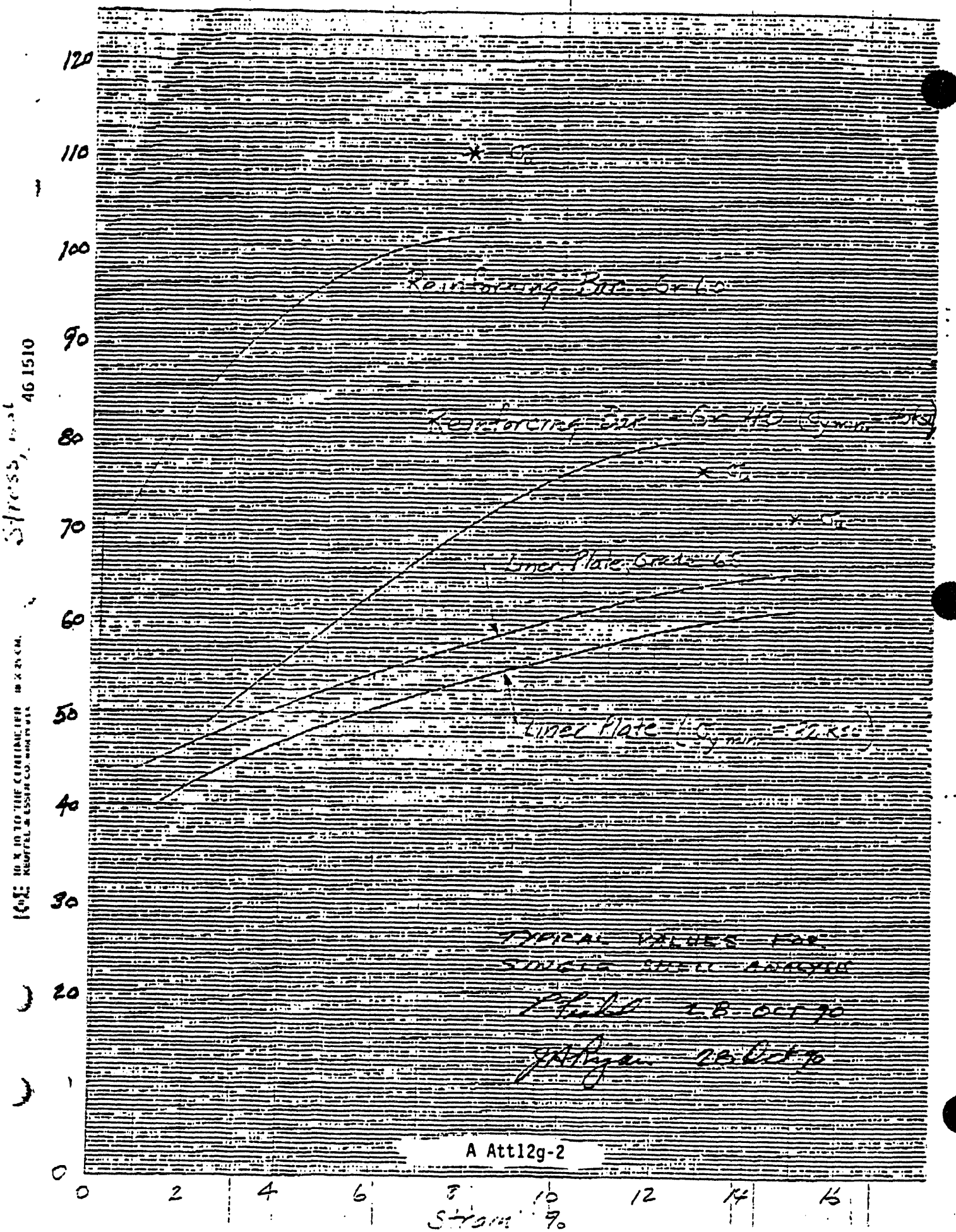
SENT BY T W FISHER PHONE NO. 509 376-4926

ADVENT
Project No. 90005
File No. 515
Item No. 7

ENGINEERING, ETC-2 BUILDING
WESTINGHOUSE HANFORD COMPANY
P. O. BOX 1970
RICHLAND, WA 99352

MACHINE NO. (509) 376-7382, FTS: 444-7382
VERIFICATION NO. (509) 376-8831, FTS: 444-8831

A Att2g-1


Reinforcing Bar - Gr 60
Reinforcing Bar - Gr 40 (Symm. 60 ksi)
Liner Plate Grade 60
Liner Plate (Symm. = 60 ksi)
TYPICAL VALUES FOR
SINGLE SHEET ANALYSIS
Stress
Strain %
0
20
30
40
50
60
70
80
90
100
110
120
0
2
4
6
8
10
12
14
16

ADVENT
ENGINEERING SERVICES, INC.

ADVENT
Project No. 90005
File No. 5.5
Log No. 8

COMMUNICATION REPORT

Company	ADVENT	Telecon X	Conference Report
Project	WHC Structural Analysis		Job No: 90005
			Date: 11/2/90
Subject	Generic Single Shell Tank No. 1		Time: 8:30 A.M.
			Place: San Ramon
Participants	T.Y. Wang		of ADVENT
	Tom Fisher		of WHC

ITEM	COMMENTS	REQUIRED ACTION BY
1.	Tom informed T.Y. that for the single shell tank analysis, the typical stress-strain curve for the Grade 40 rebar and that for the liner plate with σ_y min = 32 ksi should be used. The above stress-strian curves were transmitted to ADVENT by Tom on 10/28/90.	

Signed: T.Y. Wang

Page 1 of 1

Distribution: Participants, A. Dyrness, Project File

ATTACHMENT 13

INPUT & OUTPUT FILES FOR THE DEMONSTRATION OF APPROPRIATE SHEAR-INDUCED FAILURE RESOPONSE

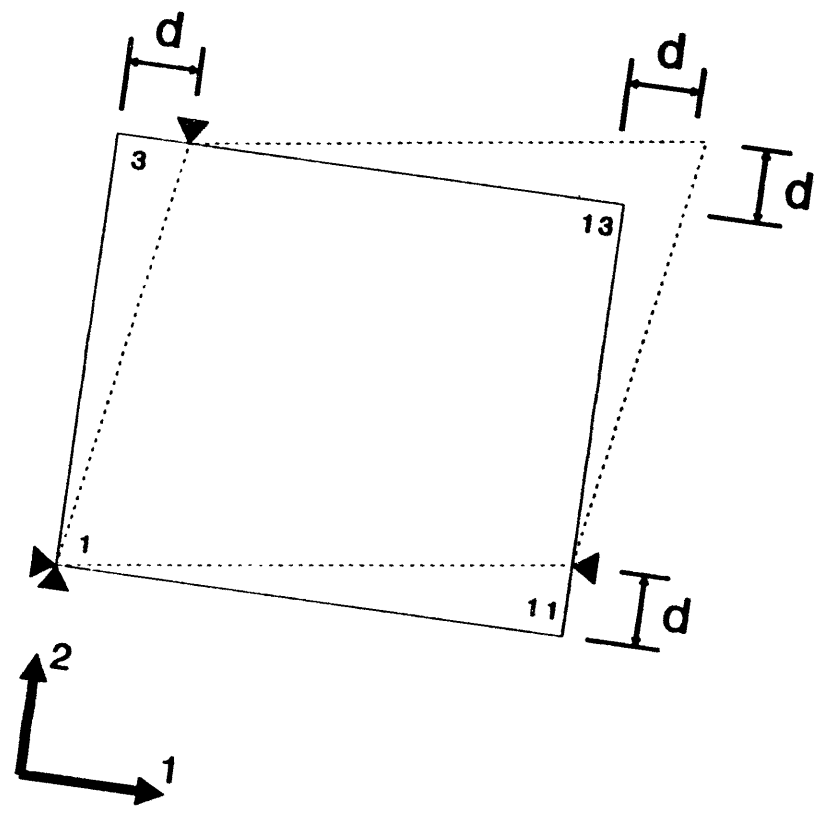
Prepared by: _____ 6/1/94
Date

Checked by: _____ 6/2/94
Date

State of Pure Shear for 1"x1" element
for DT.ABDAT

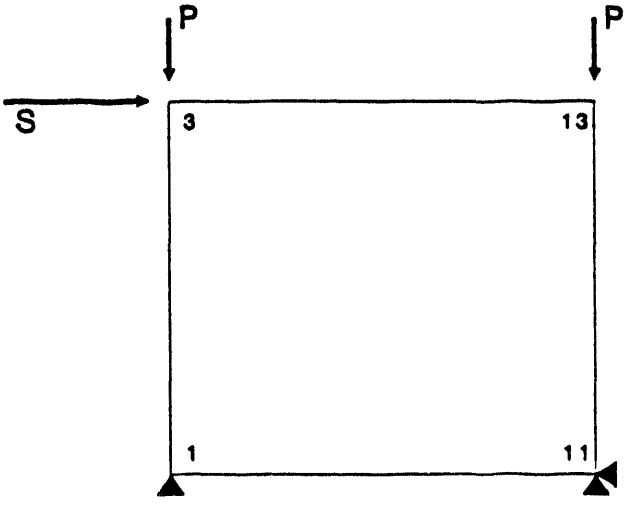
STEP	NODE	DOF	VALUE
1	3,13	1	d1
1	11,13	2	d1
1	1,11	1	0
1	1,3	2	0
2	3,13	1	d2
2	11,13	2	d2
2	1,11	1	0
2	1,3	2	0

d1=0.00010225 in.
d2=0.00010300 in.



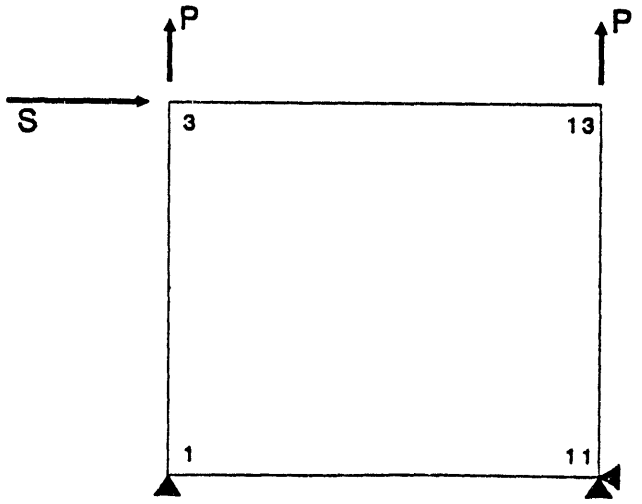
DISPLACEMENT LOADING SEQUENCE FOR NC.ABDAT				
STEP	DOF	NODE	VALUE (in)	COMMENTS
1	1	11	0.00	The 1st step involves placing the element in an initial state of compression to avoid crack initiation.
	2	1,11	0.00	
		3,13	-0.001	
2	1	11	0.00	The 2nd step keeps the compression strain constant while adding shear strain via imposed lateral displacement.
		3	0.001	
	2	1,11	0.00	
		3,13	-0.001	
3	1	11	0.00	The 3rd step continues to add shear strain via imposed lateral displacement.
		3	0.01	
	2	1,11	0.00	
		3,13	-0.001	
4	1	11	0.00	The 4th step continues to add shear strain via imposed lateral displacement.
		3	0.015	
	2	1,11	0.00	
		3,13	-0.001	

Pre-compression State of Stress with shear load applied



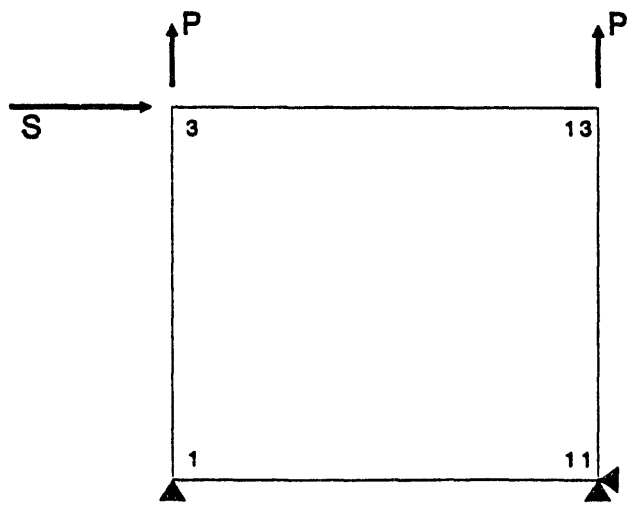
DISPLACEMENT LOADING SEQUENCE FOR OC.ABDAT				
STEP	DOF	NODE	VALUE (in)	COMMENTS
1	1	11	0.00	The 1st step involves placing the element in an initial state of tension to induce a crack.
	2	1,11	0.00	
		3,13	0.0002	
2	1	11	0.00	The 2nd step adds shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.001	
	2	1,11	0.00	
		3,13	0.0002	
3	1	11	0.00	The 3rd step continues to add shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.01	
	2	1,11	0.00	
		3,13	0.0002	
4	1	11	0.00	The 4th step continues to add shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.03	
	2	1,11	0.00	
		3,13	0.0002	

Pre-tension State of Stress
with shear load applied



DISPLACEMENT LOADING SEQUENCE FOR WOC.ABDAT				
STEP	DOF	NODE	VALUE (in)	COMMENTS
1	1	11	0.00	The 1st step involves placing the element in an initial state of tension to induce a crack.
	2	1,11	0.00	
		3,13	0.0008	
2	1	11	0.00	The 2nd step adds shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.001	
	2	1,11	0.00	
		3,13	0.0008	
3	1	11	0.00	The 3rd step continues to add shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.01	
	2	1,11	0.00	
		3,13	0.0008	
4	1	11	0.00	The 4th step continues to add shear strain to the constant tensile strain via imposed lateral displacement.
		3	0.08	
	2	1,11	0.00	
		3,13	0.0008	

Pre-tension State of Stress with shear load applied



Computer File Descriptions for Attachment 13

File Name	Page No.	Description
DT.abdat	A Att13-7	Input file for evaluation of pure shear on an element.
DT.sta	A Att13-9	Convergence results for DT analysis.
DTP.about	A Att13-12	Stress, strain, and reaction history results for DT analysis.
NC.abdat	A Att13-23	Input file for evaluation of shear on an uncracked element.
NC.sta	A Att13-25	Convergence results for NC analysis.
NCP.abdat	A Att13-27	Input file for postprocessing of stress, strain, and reaction history results. (Used for all analyses.)
NCP.about	A Att13-28	Stress, strain, and reaction history results for NC analysis.
OC.abdat	A Att13-44	Input file for evaluation of shear on an element with a crack width of 0.0002 in.
OC.sta	A Att13-46	Convergence results for OC analysis.
OCP.about	A Att13-48	Stress, strain, and reaction history results for OC analysis.
WOC.abdat	A Att13-64	Input file for evaluation of shear on an element with a crack width of 0.0008 in.
WOC.sta	A Att13-66	Convergence results for WOC analysis.
WOCP.about	A Att13-68	Stress, strain, and reaction history results for WOC analysis.

DT.abdat

```
*HEADING
 SHEAR TEST RUN
*NODE,NSET=ALLNODES
    1, 0.00000E+00, 0.00000E+00, 0.00000E+00
**  2, 0.00000E+00, 5.00000E-01, 0.00000E+00
    3, 0.00000E+00, 1.00000E+00, 0.00000E+00
**  4, 0.00000E+00, 1.50000E+00, 0.00000E+00
**  5, 0.00000E+00, 2.00000E+00, 0.00000E+00
**  6, 5.00000E-01, 0.00000E+00, 0.00000E+00
**  8, 5.00000E-01, 1.00000E+00, 0.00000E+00
** 10, 5.00000E-01, 2.00000E+00, 0.00000E+00
   11, 1.00000E+00, 0.00000E+00, 0.00000E+00
** 12, 1.00000E+00, 5.00000E-01, 0.00000E+00
   13, 1.00000E+00, 1.00000E+00, 0.00000E+00
** 14, 1.00000E+00, 1.50000E+00, 0.00000E+00
** 15, 1.00000E+00, 2.00000E+00, 0.00000E+00
*********************
*ELEMENT,TYPE=CPE4,ELSET=RCONC
1,1,11,13,3
*********************
*MATERIAL,NAME=RCONC
*USER MATERIAL,CONSTANT=25
** BASIC PROPERTIES
      3,   3000.,  96E-6,    2.00E6,    0.15,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      4.,
*DEPVAR
2
*EXPANSION
 6.00E-06
*********************
*ELSET,ELSET=G1017
**ELEMENT=CPE8R,MATERIAL=RCONC,SECTION=SO
1
*SOLIDSECTION,ELSET=G1017,MATERIAL=RCONC
 1.00E+00
*********************
*ELSET,ELSET=ALLELEME
  1
*NSET,NSET=SHEARX
 3, 13
*NSET,NSET=UFIX
 1, 11
*PLOT

*DRAW
*********************
*AMPLITUDE,TIME=A,NAME=DEAD
0.0,1.0,100.0,1.0
*AMPLITUDE,TIME=A,NAME=LIVE
0.0,0.000, 1.0,0.000, 2.0,0.156, 3.0,0.309
4.0,0.454, 5.0,0.588, 6.0,0.707, 7.0,0.809
8.0,0.891, 9.0,0.951, 10.0,0.988, 11.0,1.000
*AMPLITUDE,TIME=A,NAME=TEMP
0.0,1.0,100.0,1.0
*BOUNDARY
1,1,2,0.0
3,2,2,0.0
11,1,1,0.0
*RESTART,WRITE,FREQUENCY=1000
*********************
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=10
*STATIC,PTOL=1.0
0.25,102.25,.005,1.0
*ELFILE,FREQUENCY=10,ELSET=ALLELEME
E
S
SDV
LOADS
NFORC
*NODEFILE,FREQUENCY=10,NSET=ALLNODES
U,V,A
```

```
RF
CF
*ELPRINT,FREQUENCY=0
*NODEPRINT,FREQUENCY=0
*BOUNDARY,OP=MOD
3,1,1,.00010225
13,1,2,.00010225
11,2,2,.00010225
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0
0.25,625.,.0005,10.0
*BOUNDARY,OP=MOD
3,1,1,.000103
13,1,2,.000103
11,2,2,.000103
*ELFILE,FREQUENCY=1,ELSET=ALLELEME
E
S
SDV
LOADS
NFORC
*NODEFILE,FREQUENCY=1,NSET=ALLNODES
U,V,A
RF
CF
*END STEP
```

DT.sta

SUMMARY OF JOB INFORMATION

STEP #	INC #	ATTEMP #	ITER #	TOT TIME LPF	TIME INC LPF INC	IF RIKS
1	1	1	1	.250	.250	
1	2	1	1	.500	.250	
1	3	1	1	.875	.375	
1	4	1	1	1.44	.563	
1	5	1	1	2.28	.844	
1	6	1	1	3.28	1.00	
1	7	1	1	4.28	1.00	
1	8	1	1	5.28	1.00	
1	9	1	1	6.28	1.00	
1	10	1	1	7.28	1.00	
1	11	1	1	8.28	1.00	
1	12	1	1	9.28	1.00	
1	13	1	1	10.3	1.00	
1	14	1	1	11.3	1.00	
1	15	1	1	12.3	1.00	
1	16	1	1	13.3	1.00	
1	17	1	1	14.3	1.00	
1	18	1	1	15.3	1.00	
1	19	1	1	16.3	1.00	
1	20	1	1	17.3	1.00	
1	21	1	1	18.3	1.00	
1	22	1	1	19.3	1.00	
1	23	1	1	20.3	1.00	
1	24	1	1	21.3	1.00	
1	25	1	1	22.3	1.00	
1	26	1	1	23.3	1.00	
1	27	1	1	24.3	1.00	
1	28	1	1	25.3	1.00	
1	29	1	1	26.3	1.00	
1	30	1	1	27.3	1.00	
1	31	1	1	28.3	1.00	
1	32	1	1	29.3	1.00	
1	33	1	1	30.3	1.00	
1	34	1	1	31.3	1.00	
1	35	1	1	32.3	1.00	
1	36	1	1	33.3	1.00	
1	37	1	1	34.3	1.00	
1	38	1	1	35.3	1.00	
1	39	1	1	36.3	1.00	
1	40	1	1	37.3	1.00	
1	41	1	1	38.3	1.00	
1	42	1	1	39.3	1.00	
1	43	1	1	40.3	1.00	
1	44	1	1	41.3	1.00	
1	45	1	1	42.3	1.00	
1	46	1	1	43.3	1.00	
1	47	1	1	44.3	1.00	
1	48	1	1	45.3	1.00	
1	49	1	1	46.3	1.00	
1	50	1	1	47.3	1.00	
1	51	1	1	48.3	1.00	
1	52	1	1	49.3	1.00	
1	53	1	1	50.3	1.00	
1	54	1	1	51.3	1.00	
1	55	1	1	52.3	1.00	
1	56	1	1	53.3	1.00	
1	57	1	1	54.3	1.00	
1	58	1	1	55.3	1.00	
1	59	1	1	56.3	1.00	
1	60	1	1	57.3	1.00	
1	61	1	1	58.3	1.00	
1	62	1	1	59.3	1.00	
1	63	1	1	60.3	1.00	
1	64	1	1	61.3	1.00	
1	65	1	1	62.3	1.00	
1	66	1	1	63.3	1.00	
1	67	1	1	64.3	1.00	
1	68	1	1	65.3	1.00	
1	69	1	1	66.3	1.00	
1	70	1	1	67.3	1.00	

1	71	1	1	68.3	1.00
1	72	1	1	69.3	1.00
1	73	1	1	70.3	1.00
1	74	1	1	71.3	1.00
1	75	1	1	72.3	1.00
1	76	1	1	73.3	1.00
1	77	1	1	74.3	1.00
1	78	1	1	75.3	1.00
1	79	1	1	76.3	1.00
1	80	1	1	77.3	1.00
1	81	1	1	78.3	1.00
1	82	1	1	79.3	1.00
1	83	1	1	80.3	1.00
1	84	1	1	81.3	1.00
1	85	1	1	82.3	1.00
1	86	1	1	83.3	1.00
1	87	1	1	84.3	1.00
1	88	1	1	85.3	1.00
1	89	1	1	86.3	1.00
1	90	1	1	87.3	1.00
1	91	1	1	88.3	1.00
1	92	1	1	89.3	1.00
1	93	1	1	90.3	1.00
1	94	1	1	91.3	1.00
1	95	1	1	92.3	1.00
1	96	1	1	93.3	1.00
1	97	1	1	94.3	1.00
1	98	1	1	95.3	1.00
1	99	1	1	96.3	1.00
1	100	1	1	97.3	1.00
1	101	1	1	98.3	1.00
1	102	1	1	99.3	1.00
1	103	1	1	100.	1.00
1	104	1	1	101.	1.00
1	105	1	1	102.	.969
2	1	1	1	.250	.250
2	2	1	1	.500	.250
2	3	1	1	.875	.375
2	4	1	1	1.44	.563
2	5	1	1	2.28	.844
2	6	1	1	3.55	1.27
2	7	1	1	5.45	1.90
2	8	1	1	8.29	2.85
2	9	1	1	12.6	4.27
2	10	1	1	19.0	6.41
2	11	1	1	28.6	9.61
2	12	1	1	38.6	10.0
2	13	1	1	48.6	10.0
2	14	1	1	58.6	10.0
2	15	1	1	68.6	10.0
2	16	1	1	78.6	10.0
2	17	1	1	88.6	10.0
2	18	1	1	98.6	10.0
2	19	1	1	109.	10.0
2	20	1	1	119.	10.0
2	21	1	1	129.	10.0
2	22	1	1	139.	10.0
2	23	1	1	149.	10.0
2	24	1	1	159.	10.0
2	25	1	1	169.	10.0
2	26	1	1	179.	10.0
2	27	1	1	189.	10.0
2	28	1	1	199.	10.0
2	29	1	1	209.	10.0
2	30	1	1	219.	10.0
2	31	1	1	229.	10.0
2	32	1	1	239.	10.0
2	33	1	1	249.	10.0
2	34	1	1	259.	10.0
2	35	1	1	269.	10.0
2	36	1	1	279.	10.0
2	37	1	1	289.	10.0
2	38	1	1	299.	10.0
2	39	1	1	309.	10.0
2	40	1	1	319.	10.0
2	41	1	1	329.	10.0

2	42	1	1	339.	10.0
2	43	1	1	349.	10.0
2	44	1	1	359.	10.0
2	45	1	1	369.	10.0
2	46	1	1	379.	10.0
2	47	1	1	389.	10.0
2	48	1	1	399.	10.0
2	49	1	1	409.	10.0
2	50	1	1	419.	10.0
2	51	1	1	429.	10.0
2	52	1	1	439.	10.0
2	53	1	1	449.	10.0
2	54	1	1	459.	10.0
2	55	1	1	469.	10.0
2	56	1	1	479.	10.0
2	57	1	1	489.	10.0
2	58	1	1	499.	10.0
2	59	1	1	509.	10.0
2	60	1	1	519.	10.0
2	61	1	1	529.	10.0
2	62	1	1	539.	10.0
2	63	1	1	549.	10.0
2	64	1	1	559.	10.0
2	65	1	1	569.	10.0
2	66	1	1	579.	10.0
2	67	1	1	589.	10.0
2	68	1	1	599.	10.0
2	69	1	1	609.	10.0
2	70	1	1	619.	10.0
2	71	1	1	625.	6.42

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POST-PLOTTING

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	U2-3	8.696E-41	87.3	2.609E-44	103.
2	U2-13	1.030E-04	727.	7.281E-06	7.28
3	U1-3	1.030E-04	727.	7.281E-06	7.28
4	U1-13	1.030E-04	727.	7.281E-06	7.28
5	U2-1	8.696E-41	87.3	7.701E-46	727.
6	U2-11	1.030E-04	727.	7.281E-06	7.28
7	U1-1	8.696E-41	87.3	7.701E-46	727.
8	U1-11	8.696E-41	87.3	2.609E-44	103.

TIME	VARIABLE 1	2	3	4	5	6	7	8
7.281	8.6957E-41	7.2813E-06	7.2813E-06	7.2813E-06	8.6957E-41	7.2813E-06	8.6957E-41	8.6957E-41
17.28	8.6957E-41	1.7281E-05	1.7281E-05	1.7281E-05	8.6957E-41	1.7281E-05	8.6957E-41	8.6957E-41
27.28	8.6957E-41	2.7281E-05	2.7281E-05	2.7281E-05	8.6957E-41	2.7281E-05	8.6957E-41	8.6957E-41
37.28	8.6957E-41	3.7281E-05	3.7281E-05	3.7281E-05	8.6957E-41	3.7281E-05	8.6957E-41	8.6957E-41
47.28	8.6957E-41	4.7281E-05	4.7281E-05	4.7281E-05	8.6957E-41	4.7281E-05	8.6957E-41	8.6957E-41
57.28	8.6957E-41	5.7281E-05	5.7281E-05	5.7281E-05	8.6957E-41	5.7281E-05	8.6957E-41	8.6957E-41
67.28	8.6957E-41	6.7281E-05	6.7281E-05	6.7281E-05	8.6957E-41	6.7281E-05	8.6957E-41	8.6957E-41
77.28	8.6957E-41	7.7281E-05	7.7281E-05	7.7281E-05	8.6957E-41	7.7281E-05	8.6957E-41	8.6957E-41
87.28	8.6957E-41	8.7281E-05	8.7281E-05	8.7281E-05	8.6957E-41	8.7281E-05	8.6957E-41	8.6957E-41
97.28	8.6957E-41	9.7281E-05	9.7281E-05	9.7281E-05	8.6957E-41	9.7281E-05	8.6957E-41	8.6957E-41
102.3	8.4239E-41	1.0225E-04	1.0225E-04	1.0225E-04	8.4239E-41	1.0225E-04	8.4239E-41	8.4239E-41
102.5	2.6087E-44	1.0225E-04	1.0225E-04	1.0225E-04	2.6087E-44	1.0225E-04	2.6087E-44	2.6087E-44
102.8	2.6087E-44	1.0225E-04	1.0225E-04	1.0225E-04	2.6087E-44	1.0225E-04	2.6087E-44	2.6087E-44
103.1	3.9130E-44	1.0225E-04	1.0225E-04	1.0225E-04	3.9130E-44	1.0225E-04	3.9130E-44	3.9130E-44
103.7	5.8696E-44	1.0225E-04	1.0225E-04	1.0225E-04	5.8696E-44	1.0225E-04	5.8696E-44	5.8696E-44
104.5	8.8043E-44	1.0225E-04	1.0225E-04	1.0225E-04	8.8043E-44	1.0225E-04	8.8043E-44	8.8043E-44
105.8	1.3207E-43	1.0225E-04	1.0225E-04	1.0225E-04	1.3207E-43	1.0225E-04	1.3207E-43	1.3207E-43
107.7	1.9810E-43	1.0226E-04	1.0226E-04	1.0226E-04	1.9810E-43	1.0226E-04	1.9810E-43	1.9810E-43
110.5	2.9715E-43	1.0226E-04	1.0226E-04	1.0226E-04	2.9715E-43	1.0226E-04	2.9715E-43	2.9715E-43
114.8	4.4572E-43	1.0227E-04	1.0227E-04	1.0227E-04	4.4572E-43	1.0227E-04	4.4572E-43	4.4572E-43
121.2	6.6858E-43	1.0227E-04	1.0227E-04	1.0227E-04	6.6858E-43	1.0227E-04	6.6858E-43	6.6858E-43
130.8	1.0029E-42	1.0228E-04	1.0228E-04	1.0228E-04	1.0029E-42	1.0228E-04	1.0029E-42	1.0029E-42
140.8	1.0435E-42	1.0230E-04	1.0230E-04	1.0230E-04	1.0435E-42	1.0230E-04	1.0435E-42	1.0435E-42
150.8	1.0435E-42	1.0231E-04	1.0231E-04	1.0231E-04	1.0435E-42	1.0231E-04	1.0435E-42	1.0435E-42
160.8	1.0435E-42	1.0232E-04	1.0232E-04	1.0232E-04	1.0435E-42	1.0232E-04	1.0435E-42	1.0435E-42
170.8	1.0435E-42	1.0233E-04	1.0233E-04	1.0233E-04	1.0435E-42	1.0233E-04	1.0435E-42	1.0435E-42
180.8	1.0435E-42	1.0234E-04	1.0234E-04	1.0234E-04	1.0435E-42	1.0234E-04	1.0435E-42	1.0435E-42
190.8	1.0435E-42	1.0236E-04	1.0236E-04	1.0236E-04	1.0435E-42	1.0236E-04	1.0435E-42	1.0435E-42
200.8	1.0435E-42	1.0237E-04	1.0237E-04	1.0237E-04	1.0435E-42	1.0237E-04	1.0435E-42	1.0435E-42
210.8	1.0435E-42	1.0238E-04	1.0238E-04	1.0238E-04	1.0435E-42	1.0238E-04	1.0435E-42	1.0435E-42
220.8	1.0435E-42	1.0239E-04	1.0239E-04	1.0239E-04	1.0435E-42	1.0239E-04	1.0435E-42	1.0435E-42
230.8	1.0435E-42	1.0240E-04	1.0240E-04	1.0240E-04	1.0435E-42	1.0240E-04	1.0435E-42	1.0435E-42
240.8	1.0435E-42	1.0242E-04	1.0242E-04	1.0242E-04	1.0435E-42	1.0242E-04	1.0435E-42	1.0435E-42
250.8	1.0435E-42	1.0243E-04	1.0243E-04	1.0243E-04	1.0435E-42	1.0243E-04	1.0435E-42	1.0435E-42
260.8	1.0435E-42	1.0244E-04	1.0244E-04	1.0244E-04	1.0435E-42	1.0244E-04	1.0435E-42	1.0435E-42
270.8	1.0435E-42	1.0245E-04	1.0245E-04	1.0245E-04	1.0435E-42	1.0245E-04	1.0435E-42	1.0435E-42
280.8	1.0435E-42	1.0246E-04	1.0246E-04	1.0246E-04	1.0435E-42	1.0246E-04	1.0435E-42	1.0435E-42
290.8	1.0435E-42	1.0248E-04	1.0248E-04	1.0248E-04	1.0435E-42	1.0248E-04	1.0435E-42	1.0435E-42
300.8	1.0435E-42	1.0249E-04	1.0249E-04	1.0249E-04	1.0435E-42	1.0249E-04	1.0435E-42	1.0435E-42
310.8	1.0435E-42	1.0250E-04	1.0250E-04	1.0250E-04	1.0435E-42	1.0250E-04	1.0435E-42	1.0435E-42
320.8	1.0435E-42	1.0251E-04	1.0251E-04	1.0251E-04	1.0435E-42	1.0251E-04	1.0435E-42	1.0435E-42
330.8	1.0435E-42	1.0252E-04	1.0252E-04	1.0252E-04	1.0435E-42	1.0252E-04	1.0435E-42	1.0435E-42
340.8	1.0435E-42	1.0254E-04	1.0254E-04	1.0254E-04	1.0435E-42	1.0254E-04	1.0435E-42	1.0435E-42
350.8	1.0435E-42	1.0255E-04	1.0255E-04	1.0255E-04	1.0435E-42	1.0255E-04	1.0435E-42	1.0435E-42
360.8	1.0435E-42	1.0256E-04	1.0256E-04	1.0256E-04	1.0435E-42	1.0256E-04	1.0435E-42	1.0435E-42
370.8	1.0435E-42	1.0257E-04	1.0257E-04	1.0257E-04	1.0435E-42	1.0257E-04	1.0435E-42	1.0435E-42
380.8	1.0435E-42	1.0258E-04	1.0258E-04	1.0258E-04	1.0435E-42	1.0258E-04	1.0435E-42	1.0435E-42
390.8	1.0435E-42	1.0260E-04	1.0260E-04	1.0260E-04	1.0435E-42	1.0260E-04	1.0435E-42	1.0435E-42
400.8	1.0435E-42	1.0261E-04	1.0261E-04	1.0261E-04	1.0435E-42	1.0261E-04	1.0435E-42	1.0435E-42
410.8	1.0435E-42	1.0262E-04	1.0262E-04	1.0262E-04	1.0435E-42	1.0262E-04	1.0435E-42	1.0435E-42
420.8	1.0435E-42	1.0263E-04	1.0263E-04	1.0263E-04	1.0435E-42	1.0263E-04	1.0435E-42	1.0435E-42
430.8	1.0435E-42	1.0264E-04	1.0264E-04	1.0264E-04	1.0435E-42	1.0264E-04	1.0435E-42	1.0435E-42
440.8	1.0435E-42	1.0266E-04	1.0266E-04	1.0266E-04	1.0435E-42	1.0266E-04	1.0435E-42	1.0435E-42
450.8	1.0435E-42	1.0267E-04	1.0267E-04	1.0267E-04	1.0435E-42	1.0267E-04	1.0435E-42	1.0435E-42

460.8	1.0435E-42	1.0268E-04	1.0268E-04	1.0268E-04	1.0435E-42	1.0268E-04	1.0435E-42	1.0435E-42
470.8	1.0435E-42	1.0269E-04	1.0269E-04	1.0269E-04	1.0435E-42	1.0269E-04	1.0435E-42	1.0435E-42
480.8	1.0435E-42	1.0270E-04	1.0270E-04	1.0270E-04	1.0435E-42	1.0270E-04	1.0435E-42	1.0435E-42
490.8	1.2276E-42	1.0272E-04	1.0272E-04	1.0272E-04	1.2000E-45	1.0272E-04	1.2000E-45	1.2276E-42
500.8	1.2276E-42	1.0273E-04	1.0273E-04	1.0273E-04	1.2000E-45	1.0273E-04	1.2000E-45	1.2276E-42
510.8	1.2276E-42	1.0274E-04	1.0274E-04	1.0274E-04	1.2000E-45	1.0274E-04	1.2000E-45	1.2276E-42
520.8	1.2276E-42	1.0275E-04	1.0275E-04	1.0275E-04	1.2000E-45	1.0275E-04	1.2000E-45	1.2276E-42
530.8	1.2276E-42	1.0276E-04	1.0276E-04	1.0276E-04	1.2000E-45	1.0276E-04	1.2000E-45	1.2276E-42
540.8	1.2276E-42	1.0278E-04	1.0278E-04	1.0278E-04	1.2000E-45	1.0278E-04	1.2000E-45	1.2276E-42
550.8	1.2276E-42	1.0279E-04	1.0279E-04	1.0279E-04	1.2000E-45	1.0279E-04	1.2000E-45	1.2276E-42
560.8	1.2276E-42	1.0280E-04	1.0280E-04	1.0280E-04	1.2000E-45	1.0280E-04	1.2000E-45	1.2276E-42
570.8	1.2276E-42	1.0281E-04	1.0281E-04	1.0281E-04	1.2000E-45	1.0281E-04	1.2000E-45	1.2276E-42
580.8	1.2276E-42	1.0282E-04	1.0282E-04	1.0282E-04	1.2000E-45	1.0282E-04	1.2000E-45	1.2276E-42
590.8	1.2276E-42	1.0284E-04	1.0284E-04	1.0284E-04	1.2000E-45	1.0284E-04	1.2000E-45	1.2276E-42
600.8	1.2276E-42	1.0285E-04	1.0285E-04	1.0285E-04	1.2000E-45	1.0285E-04	1.2000E-45	1.2276E-42
610.8	1.2276E-42	1.0286E-04	1.0286E-04	1.0286E-04	1.2000E-45	1.0286E-04	1.2000E-45	1.2276E-42
620.8	1.2276E-42	1.0287E-04	1.0287E-04	1.0287E-04	1.2000E-45	1.0287E-04	1.2000E-45	1.2276E-42
630.8	1.2276E-42	1.0288E-04	1.0288E-04	1.0288E-04	1.2000E-45	1.0288E-04	1.2000E-45	1.2276E-42
640.8	1.2276E-42	1.0290E-04	1.0290E-04	1.0290E-04	1.2000E-45	1.0290E-04	1.2000E-45	1.2276E-42
650.8	1.2276E-42	1.0291E-04	1.0291E-04	1.0291E-04	1.2000E-45	1.0291E-04	1.2000E-45	1.2276E-42
660.8	1.2276E-42	1.0292E-04	1.0292E-04	1.0292E-04	1.2000E-45	1.0292E-04	1.2000E-45	1.2276E-42
670.8	1.2276E-42	1.0293E-04	1.0293E-04	1.0293E-04	1.2000E-45	1.0293E-04	1.2000E-45	1.2276E-42
680.8	1.2276E-42	1.0294E-04	1.0294E-04	1.0294E-04	1.2000E-45	1.0294E-04	1.2000E-45	1.2276E-42
690.8	1.2276E-42	1.0296E-04	1.0296E-04	1.0296E-04	1.2000E-45	1.0296E-04	1.2000E-45	1.2276E-42
700.8	1.2276E-42	1.0297E-04	1.0297E-04	1.0297E-04	1.2000E-45	1.0297E-04	1.2000E-45	1.2276E-42
710.8	1.2276E-42	1.0298E-04	1.0298E-04	1.0298E-04	1.2000E-45	1.0298E-04	1.2000E-45	1.2276E-42
720.8	1.2276E-42	1.0299E-04	1.0299E-04	1.0299E-04	1.2000E-45	1.0299E-04	1.2000E-45	1.2276E-42
727.3	7.8782E-43	1.0300E-04	1.0300E-04	1.0300E-04	7.7010E-46	1.0300E-04	7.7010E-46	7.8782E-43

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 2

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	RF1-3	89.6	727.	6.33	7.28
2	RF1-13	89.3	471.	-1.066E-14	727.
3	RF2-3	-6.33	7.28	-89.6	727.
4	RF2-13	89.3	471.	.000E+00	561.
5	RF1-1	8.882E-15	531.	-89.3	471.
6	RF1-11	-6.33	7.28	-89.6	727.
7	RF2-1	-3.553E-15	481.	-89.3	471.
8	RF2-11	89.6	727.	6.33	7.28

TIME	VARIABLE 1	2	3	4	5	6	7	8
7.281	6.332	6.332	-6.332	6.332	-6.332	-6.332	-6.332	6.332
17.28	15.03	15.03	-15.03	15.03	-15.03	-15.03	-15.03	15.03
27.28	23.72	23.72	-23.72	23.72	-23.72	-23.72	-23.72	23.72
37.28	32.42	32.42	-32.42	32.42	-32.42	-32.42	-32.42	32.42
47.28	41.11	41.11	-41.11	41.11	-41.11	-41.11	-41.11	41.11
57.28	49.81	49.81	-49.81	49.81	-49.81	-49.81	-49.81	49.81
67.28	58.51	58.51	-58.51	58.51	-58.51	-58.51	-58.51	58.51
77.28	67.20	67.20	-67.20	67.20	-67.20	-67.20	-67.20	67.20
87.28	75.90	75.90	-75.90	75.90	-75.90	-75.90	-75.90	75.90
97.28	84.59	84.59	-84.59	84.59	-84.59	-84.59	-84.59	84.59
102.3	88.91	88.91	-88.91	88.91	-88.91	-88.91	-88.91	88.91
102.5	88.91	88.91	-88.91	88.91	-88.91	-88.91	-88.91	88.91
102.8	88.91	88.91	-88.91	88.91	-88.91	-88.91	-88.91	88.91
103.1	88.91	88.91	-88.91	88.91	-88.91	-88.91	-88.91	88.91
103.7	88.91	88.91	-88.91	88.91	-88.91	-88.91	-88.91	88.91
104.5	88.92	88.92	-88.92	88.92	-88.92	-88.92	-88.92	88.92
105.8	88.92	88.92	-88.92	88.92	-88.92	-88.92	-88.92	88.92
107.7	88.92	88.92	-88.92	88.92	-88.92	-88.92	-88.92	88.92
110.5	88.92	88.92	-88.92	88.92	-88.92	-88.92	-88.92	88.92
114.8	88.93	88.93	-88.93	88.93	-88.93	-88.93	-88.93	88.93
121.2	88.93	88.93	-88.93	88.93	-88.93	-88.93	-88.93	88.93
130.8	88.94	88.94	-88.94	88.94	-88.94	-88.94	-88.94	88.94
140.8	88.95	88.95	-88.95	88.95	-88.95	-88.95	-88.95	88.95
150.8	88.96	88.96	-88.96	88.96	-88.96	-88.96	-88.96	88.96
160.8	88.97	88.97	-88.97	88.97	-88.97	-88.97	-88.97	88.97
170.8	88.98	88.98	-88.98	88.98	-88.98	-88.98	-88.98	88.98

180.8	89.00	89.00	-89.00	89.00	-89.00	-89.00	-89.00	89.00
190.8	89.01	89.01	-89.01	89.01	-89.01	-89.01	-89.01	89.01
200.8	89.02	89.02	-89.02	89.02	-89.02	-89.02	-89.02	89.02
210.8	89.03	89.03	-89.03	89.03	-89.03	-89.03	-89.03	89.03
220.8	89.04	89.04	-89.04	89.04	-89.04	-89.04	-89.04	89.04
230.8	89.05	89.05	-89.05	89.05	-89.05	-89.05	-89.05	89.05
240.8	89.06	89.06	-89.06	89.06	-89.06	-89.06	-89.06	89.06
250.8	89.07	89.07	-89.07	89.07	-89.07	-89.07	-89.07	89.07
260.8	89.08	89.08	-89.08	89.08	-89.08	-89.08	-89.08	89.08
270.8	89.09	89.09	-89.09	89.09	-89.09	-89.09	-89.09	89.09
280.8	89.10	89.10	-89.10	89.10	-89.10	-89.10	-89.10	89.10
290.8	89.11	89.11	-89.11	89.11	-89.11	-89.11	-89.11	89.11
300.8	89.12	89.12	-89.12	89.12	-89.12	-89.12	-89.12	89.12
310.8	89.13	89.13	-89.13	89.13	-89.13	-89.13	-89.13	89.13
320.8	89.14	89.14	-89.14	89.14	-89.14	-89.14	-89.14	89.14
330.8	89.15	89.15	-89.15	89.15	-89.15	-89.15	-89.15	89.15
340.8	89.16	89.16	-89.16	89.16	-89.16	-89.16	-89.16	89.16
350.8	89.17	89.17	-89.17	89.17	-89.17	-89.17	-89.17	89.17
360.8	89.18	89.18	-89.18	89.18	-89.18	-89.18	-89.18	89.18
370.8	89.19	89.19	-89.19	89.19	-89.19	-89.19	-89.19	89.19
380.8	89.20	89.20	-89.20	89.20	-89.20	-89.20	-89.20	89.20
390.8	89.21	89.21	-89.21	89.21	-89.21	-89.21	-89.21	89.21
400.8	89.22	89.22	-89.22	89.22	-89.22	-89.22	-89.22	89.22
410.8	89.24	89.24	-89.24	89.24	-89.24	-89.24	-89.24	89.24
420.8	89.25	89.25	-89.25	89.25	-89.25	-89.25	-89.25	89.25
430.8	89.26	89.26	-89.26	89.26	-89.26	-89.26	-89.26	89.26
440.8	89.27	89.27	-89.27	89.27	-89.27	-89.27	-89.27	89.27
450.8	89.28	89.28	-89.28	89.28	-89.28	-89.28	-89.28	89.28
460.8	89.29	89.29	-89.29	89.29	-89.29	-89.29	-89.29	89.29
470.8	89.30	89.30	-89.30	89.30	-89.30	-89.30	-89.30	89.30
480.8	89.31	-3.5527E-15	-89.31	1.4211E-14	5.3291E-15	-89.31	-3.5527E-15	89.31
490.8	89.32	-1.0658E-14	-89.32	3.5527E-15	7.1054E-15	-89.32	-5.3291E-15	89.32
500.8	89.33	-7.1054E-15	-89.33	3.5527E-15	7.9936E-15	-89.33	-1.3323E-14	89.33
510.8	89.34	-7.1054E-15	-89.34	3.5527E-15	5.3291E-15	-89.34	-7.1054E-15	89.34
520.8	89.36	-7.1054E-15	-89.36	1.0658E-14	7.9936E-15	-89.36	-4.4409E-15	89.36
530.8	89.37	-7.1054E-15	-89.37	3.5527E-15	8.8818E-15	-89.37	-8.8818E-15	89.37
540.8	89.38	-1.0658E-14	-89.38	3.5527E-15	7.9936E-15	-89.38	-7.9936E-15	89.38
550.8	89.39	-7.1054E-15	-89.39	3.5527E-15	6.2172E-15	-89.39	-9.7700E-15	89.39
560.8	89.41	-7.1054E-15	-89.41	.0000E+00	7.9936E-15	-89.41	-9.7700E-15	89.41
570.8	89.42	-1.0658E-14	-89.42	7.1054E-15	7.9936E-15	-89.42	-6.2172E-15	89.42
580.8	89.43	-1.0658E-14	-89.43	1.4211E-14	6.2172E-15	-89.43	-6.2172E-15	89.43
590.8	89.44	-3.5527E-15	-89.44	3.5527E-15	6.2172E-15	-89.44	-1.3323E-14	89.44
600.8	89.46	-7.1054E-15	-89.46	1.4211E-14	6.2172E-15	-89.46	-4.4409E-15	89.46
610.8	89.47	-1.0658E-14	-89.47	7.1054E-15	7.1054E-15	-89.47	-7.1054E-15	89.47
620.8	89.48	-1.0658E-14	-89.48	3.5527E-15	5.3291E-15	-89.48	-7.1054E-15	89.48
630.8	89.49	-3.5527E-15	-89.49	1.0658E-14	6.2172E-15	-89.49	-7.9936E-15	89.49
640.8	89.50	-1.0658E-14	-89.50	3.5527E-15	7.1054E-15	-89.50	-5.3291E-15	89.50
650.8	89.52	-7.1054E-15	-89.52	3.5527E-15	6.2172E-15	-89.52	-1.3323E-14	89.52
660.8	89.53	-7.1054E-15	-89.53	1.0658E-14	6.2172E-15	-89.53	-6.2172E-15	89.53
670.8	89.54	-7.1054E-15	-89.54	1.0658E-14	7.9936E-15	-89.54	-4.4409E-15	89.54
680.8	89.55	-3.5527E-15	-89.55	1.0658E-14	5.3291E-15	-89.55	-8.8818E-15	89.55
690.8	89.57	-1.0658E-14	-89.57	3.5527E-15	7.9936E-15	-89.57	-6.2172E-15	89.57
700.8	89.58	-7.1054E-15	-89.58	3.5527E-15	6.2172E-15	-89.58	-9.7700E-15	89.58
710.8	89.59	-3.5527E-15	-89.59	7.1054E-15	5.3291E-15	-89.59	-1.2434E-14	89.59
720.8	89.60	-1.0658E-14	-89.60	7.1054E-15	7.1054E-15	-89.60	-5.3291E-15	89.60
727.3	89.61	-1.0658E-14	-89.61	1.4211E-14	6.2172E-15	-89.61	-6.2172E-15	89.61

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 3

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E11-1-1	-1.216E-41	102.	-1.292E-25	727.
2	E11-2-1	1.323E-23	7.28	-6.220E-22	37.3
3	E11-3-1	-1.059E-22	27.3	-4.341E-21	111.
4	E11-4-1	4.341E-21	111.	1.059E-22	27.3

TIME	VARIABLE 1	2	3	4
7.281	-1.2551E-41	1.3235E-23	-1.0588E-22	1.0588E-22
17.28	-1.2551E-41	-1.4558E-22	-1.0588E-22	1.0588E-22

27.28	-1.2551E-41	-6.2204E-22	-1.0588E-22	1.0588E-22
37.28	-1.2551E-41	-6.2204E-22	-8.4703E-22	8.4703E-22
47.28	-1.2551E-41	-5.6910E-22	-1.4823E-21	1.4823E-21
57.28	-1.2551E-41	-4.6322E-22	-1.9058E-21	1.9058E-21
67.28	-1.2551E-41	-4.6322E-22	-2.6470E-21	2.6470E-21
77.28	-1.2551E-41	-4.6322E-22	-3.5999E-21	3.5999E-21
87.28	-1.2551E-41	-4.6322E-22	-3.8116E-21	3.8116E-21
97.28	-1.2551E-41	-4.6322E-22	-4.2352E-21	4.2352E-21
102.3	-1.2159E-41	-4.6322E-22	-4.3410E-21	4.3410E-21
102.5	-1.2925E-26	-4.6321E-22	-4.3410E-21	4.3410E-21
102.8	-2.5849E-26	-4.6320E-22	-4.3410E-21	4.3410E-21
103.1	-2.5849E-26	-4.6322E-22	-4.3410E-21	4.3410E-21
103.7	-2.5849E-26	-4.6322E-22	-4.3410E-21	4.3410E-21
104.5	-2.5849E-26	-4.6327E-22	-4.3410E-21	4.3410E-21
105.8	-2.5849E-26	-4.6327E-22	-4.3410E-21	4.3410E-21
107.7	-1.2925E-25	-4.6317E-22	-4.3410E-21	4.3410E-21
110.5	-1.2925E-25	-4.6338E-22	-4.3410E-21	4.3410E-21
114.8	-1.2925E-25	-4.6338E-22	-4.3406E-21	4.3406E-21
121.2	-1.2925E-25	-4.6338E-22	-4.3406E-21	4.3406E-21
130.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
140.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
150.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
160.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
170.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
180.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
190.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
200.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
210.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
220.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
230.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
240.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
250.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
260.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
270.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
280.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
290.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
300.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
310.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
320.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
330.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
340.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
350.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
360.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
370.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
380.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
390.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
400.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
410.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
420.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
430.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
440.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
450.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
460.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
470.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
480.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
490.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
500.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
510.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
520.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
530.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
540.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
550.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
560.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
570.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
580.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
590.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
600.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
610.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
620.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
630.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
640.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
650.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
660.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
670.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
680.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
690.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21

700.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
710.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
720.8	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21
727.3	-1.2925E-25	-4.6338E-22	-4.3398E-21	4.3398E-21

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 4

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E22-1-1	1.223E-23	727.	-2.585E-26	106.
2	E22-2-1	2.559E-21	727.	6.617E-24	7.28
3	E22-3-1	6.154E-22	27.3	3.309E-23	7.28
4	E22-4-1	-6.617E-24	7.28	-2.548E-21	351.

TIME	VARIABLE 1	2	3	4
7.281	5.6029E-41	6.6174E-24	3.3087E-23	-6.6174E-24
17.28	5.6029E-41	1.9191E-22	1.6544E-22	-1.9191E-22
27.28	5.6029E-41	2.1838E-22	6.1542E-22	-2.1838E-22
37.28	5.6029E-41	6.6836E-22	5.3601E-22	-6.6836E-22
47.28	5.6029E-41	1.0389E-21	4.3013E-22	-1.0389E-21
57.28	5.6029E-41	1.3036E-21	2.7132E-22	-1.3036E-21
67.28	5.6029E-41	1.7007E-21	2.4485E-22	-1.7007E-21
77.28	5.6029E-41	2.1771E-21	2.4485E-22	-2.1771E-21
87.28	5.6029E-41	2.2830E-21	2.4485E-22	-2.2830E-21
97.28	5.6029E-41	2.4948E-21	2.4485E-22	-2.4948E-21
102.3	5.4278E-41	2.5477E-21	2.4485E-22	-2.5477E-21
102.5	6.4623E-27	2.5477E-21	2.4484E-22	-2.5477E-21
102.8	1.2925E-26	2.5477E-21	2.4483E-22	-2.5477E-21
103.1	1.2925E-26	2.5477E-21	2.4485E-22	-2.5477E-21
103.7	.0000E+00	2.5477E-21	2.4486E-22	-2.5477E-21
104.5	1.8910E-44	2.5477E-21	2.4491E-22	-2.5477E-21
105.8	-2.5849E-26	2.5477E-21	2.4494E-22	-2.5478E-21
107.7	2.5849E-26	2.5476E-21	2.4488E-22	-2.5477E-21
110.5	2.5849E-26	2.5477E-21	2.4499E-22	-2.5478E-21
114.8	2.5849E-26	2.5475E-21	2.4499E-22	-2.5476E-21
121.2	2.5849E-26	2.5475E-21	2.4499E-22	-2.5476E-21
130.8	2.5849E-26	2.5471E-21	2.4457E-22	-2.5472E-21
140.8	2.3264E-25	2.5473E-21	2.4437E-22	-2.5466E-21
150.8	4.3944E-25	2.5475E-21	2.4416E-22	-2.5468E-21
160.8	6.4623E-25	2.5477E-21	2.4395E-22	-2.5462E-21
170.8	8.5303E-25	2.5479E-21	2.4375E-22	-2.5464E-21
180.8	1.0598E-24	2.5481E-21	2.4354E-22	-2.5466E-21
190.8	1.2666E-24	2.5483E-21	2.4333E-22	-2.5468E-21
200.8	1.4734E-24	2.5486E-21	2.4313E-22	-2.5470E-21
210.8	1.6802E-24	2.5488E-21	2.4292E-22	-2.5472E-21
220.8	1.8870E-24	2.5490E-21	2.4271E-22	-2.5474E-21
230.8	2.0938E-24	2.5492E-21	2.4251E-22	-2.5476E-21
240.8	2.3006E-24	2.5494E-21	2.4230E-22	-2.5470E-21
250.8	2.5074E-24	2.5496E-21	2.4209E-22	-2.5472E-21
260.8	2.7142E-24	2.5498E-21	2.4189E-22	-2.5474E-21
270.8	2.9210E-24	2.5500E-21	2.4168E-22	-2.5476E-21
280.8	3.1278E-24	2.5502E-21	2.4147E-22	-2.5470E-21
290.8	3.3346E-24	2.5504E-21	2.4127E-22	-2.5472E-21
300.8	3.5414E-24	2.5506E-21	2.4106E-22	-2.5474E-21
310.8	3.7482E-24	2.5508E-21	2.4085E-22	-2.5476E-21
320.8	3.9550E-24	2.5510E-21	2.4064E-22	-2.5478E-21
330.8	4.1618E-24	2.5512E-21	2.4044E-22	-2.5480E-21
340.8	4.3685E-24	2.5515E-21	2.4023E-22	-2.5482E-21
350.8	4.5753E-24	2.5517E-21	2.4002E-22	-2.5485E-21
360.8	4.7821E-24	2.5519E-21	2.3982E-22	-2.5478E-21
370.8	4.9889E-24	2.5521E-21	2.3961E-22	-2.5480E-21
380.8	5.1957E-24	2.5523E-21	2.3940E-22	-2.5474E-21
390.8	5.4025E-24	2.5525E-21	2.3920E-22	-2.5476E-21
400.8	5.6093E-24	2.5527E-21	2.3899E-22	-2.5470E-21
410.8	5.8161E-24	2.5529E-21	2.3878E-22	-2.5472E-21
420.8	6.0229E-24	2.5531E-21	2.3858E-22	-2.5466E-21
430.8	6.2297E-24	2.5533E-21	2.3837E-22	-2.5468E-21
440.8	6.4365E-24	2.5535E-21	2.3816E-22	-2.5462E-21
450.8	6.6433E-24	2.5537E-21	2.3796E-22	-2.5464E-21

460.8	6.8501E-24	2.5539E-21	2.3775E-22	-2.5466E-21
470.8	7.0569E-24	2.5541E-21	2.3754E-22	-2.5468E-21
480.8	7.2637E-24	2.5543E-21	2.3734E-22	-2.5462E-21
490.8	7.4705E-24	2.5546E-21	2.3713E-22	-2.5464E-21
500.8	7.6773E-24	2.5548E-21	2.3692E-22	-2.5466E-21
510.8	7.8841E-24	2.5550E-21	2.3672E-22	-2.5468E-21
520.8	8.0909E-24	2.5552E-21	2.3651E-22	-2.5470E-21
530.8	8.2977E-24	2.5554E-21	2.3630E-22	-2.5472E-21
540.8	8.5045E-24	2.5556E-21	2.3610E-22	-2.5466E-21
550.8	8.7112E-24	2.5558E-21	2.3589E-22	-2.5460E-21
560.8	8.9180E-24	2.5560E-21	2.3568E-22	-2.5454E-21
570.8	9.1248E-24	2.5562E-21	2.3548E-22	-2.5447E-21
580.8	9.3316E-24	2.5564E-21	2.3527E-22	-2.5449E-21
590.8	9.5384E-24	2.5566E-21	2.3506E-22	-2.5443E-21
600.8	9.7452E-24	2.5568E-21	2.3485E-22	-2.5437E-21
610.8	9.9520E-24	2.5570E-21	2.3465E-22	-2.5431E-21
620.8	1.0159E-23	2.5572E-21	2.3444E-22	-2.5433E-21
630.8	1.0366E-23	2.5574E-21	2.3423E-22	-2.5427E-21
640.8	1.0572E-23	2.5577E-21	2.3403E-22	-2.5429E-21
650.8	1.0779E-23	2.5579E-21	2.3382E-22	-2.5431E-21
660.8	1.0986E-23	2.5581E-21	2.3361E-22	-2.5425E-21
670.8	1.1193E-23	2.5583E-21	2.3341E-22	-2.5427E-21
680.8	1.1400E-23	2.5585E-21	2.3320E-22	-2.5420E-21
690.8	1.1606E-23	2.5587E-21	2.3299E-22	-2.5422E-21
700.8	1.1813E-23	2.5589E-21	2.3279E-22	-2.5416E-21
710.8	1.2020E-23	2.5591E-21	2.3258E-22	-2.5418E-21
720.8	1.2227E-23	2.5593E-21	2.3237E-22	-2.5420E-21
727.3	1.2227E-23	2.5593E-21	2.3237E-22	-2.5420E-21

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 5

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E12-1-1	2.060E-04	727.	1.456E-05	7.28
2	E12-2-1	2.060E-04	727.	1.456E-05	7.28
3	E12-3-1	2.060E-04	727.	1.456E-05	7.28
4	E12-4-1	2.060E-04	727.	1.456E-05	7.28

TIME	VARIABLE 1	2	3	4
7.281	1.4562E-05	1.4562E-05	1.4562E-05	1.4562E-05
17.28	3.4563E-05	3.4563E-05	3.4563E-05	3.4563E-05
27.28	5.4563E-05	5.4563E-05	5.4563E-05	5.4563E-05
37.28	7.4563E-05	7.4563E-05	7.4563E-05	7.4563E-05
47.28	9.4562E-05	9.4562E-05	9.4562E-05	9.4562E-05
57.28	1.1456E-04	1.1456E-04	1.1456E-04	1.1456E-04
67.28	1.3456E-04	1.3456E-04	1.3456E-04	1.3456E-04
77.28	1.5456E-04	1.5456E-04	1.5456E-04	1.5456E-04
87.28	1.7456E-04	1.7456E-04	1.7456E-04	1.7456E-04
97.28	1.9456E-04	1.9456E-04	1.9456E-04	1.9456E-04
102.3	2.0450E-04	2.0450E-04	2.0450E-04	2.0450E-04
102.5	2.0450E-04	2.0450E-04	2.0450E-04	2.0450E-04
102.8	2.0450E-04	2.0450E-04	2.0450E-04	2.0450E-04
103.1	2.0450E-04	2.0450E-04	2.0450E-04	2.0450E-04
103.7	2.0450E-04	2.0450E-04	2.0450E-04	2.0450E-04
104.5	2.0451E-04	2.0451E-04	2.0451E-04	2.0451E-04
105.8	2.0451E-04	2.0451E-04	2.0451E-04	2.0451E-04
107.7	2.0451E-04	2.0451E-04	2.0451E-04	2.0451E-04
110.5	2.0452E-04	2.0452E-04	2.0452E-04	2.0452E-04
114.8	2.0453E-04	2.0453E-04	2.0453E-04	2.0453E-04
121.2	2.0455E-04	2.0455E-04	2.0455E-04	2.0455E-04
130.8	2.0457E-04	2.0457E-04	2.0457E-04	2.0457E-04
140.8	2.0459E-04	2.0459E-04	2.0459E-04	2.0459E-04
150.8	2.0462E-04	2.0462E-04	2.0462E-04	2.0462E-04
160.8	2.0464E-04	2.0464E-04	2.0464E-04	2.0464E-04
170.8	2.0466E-04	2.0466E-04	2.0466E-04	2.0466E-04
180.8	2.0469E-04	2.0469E-04	2.0469E-04	2.0469E-04
190.8	2.0471E-04	2.0471E-04	2.0471E-04	2.0471E-04
200.8	2.0474E-04	2.0474E-04	2.0474E-04	2.0474E-04
210.8	2.0476E-04	2.0476E-04	2.0476E-04	2.0476E-04

AIIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

301/587-8202

Centimeter

Inches

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BY APPLIED IMAGE, INC.

5 of 6

220.8	2.0478E-04	2.0478E-04	2.0478E-04	2.0478E-04
230.8	2.0481E-04	2.0481E-04	2.0481E-04	2.0481E-04
240.8	2.0483E-04	2.0483E-04	2.0483E-04	2.0483E-04
250.8	2.0486E-04	2.0486E-04	2.0486E-04	2.0486E-04
260.8	2.0488E-04	2.0488E-04	2.0488E-04	2.0488E-04
270.8	2.0490E-04	2.0490E-04	2.0490E-04	2.0490E-04
280.8	2.0493E-04	2.0493E-04	2.0493E-04	2.0493E-04
290.8	2.0495E-04	2.0495E-04	2.0495E-04	2.0495E-04
300.8	2.0498E-04	2.0498E-04	2.0498E-04	2.0498E-04
310.8	2.0500E-04	2.0500E-04	2.0500E-04	2.0500E-04
320.8	2.0502E-04	2.0502E-04	2.0502E-04	2.0502E-04
330.8	2.0505E-04	2.0505E-04	2.0505E-04	2.0505E-04
340.8	2.0507E-04	2.0507E-04	2.0507E-04	2.0507E-04
350.8	2.0510E-04	2.0510E-04	2.0510E-04	2.0510E-04
360.8	2.0512E-04	2.0512E-04	2.0512E-04	2.0512E-04
370.8	2.0514E-04	2.0514E-04	2.0514E-04	2.0514E-04
380.8	2.0517E-04	2.0517E-04	2.0517E-04	2.0517E-04
390.8	2.0519E-04	2.0519E-04	2.0519E-04	2.0519E-04
400.8	2.0522E-04	2.0522E-04	2.0522E-04	2.0522E-04
410.8	2.0524E-04	2.0524E-04	2.0524E-04	2.0524E-04
420.8	2.0526E-04	2.0526E-04	2.0526E-04	2.0526E-04
430.8	2.0529E-04	2.0529E-04	2.0529E-04	2.0529E-04
440.8	2.0531E-04	2.0531E-04	2.0531E-04	2.0531E-04
450.8	2.0534E-04	2.0534E-04	2.0534E-04	2.0534E-04
460.8	2.0536E-04	2.0536E-04	2.0536E-04	2.0536E-04
470.8	2.0538E-04	2.0538E-04	2.0538E-04	2.0538E-04
480.8	2.0541E-04	2.0541E-04	2.0541E-04	2.0541E-04
490.8	2.0543E-04	2.0543E-04	2.0543E-04	2.0543E-04
500.8	2.0546E-04	2.0546E-04	2.0546E-04	2.0546E-04
510.8	2.0548E-04	2.0548E-04	2.0548E-04	2.0548E-04
520.8	2.0550E-04	2.0550E-04	2.0550E-04	2.0550E-04
530.8	2.0553E-04	2.0553E-04	2.0553E-04	2.0553E-04
540.8	2.0555E-04	2.0555E-04	2.0555E-04	2.0555E-04
550.8	2.0558E-04	2.0558E-04	2.0558E-04	2.0558E-04
560.8	2.0560E-04	2.0560E-04	2.0560E-04	2.0560E-04
570.8	2.0562E-04	2.0562E-04	2.0562E-04	2.0562E-04
580.8	2.0565E-04	2.0565E-04	2.0565E-04	2.0565E-04
590.8	2.0567E-04	2.0567E-04	2.0567E-04	2.0567E-04
600.8	2.0570E-04	2.0570E-04	2.0570E-04	2.0570E-04
610.8	2.0572E-04	2.0572E-04	2.0572E-04	2.0572E-04
620.8	2.0574E-04	2.0574E-04	2.0574E-04	2.0574E-04
630.8	2.0577E-04	2.0577E-04	2.0577E-04	2.0577E-04
640.8	2.0579E-04	2.0579E-04	2.0579E-04	2.0579E-04
650.8	2.0582E-04	2.0582E-04	2.0582E-04	2.0582E-04
660.8	2.0584E-04	2.0584E-04	2.0584E-04	2.0584E-04
670.8	2.0586E-04	2.0586E-04	2.0586E-04	2.0586E-04
680.8	2.0589E-04	2.0589E-04	2.0589E-04	2.0589E-04
690.8	2.0591E-04	2.0591E-04	2.0591E-04	2.0591E-04
700.8	2.0594E-04	2.0594E-04	2.0594E-04	2.0594E-04
710.8	2.0596E-04	2.0596E-04	2.0596E-04	2.0596E-04
720.8	2.0598E-04	2.0598E-04	2.0598E-04	2.0598E-04
727.3	2.0600E-04	2.0600E-04	2.0600E-04	2.0600E-04

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 6

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S11-1-1	-5.625E-36	7.28	-89.6	727.
2	S11-2-1	3.042E-17	7.28	-89.6	727.
3	S11-3-1	-2.113E-16	7.28	-89.6	727.
4	S11-4-1	2.211E-16	7.28	-89.6	727.

TIME	VARIABLE 1	2	3	4
7.281	-5.6249E-36	3.0416E-17	-2.1127E-16	2.2113E-16
17.28	-4.9738E-14	-4.9738E-14	-4.9738E-14	-4.9738E-14
27.28	-1.7053E-13	-1.7053E-13	-1.5632E-13	-1.7053E-13
37.28	-3.4106E-13	-3.4106E-13	-3.4106E-13	-3.4106E-13
47.28	-5.9686E-13	-5.9686E-13	-5.9686E-13	-5.9686E-13
57.28	-6.5370E-13	-6.5370E-13	-6.5370E-13	-6.5370E-13

67.28	-9.3792E-13	-9.3792E-13	-9.3792E-13	-9.3792E-13
77.28	-1.3216E-12	-1.3074E-12	-1.3642E-12	-1.3642E-12
87.28	-1.5348E-12	-1.5348E-12	-1.5916E-12	-1.5916E-12
97.28	-1.8758E-12	-1.8758E-12	-1.9327E-12	-1.9327E-12
102.3	-2.1032E-12	-2.1032E-12	-2.1600E-12	-2.1600E-12
102.5	-2.1032E-12	-2.1032E-12	-2.1600E-12	-2.1600E-12
102.8	-2.1032E-12	-2.1032E-12	-2.1600E-12	-2.1600E-12
103.1	-2.1600E-12	-2.1600E-12	-2.2169E-12	-2.2169E-12
103.7	-2.2169E-12	-2.2169E-12	-2.2737E-12	-2.2737E-12
104.5	-2.2737E-12	-2.2737E-12	-2.3306E-12	-2.3306E-12
105.8	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
107.7	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
110.5	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
114.8	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
121.2	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
130.8	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
140.8	-2.3306E-12	-2.3306E-12	-2.3874E-12	-2.3874E-12
150.8	-2.3874E-12	-2.3874E-12	-2.4443E-12	-2.4443E-12
160.8	-2.4443E-12	-2.4443E-12	-2.5011E-12	-2.5011E-12
170.8	-2.5011E-12	-2.5011E-12	-2.5580E-12	-2.5580E-12
180.8	-2.5580E-12	-2.5580E-12	-2.6148E-12	-2.6148E-12
190.8	-2.6148E-12	-2.6148E-12	-2.6716E-12	-2.6716E-12
200.8	-2.6716E-12	-2.6716E-12	-2.7285E-12	-2.7285E-12
210.8	-2.6716E-12	-2.6716E-12	-2.7285E-12	-2.7285E-12
220.8	-2.7285E-12	-2.7285E-12	-2.7853E-12	-2.7853E-12
230.8	-2.7853E-12	-2.7853E-12	-2.8422E-12	-2.8422E-12
240.8	-2.8422E-12	-2.8422E-12	-2.8990E-12	-2.8990E-12
250.8	-2.8990E-12	-2.8990E-12	-2.9559E-12	-2.9559E-12
260.8	-2.9559E-12	-2.9559E-12	-3.0127E-12	-3.0127E-12
270.8	-3.0127E-12	-3.0127E-12	-3.0695E-12	-3.0695E-12
280.8	-3.0695E-12	-3.0695E-12	-3.1264E-12	-3.1264E-12
290.8	-3.1264E-12	-3.1264E-12	-3.1832E-12	-3.1832E-12
300.8	-3.1832E-12	-3.1832E-12	-3.2401E-12	-3.2401E-12
310.8	-3.2401E-12	-3.2401E-12	-3.2969E-12	-3.2969E-12
320.8	-3.2401E-12	-3.2401E-12	-3.2969E-12	-3.2969E-12
330.8	-3.2969E-12	-3.2969E-12	-3.3538E-12	-3.3538E-12
340.8	-3.3538E-12	-3.3538E-12	-3.4106E-12	-3.4106E-12
350.8	-3.3538E-12	-3.3538E-12	-3.4106E-12	-3.4106E-12
360.8	-3.3538E-12	-3.3538E-12	-3.4106E-12	-3.4106E-12
370.8	-3.4106E-12	-3.4106E-12	-3.4674E-12	-3.4674E-12
380.8	-3.4106E-12	-3.4106E-12	-3.4674E-12	-3.4674E-12
390.8	-3.4106E-12	-3.4106E-12	-3.4674E-12	-3.4674E-12
400.8	-3.4674E-12	-3.4674E-12	-3.5243E-12	-3.5243E-12
410.8	-3.5243E-12	-3.5243E-12	-3.5811E-12	-3.5811E-12
420.8	-3.5243E-12	-3.5243E-12	-3.5811E-12	-3.5811E-12
430.8	-3.5243E-12	-3.5243E-12	-3.5811E-12	-3.5811E-12
440.8	-3.5243E-12	-3.5243E-12	-3.5811E-12	-3.5811E-12
450.8	-3.5811E-12	-3.5811E-12	-3.6380E-12	-3.6380E-12
460.8	-3.6380E-12	-3.6380E-12	-3.6948E-12	-3.6948E-12
470.8	-3.6380E-12	-3.6380E-12	-3.6948E-12	-3.6948E-12
480.8	-89.31	-89.31	-89.31	-89.31
490.8	-89.32	-89.32	-89.32	-89.32
500.8	-89.33	-89.33	-89.33	-89.33
510.8	-89.34	-89.34	-89.34	-89.34
520.8	-89.36	-89.36	-89.36	-89.36
530.8	-89.37	-89.37	-89.37	-89.37
540.8	-89.38	-89.38	-89.38	-89.38
550.8	-89.39	-89.39	-89.39	-89.39
560.8	-89.41	-89.41	-89.41	-89.41
570.8	-89.42	-89.42	-89.42	-89.42
580.8	-89.43	-89.43	-89.43	-89.43
590.8	-89.44	-89.44	-89.44	-89.44
600.8	-89.46	-89.46	-89.46	-89.46
610.8	-89.47	-89.47	-89.47	-89.47
620.8	-89.48	-89.48	-89.48	-89.48
630.8	-89.49	-89.49	-89.49	-89.49
640.8	-89.50	-89.50	-89.50	-89.50
650.8	-89.52	-89.52	-89.52	-89.52
660.8	-89.53	-89.53	-89.53	-89.53
670.8	-89.54	-89.54	-89.54	-89.54
680.8	-89.55	-89.55	-89.55	-89.55
690.8	-89.57	-89.57	-89.57	-89.57
700.8	-89.58	-89.58	-89.58	-89.58
710.8	-89.59	-89.59	-89.59	-89.59
720.8	-89.60	-89.60	-89.60	-89.60
727.3	-89.61	-89.61	-89.61	-89.61

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 7

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S22-1-1	1.136E-34	7.28	-89.6	727.
2	S22-2-1	1.891E-17	7.28	-89.6	727.
3	S22-3-1	3.042E-17	7.28	-89.6	727.
4	S22-4-1	2.548E-17	7.28	-89.6	727.

TIME	VARIABLE 1	2	3	4
7.281	1.1365E-34	1.8907E-17	3.0416E-17	2.5483E-17
17.28	-4.9738E-14	-4.9738E-14	-4.9738E-14	-4.9738E-14
27.28	-1.7053E-13	-1.7053E-13	-1.5632E-13	-1.7053E-13
37.28	-3.4106E-13	-3.4106E-13	-3.4106E-13	-3.4106E-13
47.28	-5.9686E-13	-5.9686E-13	-5.9686E-13	-5.9686E-13
57.28	-6.5370E-13	-6.5370E-13	-6.5370E-13	-6.5370E-13
67.28	-9.3792E-13	-9.3792E-13	-9.3792E-13	-9.3792E-13
77.28	-1.2648E-12	-1.2506E-12	-1.3642E-12	-1.3642E-12
87.28	-1.4779E-12	-1.4779E-12	-1.5916E-12	-1.5916E-12
97.28	-1.8190E-12	-1.8190E-12	-1.9327E-12	-1.9327E-12
102.3	-2.0464E-12	-2.0464E-12	-2.1600E-12	-2.1600E-12
102.5	-2.0464E-12	-2.0464E-12	-2.1600E-12	-2.1600E-12
102.8	-2.0464E-12	-2.0464E-12	-2.1600E-12	-2.1600E-12
103.1	-2.1032E-12	-2.1032E-12	-2.2169E-12	-2.2169E-12
103.7	-2.1600E-12	-2.1600E-12	-2.2737E-12	-2.2737E-12
104.5	-2.2169E-12	-2.2169E-12	-2.3306E-12	-2.3306E-12
105.8	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
107.7	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
110.5	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
114.8	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
121.2	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
130.8	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
140.8	-2.2737E-12	-2.2737E-12	-2.3874E-12	-2.3874E-12
150.8	-2.3306E-12	-2.3306E-12	-2.4443E-12	-2.4443E-12
160.8	-2.3874E-12	-2.3874E-12	-2.5011E-12	-2.5011E-12
170.8	-2.4443E-12	-2.4443E-12	-2.5580E-12	-2.5580E-12
180.8	-2.5011E-12	-2.5011E-12	-2.6148E-12	-2.6148E-12
190.8	-2.5580E-12	-2.5580E-12	-2.6716E-12	-2.6716E-12
200.8	-2.6148E-12	-2.6148E-12	-2.7285E-12	-2.7285E-12
210.8	-2.6148E-12	-2.6148E-12	-2.7285E-12	-2.7285E-12
220.8	-2.6716E-12	-2.6716E-12	-2.7853E-12	-2.7853E-12
230.8	-2.7285E-12	-2.7285E-12	-2.8422E-12	-2.8422E-12
240.8	-2.7853E-12	-2.7853E-12	-2.8990E-12	-2.8990E-12
250.8	-2.8422E-12	-2.8422E-12	-2.9559E-12	-2.9559E-12
260.8	-2.8990E-12	-2.8990E-12	-3.0127E-12	-3.0127E-12
270.8	-2.9559E-12	-2.9559E-12	-3.0695E-12	-3.0695E-12
280.8	-3.0127E-12	-3.0127E-12	-3.1264E-12	-3.1264E-12
290.8	-3.0695E-12	-3.0695E-12	-3.1832E-12	-3.1832E-12
300.8	-3.1264E-12	-3.1264E-12	-3.2401E-12	-3.2401E-12
310.8	-3.1832E-12	-3.1832E-12	-3.2969E-12	-3.2969E-12
320.8	-3.1832E-12	-3.1832E-12	-3.2969E-12	-3.2969E-12
330.8	-3.2401E-12	-3.2401E-12	-3.3538E-12	-3.3538E-12
340.8	-3.2969E-12	-3.2969E-12	-3.4106E-12	-3.4106E-12
350.8	-3.2969E-12	-3.2969E-12	-3.4106E-12	-3.4106E-12
360.8	-3.2969E-12	-3.2969E-12	-3.4106E-12	-3.4106E-12
370.8	-3.3538E-12	-3.3538E-12	-3.4674E-12	-3.4674E-12
380.8	-3.3538E-12	-3.3538E-12	-3.4674E-12	-3.4674E-12
390.8	-3.3538E-12	-3.3538E-12	-3.4674E-12	-3.4674E-12
400.8	-3.4106E-12	-3.4106E-12	-3.5243E-12	-3.5243E-12
410.8	-3.4674E-12	-3.4674E-12	-3.5811E-12	-3.5811E-12
420.8	-3.4674E-12	-3.4674E-12	-3.5811E-12	-3.5811E-12
430.8	-3.4674E-12	-3.4674E-12	-3.5811E-12	-3.5811E-12
440.8	-3.4674E-12	-3.4674E-12	-3.5811E-12	-3.5811E-12
450.8	-3.5243E-12	-3.5243E-12	-3.6380E-12	-3.6380E-12
460.8	-3.5811E-12	-3.5811E-12	-3.6948E-12	-3.6948E-12
470.8	-3.5811E-12	-3.5811E-12	-3.6948E-12	-3.6948E-12
480.8	-89.31	-89.31	-89.31	-89.31
490.8	-89.32	-89.32	-89.32	-89.32
500.8	-89.33	-89.33	-89.33	-89.33

510.8	-89.34	-89.34	-89.34	-89.34
520.8	-89.36	-89.36	-89.36	-89.36
530.8	-89.37	-89.37	-89.37	-89.37
540.8	-89.38	-89.38	-89.38	-89.38
550.8	-89.39	-89.39	-89.39	-89.39
560.8	-89.41	-89.41	-89.41	-89.41
570.8	-89.42	-89.42	-89.42	-89.42
580.8	-89.43	-89.43	-89.43	-89.43
590.8	-89.44	-89.44	-89.44	-89.44
600.8	-89.46	-89.46	-89.46	-89.46
610.8	-89.47	-89.47	-89.47	-89.47
620.8	-89.48	-89.48	-89.48	-89.48
630.8	-89.49	-89.49	-89.49	-89.49
640.8	-89.50	-89.50	-89.50	-89.50
650.8	-89.52	-89.52	-89.52	-89.52
660.8	-89.53	-89.53	-89.53	-89.53
670.8	-89.54	-89.54	-89.54	-89.54
680.8	-89.55	-89.55	-89.55	-89.55
690.8	-89.57	-89.57	-89.57	-89.57
700.8	-89.58	-89.58	-89.58	-89.58
710.8	-89.59	-89.59	-89.59	-89.59
720.8	-89.60	-89.60	-89.60	-89.60
727.3	-89.61	-89.61	-89.61	-89.61

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 8

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S12-1-1	179.	471.	12.7	7.28
2	S12-2-1	179.	471.	12.7	7.28
3	S12-3-1	179.	471.	12.7	7.28
4	S12-4-1	179.	471.	12.7	7.28

TIME	VARIABLE 1	2	3	4
7.281	12.66	12.66	12.66	12.66
17.28	30.05	30.05	30.05	30.05
27.28	47.45	47.45	47.45	47.45
37.28	64.84	64.84	64.84	64.84
47.28	82.23	82.23	82.23	82.23
57.28	99.62	99.62	99.62	99.62
67.28	117.0	117.0	117.0	117.0
77.28	134.4	134.4	134.4	134.4
87.28	151.8	151.8	151.8	151.8
97.28	169.2	169.2	169.2	169.2
102.3	177.8	177.8	177.8	177.8
102.5	177.8	177.8	177.8	177.8
102.8	177.8	177.8	177.8	177.8
103.1	177.8	177.8	177.8	177.8
103.7	177.8	177.8	177.8	177.8
104.5	177.8	177.8	177.8	177.8
105.8	177.8	177.8	177.8	177.8
107.7	177.8	177.8	177.8	177.8
110.5	177.8	177.8	177.8	177.8
114.8	177.9	177.9	177.9	177.9
121.2	177.9	177.9	177.9	177.9
130.8	177.9	177.9	177.9	177.9
140.8	177.9	177.9	177.9	177.9
150.8	177.9	177.9	177.9	177.9
160.8	177.9	177.9	177.9	177.9
170.8	178.0	178.0	178.0	178.0
180.8	178.0	178.0	178.0	178.0
190.8	178.0	178.0	178.0	178.0
200.8	178.0	178.0	178.0	178.0
210.8	178.1	178.1	178.1	178.1
220.8	178.1	178.1	178.1	178.1
230.8	178.1	178.1	178.1	178.1
240.8	178.1	178.1	178.1	178.1
250.8	178.1	178.1	178.1	178.1
260.8	178.2	178.2	178.2	178.2

270.8	178.2	178.2	178.2	178.2
280.8	178.2	178.2	178.2	178.2
290.8	178.2	178.2	178.2	178.2
300.8	178.2	178.2	178.2	178.2
310.8	178.3	178.3	178.3	178.3
320.8	178.3	178.3	178.3	178.3
330.8	178.3	178.3	178.3	178.3
340.8	178.3	178.3	178.3	178.3
350.8	178.3	178.3	178.3	178.3
360.8	178.4	178.4	178.4	178.4
370.8	178.4	178.4	178.4	178.4
380.8	178.4	178.4	178.4	178.4
390.8	178.4	178.4	178.4	178.4
400.8	178.4	178.4	178.4	178.4
410.8	178.5	178.5	178.5	178.5
420.8	178.5	178.5	178.5	178.5
430.8	178.5	178.5	178.5	178.5
440.8	178.5	178.5	178.5	178.5
450.8	178.6	178.6	178.6	178.6
460.8	178.6	178.6	178.6	178.6
470.8	178.6	178.6	178.6	178.6
480.8	89.31	89.31	89.31	89.31
490.8	89.32	89.32	89.32	89.32
500.8	89.33	89.33	89.33	89.33
510.8	89.34	89.34	89.34	89.34
520.8	89.36	89.36	89.36	89.36
530.8	89.37	89.37	89.37	89.37
540.8	89.38	89.38	89.38	89.38
550.8	89.39	89.39	89.39	89.39
560.8	89.41	89.41	89.41	89.41
570.8	89.42	89.42	89.42	89.42
580.8	89.43	89.43	89.43	89.43
590.8	89.44	89.44	89.44	89.44
600.8	89.46	89.46	89.46	89.46
610.8	89.47	89.47	89.47	89.47
620.8	89.48	89.48	89.48	89.48
630.8	89.49	89.49	89.49	89.49
640.8	89.50	89.50	89.50	89.50
650.8	89.52	89.52	89.52	89.52
660.8	89.53	89.53	89.53	89.53
670.8	89.54	89.54	89.54	89.54
680.8	89.55	89.55	89.55	89.55
690.8	89.57	89.57	89.57	89.57
700.8	89.58	89.58	89.58	89.58
710.8	89.59	89.59	89.59	89.59
720.8	89.60	89.60	89.60	89.60
727.3	89.61	89.61	89.61	89.61

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

NC.abdat

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*HEADING
 SHEAR TEST RUN
*NODE,NSET=ALLNODES
    1, 0.00000E+00, 0.00000E+00, 0.00000E+00
**  2, 0.00000E+00, 5.00000E-01, 0.00000E+00
    3, 0.00000E+00, 1.00000E+00, 0.00000E+00
**  4, 0.00000E+00, 1.50000E+00, 0.00000E+00
**  5, 0.00000E+00, 2.00000E+00, 0.00000E+00
**  6, 5.00000E-01, 0.00000E+00, 0.00000E+00
**  8, 5.00000E-01, 1.00000E+00, 0.00000E+00
** 10, 5.00000E-01, 2.00000E+00, 0.00000E+00
   11, 1.00000E+00, 0.00000E+00, 0.00000E+00
** 12, 1.00000E+00, 5.00000E-01, 0.00000E+00
   13, 1.00000E+00, 1.00000E+00, 0.00000E+00
** 14, 1.00000E+00, 1.50000E+00, 0.00000E+00
** 15, 1.00000E+00, 2.00000E+00, 0.00000E+00
********************
*ELEMENT,TYPE=CPE4,ELSET=RCONC
1,1,11,13,3
********************
*MATERIAL,NAME=RCONC
*USER MATERIAL,CONSTANT=25
** BASIC PROPERTIES
      3,   3000.,  96E-6,    2.00E6,    0.15,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      4.,
*DEPVAR
2
*EXPANSION
 6.00E-06
********************
*ELSET,ELSET=G1017
**ELEMENT=CPE8R,MATERIAL=RCONC,SECTION=SO
1
*SOLIDSECTION,ELSET=G1017,MATERIAL=RCONC
 1.00E+00
********************
*ELSET,ELSET=ALLELEME
  1
*NSET,NSET=SHEARX
 3, 13
*NSET,NSET=UFIX
 1, 11
*PLOT

*DRAW
********************
*AMPLITUDE,TIME=A,NAME=DEAD
0.0,1.0,100.0,1.0
*AMPLITUDE,TIME=A,NAME=LIVE
0.0,0.000, 1.0,0.000, 2.0,0.156, 3.0,0.309
4.0,0.454, 5.0,0.588, 6.0,0.707, 7.0,0.809
8.0,0.891, 9.0,0.951, 10.0,0.988, 11.0,1.000
*AMPLITUDE,TIME=A,NAME=TEMP
0.0,1.0,100.0,1.0
*BOUNDARY
1,2,2,0.0
11,1,2,0.0
*RESTART,WRITE,FREQUENCY=10
********************
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=10
*STATIC,PTOL=1.0
10.,10.,.005,1.
*ELFILE,FREQUENCY=1,ELSET=ALLELEME
E
S
SDV
LOADS
NFORC
*NODEFILE,FREQUENCY=1,NSET=ALLNODES
U,V,A
RF
```

```
CF
*ELPRINT,FREQUENCY=0
*NODEPRINT,FREQUENCY=0
*BOUNDARY,OP=MOD
3,2,2,-.001
13,2,2,-.001
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.001
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.01
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.015
*END STEP
```

NC.sta

SUMMARY OF JOB INFORMATION

STEP #	INC #	ATTEMP #	ITER #	TOT TIME LPF	TIME INC LPF INC	IF RIKS
1	1	1	1	1.00	1.00	
1	2	1	1	2.00	1.00	
1	3	1	1	3.00	1.00	
1	4	1	1	4.00	1.00	
1	5	1	1	5.00	1.00	
1	6	1	1	6.00	1.00	
1	7	1	1	7.00	1.00	
1	8	1	1	8.00	1.00	
1	9	1	1	9.00	1.00	
1	10	1	1	10.0	1.00	
2	1	1	1	.250	.250	
2	2	1	1	.500	.250	
2	3	1	1	.750	.250	
2	4	1	1	1.00	.250	
2	5	1	1	1.25	.250	
2	6	1	1	1.50	.250	
2	7	1	1	1.75	.250	
2	8	1	1	2.00	.250	
2	9	1	1	2.25	.250	
2	10	1	1	2.50	.250	
2	11	1	1	2.75	.250	
2	12	1	1	3.00	.250	
2	13	1	1	3.25	.250	
2	14	1	1	3.50	.250	
2	15	1	1	3.75	.250	
2	16	1	1	4.00	.250	
2	17	1	1	4.25	.250	
2	18	1	1	4.50	.250	
2	19	1	1	4.75	.250	
2	20	1	1	5.00	.250	
2	21	1	1	5.25	.250	
2	22	1	1	5.50	.250	
2	23	1	1	5.75	.250	
2	24	1	1	6.00	.250	
2	25	1	1	6.25	.250	
2	26	1	1	6.50	.250	
2	27	1	1	6.75	.250	
2	28	1	1	7.00	.250	
2	29	1	1	7.25	.250	
2	30	1	1	7.50	.250	
2	31	1	1	7.75	.250	
2	32	1	1	8.00	.250	
2	33	1	1	8.25	.250	
2	34	1	1	8.50	.250	
2	35	1	1	8.75	.250	
2	36	1	1	9.00	.250	
2	37	1	1	9.25	.250	
2	38	1	1	9.50	.250	
2	39	1	1	9.75	.250	
2	40	1	1	10.0	.250	
3	1	1	1	.250	.250	
3	2	1	1	.500	.250	
3	3	1	1	.750	.250	
3	4	1	1	1.00	.250	
3	5	1	3	1.25	.250	
3	6	1	3	1.50	.250	
3	7	1	4	1.75	.250	
3	8	1	4	2.00	.250	
3	9	1	5	2.25	.250	
3	10	1	5	2.50	.250	
3	11	1	5	2.75	.250	
3	12	1	5	3.00	.250	
3	13	1	6	3.25	.250	
3	14	1	6	3.50	.250	
3	15	1	6	3.75	.250	
3	16	1	7	4.00	.250	
3	17	1	7	4.25	.250	
3	18	1	7	4.50	.250	
3	19	1	7	4.75	.250	
3	20	1	8	5.00	.250	

3	21	1	8	5.25	.250
3	22	1	8	5.50	.250
3	23	1	8	5.75	.250
3	24	1	8	6.00	.250
3	25	1	8	6.25	.250
3	26	1	8	6.50	.250
3	27	1	9	6.75	.250
3	28	1	9	7.00	.250
3	29	1	9	7.25	.250
3	30	1	9	7.50	.250
3	31	1	9	7.75	.250
3	32	1	9	8.00	.250
3	33	1	9	8.25	.250
3	34	1	9	8.50	.250
3	35	1	9	8.75	.250
3	36	1	9	9.00	.250
3	37	1	9	9.25	.250
3	38	1	9	9.50	.250
3	39	1	9	9.75	.250
3	40	1	9	10.0	.250
4	1	1	7	.250	.250
4	2	1	7	.500	.250
4	3	1	7	.750	.250
4	4	1	7	1.00	.250
4	5	1	7	1.25	.250
4	6	1	7	1.50	.250
4	7	1	7	1.75	.250
4	8	1	7	2.00	.250
4	9	1	7	2.25	.250
4	10	1	7	2.50	.250
4	11	1	7	2.75	.250
4	12	1	7	3.00	.250
4	13	1	7	3.25	.250
4	14	1	7	3.50	.250
4	15	1	7	3.75	.250
4	16	1	7	4.00	.250
4	17	1	7	4.25	.250
4	18	1	7	4.50	.250
4	19	1	7	4.75	.250
4	20	1	7	5.00	.250
4	21	1	7	5.25	.250
4	22	1	7	5.50	.250
4	23	1	7	5.75	.250
4	24	1	6	6.00	.250
4	25	1	7	6.25	.250
4	26	1	6	6.50	.250
4	27	1	6	6.75	.250
4	28	1	6	7.00	.250
4	29	1	6	7.25	.250
4	30	1	6	7.50	.250
4	31	1	6	7.75	.250
4	32	1	6	8.00	.250
4	33	1	6	8.25	.250
4	34	1	6	8.50	.250
4	35	1	6	8.75	.250
4	36	1	6	9.00	.250
4	37	1	6	9.25	.250
4	38	1	6	9.50	.250
4	39	1	6	9.75	.250
4	40	1	6	10.0	.250

NCP.abdat

```
*** Postprocess .fil File to Tabulate Displacement History Data
*** Must temporarily rename original file.fil to g_disp.fil
*** Results are found in g_disp.about
*POST FILE,INPUT=BINARY
**
**   vertical displacements
*PRINT HISTORY
U2, U2-3, 3
U2, U2-13, 13
U1, U1-3, 3
U1, U1-13, 13
U2,U2-1,1
U2,U2-11,11
U1,U1-1,1
U1,U1-11,11
*PRINT HISTORY
RF1, RF1-3, 3
RF1, RF1-13, 13
RF2, RF2-3, 3
RF2, RF2-13, 13
RF1, RF1-1, 1
RF1, RF1-11, 11
RF2, RF2-1, 1
RF2, RF2-11, 11
*PRINT HISTORY
E11,E11-1-1,1,1,,0
E11,E11-2-1,1,2,,0
E11,E11-3-1,1,3,,0
E11,E11-4-1,1,4,,0
*PRINT HISTORY
E22,E22-1-1,1,1,,0
E22,E22-2-1,1,2,,0
E22,E22-3-1,1,3,,0
E22,E22-4-1,1,4,,0
*PRINT HISTORY
E12,E12-1-1,1,1,,0
E12,E12-2-1,1,2,,0
E12,E12-3-1,1,3,,0
E12,E12-4-1,1,4,,0
*PRINT HISTORY
S11,S11-1-1,1,1,,0
S11,S11-2-1,1,2,,0
S11,S11-3-1,1,3,,0
S11,S11-4-1,1,4,,0
*PRINT HISTORY
S22,S22-1-1,1,1,,0
S22,S22-2-1,1,2,,0
S22,S22-3-1,1,3,,0
S22,S22-4-1,1,4,,0
*PRINT HISTORY
S12,S12-1-1,1,1,,0
S12,S12-2-1,1,2,,0
S12,S12-3-1,1,3,,0
S12,S12-4-1,1,4,,0
```

NCP.about

POST-PLOTTING

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	U2-3	-1.000E-04	1.00	-1.000E-03	40.0
2	U2-13	-1.000E-04	1.00	-1.000E-03	40.0
3	U1-3	1.500E-02	40.0	-1.765E-04	10.0
4	U1-13	1.615E-02	40.0	-8.781E-21	10.0
5	U2-1	1.186E-38	26.8	-1.023E-38	10.0
6	U2-11	-1.066E-39	20.0	-1.061E-38	26.8
7	U1-1	6.536E-04	23.0	-1.151E-03	40.0
8	U1-11	1.386E-38	20.3	-1.374E-54	10.0

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	-1.0000E-04	-1.0000E-04	-1.7647E-05	3.6600E-21	-1.0230E-38	-1.0230E-38	-1.7647E-05	3.5527E-55
2.000	-2.0000E-04	-2.0000E-04	-3.5294E-05	-4.3410E-21	-1.0230E-38	-1.0230E-38	-3.5294E-05	1.2806E-55
3.000	-3.0000E-04	-3.0000E-04	-5.2941E-05	-7.8237E-21	-1.0230E-38	-1.0230E-38	-5.2941E-05	5.0767E-56
4.000	-4.0000E-04	-4.0000E-04	-7.0588E-05	1.5676E-20	-1.0230E-38	-1.0230E-38	-7.0588E-05	8.6046E-55
5.000	-5.0000E-04	-5.0000E-04	-8.8235E-05	1.9073E-20	-1.0230E-38	-1.0230E-38	-8.8235E-05	3.1854E-56
6.000	-6.0000E-04	-6.0000E-04	-1.0588E-04	1.5151E-20	-1.0230E-38	-1.0230E-38	-1.0588E-04	3.1854E-56
7.000	-7.0000E-04	-7.0000E-04	-1.2353E-04	-4.5963E-21	-1.0230E-38	-1.0230E-38	-1.2353E-04	-1.0823E-54
8.000	-8.0000E-04	-8.0000E-04	-1.4118E-04	2.8947E-20	-1.0230E-38	-1.0230E-38	-1.4118E-04	2.4798E-54
9.000	-9.0000E-04	-9.0000E-04	-1.5882E-04	4.8091E-20	-1.0230E-38	-1.0230E-38	-1.5882E-04	-6.8695E-55
10.00	-1.0000E-03	-1.0000E-03	-1.7647E-04	-8.7811E-21	-1.0230E-38	-1.0230E-38	-1.7647E-04	-1.3739E-54
10.25	-1.0000E-03	-1.0000E-03	-1.4706E-04	2.0833E-05	7.4595E-40	-1.0656E-39	-1.6789E-04	1.8116E-39
10.50	-1.0000E-03	-1.0000E-03	-1.1765E-04	4.1667E-05	7.4595E-40	-1.0656E-39	-1.5931E-04	1.8116E-39
10.75	-1.0000E-03	-1.0000E-03	-8.8235E-05	6.2500E-05	7.4595E-40	-1.0656E-39	-1.5074E-04	1.8116E-39
11.00	-1.0000E-03	-1.0000E-03	-5.8824E-05	8.3333E-05	7.4595E-40	-1.0656E-39	-1.4216E-04	1.8116E-39
11.25	-1.0000E-03	-1.0000E-03	-2.9412E-05	1.0417E-04	7.4595E-40	-1.0656E-39	-1.3358E-04	1.8116E-39
11.50	-1.0000E-03	-1.0000E-03	1.3553E-20	1.2500E-04	7.4595E-40	-1.0656E-39	-1.2500E-04	1.8116E-39
11.75	-1.0000E-03	-1.0000E-03	2.9412E-05	1.4583E-04	7.4595E-40	-1.0656E-39	-1.1642E-04	1.8116E-39
12.00	-1.0000E-03	-1.0000E-03	5.8824E-05	1.6667E-04	7.4595E-40	-1.0656E-39	-1.0784E-04	1.8116E-39
12.25	-1.0000E-03	-1.0000E-03	8.8235E-05	1.8750E-04	7.4595E-40	-1.0656E-39	-9.9265E-05	1.8116E-39
12.50	-1.0000E-03	-1.0000E-03	1.1765E-04	2.0833E-04	7.4595E-40	-1.0656E-39	-9.0686E-05	1.8116E-39
12.75	-1.0000E-03	-1.0000E-03	1.4706E-04	2.2917E-04	7.4595E-40	-1.0656E-39	-8.2108E-05	1.8116E-39
13.00	-1.0000E-03	-1.0000E-03	1.7647E-04	2.5000E-04	7.4595E-40	-1.0656E-39	-7.3529E-05	1.8116E-39
13.25	-1.0000E-03	-1.0000E-03	2.0588E-04	2.7083E-04	7.4595E-40	-1.0656E-39	-6.4951E-05	1.8116E-39
13.50	-1.0000E-03	-1.0000E-03	2.3529E-04	2.9167E-04	7.4595E-40	-1.0656E-39	-5.6373E-05	1.8116E-39
13.75	-1.0000E-03	-1.0000E-03	2.6471E-04	3.1250E-04	7.4595E-40	-1.0656E-39	-4.7794E-05	1.8116E-39
14.00	-1.0000E-03	-1.0000E-03	2.9412E-04	3.3333E-04	7.4595E-40	-1.0656E-39	-3.9216E-05	1.8116E-39
14.25	-1.0000E-03	-1.0000E-03	3.2353E-04	3.5417E-04	7.4595E-40	-1.0656E-39	-3.0637E-05	1.8116E-39
14.50	-1.0000E-03	-1.0000E-03	3.5294E-04	3.7500E-04	7.4595E-40	-1.0656E-39	-2.2059E-05	1.8116E-39
14.75	-1.0000E-03	-1.0000E-03	3.8235E-04	3.9583E-04	7.4595E-40	-1.0656E-39	-1.3480E-05	1.8116E-39
15.00	-1.0000E-03	-1.0000E-03	4.1176E-04	4.1667E-04	7.4595E-40	-1.0656E-39	-4.9020E-06	1.8116E-39
15.25	-1.0000E-03	-1.0000E-03	4.4118E-04	4.3750E-04	7.4595E-40	-1.0656E-39	3.6765E-06	1.8116E-39
15.50	-1.0000E-03	-1.0000E-03	4.7059E-04	4.5833E-04	7.4595E-40	-1.0656E-39	1.2255E-05	1.8116E-39
15.75	-1.0000E-03	-1.0000E-03	5.0000E-04	4.7917E-04	7.4595E-40	-1.0656E-39	2.0833E-05	1.8116E-39
16.00	-1.0000E-03	-1.0000E-03	5.2941E-04	5.0000E-04	7.4595E-40	-1.0656E-39	2.9412E-05	1.8116E-39
16.25	-1.0000E-03	-1.0000E-03	5.5882E-04	5.2083E-04	7.4595E-40	-1.0656E-39	3.7990E-05	1.8116E-39
16.50	-1.0000E-03	-1.0000E-03	5.8824E-04	5.4167E-04	7.4595E-40	-1.0656E-39	4.6569E-05	1.8116E-39
16.75	-1.0000E-03	-1.0000E-03	6.1765E-04	5.6250E-04	7.4595E-40	-1.0656E-39	5.5147E-05	1.8116E-39
17.00	-1.0000E-03	-1.0000E-03	6.4706E-04	5.8333E-04	7.4595E-40	-1.0656E-39	6.3725E-05	1.8116E-39
17.25	-1.0000E-03	-1.0000E-03	6.7647E-04	6.0417E-04	7.4595E-40	-1.0656E-39	7.2304E-05	1.8116E-39
17.50	-1.0000E-03	-1.0000E-03	7.0588E-04	6.2500E-04	7.4595E-40	-1.0656E-39	8.0882E-05	1.8116E-39
17.75	-1.0000E-03	-1.0000E-03	7.3529E-04	6.4583E-04	7.4595E-40	-1.0656E-39	8.9461E-05	1.8116E-39
18.00	-1.0000E-03	-1.0000E-03	7.6471E-04	6.6667E-04	7.4595E-40	-1.0656E-39	9.8039E-05	1.8116E-39
18.25	-1.0000E-03	-1.0000E-03	7.9412E-04	6.8750E-04	7.4595E-40	-1.0656E-39	1.0662E-04	1.8116E-39
18.50	-1.0000E-03	-1.0000E-03	8.2353E-04	7.0833E-04	7.4595E-40	-1.0656E-39	1.1520E-04	1.8116E-39
18.75	-1.0000E-03	-1.0000E-03	8.5294E-04	7.2917E-04	7.4595E-40	-1.0656E-39	1.2377E-04	1.8116E-39
19.00	-1.0000E-03	-1.0000E-03	8.8235E-04	7.5000E-04	7.4595E-40	-1.0656E-39	1.3235E-04	1.8116E-39
19.25	-1.0000E-03	-1.0000E-03	9.1176E-04	7.7083E-04	7.4595E-40	-1.0656E-39	1.4093E-04	1.8116E-39
19.50	-1.0000E-03	-1.0000E-03	9.4118E-04	7.9167E-04	7.4595E-40	-1.0656E-39	1.4951E-04	1.8116E-39
19.75	-1.0000E-03	-1.0000E-03	9.7059E-04	8.1250E-04	7.4595E-40	-1.0656E-39	1.5809E-04	1.8116E-39
20.00	-1.0000E-03	-1.0000E-03	1.0000E-03	8.3333E-04	7.4595E-40	-1.0656E-39	1.6667E-04	1.8116E-39
20.25	-1.0000E-03	-1.0000E-03	1.2250E-03	9.9271E-04	5.7065E-39	-8.1522E-39	2.3229E-04	1.3859E-38
20.50	-1.0000E-03	-1.0000E-03	1.4500E-03	1.1521E-03	5.7065E-39	-8.1522E-39	2.9792E-04	1.3859E-38

20.75	-1.0000E-03	-1.0000E-03	1.6750E-03	1.3115E-03	5.7065E-39	-8.1522E-39	3.6354E-04	1.3859E-38
21.00	-1.0000E-03	-1.0000E-03	1.9000E-03	1.4708E-03	5.7065E-39	-8.1522E-39	4.2917E-04	1.3859E-38
21.25	-1.0000E-03	-1.0000E-03	2.1250E-03	1.6358E-03	6.0526E-39	-8.2906E-39	4.8922E-04	1.3513E-38
21.50	-1.0000E-03	-1.0000E-03	2.3500E-03	1.8145E-03	6.9094E-39	-8.6333E-39	5.3548E-04	1.2656E-38
21.75	-1.0000E-03	-1.0000E-03	2.5750E-03	2.0022E-03	7.4674E-39	-8.8565E-39	5.7275E-04	1.2098E-38
22.00	-1.0000E-03	-1.0000E-03	2.8000E-03	2.1969E-03	7.8954E-39	-9.0277E-39	6.0714E-04	1.1670E-38
22.25	-1.0000E-03	-1.0000E-03	3.0250E-03	2.3999E-03	8.4212E-39	-9.2381E-39	6.2506E-04	1.1144E-38
22.50	-1.0000E-03	-1.0000E-03	3.2500E-03	2.6099E-03	8.8379E-39	-9.3925E-39	6.4012E-04	1.0708E-38
22.75	-1.0000E-03	-1.0000E-03	3.4750E-03	2.8255E-03	9.1891E-39	-9.5325E-39	6.4948E-04	1.0352E-38
23.00	-1.0000E-03	-1.0000E-03	3.7000E-03	3.0464E-03	9.5115E-39	-9.6613E-39	6.5362E-04	1.0026E-38
23.25	-1.0000E-03	-1.0000E-03	3.9250E-03	3.2732E-03	9.8721E-39	-9.8053E-39	6.5184E-04	9.6604E-39
23.50	-1.0000E-03	-1.0000E-03	4.1500E-03	3.5043E-03	1.0127E-38	-9.9072E-39	6.4571E-04	9.4016E-39
23.75	-1.0000E-03	-1.0000E-03	4.3750E-03	3.7397E-03	1.0381E-38	-1.0009E-38	6.3530E-04	9.1628E-39
24.00	-1.0000E-03	-1.0000E-03	4.6000E-03	3.9801E-03	1.0628E-38	-1.0108E-38	6.1987E-04	8.8920E-39
24.25	-1.0000E-03	-1.0000E-03	4.8250E-03	4.2236E-03	1.0790E-38	-1.0173E-38	6.0137E-04	8.7271E-39
24.50	-1.0000E-03	-1.0000E-03	5.0500E-03	4.4707E-03	1.0976E-38	-1.0248E-38	5.7933E-04	8.5373E-39
24.75	-1.0000E-03	-1.0000E-03	5.2750E-03	4.7209E-03	1.1140E-38	-1.0314E-38	5.5406E-04	8.3705E-39
25.00	-1.0000E-03	-1.0000E-03	5.5000E-03	4.9750E-03	1.1326E-38	-1.0389E-38	5.2504E-04	8.1813E-39
25.25	-1.0000E-03	-1.0000E-03	5.7250E-03	5.2310E-03	1.1412E-38	-1.0424E-38	4.9397E-04	8.0941E-39
25.50	-1.0000E-03	-1.0000E-03	5.9500E-03	5.4896E-03	1.1520E-38	-1.0468E-38	4.6043E-04	7.9834E-39
25.75	1.0000E-03	-1.0000E-03	6.1750E-03	5.7503E-03	1.1610E-38	-1.0504E-38	4.2468E-04	7.8924E-39
26.00	-1.0000E-03	-1.0000E-03	6.4000E-03	6.0130E-03	1.1683E-38	-1.0534E-38	3.8698E-04	7.8178E-39
26.25	-1.0000E-03	-1.0000E-03	6.6250E-03	6.2774E-03	1.1742E-38	-1.0558E-38	3.4755E-04	7.7587E-39
26.50	-1.0000E-03	-1.0000E-03	6.8500E-03	6.5434E-03	1.1786E-38	-1.0576E-38	3.0662E-04	7.7141E-39
26.75	-1.0000E-03	-1.0000E-03	7.0750E-03	6.8115E-03	1.1859E-38	-1.0606E-38	2.6347E-04	7.6395E-39
27.00	-1.0000E-03	-1.0000E-03	7.3000E-03	7.0799E-03	1.1830E-38	-1.0594E-38	2.2008E-04	7.6689E-39
27.25	-1.0000E-03	-1.0000E-03	7.5250E-03	7.3492E-03	1.1838E-38	-1.0598E-38	1.7577E-04	7.6609E-39
27.50	-1.0000E-03	-1.0000E-03	7.7500E-03	7.6192E-03	1.1834E-38	-1.0597E-38	1.3077E-04	7.6652E-39
27.75	-1.0000E-03	-1.0000E-03	7.9750E-03	7.8898E-03	1.1821E-38	-1.0592E-38	8.5243E-05	7.6785E-39
28.00	-1.0000E-03	-1.0000E-03	8.2000E-03	8.1607E-03	1.1800E-38	-1.0584E-38	3.9349E-05	7.6999E-39
28.25	-1.0000E-03	-1.0000E-03	8.4250E-03	8.4318E-03	1.1772E-38	-1.0573E-38	-6.7652E-06	7.7284E-39
28.50	-1.0000E-03	-1.0000E-03	8.6500E-03	8.7030E-03	1.1738E-38	-1.0559E-38	-5.2966E-05	7.7630E-39
28.75	-1.0000E-03	-1.0000E-03	8.8750E-03	8.9741E-03	1.1699E-38	-1.0544E-38	-9.9133E-05	7.8030E-39
29.00	-1.0000E-03	-1.0000E-03	9.1000E-03	9.2452E-03	1.1655E-38	-1.0527E-38	-1.4516E-04	7.8473E-39
29.25	-1.0000E-03	-1.0000E-03	9.3250E-03	9.5159E-03	1.1608E-38	-1.0508E-38	-1.9094E-04	7.8953E-39
29.50	-1.0000E-03	-1.0000E-03	9.5500E-03	9.7864E-03	1.1557E-38	-1.0488E-38	-2.3640E-04	7.9462E-39
29.75	-1.0000E-03	-1.0000E-03	9.7750E-03	1.0056E-02	1.1505E-38	-1.0467E-38	-2.8147E-04	7.9994E-39
30.00	-1.0000E-03	-1.0000E-03	1.0000E-02	1.0326E-02	1.1450E-38	-1.0446E-38	-3.2607E-04	8.0544E-39
30.25	-1.0000E-03	-1.0000E-03	1.0125E-02	1.0473E-02	6.2393E-39	-5.7533E-39	-3.4762E-04	4.5988E-39
30.50	-1.0000E-03	-1.0000E-03	1.0250E-02	1.0622E-02	6.3570E-39	-5.8004E-39	-3.7189E-04	4.4800E-39
30.75	-1.0000E-03	-1.0000E-03	1.0375E-02	1.0771E-02	6.3444E-39	-5.7954E-39	-3.9607E-04	4.4928E-39
31.00	-1.0000E-03	-1.0000E-03	1.0500E-02	1.0920E-02	6.3283E-39	-5.7890E-39	-4.2010E-04	4.5091E-39
31.25	-1.0000E-03	-1.0000E-03	1.0625E-02	1.1069E-02	6.3118E-39	-5.7825E-39	-4.4395E-04	4.5257E-39
31.50	-1.0000E-03	-1.0000E-03	1.0750E-02	1.1218E-02	6.2953E-39	-5.7760E-39	-4.6762E-04	4.5423E-39
31.75	-1.0000E-03	-1.0000E-03	1.0875E-02	1.1366E-02	6.2787E-39	-5.7694E-39	-4.9111E-04	4.5590E-39
32.00	-1.0000E-03	-1.0000E-03	1.1000E-02	1.1514E-02	6.2621E-39	-5.7628E-39	-5.1441E-04	4.5757E-39
32.25	-1.0000E-03	-1.0000E-03	1.1125E-02	1.1663E-02	6.2455E-39	-5.7562E-39	-5.3752E-04	4.5925E-39
32.50	-1.0000E-03	-1.0000E-03	1.1250E-02	1.1810E-02	6.2290E-39	-5.7497E-39	-5.6043E-04	4.6091E-39
32.75	-1.0000E-03	-1.0000E-03	1.1375E-02	1.1958E-02	6.2125E-39	-5.7432E-39	-5.8314E-04	4.6257E-39
33.00	-1.0000E-03	-1.0000E-03	1.1500E-02	1.2106E-02	6.1960E-39	-5.7366E-39	-6.0565E-04	4.6423E-39
33.25	-1.0000E-03	-1.0000E-03	1.1625E-02	1.2253E-02	6.1797E-39	-5.7302E-39	-6.2795E-04	4.6587E-39
33.50	-1.0000E-03	-1.0000E-03	1.1750E-02	1.2400E-02	6.1635E-39	-5.7238E-39	-6.5005E-04	4.6750E-39
33.75	-1.0000E-03	-1.0000E-03	1.1875E-02	1.2547E-02	6.1474E-39	-5.7174E-39	-6.7194E-04	4.6912E-39
34.00	-1.0000E-03	-1.0000E-03	1.2000E-02	1.2694E-02	6.1314E-39	-5.7111E-39	-6.9362E-04	4.7073E-39
34.25	-1.0000E-03	-1.0000E-03	1.2125E-02	1.2840E-02	6.1156E-39	-5.7048E-39	-7.1509E-04	4.7232E-39
34.50	-1.0000E-03	-1.0000E-03	1.2250E-02	1.2986E-02	6.1000E-39	-5.6986E-39	-7.3635E-04	4.7389E-39
34.75	-1.0000E-03	-1.0000E-03	1.2375E-02	1.3132E-02	6.0845E-39	-5.6925E-39	-7.5740E-04	4.7545E-39
35.00	-1.0000E-03	-1.0000E-03	1.2500E-02	1.3278E-02	6.0692E-39	-5.6864E-39	-7.7824E-04	4.7699E-39
35.25	-1.0000E-03	-1.0000E-03	1.2625E-02	1.3424E-02	6.0541E-39	-5.6804E-39	-7.9888E-04	4.7851E-39
35.50	-1.0000E-03	-1.0000E-03	1.2750E-02	1.3569E-02	6.0392E-39	-5.6745E-39	-8.1930E-04	4.8000E-39
35.75	-1.0000E-03	-1.0000E-03	1.2875E-02	1.3715E-02	6.0245E-39	-5.6687E-39	-8.3952E-04	4.8148E-39
36.00	-1.0000E-03	-1.0000E-03	1.3000E-02	1.3858E-02	5.9686E-39	-5.6465E-39	-8.5803E-04	4.8710E-39
36.25	-1.0000E-03	-1.0000E-03	1.3125E-02	1.4004E-02	6.0508E-39	-5.6794E-39	-8.7921E-04	4.7883E-39
36.50	-1.0000E-03	-1.0000E-03	1.3250E-02	1.4147E-02	5.9445E-39	-5.6369E-39	-8.9740E-04	4.8952E-39
36.75	-1.0000E-03	-1.0000E-03	1.3375E-02	1.4292E-02	5.9806E-39	-5.6514E-39	-9.1664E-04	4.8589E-39
37.00	-1.0000E-03	-1.0000E-03	1.3500E-02	1.4436E-02	5.9714E-39	-5.6478E-39	-9.3579E-04	4.8681E-39
37.25	-1.0000E-03	-1.0000E-03	1.3625E-02	1.4580E-02	5.9583E-39	-5.6426E-39	-9.5475E-04	4.8813E-39
37.50	-1.0000E-03	-1.0000E-03	1.3750E-02	1.4724E-02	5.9450E-39	-5.6374E-39	-9.7353E-04	4.8947E-39
37.75	-1.0000E-03	-1.0000E-03	1.3875E-02	1.4867E-02	5.9319E-39	-5.6322E-39	-9.9213E-04	4.9079E-39
38.00	-1.0000E-03	-1.0000E-03	1.4000E-02	1.5011E-02	5.9190E-39	-5.6270E-39	-1.0105E-03	4.9209E-39
38.25	-1.0000E-03	-1.0000E-03	1.4125E-02	1.5154E-02	5.9062E-39	-5.6220E-39	-1.0288E-03	4.9337E-39
38.50	-1.0000E-03	-1.0000E-03	1.4250E-02	1.5297E-02	5.8937E-39	-5.6170E-39	-1.0468E-03	4.9462E-39
38.75	-1.0000E-03	-1.0000E-03	1.4375E-02	1.5440E-02	5.8814E-39	-5.6122E-39	-1.0647E-03	4.9586E-39
39.00	-1.0000E-03	-1.0000E-03	1.4500E-02	1.5582E-02	5.8693E-39	-5.6074E-39	-1.0824E-03	4.9708E-39
39.25	-1.0000E-03	-1.0000E-03	1.4625E-02	1.5725E-02	5.8574E-39	-5.6027E-39	-1.0999E-03	4.9828E-39
39.50	-1.0000E-03	-1.0000E-03	1.4750E-02	1.5867E-02	5.8457E-39	-5.5980E-39	-1.1172E-03	4.9945E-39

39.75	-1.0000E-03	-1.0000E-03	1.4875E-02	1.6009E-02	5.8342E-39	-5.5935E-39	-1.1344E-03	5.0061E-39
40.00	-1.0000E-03	-1.0000E-03	1.5000E-02	1.6151E-02	5.8229E-39	-5.5890E-39	-1.1514E-03	5.0175E-39

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 2

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	RF1-3	1.695E+03	22.8	.000E+00	10.0
2	RF1-13	.000E+00	40.0	.000E+00	40.0
3	RF2-3	-102.	1.00	-1.919E+03	22.0
4	RF2-13	-59.9	40.0	-1.023E+03	10.0
5	RF1-1	.000E+00	40.0	.000E+00	40.0
6	RF1-11	2.364E-14	7.00	-1.695E+03	22.8
7	RF2-1	1.023E+03	10.0	59.9	40.0
8	RF2-11	1.919E+03	22.0	102.	1.00

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	.0000E+00	.0000E+00	-102.3	-102.3	.0000E+00	-4.4409E-15	102.3	102.3
2.000	.0000E+00	.0000E+00	-204.6	-204.6	.0000E+00	-3.0055E-15	204.6	204.6
3.000	.0000E+00	.0000E+00	-306.9	-306.9	.0000E+00	5.8763E-15	306.9	306.9
4.000	.0000E+00	.0000E+00	-409.2	-409.2	.0000E+00	-2.3236E-15	409.2	409.2
5.000	.0000E+00	.0000E+00	-511.5	-511.5	.0000E+00	-2.3236E-15	511.5	511.5
6.000	.0000E+00	.0000E+00	-613.8	-613.8	.0000E+00	-1.4211E-14	613.8	613.8
7.000	.0000E+00	.0000E+00	-716.1	-716.1	.0000E+00	2.3640E-14	716.1	716.1
8.000	.0000E+00	.0000E+00	-818.4	-818.4	.0000E+00	-9.4290E-15	818.4	818.4
9.000	.0000E+00	.0000E+00	-920.7	-920.7	.0000E+00	-1.8858E-14	920.7	920.7
10.00	.0000E+00	.0000E+00	-1023.	-1023.	.0000E+00	2.3236E-15	1023.	1023.
10.25	18.12	.0000E+00	-1034.	-1016.	.0000E+00	-18.12	1016.	1034.
10.50	36.23	.0000E+00	-1044.	-1008.	.0000E+00	-36.23	1008.	1044.
10.75	54.35	.0000E+00	-1055.	-1001.	.0000E+00	-54.35	1001.	1055.
11.00	72.46	.0000E+00	-1066.	-993.2	.0000E+00	-72.46	993.2	1066.
11.25	90.58	.0000E+00	-1076.	-985.7	.0000E+00	-90.58	985.7	1076.
11.50	108.7	.0000E+00	-1087.	-978.3	.0000E+00	-108.7	978.3	1087.
11.75	126.8	.0000E+00	-1098.	-970.8	.0000E+00	-126.8	970.8	1098.
12.00	144.9	.0000E+00	-1108.	-963.3	.0000E+00	-144.9	963.3	1108.
12.25	163.0	.0000E+00	-1119.	-955.9	.0000E+00	-163.0	955.9	1119.
12.50	181.2	.0000E+00	-1130.	-948.4	.0000E+00	-181.2	948.4	1130.
12.75	199.3	.0000E+00	-1140.	-941.0	.0000E+00	-199.3	941.0	1140.
13.00	217.4	.0000E+00	-1151.	-933.5	.0000E+00	-217.4	933.5	1151.
13.25	235.5	.0000E+00	-1162.	-926.0	.0000E+00	-235.5	926.0	1162.
13.50	253.6	.0000E+00	-1172.	-918.6	.0000E+00	-253.6	918.6	1172.
13.75	271.7	.0000E+00	-1183.	-911.1	.0000E+00	-271.7	911.1	1183.
14.00	289.9	.0000E+00	-1194.	-903.7	.0000E+00	-289.9	903.7	1194.
14.25	308.0	.0000E+00	-1204.	-896.2	.0000E+00	-308.0	896.2	1204.
14.50	326.1	.0000E+00	-1215.	-888.7	.0000E+00	-326.1	888.7	1215.
14.75	344.2	.0000E+00	-1225.	-881.3	.0000E+00	-344.2	881.3	1225.
15.00	362.3	.0000E+00	-1236.	-873.8	.0000E+00	-362.3	873.8	1236.
15.25	380.4	.0000E+00	-1247.	-866.4	.0000E+00	-380.4	866.4	1247.
15.50	398.6	.0000E+00	-1257.	-858.9	.0000E+00	-398.6	858.9	1257.
15.75	416.7	.0000E+00	-1268.	-851.4	.0000E+00	-416.7	851.4	1268.
16.00	434.8	.0000E+00	-1279.	-844.0	.0000E+00	-434.8	844.0	1279.
16.25	452.9	.0000E+00	-1289.	-836.5	.0000E+00	-452.9	836.5	1289.
16.50	471.0	.0000E+00	-1300.	-829.1	.0000E+00	-471.0	829.1	1300.
16.75	489.1	.0000E+00	-1311.	-821.6	.0000E+00	-489.1	821.6	1311.
17.00	507.2	.0000E+00	-1321.	-814.2	.0000E+00	-507.2	814.2	1321.
17.25	525.4	.0000E+00	-1332.	-806.7	.0000E+00	-525.4	806.7	1332.
17.50	543.5	.0000E+00	-1343.	-799.2	.0000E+00	-543.5	799.2	1343.
17.75	561.6	.0000E+00	-1353.	-791.8	.0000E+00	-561.6	791.8	1353.
18.00	579.7	.0000E+00	-1364.	-784.3	.0000E+00	-579.7	784.3	1364.
18.25	597.8	.0000E+00	-1375.	-776.9	.0000E+00	-597.8	776.9	1375.
18.50	615.9	.0000E+00	-1385.	-769.4	.0000E+00	-615.9	769.4	1385.
18.75	634.1	.0000E+00	-1396.	-761.9	.0000E+00	-634.1	761.9	1396.
19.00	652.2	.0000E+00	-1407.	-754.5	.0000E+00	-652.2	754.5	1407.
19.25	670.3	.0000E+00	-1417.	-747.0	.0000E+00	-670.3	747.0	1417.
19.50	688.4	.0000E+00	-1428.	-739.6	.0000E+00	-688.4	739.6	1428.
19.75	706.5	.0000E+00	-1439.	-732.1	.0000E+00	-706.5	732.1	1439.
20.00	724.6	.0000E+00	-1449.	-724.6	.0000E+00	-724.6	724.6	1449.
20.25	863.2	.0000E+00	-1531.	-667.6	.0000E+00	-863.2	667.6	1531.

20.50	1002.	.0000E+00	-1612.	-610.5	.0000E+00	-1002.	610.5	1612.
20.75	1140.	.0000E+00	-1694.	-553.4	.0000E+00	-1140.	553.4	1694.
21.00	1279.	.0000E+00	-1775.	-496.4	.0000E+00	-1279.	496.4	1775.
21.25	1406.	.0000E+00	-1845.	-439.1	.0000E+00	-1406.	439.1	1845.
21.50	1501.	.0000E+00	-1884.	-384.0	.0000E+00	-1501.	384.0	1884.
21.75	1576.	.0000E+00	-1908.	-332.6	.0000E+00	-1576.	332.6	1908.
22.00	1633.	.0000E+00	-1919.	-286.6	.0000E+00	-1633.	286.6	1919.
22.25	1669.	.0000E+00	-1915.	-246.6	.0000E+00	-1669.	246.6	1915.
22.50	1688.	.0000E+00	-1901.	-213.1	.0000E+00	-1688.	213.1	1901.
22.75	1695.	.0000E+00	-1879.	-185.4	.0000E+00	-1695.	185.4	1879.
23.00	1689.	.0000E+00	-1852.	-163.1	.0000E+00	-1689.	163.1	1852.
23.25	1674.	.0000E+00	-1820.	-146.5	.0000E+00	-1674.	146.5	1820.
23.50	1651.	.0000E+00	-1785.	-134.4	.0000E+00	-1651.	134.4	1785.
23.75	1622.	.0000E+00	-1747.	-126.1	.0000E+00	-1622.	126.1	1747.
24.00	1587.	.0000E+00	-1707.	-120.8	.0000E+00	-1587.	120.8	1707.
24.25	1549.	.0000E+00	-1666.	-118.1	.0000E+00	-1549.	118.1	1666.
24.50	1508.	.0000E+00	-1624.	-117.3	.0000E+00	-1508.	117.3	1624.
24.75	1465.	.0000E+00	-1582.	-118.0	.0000E+00	-1465.	118.0	1582.
25.00	1421.	.0000E+00	-1540.	-119.6	.0000E+00	-1421.	119.6	1540.
25.25	1377.	.0000E+00	-1498.	-122.0	.0000E+00	-1377.	122.0	1498.
25.50	1333.	.0000E+00	-1457.	-124.7	.0000E+00	-1333.	124.7	1457.
25.75	1289.	.0000E+00	-1416.	-127.5	.0000E+00	-1289.	127.5	1416.
26.00	1246.	.0000E+00	-1376.	-130.3	.0000E+00	-1246.	130.3	1376.
26.25	1204.	.0000E+00	-1336.	-132.8	.0000E+00	-1204.	132.8	1336.
26.50	1164.	.0000E+00	-1298.	-135.0	.0000E+00	-1164.	135.0	1298.
26.75	1124.	.0000E+00	-1260.	-136.8	.0000E+00	-1124.	136.8	1260.
27.00	1086.	.0000E+00	-1224.	-138.0	.0000E+00	-1086.	138.0	1224.
27.25	1050.	.0000E+00	-1188.	-138.8	.0000E+00	-1050.	138.8	1188.
27.50	1015.	.0000E+00	-1153.	-139.1	.0000E+00	-1015.	139.1	1153.
27.75	981.8	.0000E+00	-1120.	-138.9	.0000E+00	-981.8	138.9	1120.
28.00	950.1	.0000E+00	-1088.	-138.2	.0000E+00	-950.1	138.2	1088.
28.25	919.8	.0000E+00	-1056.	-137.1	.0000E+00	-919.8	137.1	1056.
28.50	891.0	.0000E+00	-1026.	-135.7	.0000E+00	-891.0	135.7	1026.
28.75	863.6	.0000E+00	-996.7	-133.8	.0000E+00	-863.6	133.8	996.7
29.00	837.5	.0000E+00	-968.5	-131.7	.0000E+00	-837.5	131.7	968.5
29.25	812.7	.0000E+00	-941.3	-129.3	.0000E+00	-812.7	129.3	941.3
29.50	789.1	.0000E+00	-915.1	-126.7	.0000E+00	-789.1	126.7	915.1
29.75	766.6	.0000E+00	-889.9	-123.9	.0000E+00	-766.6	123.9	889.9
30.00	745.3	.0000E+00	-865.6	-121.0	.0000E+00	-745.3	121.0	865.6
30.25	736.3	.0000E+00	-854.2	-118.7	.0000E+00	-736.3	118.7	854.2
30.50	725.2	.0000E+00	-841.4	-117.1	.0000E+00	-725.2	117.1	841.4
30.75	714.3	.0000E+00	-828.9	-115.5	.0000E+00	-714.3	115.5	828.9
31.00	703.7	.0000E+00	-816.6	-113.8	.0000E+00	-703.7	113.8	816.6
31.25	693.3	.0000E+00	-804.6	-112.1	.0000E+00	-693.3	112.1	804.6
31.50	683.3	.0000E+00	-792.8	-110.4	.0000E+00	-683.3	110.4	792.8
31.75	673.5	.0000E+00	-781.3	-108.6	.0000E+00	-673.5	108.6	781.3
32.00	664.0	.0000E+00	-770.1	-106.9	.0000E+00	-664.0	106.9	770.1
32.25	654.7	.0000E+00	-759.1	-105.2	.0000E+00	-654.7	105.2	759.1
32.50	645.6	.0000E+00	-748.3	-103.4	.0000E+00	-645.6	103.4	748.3
32.75	636.8	.0000E+00	-737.8	-101.7	.0000E+00	-636.8	101.7	737.8
33.00	628.2	.0000E+00	-727.4	-99.96	.0000E+00	-628.2	99.96	727.4
33.25	619.8	.0000E+00	-717.4	-98.24	.0000E+00	-619.8	98.24	717.4
33.50	611.7	.0000E+00	-707.5	-96.52	.0000E+00	-611.7	96.52	707.5
33.75	603.7	.0000E+00	-697.8	-94.82	.0000E+00	-603.7	94.82	697.8
34.00	595.9	.0000E+00	-688.4	-93.14	.0000E+00	-595.9	93.14	688.4
34.25	588.3	.0000E+00	-679.1	-91.47	.0000E+00	-588.3	91.47	679.1
34.50	580.9	.0000E+00	-670.1	-89.82	.0000E+00	-580.9	89.82	670.1
34.75	573.7	.0000E+00	-661.2	-88.19	.0000E+00	-573.7	88.19	661.2
35.00	566.6	.0000E+00	-652.6	-86.58	.0000E+00	-566.6	86.58	652.6
35.25	559.7	.0000E+00	-644.1	-84.99	.0000E+00	-559.7	84.99	644.1
35.50	553.0	.0000E+00	-635.8	-83.42	.0000E+00	-553.0	83.42	635.8
35.75	546.4	.0000E+00	-627.7	-81.88	.0000E+00	-546.4	81.88	627.7
36.00	540.7	.0000E+00	-620.1	-80.41	.0000E+00	-540.7	80.41	620.1
36.25	533.7	.0000E+00	-612.1	-78.90	.0000E+00	-533.7	78.90	612.1
36.50	528.3	.0000E+00	-604.8	-77.47	.0000E+00	-528.3	77.47	604.8
36.75	522.3	.0000E+00	-597.4	-76.06	.0000E+00	-522.3	76.06	597.4
37.00	516.4	.0000E+00	-590.1	-74.67	.0000E+00	-516.4	74.67	590.1
37.25	510.7	.0000E+00	-583.0	-73.30	.0000E+00	-510.7	73.30	583.0
37.50	505.0	.0000E+00	-576.1	-71.95	.0000E+00	-505.0	71.95	576.1
37.75	499.5	.0000E+00	-569.3	-70.64	.0000E+00	-499.5	70.64	569.3
38.00	494.1	.0000E+00	-562.6	-69.34	.0000E+00	-494.1	69.34	562.6
38.25	488.9	.0000E+00	-556.1	-68.08	.0000E+00	-488.9	68.08	556.1
38.50	483.7	.0000E+00	-549.7	-66.83	.0000E+00	-483.7	66.83	549.7
38.75	478.6	.0000E+00	-543.4	-65.62	.0000E+00	-478.6	65.62	543.4
39.00	473.7	.0000E+00	-537.3	-64.43	.0000E+00	-473.7	64.43	537.3
39.25	468.8	.0000E+00	-531.3	-63.26	.0000E+00	-468.8	63.26	531.3

39.50	464.0	.0000E+00	-525.4	-62.12	.0000E+00	-464.0	62.12	525.4
39.75	459.4	.0000E+00	-519.6	-61.00	.0000E+00	-459.4	61.00	519.6
40.00	454.8	.0000E+00	-514.0	-59.91	.0000E+00	-454.8	59.91	514.0

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 3

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E11-1-1	1.151E-03	40.0	-6.536E-04	23.0
2	E11-2-1	1.151E-03	40.0	-6.536E-04	23.0
3	E11-3-1	1.151E-03	40.0	-6.536E-04	23.0
4	E11-4-1	1.151E-03	40.0	-6.536E-04	23.0

TIME	VARIABLE 1	2	3	4
1.000	1.7647E-05	1.7647E-05	1.7647E-05	1.7647E-05
2.000	3.5294E-05	3.5294E-05	3.5294E-05	3.5294E-05
3.000	5.2941E-05	5.2941E-05	5.2941E-05	5.2941E-05
4.000	7.0588E-05	7.0588E-05	7.0588E-05	7.0588E-05
5.000	8.8235E-05	8.8235E-05	8.8235E-05	8.8235E-05
6.000	1.0588E-04	1.0588E-04	1.0588E-04	1.0588E-04
7.000	1.2353E-04	1.2353E-04	1.2353E-04	1.2353E-04
8.000	1.4118E-04	1.4118E-04	1.4118E-04	1.4118E-04
9.000	1.5882E-04	1.5882E-04	1.5882E-04	1.5882E-04
10.00	1.7647E-04	1.7647E-04	1.7647E-04	1.7647E-04
10.25	1.6789E-04	1.6789E-04	1.6789E-04	1.6789E-04
10.50	1.5931E-04	1.5931E-04	1.5931E-04	1.5931E-04
10.75	1.5074E-04	1.5074E-04	1.5074E-04	1.5074E-04
11.00	1.4216E-04	1.4216E-04	1.4216E-04	1.4216E-04
11.25	1.3358E-04	1.3358E-04	1.3358E-04	1.3358E-04
11.50	1.2500E-04	1.2500E-04	1.2500E-04	1.2500E-04
11.75	1.1642E-04	1.1642E-04	1.1642E-04	1.1642E-04
12.00	1.0784E-04	1.0784E-04	1.0784E-04	1.0784E-04
12.25	9.9265E-05	9.9265E-05	9.9265E-05	9.9265E-05
12.50	9.0686E-05	9.0686E-05	9.0686E-05	9.0686E-05
12.75	8.2108E-05	8.2108E-05	8.2108E-05	8.2108E-05
13.00	7.3529E-05	7.3529E-05	7.3529E-05	7.3529E-05
13.25	6.4951E-05	6.4951E-05	6.4951E-05	6.4951E-05
13.50	5.6373E-05	5.6373E-05	5.6373E-05	5.6373E-05
13.75	4.7794E-05	4.7794E-05	4.7794E-05	4.7794E-05
14.00	3.9216E-05	3.9216E-05	3.9216E-05	3.9216E-05
14.25	3.0637E-05	3.0637E-05	3.0637E-05	3.0637E-05
14.50	2.2059E-05	2.2059E-05	2.2059E-05	2.2059E-05
14.75	1.3480E-05	1.3480E-05	1.3480E-05	1.3480E-05
15.00	4.9020E-06	4.9020E-06	4.9020E-06	4.9020E-06
15.25	-3.6765E-06	-3.6765E-06	-3.6765E-06	-3.6765E-06
15.50	-1.2255E-05	-1.2255E-05	-1.2255E-05	-1.2255E-05
15.75	-2.0833E-05	-2.0833E-05	-2.0833E-05	-2.0833E-05
16.00	-2.9412E-05	-2.9412E-05	-2.9412E-05	-2.9412E-05
16.25	-3.7990E-05	-3.7990E-05	-3.7990E-05	-3.7990E-05
16.50	-4.6569E-05	-4.6569E-05	-4.6569E-05	-4.6569E-05
16.75	-5.5147E-05	-5.5147E-05	-5.5147E-05	-5.5147E-05
17.00	-6.3725E-05	-6.3725E-05	-6.3725E-05	-6.3725E-05
17.25	-7.2304E-05	-7.2304E-05	-7.2304E-05	-7.2304E-05
17.50	-8.0882E-05	-8.0882E-05	-8.0882E-05	-8.0882E-05
17.75	-8.9461E-05	-8.9461E-05	-8.9461E-05	-8.9461E-05
18.00	-9.8039E-05	-9.8039E-05	-9.8039E-05	-9.8039E-05
18.25	-1.0662E-04	-1.0662E-04	-1.0662E-04	-1.0662E-04
18.50	-1.1520E-04	-1.1520E-04	-1.1520E-04	-1.1520E-04
18.75	-1.2377E-04	-1.2377E-04	-1.2377E-04	-1.2377E-04
19.00	-1.3235E-04	-1.3235E-04	-1.3235E-04	-1.3235E-04
19.25	-1.4093E-04	-1.4093E-04	-1.4093E-04	-1.4093E-04
19.50	-1.4951E-04	-1.4951E-04	-1.4951E-04	-1.4951E-04
19.75	-1.5809E-04	-1.5809E-04	-1.5809E-04	-1.5809E-04
20.00	-1.6667E-04	-1.6667E-04	-1.6667E-04	-1.6667E-04
20.25	-2.3229E-04	-2.3229E-04	-2.3229E-04	-2.3229E-04
20.50	-2.9792E-04	-2.9792E-04	-2.9792E-04	-2.9792E-04
20.75	-3.6354E-04	-3.6354E-04	-3.6354E-04	-3.6354E-04
21.00	-4.2917E-04	-4.2917E-04	-4.2917E-04	-4.2917E-04
21.25	-4.8922E-04	-4.8922E-04	-4.8922E-04	-4.8922E-04

21.50	-5.3548E-04	-5.3548E-04	-5.3548E-04	-5.3548E-04
21.75	-5.7275E-04	-5.7275E-04	-5.7275E-04	-5.7275E-04
22.00	-6.0314E-04	-6.0314E-04	-6.0314E-04	-6.0314E-04
22.25	-6.2506E-04	-6.2506E-04	-6.2506E-04	-6.2506E-04
22.50	-6.4012E-04	-6.4012E-04	-6.4012E-04	-6.4012E-04
22.75	-6.4948E-04	-6.4948E-04	-6.4948E-04	-6.4948E-04
23.00	-6.5362E-04	-6.5362E-04	-6.5362E-04	-6.5362E-04
23.25	-6.5184E-04	-6.5184E-04	-6.5184E-04	-6.5184E-04
23.50	-6.4571E-04	-6.4571E-04	-6.4571E-04	-6.4571E-04
23.75	-6.3530E-04	-6.3530E-04	-6.3530E-04	-6.3530E-04
24.00	-6.1987E-04	-6.1987E-04	-6.1987E-04	-6.1987E-04
24.25	-6.0137E-04	-6.0137E-04	-6.0137E-04	-6.0137E-04
24.50	-5.7933E-04	-5.7933E-04	-5.7933E-04	-5.7933E-04
24.75	-5.5406E-04	-5.5406E-04	-5.5406E-04	-5.5406E-04
25.00	-5.2504E-04	-5.2504E-04	-5.2504E-04	-5.2504E-04
25.25	-4.9397E-04	-4.9397E-04	-4.9397E-04	-4.9397E-04
25.50	-4.6043E-04	-4.6043E-04	-4.6043E-04	-4.6043E-04
25.75	-4.2468E-04	-4.2468E-04	-4.2468E-04	-4.2468E-04
26.00	-3.8698E-04	-3.8698E-04	-3.8698E-04	-3.8698E-04
26.25	-3.4755E-04	-3.4755E-04	-3.4755E-04	-3.4755E-04
26.50	-3.0662E-04	-3.0662E-04	-3.0662E-04	-3.0662E-04
26.75	-2.6347E-04	-2.6347E-04	-2.6347E-04	-2.6347E-04
27.00	-2.2008E-04	-2.2008E-04	-2.2008E-04	-2.2008E-04
27.25	-1.7577E-04	-1.7577E-04	-1.7577E-04	-1.7577E-04
27.50	-1.3077E-04	-1.3077E-04	-1.3077E-04	-1.3077E-04
27.75	-8.5243E-05	-8.5243E-05	-8.5243E-05	-8.5243E-05
28.00	-3.9349E-05	-3.9349E-05	-3.9349E-05	-3.9349E-05
28.25	6.7652E-06	6.7652E-06	6.7652E-06	6.7652E-06
28.50	5.2966E-05	5.2966E-05	5.2966E-05	5.2966E-05
28.75	9.9133E-05	9.9133E-05	9.9133E-05	9.9133E-05
29.00	1.4516E-04	1.4516E-04	1.4516E-04	1.4516E-04
29.25	1.9094E-04	1.9094E-04	1.9094E-04	1.9094E-04
29.50	2.3640E-04	2.3640E-04	2.3640E-04	2.3640E-04
29.75	2.8147E-04	2.8147E-04	2.8147E-04	2.8147E-04
30.00	3.2607E-04	3.2607E-04	3.2607E-04	3.2607E-04
30.25	3.4762E-04	3.4762E-04	3.4762E-04	3.4762E-04
30.50	3.7189E-04	3.7189E-04	3.7189E-04	3.7189E-04
30.75	3.9607E-04	3.9607E-04	3.9607E-04	3.9607E-04
31.00	4.2010E-04	4.2010E-04	4.2010E-04	4.2010E-04
31.25	4.4395E-04	4.4395E-04	4.4395E-04	4.4395E-04
31.50	4.6762E-04	4.6762E-04	4.6762E-04	4.6762E-04
31.75	4.9111E-04	4.9111E-04	4.9111E-04	4.9111E-04
32.00	5.1441E-04	5.1441E-04	5.1441E-04	5.1441E-04
32.25	5.3752E-04	5.3752E-04	5.3752E-04	5.3752E-04
32.50	5.6043E-04	5.6043E-04	5.6043E-04	5.6043E-04
32.75	5.8314E-04	5.8314E-04	5.8314E-04	5.8314E-04
33.00	6.0565E-04	6.0565E-04	6.0565E-04	6.0565E-04
33.25	6.2795E-04	6.2795E-04	6.2795E-04	6.2795E-04
33.50	6.5005E-04	6.5005E-04	6.5005E-04	6.5005E-04
33.75	6.7194E-04	6.7194E-04	6.7194E-04	6.7194E-04
34.00	6.9362E-04	6.9362E-04	6.9362E-04	6.9362E-04
34.25	7.1509E-04	7.1509E-04	7.1509E-04	7.1509E-04
34.50	7.3635E-04	7.3635E-04	7.3635E-04	7.3635E-04
34.75	7.5740E-04	7.5740E-04	7.5740E-04	7.5740E-04
35.00	7.7824E-04	7.7824E-04	7.7824E-04	7.7824E-04
35.25	7.9888E-04	7.9888E-04	7.9888E-04	7.9888E-04
35.50	8.1930E-04	8.1930E-04	8.1930E-04	8.1930E-04
35.75	8.3952E-04	8.3952E-04	8.3952E-04	8.3952E-04
36.00	8.5803E-04	8.5803E-04	8.5803E-04	8.5803E-04
36.25	8.7921E-04	8.7921E-04	8.7921E-04	8.7921E-04
36.50	8.9740E-04	8.9740E-04	8.9740E-04	8.9740E-04
36.75	9.1664E-04	9.1664E-04	9.1664E-04	9.1664E-04
37.00	9.3579E-04	9.3579E-04	9.3579E-04	9.3579E-04
37.25	9.5475E-04	9.5475E-04	9.5475E-04	9.5475E-04
37.50	9.7353E-04	9.7353E-04	9.7353E-04	9.7353E-04
37.75	9.9213E-04	9.9213E-04	9.9213E-04	9.9213E-04
38.00	1.0105E-03	1.0105E-03	1.0105E-03	1.0105E-03
38.25	1.0288E-03	1.0288E-03	1.0288E-03	1.0288E-03
38.50	1.0468E-03	1.0468E-03	1.0468E-03	1.0468E-03
38.75	1.0647E-03	1.0647E-03	1.0647E-03	1.0647E-03
39.00	1.0824E-03	1.0824E-03	1.0824E-03	1.0824E-03
39.25	1.0999E-03	1.0999E-03	1.0999E-03	1.0999E-03
39.50	1.1172E-03	1.1172E-03	1.1172E-03	1.1172E-03
39.75	1.1344E-03	1.1344E-03	1.1344E-03	1.1344E-03
40.00	1.1514E-03	1.1514E-03	1.1514E-03	1.1514E-03

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 4

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E22-1-1	-1.000E-04	1.00	-1.000E-03	40.0
2	E22-2-1	-1.000E-04	1.00	-1.000E-03	40.0
3	E22-3-1	-1.000E-04	1.00	-1.000E-03	26.3
4	E22-4-1	-1.000E-04	1.00	-1.000E-03	26.3

TIME	VARIABLE 1	2	3	4
1.000	-1.0000E-04	-1.0000E-04	-1.0000E-04	-1.0000E-04
2.000	-2.0000E-04	-2.0000E-04	-2.0000E-04	-2.0000E-04
3.000	-3.0000E-04	-3.0000E-04	-3.0000E-04	-3.0000E-04
4.000	-4.0000E-04	-4.0000E-04	-4.0000E-04	-4.0000E-04
5.000	-5.0000E-04	-5.0000E-04	-5.0000E-04	-5.0000E-04
6.000	-6.0000E-04	-6.0000E-04	-6.0000E-04	-6.0000E-04
7.000	-7.0000E-04	-7.0000E-04	-7.0000E-04	-7.0000E-04
8.000	-8.0000E-04	-8.0000E-04	-8.0000E-04	-8.0000E-04
9.000	-9.0000E-04	-9.0000E-04	-9.0000E-04	-9.0000E-04
10.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
10.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
10.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
10.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
11.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
11.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
11.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
11.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
12.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
12.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
12.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
12.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
13.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
13.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
13.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
13.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
14.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
14.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
14.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
14.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
15.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
15.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
15.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
15.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
16.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
16.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
16.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
16.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
17.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
17.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
17.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
17.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
18.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
18.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
18.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
18.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
19.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
19.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
19.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
19.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
20.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
20.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
20.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
20.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
21.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
21.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
21.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
21.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
22.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
22.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
22.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03

22.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
23.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
23.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
23.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
23.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
24.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
24.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
24.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
24.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
25.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
25.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
25.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
25.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
26.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
26.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
26.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
26.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
27.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
27.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
27.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
27.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
28.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
28.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
28.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
28.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
29.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
29.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
29.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
29.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
30.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
30.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
30.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
30.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
31.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
31.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
31.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
31.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
32.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
32.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
32.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
32.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
33.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
33.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
33.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
33.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
34.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
34.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
34.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
34.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
35.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
35.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
35.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
35.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
36.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
36.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
36.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
36.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
37.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
37.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
37.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
37.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
38.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
38.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
38.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
38.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
39.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
39.25	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
39.50	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
39.75	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03
40.00	-1.0000E-03	-1.0000E-03	-1.0000E-03	-1.0000E-03

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 5

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E12-1-1	1.615E-02	40.0	-2.033E-20	9.00
2	E12-2-1	1.615E-02	40.0	.000E+00	3.00
3	E12-3-1	1.615E-02	40.0	-1.355E-20	9.00
4	E12-4-1	1.615E-02	40.0	-1.355E-20	10.0

TIME	VARIABLE 1	2	3	4
1.000	-3.3881E-21	3.3881E-21	.0000E+00	.0000E+00
2.000	.0000E+00	.0000E+00	.0000E+00	-1.3553E-20
3.000	6.7763E-21	.0000E+00	.0000E+00	-1.3553E-20
4.000	.0000E+00	1.6941E-20	.0000E+00	1.3553E-20
5.000	-3.3881E-21	2.0329E-20	.0000E+00	1.3553E-20
6.000	-3.3881E-21	1.6941E-20	.0000E+00	.0000E+00
7.000	1.3553E-20	6.7763E-21	1.3553E-20	-1.3553E-20
8.000	-3.3881E-21	2.7105E-20	.0000E+00	1.3553E-20
9.000	-2.0329E-20	3.7269E-20	-1.3553E-20	2.7105E-20
10.00	1.0164E-20	6.7763E-21	1.3553E-20	-1.3553E-20
10.25	2.0833E-05	2.0833E-05	2.0833E-05	2.0833E-05
10.50	4.1667E-05	4.1667E-05	4.1667E-05	4.1667E-05
10.75	6.2500E-05	6.2500E-05	6.2500E-05	6.2500E-05
11.00	8.3333E-05	8.3333E-05	8.3333E-05	8.3333E-05
11.25	1.0417E-04	1.0417E-04	1.0417E-04	1.0417E-04
11.50	1.2500E-04	1.2500E-04	1.2500E-04	1.2500E-04
11.75	1.4583E-04	1.4583E-04	1.4583E-04	1.4583E-04
12.00	1.6667E-04	1.6667E-04	1.6667E-04	1.6667E-04
12.25	1.8750E-04	1.8750E-04	1.8750E-04	1.8750E-04
12.50	2.0833E-04	2.0833E-04	2.0833E-04	2.0833E-04
12.75	2.2917E-04	2.2917E-04	2.2917E-04	2.2917E-04
13.00	2.5000E-04	2.5000E-04	2.5000E-04	2.5000E-04
13.25	2.7083E-04	2.7083E-04	2.7083E-04	2.7083E-04
13.50	2.9167E-04	2.9167E-04	2.9167E-04	2.9167E-04
13.75	3.1250E-04	3.1250E-04	3.1250E-04	3.1250E-04
14.00	3.3333E-04	3.3333E-04	3.3333E-04	3.3333E-04
14.25	3.5417E-04	3.5417E-04	3.5417E-04	3.5417E-04
14.50	3.7500E-04	3.7500E-04	3.7500E-04	3.7500E-04
14.75	3.9583E-04	3.9583E-04	3.9583E-04	3.9583E-04
15.00	4.1667E-04	4.1667E-04	4.1667E-04	4.1667E-04
15.25	4.3750E-04	4.3750E-04	4.3750E-04	4.3750E-04
15.50	4.5833E-04	4.5833E-04	4.5833E-04	4.5833E-04
15.75	4.7917E-04	4.7917E-04	4.7917E-04	4.7917E-04
16.00	5.0000E-04	5.0000E-04	5.0000E-04	5.0000E-04
16.25	5.2083E-04	5.2083E-04	5.2083E-04	5.2083E-04
16.50	5.4167E-04	5.4167E-04	5.4167E-04	5.4167E-04
16.75	5.6250E-04	5.6250E-04	5.6250E-04	5.6250E-04
17.00	5.8333E-04	5.8333E-04	5.8333E-04	5.8333E-04
17.25	6.0417E-04	6.0417E-04	6.0417E-04	6.0417E-04
17.50	6.2500E-04	6.2500E-04	6.2500E-04	6.2500E-04
17.75	6.4583E-04	6.4583E-04	6.4583E-04	6.4583E-04
18.00	6.6667E-04	6.6667E-04	6.6667E-04	6.6667E-04
18.25	6.8750E-04	6.8750E-04	6.8750E-04	6.8750E-04
18.50	7.0833E-04	7.0833E-04	7.0833E-04	7.0833E-04
18.75	7.2917E-04	7.2917E-04	7.2917E-04	7.2917E-04
19.00	7.5000E-04	7.5000E-04	7.5000E-04	7.5000E-04
19.25	7.7083E-04	7.7083E-04	7.7083E-04	7.7083E-04
19.50	7.9167E-04	7.9167E-04	7.9167E-04	7.9167E-04
19.75	8.1250E-04	8.1250E-04	8.1250E-04	8.1250E-04
20.00	8.3333E-04	8.3333E-04	8.3333E-04	8.3333E-04
20.25	9.9271E-04	9.9271E-04	9.9271E-04	9.9271E-04
20.50	1.1521E-03	1.1521E-03	1.1521E-03	1.1521E-03
20.75	1.3115E-03	1.3115E-03	1.3115E-03	1.3115E-03
21.00	1.4708E-03	1.4708E-03	1.4708E-03	1.4708E-03
21.25	1.6358E-03	1.6358E-03	1.6358E-03	1.6358E-03
21.50	1.8145E-03	1.8145E-03	1.8145E-03	1.8145E-03
21.75	2.0022E-03	2.0022E-03	2.0022E-03	2.0022E-03
22.00	2.1969E-03	2.1969E-03	2.1969E-03	2.1969E-03
22.25	2.3999E-03	2.3999E-03	2.3999E-03	2.3999E-03
22.50	2.6099E-03	2.6099E-03	2.6099E-03	2.6099E-03
22.75	2.8255E-03	2.8255E-03	2.8255E-03	2.8255E-03
23.00	3.0464E-03	3.0464E-03	3.0464E-03	3.0464E-03
23.25	3.2732E-03	3.2732E-03	3.2732E-03	3.2732E-03
23.50	3.5043E-03	3.5043E-03	3.5043E-03	3.5043E-03
23.75	3.7397E-03	3.7397E-03	3.7397E-03	3.7397E-03

24.00	3.9801E-03	3.9801E-03	3.9801E-03	3.9801E-03
24.25	4.2236E-03	4.2236E-03	4.2236E-03	4.2236E-03
24.50	4.4707E-03	4.4707E-03	4.4707E-03	4.4707E-03
24.75	4.7209E-03	4.7209E-03	4.7209E-03	4.7209E-03
25.00	4.9750E-03	4.9750E-03	4.9750E-03	4.9750E-03
25.25	5.2310E-03	5.2310E-03	5.2310E-03	5.2310E-03
25.50	5.4896E-03	5.4896E-03	5.4896E-03	5.4896E-03
25.75	5.7503E-03	5.7503E-03	5.7503E-03	5.7503E-03
26.00	6.0130E-03	6.0130E-03	6.0130E-03	6.0130E-03
26.25	6.2774E-03	6.2774E-03	6.2774E-03	6.2774E-03
26.50	6.5434E-03	6.5434E-03	6.5434E-03	6.5434E-03
26.75	6.8115E-03	6.8115E-03	6.8115E-03	6.8115E-03
27.00	7.0799E-03	7.0799E-03	7.0799E-03	7.0799E-03
27.25	7.3492E-03	7.3492E-03	7.3492E-03	7.3492E-03
27.50	7.6192E-03	7.6192E-03	7.6192E-03	7.6192E-03
27.75	7.8898E-03	7.8898E-03	7.8898E-03	7.8898E-03
28.00	8.1607E-03	8.1607E-03	8.1607E-03	8.1607E-03
28.25	8.4318E-03	8.4318E-03	8.4318E-03	8.4318E-03
28.50	8.7030E-03	8.7030E-03	8.7030E-03	8.7030E-03
28.75	8.9741E-03	8.9741E-03	8.9741E-03	8.9741E-03
29.00	9.2452E-03	9.2452E-03	9.2452E-03	9.2452E-03
29.25	9.5159E-03	9.5159E-03	9.5159E-03	9.5159E-03
29.50	9.7864E-03	9.7864E-03	9.7864E-03	9.7864E-03
29.75	1.0056E-02	1.0056E-02	1.0056E-02	1.0056E-02
30.00	1.0326E-02	1.0326E-02	1.0326E-02	1.0326E-02
30.25	1.0473E-02	1.0473E-02	1.0473E-02	1.0473E-02
30.50	1.0622E-02	1.0622E-02	1.0622E-02	1.0622E-02
30.75	1.0771E-02	1.0771E-02	1.0771E-02	1.0771E-02
31.00	1.0920E-02	1.0920E-02	1.0920E-02	1.0920E-02
31.25	1.1069E-02	1.1069E-02	1.1069E-02	1.1069E-02
31.50	1.1218E-02	1.1218E-02	1.1218E-02	1.1218E-02
31.75	1.1366E-02	1.1366E-02	1.1366E-02	1.1366E-02
32.00	1.1514E-02	1.1514E-02	1.1514E-02	1.1514E-02
32.25	1.1663E-02	1.1663E-02	1.1663E-02	1.1663E-02
32.50	1.1810E-02	1.1810E-02	1.1810E-02	1.1810E-02
32.75	1.1958E-02	1.1958E-02	1.1958E-02	1.1958E-02
33.00	1.2106E-02	1.2106E-02	1.2106E-02	1.2106E-02
33.25	1.2253E-02	1.2253E-02	1.2253E-02	1.2253E-02
33.50	1.2400E-02	1.2400E-02	1.2400E-02	1.2400E-02
33.75	1.2547E-02	1.2547E-02	1.2547E-02	1.2547E-02
34.00	1.2694E-02	1.2694E-02	1.2694E-02	1.2694E-02
34.25	1.2840E-02	1.2840E-02	1.2840E-02	1.2840E-02
34.50	1.2986E-02	1.2986E-02	1.2986E-02	1.2986E-02
34.75	1.3132E-02	1.3132E-02	1.3132E-02	1.3132E-02
35.00	1.3278E-02	1.3278E-02	1.3278E-02	1.3278E-02
35.25	1.3424E-02	1.3424E-02	1.3424E-02	1.3424E-02
35.50	1.3569E-02	1.3569E-02	1.3569E-02	1.3569E-02
35.75	1.3715E-02	1.3715E-02	1.3715E-02	1.3715E-02
36.00	1.3858E-02	1.3858E-02	1.3858E-02	1.3858E-02
36.25	1.4004E-02	1.4004E-02	1.4004E-02	1.4004E-02
36.50	1.4147E-02	1.4147E-02	1.4147E-02	1.4147E-02
36.75	1.4292E-02	1.4292E-02	1.4292E-02	1.4292E-02
37.00	1.4436E-02	1.4436E-02	1.4436E-02	1.4436E-02
37.25	1.4580E-02	1.4580E-02	1.4580E-02	1.4580E-02
37.50	1.4724E-02	1.4724E-02	1.4724E-02	1.4724E-02
37.75	1.4867E-02	1.4867E-02	1.4867E-02	1.4867E-02
38.00	1.5011E-02	1.5011E-02	1.5011E-02	1.5011E-02
38.25	1.5154E-02	1.5154E-02	1.5154E-02	1.5154E-02
38.50	1.5297E-02	1.5297E-02	1.5297E-02	1.5297E-02
38.75	1.5440E-02	1.5440E-02	1.5440E-02	1.5440E-02
39.00	1.5582E-02	1.5582E-02	1.5582E-02	1.5582E-02
39.25	1.5725E-02	1.5725E-02	1.5725E-02	1.5725E-02
39.50	1.5867E-02	1.5867E-02	1.5867E-02	1.5867E-02
39.75	1.6009E-02	1.6009E-02	1.6009E-02	1.6009E-02
40.00	1.6151E-02	1.6151E-02	1.6151E-02	1.6151E-02

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 6

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S11-1-1	6.395E-14	10.0	-1.695E+03	22.8

2	S11-2-1	1.095E-47	1.00	-1.695E+03	22.8
3	S11-3-1	6.395E-14	9.00	-1.695E+03	22.8
4	S11-4-1	2.132E-14	9.00	-1.695E+03	22.8

TIME	VARIABLE 1	2	3	4
1.000	1.0948E-47	1.0948E-47	.0000E+00	-7.1054E-15
2.000	7.1054E-15	-7.1054E-15	-7.1054E-15	-1.4211E-14
3.000	1.4211E-14	.0000E+00	-7.1054E-15	-2.1316E-14
4.000	7.1054E-15	-2.1316E-14	.0000E+00	-1.4211E-14
5.000	7.1054E-15	-2.1316E-14	7.1054E-15	-7.1054E-15
6.000	1.4211E-14	-2.8422E-14	1.4211E-14	.0000E+00
7.000	4.2633E-14	-7.1054E-15	2.1316E-14	-7.1054E-15
8.000	7.1054E-15	-5.6843E-14	1.4211E-14	-1.4211E-14
9.000	2.8422E-14	-2.8422E-14	6.3949E-14	2.1316E-14
10.00	6.3949E-14	-7.1054E-15	4.2633E-14	-7.1054E-15
10.25	-18.12	-18.12	-18.12	-18.12
10.50	-36.23	-36.23	-36.23	-36.23
10.75	-54.35	-54.35	-54.35	-54.35
11.00	-72.46	-72.46	-72.46	-72.46
11.25	-90.58	-90.58	-90.58	-90.58
11.50	-108.7	-108.7	-108.7	-108.7
11.75	-126.8	-126.8	-126.8	-126.8
12.00	-144.9	-144.9	-144.9	-144.9
12.25	-163.0	-163.0	-163.0	-163.0
12.50	-181.2	-181.2	-181.2	-181.2
12.75	-199.3	-199.3	-199.3	-199.3
13.00	-217.4	-217.4	-217.4	-217.4
13.25	-235.5	-235.5	-235.5	-235.5
13.50	-253.6	-253.6	-253.6	-253.6
13.75	-271.7	-271.7	-271.7	-271.7
14.00	-289.9	-289.9	-289.9	-289.9
14.25	-308.0	-308.0	-308.0	-308.0
14.50	-326.1	-326.1	-326.1	-326.1
14.75	-344.2	-344.2	-344.2	-344.2
15.00	-362.3	-362.3	-362.3	-362.3
15.25	-380.4	-380.4	-380.4	-380.4
15.50	-398.6	-398.6	-398.6	-398.6
15.75	-416.7	-416.7	-416.7	-416.7
16.00	-434.8	-434.8	-434.8	-434.8
16.25	-452.9	-452.9	-452.9	-452.9
16.50	-471.0	-471.0	-471.0	-471.0
16.75	-489.1	-489.1	-489.1	-489.1
17.00	-507.2	-507.2	-507.2	-507.2
17.25	-525.4	-525.4	-525.4	-525.4
17.50	-543.5	-543.5	-543.5	-543.5
17.75	-561.6	-561.6	-561.6	-561.6
18.00	-579.7	-579.7	-579.7	-579.7
18.25	-597.8	-597.8	-597.8	-597.8
18.50	-615.9	-615.9	-615.9	-615.9
18.75	-634.1	-634.1	-634.1	-634.1
19.00	-652.2	-652.2	-652.2	-652.2
19.25	-670.3	-670.3	-670.3	-670.3
19.50	-688.4	-688.4	-688.4	-688.4
19.75	-706.5	-706.5	-706.5	-706.5
20.00	-724.6	-724.6	-724.6	-724.6
20.25	-863.2	-863.2	-863.2	-863.2
20.50	-1002.	-1002.	-1002.	-1002.
20.75	-1140.	-1140.	-1140.	-1140.
21.00	-1279.	-1279.	-1279.	-1279.
21.25	-1406.	-1406.	-1406.	-1406.
21.50	-1502.	-1502.	-1502.	-1502.
21.75	-1576.	-1576.	-1576.	-1576.
22.00	-1633.	-1633.	-1633.	-1633.
22.25	-1669.	-1669.	-1669.	-1669.
22.50	-1689.	-1689.	-1689.	-1689.
22.75	-1695.	-1695.	-1695.	-1695.
23.00	-1690.	-1690.	-1690.	-1690.
23.25	-1675.	-1675.	-1675.	-1675.
23.50	-1652.	-1652.	-1652.	-1652.
23.75	-1623.	-1623.	-1623.	-1623.
24.00	-1587.	-1587.	-1587.	-1587.
24.25	-1549.	-1549.	-1549.	-1549.
24.50	-1509.	-1509.	-1509.	-1509.
24.75	-1466.	-1466.	-1466.	-1466.

25.00	-1421.	-1421.	-1421.	-1421.
25.25	-1377.	-1377.	-1377.	-1377.
25.50	-1333.	-1333.	-1333.	-1333.
25.75	-1290.	-1290.	-1290.	-1290.
26.00	-1247.	-1247.	-1247.	-1247.
26.25	-1205.	-1205.	-1205.	-1205.
26.50	-1165.	-1165.	-1165.	-1165.
26.75	-1125.	-1125.	-1125.	-1125.
27.00	-1087.	-1087.	-1087.	-1087.
27.25	-1050.	-1050.	-1050.	-1050.
27.50	-1016.	-1016.	-1016.	-1016.
27.75	-982.5	-982.5	-982.5	-982.5
28.00	-950.8	-950.8	-950.8	-950.8
28.25	-920.5	-920.5	-920.5	-920.5
28.50	-891.7	-891.7	-891.7	-891.7
28.75	-864.3	-864.3	-864.3	-864.3
29.00	-838.2	-838.2	-838.2	-838.2
29.25	-813.4	-813.4	-813.4	-813.4
29.50	-789.8	-789.8	-789.8	-789.8
29.75	-767.3	-767.3	-767.3	-767.3
30.00	-745.9	-745.9	-745.9	-745.9
30.25	-737.1	-737.1	-737.1	-737.1
30.50	-726.0	-726.0	-726.0	-726.0
30.75	-715.1	-715.1	-715.1	-715.1
31.00	-704.5	-704.5	-704.5	-704.5
31.25	-694.2	-694.2	-694.2	-694.2
31.50	-684.1	-684.1	-684.1	-684.1
31.75	-674.3	-674.3	-674.3	-674.3
32.00	-664.8	-664.8	-664.8	-664.8
32.25	-655.5	-655.5	-655.5	-655.5
32.50	-646.4	-646.4	-646.4	-646.4
32.75	-637.6	-637.6	-637.6	-637.6
33.00	-628.9	-628.9	-628.9	-628.9
33.25	-620.5	-620.5	-620.5	-620.5
33.50	-612.3	-612.3	-612.3	-612.3
33.75	-604.4	-604.4	-604.4	-604.4
34.00	-596.6	-596.6	-596.6	-596.6
34.25	-589.0	-589.0	-589.0	-589.0
34.50	-581.5	-581.5	-581.5	-581.5
34.75	-574.3	-574.3	-574.3	-574.3
35.00	-567.2	-567.2	-567.2	-567.2
35.25	-560.3	-560.3	-560.3	-560.3
35.50	-553.6	-553.6	-553.6	-553.6
35.75	-547.0	-547.0	-547.0	-547.0
36.00	-541.7	-541.7	-541.7	-541.7
36.25	-534.3	-534.3	-534.3	-534.3
36.50	-529.2	-529.2	-529.2	-529.2
36.75	-523.3	-523.3	-523.3	-523.3
37.00	-517.4	-517.4	-517.4	-517.4
37.25	-511.6	-511.6	-511.6	-511.6
37.50	-506.0	-506.0	-506.0	-506.0
37.75	-500.4	-500.4	-500.4	-500.4
38.00	-495.0	-495.0	-495.0	-495.0
38.25	-489.7	-489.7	-489.7	-489.7
38.50	-484.5	-484.5	-484.5	-484.5
38.75	-479.4	-479.4	-479.4	-479.4
39.00	-474.5	-474.5	-474.5	-474.5
39.25	-469.6	-469.6	-469.6	-469.6
39.50	-464.8	-464.8	-464.8	-464.8
39.75	-460.1	-460.1	-460.1	-460.1
40.00	-455.5	-455.5	-455.5	-455.5

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 7

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S22-1-1	-205.	1.00	-2.284E+03	21.3
2	S22-2-1	-205.	1.00	-2.284E+03	21.3
3	S22-3-1	-205.	1.00	-2.284E+03	21.3
4	S22-4-1	-205.	1.00	-2.284E+03	21.3

TIME	VARIABLE 1	2	3	4
1.000	-204.6	-204.6	-204.6	-204.6
2.000	-409.2	-409.2	-409.2	-409.2
3.000	-613.8	-613.8	-613.8	-613.8
4.000	-818.4	-818.4	-818.4	-818.4
5.000	-1023.	-1023.	-1023.	-1023.
6.000	-1228.	-1228.	-1228.	-1228.
7.000	-1432.	-1432.	-1432.	-1432.
8.000	-1637.	-1637.	-1637.	-1637.
9.000	-1841.	-1841.	-1841.	-1841.
10.00	-2046.	-2046.	-2046.	-2046.
10.25	-2049.	-2049.	-2049.	-2049.
10.50	-2052.	-2052.	-2052.	-2052.
10.75	-2056.	-2056.	-2056.	-2056.
11.00	-2059.	-2059.	-2059.	-2059.
11.25	-2062.	-2062.	-2062.	-2062.
11.50	-2065.	-2065.	-2065.	-2065.
11.75	-2068.	-2068.	-2068.	-2068.
12.00	-2072.	-2072.	-2072.	-2072.
12.25	-2075.	-2075.	-2075.	-2075.
12.50	-2078.	-2078.	-2078.	-2078.
12.75	-2081.	-2081.	-2081.	-2081.
13.00	-2084.	-2084.	-2084.	-2084.
13.25	-2088.	-2088.	-2088.	-2088.
13.50	-2091.	-2091.	-2091.	-2091.
13.75	-2094.	-2094.	-2094.	-2094.
14.00	-2097.	-2097.	-2097.	-2097.
14.25	-2100.	-2100.	-2100.	-2100.
14.50	-2104.	-2104.	-2104.	-2104.
14.75	-2107.	-2107.	-2107.	-2107.
15.00	-2110.	-2110.	-2110.	-2110.
15.25	-2113.	-2113.	-2113.	-2113.
15.50	-2116.	-2116.	-2116.	-2116.
15.75	-2120.	-2120.	-2120.	-2120.
16.00	-2123.	-2123.	-2123.	-2123.
16.25	-2126.	-2126.	-2126.	-2126.
16.50	-2129.	-2129.	-2129.	-2129.
16.75	-2132.	-2132.	-2132.	-2132.
17.00	-2136.	-2136.	-2136.	-2136.
17.25	-2139.	-2139.	-2139.	-2139.
17.50	-2142.	-2142.	-2142.	-2142.
17.75	-2145.	-2145.	-2145.	-2145.
18.00	-2148.	-2148.	-2148.	-2148.
18.25	-2152.	-2152.	-2152.	-2152.
18.50	-2155.	-2155.	-2155.	-2155.
18.75	-2158.	-2158.	-2158.	-2158.
19.00	-2161.	-2161.	-2161.	-2161.
19.25	-2164.	-2164.	-2164.	-2164.
19.50	-2168.	-2168.	-2168.	-2168.
19.75	-2171.	-2171.	-2171.	-2171.
20.00	-2174.	-2174.	-2174.	-2174.
20.25	-2198.	-2198.	-2198.	-2198.
20.50	-2223.	-2223.	-2223.	-2223.
20.75	-2247.	-2247.	-2247.	-2247.
21.00	-2272.	-2272.	-2272.	-2272.
21.25	-2284.	-2284.	-2284.	-2284.
21.50	-2268.	-2268.	-2268.	-2268.
21.75	-2241.	-2241.	-2241.	-2241.
22.00	-2205.	-2205.	-2205.	-2205.
22.25	-2162.	-2162.	-2162.	-2162.
22.50	-2114.	-2114.	-2114.	-2114.
22.75	-2065.	-2065.	-2065.	-2065.
23.00	-2015.	-2015.	-2015.	-2015.
23.25	-1966.	-1966.	-1966.	-1966.
23.50	-1919.	-1919.	-1919.	-1919.
23.75	-1873.	-1873.	-1873.	-1873.
24.00	-1828.	-1828.	-1828.	-1828.
24.25	-1784.	-1784.	-1784.	-1784.
24.50	-1742.	-1742.	-1742.	-1742.
24.75	-1700.	-1700.	-1700.	-1700.
25.00	-1660.	-1660.	-1660.	-1660.
25.25	-1620.	-1620.	-1620.	-1620.
25.50	-1581.	-1581.	-1581.	-1581.
25.75	-1543.	-1543.	-1543.	-1543.
26.00	-1506.	-1506.	-1506.	-1506.

26.25	-1469.	-1469.	-1469.	-1469.
26.50	-1433.	-1433.	-1433.	-1433.
26.75	-1397.	-1397.	-1397.	-1397.
27.00	-1362.	-1362.	-1362.	-1362.
27.25	-1327.	-1327.	-1327.	-1327.
27.50	-1293.	-1293.	-1293.	-1293.
27.75	-1259.	-1259.	-1259.	-1259.
28.00	-1226.	-1226.	-1226.	-1226.
28.25	-1193.	-1193.	-1193.	-1193.
28.50	-1162.	-1162.	-1162.	-1162.
28.75	-1131.	-1131.	-1131.	-1131.
29.00	-1100.	-1100.	-1100.	-1100.
29.25	-1071.	-1071.	-1071.	-1071.
29.50	-1042.	-1042.	-1042.	-1042.
29.75	-1014.	-1014.	-1014.	-1014.
30.00	-986.5	-986.5	-986.5	-986.5
30.25	-972.9	-972.9	-972.9	-972.9
30.50	-958.5	-958.5	-958.5	-958.5
30.75	-944.3	-944.3	-944.3	-944.3
31.00	-930.4	-930.4	-930.4	-930.4
31.25	-916.7	-916.7	-916.7	-916.7
31.50	-903.2	-903.2	-903.2	-903.2
31.75	-890.0	-890.0	-890.0	-890.0
32.00	-877.0	-877.0	-877.0	-877.0
32.25	-864.2	-864.2	-864.2	-864.2
32.50	-851.7	-851.7	-851.7	-851.7
32.75	-839.5	-839.5	-839.5	-839.5
33.00	-827.4	-827.4	-827.4	-827.4
33.25	-815.6	-815.6	-815.6	-815.6
33.50	-804.0	-804.0	-804.0	-804.0
33.75	-792.6	-792.6	-792.6	-792.6
34.00	-781.5	-781.5	-781.5	-781.5
34.25	-770.6	-770.6	-770.6	-770.6
34.50	-759.9	-759.9	-759.9	-759.9
34.75	-749.4	-749.4	-749.4	-749.4
35.00	-739.2	-739.2	-739.2	-739.2
35.25	-729.1	-729.1	-729.1	-729.1
35.50	-719.3	-719.3	-719.3	-719.3
35.75	-709.6	-709.6	-709.6	-709.6
36.00	-700.5	-700.5	-700.5	-700.5
36.25	-691.0	-691.0	-691.0	-691.0
36.50	-682.3	-682.3	-682.3	-682.3
36.75	-673.4	-673.4	-673.4	-673.4
37.00	-664.8	-664.8	-664.8	-664.8
37.25	-656.3	-656.3	-656.3	-656.3
37.50	-648.0	-648.0	-648.0	-648.0
37.75	-639.9	-639.9	-639.9	-639.9
38.00	-631.9	-631.9	-631.9	-631.9
38.25	-624.1	-624.1	-624.1	-624.1
38.50	-616.5	-616.5	-616.5	-616.5
38.75	-609.0	-609.0	-609.0	-609.0
39.00	-601.7	-601.7	-601.7	-601.7
39.25	-594.5	-594.5	-594.5	-594.5
39.50	-587.5	-587.5	-587.5	-587.5
39.75	-580.6	-580.6	-580.6	-580.6
40.00	-573.9	-573.9	-573.9	-573.9

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 8

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S12-1-1	1.694E+03	22.8	-1.768E-14	9.00
2	S12-2-1	1.694E+03	22.8	.000E+00	3.00
3	S12-3-1	1.694E+03	22.8	-1.178E-14	9.00
4	S12-4-1	1.694E+03	22.8	-1.178E-14	10.0

TIME	VARIABLE 1	2	3	4
1.000	-2.9462E-15	2.9462E-15	.0000E+00	.0000E+00
2.000	.0000E+00	.0000E+00	.0000E+00	-1.1785E-14

3.000	5.8924E-15	.0000E+00	.0000E+00	-1.1785E-14
4.000	.0000E+00	1.4731E-14	.0000E+00	1.1785E-14
5.000	-2.9462E-15	1.7677E-14	.0000E+00	1.1785E-14
6.000	-2.9462E-15	1.4731E-14	.0000E+00	.0000E+00
7.000	1.1785E-14	5.8924E-15	1.1785E-14	-1.1785E-14
8.000	-2.9462E-15	2.3570E-14	.0000E+00	1.1785E-14
9.000	-1.7677E-14	3.2408E-14	-1.1785E-14	2.3570E-14
10.00	8.8386E-15	5.8924E-15	1.1785E-14	-1.1785E-14
10.25	18.12	18.12	18.12	18.12
10.50	36.23	36.23	36.23	36.23
10.75	54.35	54.35	54.35	54.35
11.00	72.46	72.46	72.46	72.46
11.25	90.58	90.58	90.58	90.58
11.50	108.7	108.7	108.7	108.7
11.75	126.8	126.8	126.8	126.8
12.00	144.9	144.9	144.9	144.9
12.25	163.0	163.0	163.0	163.0
12.50	181.2	181.2	181.2	181.2
12.75	199.3	199.3	199.3	199.3
13.00	217.4	217.4	217.4	217.4
13.25	235.5	235.5	235.5	235.5
13.50	253.6	253.6	253.6	253.6
13.75	271.7	271.7	271.7	271.7
14.00	289.9	289.9	289.9	289.9
14.25	308.0	308.0	308.0	308.0
14.50	326.1	326.1	326.1	326.1
14.75	344.2	344.2	344.2	344.2
15.00	362.3	362.3	362.3	362.3
15.25	380.4	380.4	380.4	380.4
15.50	398.6	398.6	398.6	398.6
15.75	416.7	416.7	416.7	416.7
16.00	434.8	434.8	434.8	434.8
16.25	452.9	452.9	452.9	452.9
16.50	471.0	471.0	471.0	471.0
16.75	489.1	489.1	489.1	489.1
17.00	507.2	507.2	507.2	507.2
17.25	525.4	525.4	525.4	525.4
17.50	543.5	543.5	543.5	543.5
17.75	561.6	561.6	561.6	561.6
18.00	579.7	579.7	579.7	579.7
18.25	597.8	597.8	597.8	597.8
18.50	615.9	615.9	615.9	615.9
18.75	634.1	634.1	634.1	634.1
19.00	652.2	652.2	652.2	652.2
19.25	670.3	670.3	670.3	670.3
19.50	688.4	688.4	688.4	688.4
19.75	706.5	706.5	706.5	706.5
20.00	724.6	724.6	724.6	724.6
20.25	863.2	863.2	863.2	863.2
20.50	1002.	1002.	1002.	1002.
20.75	1140.	1140.	1140.	1140.
21.00	1279.	1279.	1279.	1279.
21.25	1406.	1406.	1406.	1406.
21.50	1500.	1500.	1500.	1500.
21.75	1576.	1576.	1576.	1576.
22.00	1632.	1632.	1632.	1632.
22.25	1669.	1669.	1669.	1669.
22.50	1688.	1688.	1688.	1688.
22.75	1694.	1694.	1694.	1694.
23.00	1688.	1688.	1688.	1688.
23.25	1673.	1673.	1673.	1673.
23.50	1650.	1650.	1650.	1650.
23.75	1621.	1621.	1621.	1621.
24.00	1586.	1586.	1586.	1586.
24.25	1548.	1548.	1548.	1548.
24.50	1507.	1507.	1507.	1507.
24.75	1464.	1464.	1464.	1464.
25.00	1420.	1420.	1420.	1420.
25.25	1376.	1376.	1376.	1376.
25.50	1332.	1332.	1332.	1332.
25.75	1288.	1288.	1288.	1288.
26.00	1245.	1245.	1245.	1245.
26.25	1204.	1204.	1204.	1204.
26.50	1163.	1163.	1163.	1163.
26.75	1123.	1123.	1123.	1123.
27.00	1086.	1086.	1086.	1086.

27.25	1049.	1049.	1049.	1049.
27.50	1014.	1014.	1014.	1014.
27.75	981.1	981.1	981.1	981.1
28.00	949.4	949.4	949.4	949.4
28.25	919.1	919.1	919.1	919.1
28.50	890.3	890.3	890.3	890.3
28.75	862.9	862.9	862.9	862.9
29.00	836.8	836.8	836.8	836.8
29.25	812.0	812.0	812.0	812.0
29.50	788.4	788.4	788.4	788.4
29.75	766.0	766.0	766.0	766.0
30.00	744.6	744.6	744.6	744.6
30.25	735.5	735.5	735.5	735.5
30.50	724.3	724.3	724.3	724.3
30.75	713.4	713.4	713.4	713.4
31.00	702.8	702.8	702.8	702.8
31.25	692.5	692.5	692.5	692.5
31.50	682.5	682.5	682.5	682.5
31.75	672.7	672.7	672.7	672.7
32.00	663.2	663.2	663.2	663.2
32.25	653.9	653.9	653.9	653.9
32.50	644.9	644.9	644.9	644.9
32.75	636.1	636.1	636.1	636.1
33.00	627.5	627.5	627.5	627.5
33.25	619.1	619.1	619.1	619.1
33.50	611.0	611.0	611.0	611.0
33.75	603.0	603.0	603.0	603.0
34.00	595.2	595.2	595.2	595.2
34.25	587.7	587.7	587.7	587.7
34.50	580.3	580.3	580.3	580.3
34.75	573.1	573.1	573.1	573.1
35.00	566.0	566.0	566.0	566.0
35.25	559.1	559.1	559.1	559.1
35.50	552.4	552.4	552.4	552.4
35.75	545.9	545.9	545.9	545.9
36.00	539.7	539.7	539.7	539.7
36.25	533.2	533.2	533.2	533.2
36.50	527.3	527.3	527.3	527.3
36.75	521.3	521.3	521.3	521.3
37.00	515.5	515.5	515.5	515.5
37.25	509.7	509.7	509.7	509.7
37.50	504.1	504.1	504.1	504.1
37.75	498.6	498.6	498.6	498.6
38.00	493.3	493.3	493.3	493.3
38.25	488.0	488.0	488.0	488.0
38.50	482.8	482.8	482.8	482.8
38.75	477.8	477.8	477.8	477.8
39.00	472.9	472.9	472.9	472.9
39.25	468.0	468.0	468.0	468.0
39.50	463.3	463.3	463.3	463.3
39.75	458.6	458.6	458.6	458.6
40.00	454.1	454.1	454.1	454.1

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

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*HEADING
 SHEAR TEST RUN
*NODE,NSET=ALLNODES
    1, 0.00000E+00, 0.00000E+00, 0.00000E+00
**  2, 0.00000E+00, 5.00000E-01, 0.00000E+00
    3, 0.00000E+00, 1.00000E+00, 0.00000E+00
**  4, 0.00000E+00, 1.50000E+00, 0.00000E+00
**  5, 0.00000E+00, 2.00000E+00, 0.00000E+00
**  6, 5.00000E-01, 0.00000E+00, 0.00000E+00
**  8, 5.00000E-01, 1.00000E+00, 0.00000E+00
** 10, 5.00000E-01, 2.00000E+00, 0.00000E+00
   11, 1.00000E+00, 0.00000E+00, 0.00000E+00
** 12, 1.00000E+00, 5.00000E-01, 0.00000E+00
   13, 1.00000E+00, 1.00000E+00, 0.00000E+00
** 14, 1.00000E+00, 1.50000E+00, 0.00000E+00
** 15, 1.00000E+00, 2.00000E+00, 0.00000E+00
*********************
*ELEMENT,TYPE=CPE4,ELSET=RCONC
1,1,11,13,3
*********************
*MATERIAL,NAME=RCONC
*USER MATERIAL,CONSTANT=25
** BASIC PROPERTIES
      3,   3000.,  96E-6,    2.00E6,    0.15,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      4.,
*DEPVAR
2
*EXPANSION
 6.00E-06
*********************
*ELSET,ELSET=G1017
**ELEMENT=CPE8R,MATERIAL=RCONC,SECTION=SO
1
*SOLIDSECTION,ELSET=G1017,MATERIAL=RCONC
 1.00E+00
*********************
*ELSET,ELSET=ALLELEME
  1
*NSET,NSET=SHEARX
 3, 13
*NSET,NSET=UFIX
 1, 11
*PLOT

*DRAW
*********************
*AMPLITUDE,TIME=A,NAME=DEAD
0.0,1.0,100.0,1.0
*AMPLITUDE,TIME=A,NAME=LIVE
0.0,0.000, 1.0,0.000, 2.0,0.156, 3.0,0.309
4.0,0.454, 5.0,0.588, 6.0,0.707, 7.0,0.809
8.0,0.891, 9.0,0.951, 10.0,0.988, 11.0,1.000
*AMPLITUDE,TIME=A,NAME=TEMP
0.0,1.0,100.0,1.0
*BOUNDARY
1,2,2,0.0
11,1,2,0.0
*RESTART,WRITE,FREQUENCY=10
*********************
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=10
*STATIC,PTOL=1.0
10.,10.,.005,1.
*ELFILE,FREQUENCY=1,ELSET=ALLELEME
E
S
SDV
LOADS
NFORC
*NODEFILE,FREQUENCY=1,NSET=ALLNODES
U,V,A
RF
```

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CF
*ELPRINT,FREQUENCY=0
*NODEPRINT,FREQUENCY=0
*BOUNDARY,OP=MOD
3,2,2,0.0002
13,2,2,0.0002
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.001
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.01
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.03
*END STEP
```

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SUMMARY OF JOB INFORMATION

STEP #	INC #	ATTEMP #	ITER #	TOT TIME LPF	TIME INC LPF INC	IF RIKS
1	1	1	1	1.00	1.00	
1	2	1	1	2.00	1.00	
1	3	1	1	3.00	1.00	
1	4	1	1	4.00	1.00	
1	5	1	1	5.00	1.00	
1	6	1	1	6.00	1.00	
1	7	1	1	7.00	1.00	
1	8	1	1	8.00	1.00	
1	9	1	1	9.00	1.00	
1	10	1	1	10.0	1.00	
2	1	1	1	.250	.250	
2	2	1	1	.500	.250	
2	3	1	1	.750	.250	
2	4	1	1	1.00	.250	
2	5	1	1	1.25	.250	
2	6	1	1	1.50	.250	
2	7	1	1	1.75	.250	
2	8	1	1	2.00	.250	
2	9	1	1	2.25	.250	
2	10	1	1	2.50	.250	
2	11	1	1	2.75	.250	
2	12	1	1	3.00	.250	
2	13	1	1	3.25	.250	
2	14	1	1	3.50	.250	
2	15	1	1	3.75	.250	
2	16	1	1	4.00	.250	
2	17	1	1	4.25	.250	
2	18	1	1	4.50	.250	
2	19	1	1	4.75	.250	
2	20	1	1	5.00	.250	
2	21	1	1	5.25	.250	
2	22	1	1	5.50	.250	
2	23	1	1	5.75	.250	
2	24	1	1	6.00	.250	
2	25	1	1	6.25	.250	
2	26	1	1	6.50	.250	
2	27	1	1	6.75	.250	
2	28	1	1	7.00	.250	
2	29	1	1	7.25	.250	
2	30	1	1	7.50	.250	
2	31	1	1	7.75	.250	
2	32	1	1	8.00	.250	
2	33	1	1	8.25	.250	
2	34	1	1	8.50	.250	
2	35	1	1	8.75	.250	
2	36	1	1	9.00	.250	
2	37	1	1	9.25	.250	
2	38	1	1	9.50	.250	
2	39	1	1	9.75	.250	
2	40	1	1	10.0	.250	
3	1	1	1	.250	.250	
3	2	1	1	.500	.250	
3	3	1	1	.750	.250	
3	4	1	1	1.00	.250	
3	5	1	1	1.25	.250	
3	6	1	1	1.50	.250	
3	7	1	1	1.75	.250	
3	8	1	1	2.00	.250	
3	9	1	1	2.25	.250	
3	10	1	1	2.50	.250	
3	11	1	1	2.75	.250	
3	12	1	1	3.00	.250	
3	13	1	1	3.25	.250	
3	14	1	1	3.50	.250	
3	15	1	1	3.75	.250	
3	16	1	1	4.00	.250	
3	17	1	1	4.25	.250	
3	18	1	1	4.50	.250	
3	19	1	1	4.75	.250	
3	20	1	1	5.00	.250	

3	21	1	1	5.25	.250
3	22	1	1	5.50	.250
3	23	1	1	5.75	.250
3	24	1	1	6.00	.250
3	25	1	1	6.25	.250
3	26	1	1	6.50	.250
3	27	1	1	6.75	.250
3	28	1	1	7.00	.250
3	29	1	1	7.25	.250
3	30	1	1	7.50	.250
3	31	1	1	7.75	.250
3	32	1	1	8.00	.250
3	33	1	1	8.25	.250
3	34	1	1	8.50	.250
3	35	1	1	8.75	.250
3	36	1	1	9.00	.250
3	37	1	1	9.25	.250
3	38	1	1	9.50	.250
3	39	1	1	9.75	.250
3	40	1	1	10.0	.250
4	1	1	1	.250	.250
4	2	1	1	.500	.250
4	3	1	1	.750	.250
4	4	1	1	1.00	.250
4	5	1	1	1.25	.250
4	6	1	1	1.50	.250
4	7	1	1	1.75	.250
4	8	1	1	2.00	.250
4	9	1	1	2.25	.250
4	10	1	1	2.50	.250
4	11	1	1	2.75	.250
4	12	1	1	3.00	.250
4	13	1	1	3.25	.250
4	14	1	1	3.50	.250
4	15	1	1	3.75	.250
4	16	1	1	4.00	.250
4	17	1	1	4.25	.250
4	18	1	1	4.50	.250
4	19	1	1	4.75	.250
4	20	1	1	5.00	.250
4	21	1	1	5.25	.250
4	22	1	1	5.50	.250
4	23	1	1	5.75	.250
4	24	1	1	6.00	.250
4	25	1	1	6.25	.250
4	26	1	1	6.50	.250
4	27	1	1	6.75	.250
4	28	1	1	7.00	.250
4	29	1	1	7.25	.250
4	30	1	1	7.50	.250
4	31	1	1	7.75	.250
4	32	1	1	8.00	.250
4	33	1	1	8.25	.250
4	34	1	1	8.50	.250
4	35	1	1	8.75	.250
4	36	1	1	9.00	.250
4	37	1	1	9.25	.250
4	38	1	1	9.50	.250
4	39	1	1	9.75	.250
4	40	1	1	10.0	.250

OCP.about

POST-PLOTTING

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	U2-3	2.000E-04	40.0	2.000E-05	1.00
2	U2-13	2.000E-04	40.0	2.000E-05	1.00
3	U1-3	3.000E-02	40.0	3.529E-06	1.00
4	U1-13	2.657E-02	40.0	-1.521E-21	2.00
5	U2-1	5.829E-39	36.0	2.000E-42	6.00
6	U2-11	2.046E-39	3.00	-5.829E-39	36.0
7	U1-1	3.434E-03	40.0	3.529E-06	1.00
8	U1-11	1.166E-38	36.0	-7.032E-56	10.0

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	2.0000E-05	2.0000E-05	3.5294E-06	-9.1501E-22	2.0460E-39	2.0460E-39	3.5294E-06	.0000E+00
2.000	4.0000E-05	4.0000E-05	7.0588E-06	-1.5215E-21	2.0460E-39	2.0460E-39	7.0588E-06	1.0018E-55
3.000	6.0000E-05	6.0000E-05	1.0588E-05	6.2774E-22	2.0460E-39	2.0460E-39	1.0588E-05	-4.3376E-56
4.000	8.0000E-05	8.0000E-05	1.4118E-05	9.4693E-22	2.0460E-39	2.0460E-39	1.4118E-05	-4.3376E-56
5.000	1.0000E-04	1.0000E-04	1.7647E-05	-1.1597E-21	2.0460E-39	2.0460E-39	1.7647E-05	9.0883E-56
6.000	1.2000E-04	1.2000E-04	1.7647E-05	-1.3724E-21	2.0000E-42	2.0000E-42	1.7647E-05	1.0434E-55
7.000	1.4000E-04	1.4000E-04	1.7647E-05	2.2187E-21	2.0000E-42	2.0000E-42	1.7647E-05	4.8518E-56
8.000	1.6000E-04	1.6000E-04	1.7647E-05	2.0628E-21	2.0000E-42	2.0000E-42	1.7647E-05	-6.8239E-56
9.000	1.8000E-04	1.8000E-04	1.7647E-05	5.9995E-21	2.0000E-42	2.0000E-42	1.7647E-05	6.1429E-56
10.00	2.0000E-04	2.0000E-04	1.7647E-05	5.7036E-21	2.0000E-42	2.0000E-42	1.7647E-05	-7.0316E-56
10.25	2.0000E-04	2.0000E-04	4.2206E-05	2.1760E-05	2.8632E-40	-2.8632E-40	2.0446E-05	5.7263E-40
10.50	2.0000E-04	2.0000E-04	6.6765E-05	4.3520E-05	2.8632E-40	-2.8632E-40	2.3245E-05	5.7263E-40
10.75	2.0000E-04	2.0000E-04	9.1324E-05	6.5280E-05	2.8632E-40	-2.8632E-40	2.6043E-05	5.7263E-40
11.00	2.0000E-04	2.0000E-04	1.1588E-04	8.7040E-05	2.8632E-40	-2.8632E-40	2.8842E-05	5.7263E-40
11.25	2.0000E-04	2.0000E-04	1.4044E-04	1.0880E-04	2.8632E-40	-2.8632E-40	3.1641E-05	5.7263E-40
11.50	2.0000E-04	2.0000E-04	1.6500E-04	1.3056E-04	2.8632E-40	-2.8632E-40	3.4440E-05	5.7263E-40
11.75	2.0000E-04	2.0000E-04	1.8956E-04	1.5232E-04	2.8632E-40	-2.8632E-40	3.7238E-05	5.7263E-40
12.00	2.0000E-04	2.0000E-04	2.1412E-04	1.7408E-04	2.8632E-40	-2.8632E-40	4.0037E-05	5.7263E-40
12.25	2.0000E-04	2.0000E-04	2.3868E-04	1.9584E-04	2.8632E-40	-2.8632E-40	4.2836E-05	5.7263E-40
12.50	2.0000E-04	2.0000E-04	2.6324E-04	2.1760E-04	2.8632E-40	-2.8632E-40	4.5635E-05	5.7263E-40
12.75	2.0000E-04	2.0000E-04	2.8779E-04	2.3936E-04	2.8632E-40	-2.8632E-40	4.8433E-05	5.7263E-40
13.00	2.0000E-04	2.0000E-04	3.1235E-04	2.6112E-04	2.8632E-40	-2.8632E-40	5.1232E-05	5.7263E-40
13.25	2.0000E-04	2.0000E-04	3.3691E-04	2.8288E-04	2.8632E-40	-2.8632E-40	5.4031E-05	5.7263E-40
13.50	2.0000E-04	2.0000E-04	3.6147E-04	3.0464E-04	2.8632E-40	-2.8632E-40	5.6830E-05	5.7263E-40
13.75	2.0000E-04	2.0000E-04	3.8603E-04	3.2640E-04	2.8632E-40	-2.8632E-40	5.9628E-05	5.7263E-40
14.00	2.0000E-04	2.0000E-04	4.1059E-04	3.4816E-04	2.8632E-40	-2.8632E-40	6.2427E-05	5.7263E-40
14.25	2.0000E-04	2.0000E-04	4.3515E-04	3.6992E-04	2.8632E-40	-2.8632E-40	6.5226E-05	5.7263E-40
14.50	2.0000E-04	2.0000E-04	4.5971E-04	3.9168E-04	2.8632E-40	-2.8632E-40	6.8024E-05	5.7263E-40
14.75	2.0000E-04	2.0000E-04	4.8426E-04	4.1344E-04	2.8632E-40	-2.8632E-40	7.0823E-05	5.7263E-40
15.00	2.0000E-04	2.0000E-04	5.0882E-04	4.3520E-04	2.8632E-40	-2.8632E-40	7.3622E-05	5.7263E-40
15.25	2.0000E-04	2.0000E-04	5.3338E-04	4.5696E-04	2.8632E-40	-2.8632E-40	7.6421E-05	5.7263E-40
15.50	2.0000E-04	2.0000E-04	5.5794E-04	4.7872E-04	2.8632E-40	-2.8632E-40	7.9219E-05	5.7263E-40
15.75	2.0000E-04	2.0000E-04	5.8250E-04	5.0048E-04	2.8632E-40	-2.8632E-40	8.2018E-05	5.7263E-40
16.00	2.0000E-04	2.0000E-04	6.0706E-04	5.2224E-04	2.8632E-40	-2.8632E-40	8.4817E-05	5.7263E-40
16.25	2.0000E-04	2.0000E-04	6.3162E-04	5.4400E-04	2.8632E-40	-2.8632E-40	8.7616E-05	5.7263E-40
16.50	2.0000E-04	2.0000E-04	6.5618E-04	5.6576E-04	2.8632E-40	-2.8632E-40	9.0414E-05	5.7263E-40
16.75	2.0000E-04	2.0000E-04	6.8074E-04	5.8752E-04	2.8632E-40	-2.8632E-40	9.3213E-05	5.7263E-40
17.00	2.0000E-04	2.0000E-04	7.0529E-04	6.0928E-04	2.8632E-40	-2.8632E-40	9.6012E-05	5.7263E-40
17.25	2.0000E-04	2.0000E-04	7.2985E-04	6.3104E-04	2.8632E-40	-2.8632E-40	9.8811E-05	5.7263E-40
17.50	2.0000E-04	2.0000E-04	7.5441E-04	6.5280E-04	2.8632E-40	-2.8632E-40	1.0161E-04	5.7263E-40
17.75	2.0000E-04	2.0000E-04	7.7897E-04	6.7456E-04	2.8632E-40	-2.8632E-40	1.0441E-04	5.7263E-40
18.00	2.0000E-04	2.0000E-04	8.0353E-04	6.9632E-04	2.8632E-40	-2.8632E-40	1.0721E-04	5.7263E-40
18.25	2.0000E-04	2.0000E-04	8.2809E-04	7.1808E-04	2.8632E-40	-2.8632E-40	1.1001E-04	5.7263E-40
18.50	2.0000E-04	2.0000E-04	8.5265E-04	7.3984E-04	2.8632E-40	-2.8632E-40	1.1280E-04	5.7263E-40
18.75	2.0000E-04	2.0000E-04	8.7721E-04	7.6160E-04	2.8632E-40	-2.8632E-40	1.1560E-04	5.7263E-40
19.00	2.0000E-04	2.0000E-04	9.0176E-04	7.8336E-04	2.8632E-40	-2.8632E-40	1.1840E-04	5.7263E-40
19.25	2.0000E-04	2.0000E-04	9.2632E-04	8.0512E-04	2.8632E-40	-2.8632E-40	1.2120E-04	5.7263E-40
19.50	2.0000E-04	2.0000E-04	9.5088E-04	8.2688E-04	2.8632E-40	-2.8632E-40	1.2400E-04	5.7263E-40
19.75	2.0000E-04	2.0000E-04	9.7544E-04	8.4864E-04	2.8632E-40	-2.8632E-40	1.2680E-04	5.7263E-40
20.00	2.0000E-04	2.0000E-04	1.0000E-03	8.7040E-04	2.8632E-40	-2.8632E-40	1.2960E-04	5.7263E-40
20.25	2.0000E-04	2.0000E-04	1.2250E-03	1.0698E-03	2.6231E-39	-2.6231E-39	1.5524E-04	5.2463E-39
20.50	2.0000E-04	2.0000E-04	1.4500E-03	1.2691E-03	2.6231E-39	-2.6231E-39	1.8088E-04	5.2463E-39

20.75	2.0000E-04	2.0000E-04	1.6750E-03	1.4685E-03	2.6231E-39	-2.6231E-39	2.0652E-04	5.2463E-39
21.00	2.0000E-04	2.0000E-04	1.9000E-03	1.6678E-03	2.6231E-39	-2.6231E-39	2.3216E-04	5.2463E-39
21.25	2.0000E-04	2.0000E-04	2.1250E-03	1.8672E-03	2.6231E-39	-2.6231E-39	2.5780E-04	5.2463E-39
21.50	2.0000E-04	2.0000E-04	2.3500E-03	2.0666E-03	2.6231E-39	-2.6231E-39	2.8344E-04	5.2463E-39
21.75	2.0000E-04	2.0000E-04	2.5750E-03	2.2659E-03	2.6231E-39	-2.6231E-39	3.0909E-04	5.2463E-39
22.00	2.0000E-04	2.0000E-04	2.8000E-03	2.4653E-03	2.6231E-39	-2.6231E-39	3.3473E-04	5.2463E-39
22.25	2.0000E-04	2.0000E-04	3.0250E-03	2.6646E-03	2.6231E-39	-2.6231E-39	3.6037E-04	5.2463E-39
22.50	2.0000E-04	2.0000E-04	3.2500E-03	2.8640E-03	2.6231E-39	-2.6231E-39	3.8601E-04	5.2463E-39
22.75	2.0000E-04	2.0000E-04	3.4750E-03	3.0633E-03	2.6231E-39	-2.6231E-39	4.1165E-04	5.2463E-39
23.00	2.0000E-04	2.0000E-04	3.7000E-03	3.2627E-03	2.6231E-39	-2.6231E-39	4.3729E-04	5.2463E-39
23.25	2.0000E-04	2.0000E-04	3.9250E-03	3.4621E-03	2.6231E-39	-2.6231E-39	4.6293E-04	5.2463E-39
23.50	2.0000E-04	2.0000E-04	4.1500E-03	3.6614E-03	2.6231E-39	-2.6231E-39	4.8857E-04	5.2463E-39
23.75	2.0000E-04	2.0000E-04	4.3750E-03	3.8608E-03	2.6231E-39	-2.6231E-39	5.1422E-04	5.2463E-39
24.00	2.0000E-04	2.0000E-04	4.6000E-03	4.0601E-03	2.6231E-39	-2.6231E-39	5.3986E-04	5.2463E-39
24.25	2.0000E-04	2.0000E-04	4.8250E-03	4.2595E-03	2.6231E-39	-2.6231E-39	5.6550E-04	5.2463E-39
24.50	2.0000E-04	2.0000E-04	5.0500E-03	4.4589E-03	2.6231E-39	-2.6231E-39	5.9114E-04	5.2463E-39
24.75	2.0000E-04	2.0000E-04	5.2750E-03	4.6582E-03	2.6231E-39	-2.6231E-39	6.1678E-04	5.2463E-39
25.00	2.0000E-04	2.0000E-04	5.5000E-03	4.8576E-03	2.6231E-39	-2.6231E-39	6.4242E-04	5.2463E-39
25.25	2.0000E-04	2.0000E-04	5.7250E-03	5.0569E-03	2.6231E-39	-2.6231E-39	6.6806E-04	5.2463E-39
25.50	2.0000E-04	2.0000E-04	5.9500E-03	5.2563E-03	2.6231E-39	-2.6231E-39	6.9370E-04	5.2463E-39
25.75	2.0000E-04	2.0000E-04	6.1750E-03	5.4557E-03	2.6231E-39	-2.6231E-39	7.1934E-04	5.2463E-39
26.00	2.0000E-04	2.0000E-04	6.4000E-03	5.6550E-03	2.6231E-39	-2.6231E-39	7.4499E-04	5.2463E-39
26.25	2.0000E-04	2.0000E-04	6.6250E-03	5.8544E-03	2.6231E-39	-2.6231E-39	7.7063E-04	5.2463E-39
26.50	2.0000E-04	2.0000E-04	6.8500E-03	6.0537E-03	2.6231E-39	-2.6231E-39	7.9627E-04	5.2463E-39
26.75	2.0000E-04	2.0000E-04	7.0750E-03	6.2531E-03	2.6231E-39	-2.6231E-39	8.2191E-04	5.2463E-39
27.00	2.0000E-04	2.0000E-04	7.3000E-03	6.4524E-03	2.6231E-39	-2.6231E-39	8.4755E-04	5.2463E-39
27.25	2.0000E-04	2.0000E-04	7.5250E-03	6.6518E-03	2.6231E-39	-2.6231E-39	8.7319E-04	5.2463E-39
27.50	2.0000E-04	2.0000E-04	7.7500E-03	6.8512E-03	2.6231E-39	-2.6231E-39	8.9883E-04	5.2463E-39
27.75	2.0000E-04	2.0000E-04	7.9750E-03	7.0505E-03	2.6231E-39	-2.6231E-39	9.2447E-04	5.2463E-39
28.00	2.0000E-04	2.0000E-04	8.2000E-03	7.2499E-03	2.6231E-39	-2.6231E-39	9.5012E-04	5.2463E-39
28.25	2.0000E-04	2.0000E-04	8.4250E-03	7.4492E-03	2.6231E-39	-2.6231E-39	9.7576E-04	5.2463E-39
28.50	2.0000E-04	2.0000E-04	8.6500E-03	7.6486E-03	2.6231E-39	-2.6231E-39	1.0014E-03	5.2463E-39
28.75	2.0000E-04	2.0000E-04	8.8750E-03	7.8480E-03	2.6231E-39	-2.6231E-39	1.0270E-03	5.2463E-39
29.00	2.0000E-04	2.0000E-04	9.1000E-03	8.0473E-03	2.6231E-39	-2.6231E-39	1.0527E-03	5.2463E-39
29.25	2.0000E-04	2.0000E-04	9.3250E-03	8.2467E-03	2.6231E-39	-2.6231E-39	1.0783E-03	5.2463E-39
29.50	2.0000E-04	2.0000E-04	9.5500E-03	8.4460E-03	2.6231E-39	-2.6231E-39	1.1040E-03	5.2463E-39
29.75	2.0000E-04	2.0000E-04	9.7750E-03	8.6454E-03	2.6231E-39	-2.6231E-39	1.1296E-03	5.2463E-39
30.00	2.0000E-04	2.0000E-04	1.0000E-02	8.8448E-03	2.6231E-39	-2.6231E-39	1.1552E-03	5.2463E-39
30.25	2.0000E-04	2.0000E-04	1.0500E-02	9.2878E-03	5.8292E-39	-5.8292E-39	1.2122E-03	1.1658E-38
30.50	2.0000E-04	2.0000E-04	1.1000E-02	9.7308E-03	5.8292E-39	-5.8292E-39	1.2692E-03	1.1658E-38
30.75	2.0000E-04	2.0000E-04	1.1500E-02	1.0174E-02	5.8292E-39	-5.8292E-39	1.3262E-03	1.1658E-38
31.00	2.0000E-04	2.0000E-04	1.2000E-02	1.0617E-02	5.8292E-39	-5.8292E-39	1.3832E-03	1.1658E-38
31.25	2.0000E-04	2.0000E-04	1.2500E-02	1.1060E-02	5.8292E-39	-5.8292E-39	1.4401E-03	1.1658E-38
31.50	2.0000E-04	2.0000E-04	1.3000E-02	1.1503E-02	5.8292E-39	-5.8292E-39	1.4971E-03	1.1658E-38
31.75	2.0000E-04	2.0000E-04	1.3500E-02	1.1946E-02	5.8292E-39	-5.8292E-39	1.5541E-03	1.1658E-38
32.00	2.0000E-04	2.0000E-04	1.4000E-02	1.2389E-02	5.8292E-39	-5.8292E-39	1.6111E-03	1.1658E-38
32.25	2.0000E-04	2.0000E-04	1.4500E-02	1.2832E-02	5.8292E-39	-5.8292E-39	1.6681E-03	1.1658E-38
32.50	2.0000E-04	2.0000E-04	1.5000E-02	1.3275E-02	5.8292E-39	-5.8292E-39	1.7251E-03	1.1658E-38
32.75	2.0000E-04	2.0000E-04	1.5500E-02	1.3718E-02	5.8292E-39	-5.8292E-39	1.7820E-03	1.1658E-38
33.00	2.0000E-04	2.0000E-04	1.6000E-02	1.4161E-02	5.8292E-39	-5.8292E-39	1.8390E-03	1.1658E-38
33.25	2.0000E-04	2.0000E-04	1.6500E-02	1.4604E-02	5.8292E-39	-5.8292E-39	1.8960E-03	1.1658E-38
33.50	2.0000E-04	2.0000E-04	1.7000E-02	1.5047E-02	5.8292E-39	-5.8292E-39	1.9530E-03	1.1658E-38
33.75	2.0000E-04	2.0000E-04	1.7500E-02	1.5490E-02	5.8292E-39	-5.8292E-39	2.0100E-03	1.1658E-38
34.00	2.0000E-04	2.0000E-04	1.8000E-02	1.5933E-02	5.8292E-39	-5.8292E-39	2.0669E-03	1.1658E-38
34.25	2.0000E-04	2.0000E-04	1.8500E-02	1.6376E-02	5.8292E-39	-5.8292E-39	2.1239E-03	1.1658E-38
34.50	2.0000E-04	2.0000E-04	1.9000E-02	1.6819E-02	5.8292E-39	-5.8292E-39	2.1809E-03	1.1658E-38
34.75	2.0000E-04	2.0000E-04	1.9500E-02	1.7262E-02	5.8292E-39	-5.8292E-39	2.2379E-03	1.1658E-38
35.00	2.0000E-04	2.0000E-04	2.0000E-02	1.7705E-02	5.8292E-39	-5.8292E-39	2.2949E-03	1.1658E-38
35.25	2.0000E-04	2.0000E-04	2.0500E-02	1.8148E-02	5.8292E-39	-5.8292E-39	2.3518E-03	1.1658E-38
35.50	2.0000E-04	2.0000E-04	2.1000E-02	1.8591E-02	5.8292E-39	-5.8292E-39	2.4088E-03	1.1658E-38
35.75	2.0000E-04	2.0000E-04	2.1500E-02	1.9034E-02	5.8292E-39	-5.8292E-39	2.4658E-03	1.1658E-38
36.00	2.0000E-04	2.0000E-04	2.2000E-02	1.9477E-02	5.8292E-39	-5.8292E-39	2.5228E-03	1.1658E-38
36.25	2.0000E-04	2.0000E-04	2.2500E-02	1.9920E-02	5.8292E-39	-5.8292E-39	2.5798E-03	1.1658E-38
36.50	2.0000E-04	2.0000E-04	2.3000E-02	2.0363E-02	5.8292E-39	-5.8292E-39	2.6367E-03	1.1658E-38
36.75	2.0000E-04	2.0000E-04	2.3500E-02	2.0806E-02	5.8292E-39	-5.8292E-39	2.6937E-03	1.1658E-38
37.00	2.0000E-04	2.0000E-04	2.4000E-02	2.1249E-02	5.8292E-39	-5.8292E-39	2.7507E-03	1.1658E-38
37.25	2.0000E-04	2.0000E-04	2.4500E-02	2.1692E-02	5.8292E-39	-5.8292E-39	2.8077E-03	1.1658E-38
37.50	2.0000E-04	2.0000E-04	2.5000E-02	2.2135E-02	5.8292E-39	-5.8292E-39	2.8647E-03	1.1658E-38
37.75	2.0000E-04	2.0000E-04	2.5500E-02	2.2578E-02	5.8292E-39	-5.8292E-39	2.9216E-03	1.1658E-38
38.00	2.0000E-04	2.0000E-04	2.6000E-02	2.3021E-02	5.8292E-39	-5.8292E-39	2.9786E-03	1.1658E-38
38.25	2.0000E-04	2.0000E-04	2.6500E-02	2.3464E-02	5.8292E-39	-5.8292E-39	3.0356E-03	1.1658E-38
38.50	2.0000E-04	2.0000E-04	2.7000E-02	2.3907E-02	5.8292E-39	-5.8292E-39	3.0926E-03	1.1658E-38
38.75	2.0000E-04	2.0000E-04	2.7500E-02	2.4350E-02	5.8292E-39	-5.8292E-39	3.1496E-03	1.1658E-38
39.00	2.0000E-04	2.0000E-04	2.8000E-02	2.4793E-02	5.8292E-39	-5.8292E-39	3.2065E-03	1.1658E-38
39.25	2.0000E-04	2.0000E-04	2.8500E-02	2.5236E-02	5.8292E-39	-5.8292E-39	3.2635E-03	1.1658E-38
39.50	2.0000E-04	2.0000E-04	2.9000E-02	2.5679E-02	5.8292E-39	-5.8292E-39	3.3205E-03	1.1658E-38

39.75	2.0000E-04	2.0000E-04	2.9500E-02	2.6123E-02	5.8292E-39	-5.8292E-39	3.3775E-03	1.1658E-38
40.00	2.0000E-04	2.0000E-04	3.0000E-02	2.6566E-02	5.8292E-39	-5.8292E-39	3.4345E-03	1.1658E-3

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 2

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	RF1-3	1.491E+03	29.3	.000E+00	10.0
2	RF1-13	.000E+00	40.0	.000E+00	40.0
3	RF2-3	81.8	4.00	-746.	29.3
4	RF2-13	746.	29.3	-5.353E-17	10.0
5	RF1-1	.000E+00	40.0	.000E+00	40.0
6	RF1-11	9.423E-16	10.0	-1.491E+03	29.3
7	RF2-1	4.551E-16	10.0	-746.	29.3
8	RF2-11	746.	29.3	-81.8	4.00

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	.0000E+00	.0000E+00	20.46	20.46	.0000E+00	6.6613E-16	-20.46	-20.46
2.000	.0000E+00	.0000E+00	40.92	40.92	.0000E+00	4.4409E-16	-40.92	-40.92
3.000	.0000E+00	.0000E+00	61.38	61.38	.0000E+00	.0000E+00	-61.38	-61.38
4.000	.0000E+00	.0000E+00	81.84	81.84	.0000E+00	8.8818E-16	-81.84	-81.84
5.000	.0000E+00	.0000E+00	-1.9230E-16	1.9230E-16	.0000E+00	2.1744E-16	1.9230E-16	-1.9230E-16
6.000	.0000E+00	.0000E+00	-3.5995E-16	3.5995E-16	.0000E+00	3.2503E-16	2.4647E-17	-2.4647E-17
7.000	.0000E+00	.0000E+00	-4.5517E-16	4.5517E-16	.0000E+00	-9.2073E-17	8.9766E-17	-8.9766E-17
8.000	.0000E+00	.0000E+00	-1.2474E-16	1.2474E-16	.0000E+00	4.0570E-16	3.0905E-16	-3.0905E-16
9.000	.0000E+00	.0000E+00	-2.5697E-16	2.5697E-16	.0000E+00	1.5623E-16	1.7681E-16	-1.7681E-16
10.00	.0000E+00	.0000E+00	5.3526E-17	-5.3526E-17	.0000E+00	9.4227E-16	4.5514E-16	-4.5514E-16
10.25	5.726	.0000E+00	-2.863	2.863	.0000E+00	-5.726	-2.863	2.863
10.50	11.45	.0000E+00	-5.726	5.726	.0000E+00	-11.45	-5.726	5.726
10.75	17.18	.0000E+00	-8.590	8.590	.0000E+00	-17.18	-8.590	8.590
11.00	22.91	.0000E+00	-11.45	11.45	.0000E+00	-22.91	-11.45	11.45
11.25	28.63	.0000E+00	-14.32	14.32	.0000E+00	-28.63	-14.32	14.32
11.50	34.36	.0000E+00	-17.18	17.18	.0000E+00	-34.36	-17.18	17.18
11.75	40.08	.0000E+00	-20.04	20.04	.0000E+00	-40.08	-20.04	20.04
12.00	45.81	.0000E+00	-22.91	22.91	.0000E+00	-45.81	-22.91	22.91
12.25	51.54	.0000E+00	-25.77	25.77	.0000E+00	-51.54	-25.77	25.77
12.50	57.26	.0000E+00	-28.63	28.63	.0000E+00	-57.26	-28.63	28.63
12.75	62.99	.0000E+00	-31.49	31.49	.0000E+00	-62.99	-31.49	31.49
13.00	68.72	.0000E+00	-34.36	34.36	.0000E+00	-68.72	-34.36	34.36
13.25	74.44	.0000E+00	-37.22	37.22	.0000E+00	-74.44	-37.22	37.22
13.50	80.17	.0000E+00	-40.08	40.08	.0000E+00	-80.17	-40.08	40.08
13.75	85.90	.0000E+00	-42.95	42.95	.0000E+00	-85.90	-42.95	42.95
14.00	91.62	.0000E+00	-45.81	45.81	.0000E+00	-91.62	-45.81	45.81
14.25	97.35	.0000E+00	-48.67	48.67	.0000E+00	-97.35	-48.67	48.67
14.50	103.1	.0000E+00	-51.54	51.54	.0000E+00	-103.1	-51.54	51.54
14.75	108.8	.0000E+00	-54.40	54.40	.0000E+00	-108.8	-54.40	54.40
15.00	114.5	.0000E+00	-57.26	57.26	.0000E+00	-114.5	-57.26	57.26
15.25	120.3	.0000E+00	-60.13	60.13	.0000E+00	-120.3	-60.13	60.13
15.50	126.0	.0000E+00	-62.99	62.99	.0000E+00	-126.0	-62.99	62.99
15.75	131.7	.0000E+00	-65.85	65.85	.0000E+00	-131.7	-65.85	65.85
16.00	137.4	.0000E+00	-68.72	68.72	.0000E+00	-137.4	-68.72	68.72
16.25	143.2	.0000E+00	-71.58	71.58	.0000E+00	-143.2	-71.58	71.58
16.50	148.9	.0000E+00	-74.44	74.44	.0000E+00	-148.9	-74.44	74.44
16.75	154.6	.0000E+00	-77.31	77.31	.0000E+00	-154.6	-77.31	77.31
17.00	160.3	.0000E+00	-80.17	80.17	.0000E+00	-160.3	-80.17	80.17
17.25	166.1	.0000E+00	-83.03	83.03	.0000E+00	-166.1	-83.03	83.03
17.50	171.8	.0000E+00	-85.90	85.90	.0000E+00	-171.8	-85.90	85.90
17.75	177.5	.0000E+00	-88.76	88.76	.0000E+00	-177.5	-88.76	88.76
18.00	183.2	.0000E+00	-91.62	91.62	.0000E+00	-183.2	-91.62	91.62
18.25	189.0	.0000E+00	-94.48	94.48	.0000E+00	-189.0	-94.48	94.48
18.50	194.7	.0000E+00	-97.35	97.35	.0000E+00	-194.7	-97.35	97.35
18.75	200.4	.0000E+00	-100.2	100.2	.0000E+00	-200.4	-100.2	100.2
19.00	206.1	.0000E+00	-103.1	103.1	.0000E+00	-206.1	-103.1	103.1
19.25	211.9	.0000E+00	-105.9	105.9	.0000E+00	-211.9	-105.9	105.9
19.50	217.6	.0000E+00	-108.8	108.8	.0000E+00	-217.6	-108.8	108.8
19.75	223.3	.0000E+00	-111.7	111.7	.0000E+00	-223.3	-111.7	111.7
20.00	229.1	.0000E+00	-114.5	114.5	.0000E+00	-229.1	-114.5	114.5
20.25	281.5	.0000E+00	-140.8	140.8	.0000E+00	-281.5	-140.8	140.8
20.50	334.0	.0000E+00	-167.0	167.0	.0000E+00	-334.0	-167.0	167.0

20.75	386.4	.0000E+00	-193.2	193.2	.0000E+00	-386.4	-193.2	193.2
21.00	438.9	.0000E+00	-219.5	219.5	.0000E+00	-438.9	-219.5	219.5
21.25	491.4	.0000E+00	-245.7	245.7	.0000E+00	-491.4	-245.7	245.7
21.50	543.8	.0000E+00	-271.9	271.9	.0000E+00	-543.8	-271.9	271.9
21.75	596.3	.0000E+00	-298.1	298.1	.0000E+00	-596.3	-298.1	298.1
22.00	648.8	.0000E+00	-324.4	324.4	.0000E+00	-648.8	-324.4	324.4
22.25	701.2	.0000E+00	-350.6	350.6	.0000E+00	-701.2	-350.6	350.6
22.50	753.7	.0000E+00	-376.8	376.8	.0000E+00	-753.7	-376.8	376.8
22.75	806.1	.0000E+00	-403.1	403.1	.0000E+00	-806.1	-403.1	403.1
23.00	858.6	.0000E+00	-429.3	429.3	.0000E+00	-858.6	-429.3	429.3
23.25	911.1	.0000E+00	-455.5	455.5	.0000E+00	-911.1	-455.5	455.5
23.50	963.5	.0000E+00	-481.8	481.8	.0000E+00	-963.5	-481.8	481.8
23.75	1016.	.0000E+00	-508.0	508.0	.0000E+00	-1016.	-508.0	508.0
24.00	1068.	.0000E+00	-534.2	534.2	.0000E+00	-1068.	-534.2	534.2
24.25	1121.	.0000E+00	-560.5	560.5	.0000E+00	-1121.	-560.5	560.5
24.50	1173.	.0000E+00	-586.7	586.7	.0000E+00	-1173.	-586.7	586.7
24.75	1219.	.0000E+00	-609.3	609.3	.0000E+00	-1219.	-609.3	609.3
25.00	1257.	.0000E+00	-628.4	628.4	.0000E+00	-1257.	-628.4	628.4
25.25	1290.	.0000E+00	-644.8	644.8	.0000E+00	-1290.	-644.8	644.8
25.50	1319.	.0000E+00	-659.3	659.3	.0000E+00	-1319.	-659.3	659.3
25.75	1345.	.0000E+00	-672.3	672.3	.0000E+00	-1345.	-672.3	672.3
26.00	1368.	.0000E+00	-683.8	683.8	.0000E+00	-1368.	-683.8	683.8
26.25	1388.	.0000E+00	-694.1	694.1	.0000E+00	-1388.	-694.1	694.1
26.50	1407.	.0000E+00	-703.3	703.3	.0000E+00	-1407.	-703.3	703.3
26.75	1423.	.0000E+00	-711.3	711.3	.0000E+00	-1423.	-711.3	711.3
27.00	1437.	.0000E+00	-718.4	718.4	.0000E+00	-1437.	-718.4	718.4
27.25	1449.	.0000E+00	-724.5	724.5	.0000E+00	-1449.	-724.5	724.5
27.50	1459.	.0000E+00	-729.7	729.7	.0000E+00	-1459.	-729.7	729.7
27.75	1468.	.0000E+00	-734.1	734.1	.0000E+00	-1468.	-734.1	734.1
28.00	1475.	.0000E+00	-737.7	737.7	.0000E+00	-1475.	-737.7	737.7
28.25	1481.	.0000E+00	-740.6	740.6	.0000E+00	-1481.	-740.6	740.6
28.50	1486.	.0000E+00	-742.8	742.8	.0000E+00	-1486.	-742.8	742.8
28.75	1489.	.0000E+00	-744.4	744.4	.0000E+00	-1489.	-744.4	744.4
29.00	1491.	.0000E+00	-745.3	745.3	.0000E+00	-1491.	-745.3	745.3
29.25	1491.	.0000E+00	-745.6	745.6	.0000E+00	-1491.	-745.6	745.6
29.50	1491.	.0000E+00	-745.5	745.5	.0000E+00	-1491.	-745.5	745.5
29.75	1490.	.0000E+00	-745.0	745.0	.0000E+00	-1490.	-745.0	745.0
30.00	1489.	.0000E+00	-744.3	744.3	.0000E+00	-1489.	-744.3	744.3
30.25	1480.	.0000E+00	-739.9	739.9	.0000E+00	-1480.	-739.9	739.9
30.50	1471.	.0000E+00	-735.5	735.5	.0000E+00	-1471.	-735.5	735.5
30.75	1460.	.0000E+00	-730.1	730.1	.0000E+00	-1460.	-730.1	730.1
31.00	1448.	.0000E+00	-723.9	723.9	.0000E+00	-1448.	-723.9	723.9
31.25	1434.	.0000E+00	-717.0	717.0	.0000E+00	-1434.	-717.0	717.0
31.50	1419.	.0000E+00	-709.6	709.6	.0000E+00	-1419.	-709.6	709.6
31.75	1403.	.0000E+00	-701.7	701.7	.0000E+00	-1403.	-701.7	701.7
32.00	1387.	.0000E+00	-693.5	693.5	.0000E+00	-1387.	-693.5	693.5
32.25	1370.	.0000E+00	-685.0	685.0	.0000E+00	-1370.	-685.0	685.0
32.50	1352.	.0000E+00	-676.2	676.2	.0000E+00	-1352.	-676.2	676.2
32.75	1335.	.0000E+00	-667.3	667.3	.0000E+00	-1335.	-667.3	667.3
33.00	1316.	.0000E+00	-658.2	658.2	.0000E+00	-1316.	-658.2	658.2
33.25	1298.	.0000E+00	-649.0	649.0	.0000E+00	-1298.	-649.0	649.0
33.50	1279.	.0000E+00	-639.7	639.7	.0000E+00	-1279.	-639.7	639.7
33.75	1261.	.0000E+00	-630.5	630.5	.0000E+00	-1261.	-630.5	630.5
34.00	1242.	.0000E+00	-621.2	621.2	.0000E+00	-1242.	-621.2	621.2
34.25	1224.	.0000E+00	-611.9	611.9	.0000E+00	-1224.	-611.9	611.9
34.50	1205.	.0000E+00	-602.7	602.7	.0000E+00	-1205.	-602.7	602.7
34.75	1187.	.0000E+00	-593.6	593.6	.0000E+00	-1187.	-593.6	593.6
35.00	1169.	.0000E+00	-584.5	584.5	.0000E+00	-1169.	-584.5	584.5
35.25	1151.	.0000E+00	-575.5	575.5	.0000E+00	-1151.	-575.5	575.5
35.50	1133.	.0000E+00	-566.6	566.6	.0000E+00	-1133.	-566.6	566.6
35.75	1116.	.0000E+00	-557.9	557.9	.0000E+00	-1116.	-557.9	557.9
36.00	1098.	.0000E+00	-549.2	549.2	.0000E+00	-1098.	-549.2	549.2
36.25	1081.	.0000E+00	-540.7	540.7	.0000E+00	-1081.	-540.7	540.7
36.50	1064.	.0000E+00	-532.2	532.2	.0000E+00	-1064.	-532.2	532.2
36.75	1048.	.0000E+00	-524.0	524.0	.0000E+00	-1048.	-524.0	524.0
37.00	1032.	.0000E+00	-515.8	515.8	.0000E+00	-1032.	-515.8	515.8
37.25	1016.	.0000E+00	-507.8	507.8	.0000E+00	-1016.	-507.8	507.8
37.50	1000.0	.0000E+00	-500.0	500.0	.0000E+00	-1000.0	-500.0	500.0
37.75	984.5	.0000E+00	-492.3	492.3	.0000E+00	-984.5	-492.3	492.3
38.00	969.4	.0000E+00	-484.7	484.7	.0000E+00	-969.4	-484.7	484.7
38.25	954.6	.0000E+00	-477.3	477.3	.0000E+00	-954.6	-477.3	477.3
38.50	940.0	.0000E+00	-470.0	470.0	.0000E+00	-940.0	-470.0	470.0
38.75	925.7	.0000E+00	-462.9	462.9	.0000E+00	-925.7	-462.9	462.9
39.00	911.8	.0000E+00	-455.9	455.9	.0000E+00	-911.8	-455.9	455.9
39.25	898.1	.0000E+00	-449.0	449.0	.0000E+00	-898.1	-449.0	449.0
39.50	884.6	.0000E+00	-442.3	442.3	.0000E+00	-884.6	-442.3	442.3

39.75	871.5	.0000E+00	-435.8	435.8	.0000E+00	-871.5	-435.8	435.8
40.00	858.6	.0000E+00	-429.3	429.3	.0000E+00	-858.6	-429.3	429.3

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 3

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E11-1-1	-3.529E-06	1.00	-3.434E-03	40.0
2	E11-2-1	-3.529E-06	1.00	-3.434E-03	40.0
3	E11-3-1	-3.529E-06	1.00	-3.434E-03	40.0
4	E11-4-1	-3.529E-06	1.00	-3.434E-03	40.0

TIME	VARIABLE 1	2	3	4
1.000	-3.5294E-06	-3.5294E-06	-3.5294E-06	-3.5294E-06
2.000	-7.0588E-06	-7.0588E-06	-7.0588E-06	-7.0588E-06
3.000	-1.0588E-05	-1.0588E-05	-1.0588E-05	-1.0588E-05
4.000	-1.4118E-05	-1.4118E-05	-1.4118E-05	-1.4118E-05
5.000	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
6.000	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
7.000	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
8.000	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
9.000	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
10.00	-1.7647E-05	-1.7647E-05	-1.7647E-05	-1.7647E-05
10.25	-2.0446E-05	-2.0446E-05	-2.0446E-05	-2.0446E-05
10.50	-2.3245E-05	-2.3245E-05	-2.3245E-05	-2.3245E-05
10.75	-2.6043E-05	-2.6043E-05	-2.6043E-05	-2.6043E-05
11.00	-2.8842E-05	-2.8842E-05	-2.8842E-05	-2.8842E-05
11.25	-3.1641E-05	-3.1641E-05	-3.1641E-05	-3.1641E-05
11.50	-3.4440E-05	-3.4440E-05	-3.4440E-05	-3.4440E-05
11.75	-3.7238E-05	-3.7238E-05	-3.7238E-05	-3.7238E-05
12.00	-4.0037E-05	-4.0037E-05	-4.0037E-05	-4.0037E-05
12.25	-4.2836E-05	-4.2836E-05	-4.2836E-05	-4.2836E-05
12.50	-4.5635E-05	-4.5635E-05	-4.5635E-05	-4.5635E-05
12.75	-4.8433E-05	-4.8433E-05	-4.8433E-05	-4.8433E-05
13.00	-5.1232E-05	-5.1232E-05	-5.1232E-05	-5.1232E-05
13.25	-5.4031E-05	-5.4031E-05	-5.4031E-05	-5.4031E-05
13.50	-5.6830E-05	-5.6830E-05	-5.6830E-05	-5.6830E-05
13.75	-5.9628E-05	-5.9628E-05	-5.9628E-05	-5.9628E-05
14.00	-6.2427E-05	-6.2427E-05	-6.2427E-05	-6.2427E-05
14.25	-6.5226E-05	-6.5226E-05	-6.5226E-05	-6.5226E-05
14.50	-6.8024E-05	-6.8024E-05	-6.8024E-05	-6.8024E-05
14.75	-7.0823E-05	-7.0823E-05	-7.0823E-05	-7.0823E-05
15.00	-7.3622E-05	-7.3622E-05	-7.3622E-05	-7.3622E-05
15.25	-7.6421E-05	-7.6421E-05	-7.6421E-05	-7.6421E-05
15.50	-7.9219E-05	-7.9219E-05	-7.9219E-05	-7.9219E-05
15.75	-8.2018E-05	-8.2018E-05	-8.2018E-05	-8.2018E-05
16.00	-8.4817E-05	-8.4817E-05	-8.4817E-05	-8.4817E-05
16.25	-8.7616E-05	-8.7616E-05	-8.7616E-05	-8.7616E-05
16.50	-9.0414E-05	-9.0414E-05	-9.0414E-05	-9.0414E-05
16.75	-9.3213E-05	-9.3213E-05	-9.3213E-05	-9.3213E-05
17.00	-9.6012E-05	-9.6012E-05	-9.6012E-05	-9.6012E-05
17.25	-9.8811E-05	-9.8811E-05	-9.8811E-05	-9.8811E-05
17.50	-1.0161E-04	-1.0161E-04	-1.0161E-04	-1.0161E-04
17.75	-1.0441E-04	-1.0441E-04	-1.0441E-04	-1.0441E-04
18.00	-1.0721E-04	-1.0721E-04	-1.0721E-04	-1.0721E-04
18.25	-1.1001E-04	-1.1001E-04	-1.1001E-04	-1.1001E-04
18.50	-1.1280E-04	-1.1280E-04	-1.1280E-04	-1.1280E-04
18.75	-1.1560E-04	-1.1560E-04	-1.1560E-04	-1.1560E-04
19.00	-1.1840E-04	-1.1840E-04	-1.1840E-04	-1.1840E-04
19.25	-1.2120E-04	-1.2120E-04	-1.2120E-04	-1.2120E-04
19.50	-1.2400E-04	-1.2400E-04	-1.2400E-04	-1.2400E-04
19.75	-1.2680E-04	-1.2680E-04	-1.2680E-04	-1.2680E-04
20.00	-1.2960E-04	-1.2960E-04	-1.2960E-04	-1.2960E-04
20.25	-1.5524E-04	-1.5524E-04	-1.5524E-04	-1.5524E-04
20.50	-1.8088E-04	-1.8088E-04	-1.8088E-04	-1.8088E-04
20.75	-2.0652E-04	-2.0652E-04	-2.0652E-04	-2.0652E-04
21.00	-2.3216E-04	-2.3216E-04	-2.3216E-04	-2.3216E-04
21.25	-2.5780E-04	-2.5780E-04	-2.5780E-04	-2.5780E-04

21.50	-2.8344E-04	-2.8344E-04	-2.8344E-04	-2.8344E-04
21.75	-3.0909E-04	-3.0909E-04	-3.0909E-04	-3.0909E-04
22.00	-3.3473E-04	-3.3473E-04	-3.3473E-04	-3.3473E-04
22.25	-3.6037E-04	-3.6037E-04	-3.6037E-04	-3.6037E-04
22.50	-3.8601E-04	-3.8601E-04	-3.8601E-04	-3.8601E-04
22.75	-4.1165E-04	-4.1165E-04	-4.1165E-04	-4.1165E-04
23.00	-4.3729E-04	-4.3729E-04	-4.3729E-04	-4.3729E-04
23.25	-4.6293E-04	-4.6293E-04	-4.6293E-04	-4.6293E-04
23.50	-4.8857E-04	-4.8857E-04	-4.8857E-04	-4.8857E-04
23.75	-5.1422E-04	-5.1422E-04	-5.1422E-04	-5.1422E-04
24.00	-5.3986E-04	-5.3986E-04	-5.3986E-04	-5.3986E-04
24.25	-5.6550E-04	-5.6550E-04	-5.6550E-04	-5.6550E-04
24.50	-5.9114E-04	-5.9114E-04	-5.9114E-04	-5.9114E-04
24.75	-6.1678E-04	-6.1678E-04	-6.1678E-04	-6.1678E-04
25.00	-6.4242E-04	-6.4242E-04	-6.4242E-04	-6.4242E-04
25.25	-6.6806E-04	-6.6806E-04	-6.6806E-04	-6.6806E-04
25.50	-6.9370E-04	-6.9370E-04	-6.9370E-04	-6.9370E-04
25.75	-7.1934E-04	-7.1934E-04	-7.1934E-04	-7.1934E-04
26.00	-7.4499E-04	-7.4499E-04	-7.4499E-04	-7.4499E-04
26.25	-7.7063E-04	-7.7063E-04	-7.7063E-04	-7.7063E-04
26.50	-7.9627E-04	-7.9627E-04	-7.9627E-04	-7.9627E-04
26.75	-8.2191E-04	-8.2191E-04	-8.2191E-04	-8.2191E-04
27.00	-8.4755E-04	-8.4755E-04	-8.4755E-04	-8.4755E-04
27.25	-8.7319E-04	-8.7319E-04	-8.7319E-04	-8.7319E-04
27.50	-8.9883E-04	-8.9883E-04	-8.9883E-04	-8.9883E-04
27.75	-9.2447E-04	-9.2447E-04	-9.2447E-04	-9.2447E-04
28.00	-9.5012E-04	-9.5012E-04	-9.5012E-04	-9.5012E-04
28.25	-9.7576E-04	-9.7576E-04	-9.7576E-04	-9.7576E-04
28.50	-1.0014E-03	-1.0014E-03	-1.0014E-03	-1.0014E-03
28.75	-1.0270E-03	-1.0270E-03	-1.0270E-03	-1.0270E-03
29.00	-1.0527E-03	-1.0527E-03	-1.0527E-03	-1.0527E-03
29.25	-1.0783E-03	-1.0783E-03	-1.0783E-03	-1.0783E-03
29.50	-1.1040E-03	-1.1040E-03	-1.1040E-03	-1.1040E-03
29.75	-1.1296E-03	-1.1296E-03	-1.1296E-03	-1.1296E-03
30.00	-1.1552E-03	-1.1552E-03	-1.1552E-03	-1.1552E-03
30.25	-1.2122E-03	-1.2122E-03	-1.2122E-03	-1.2122E-03
30.50	-1.2692E-03	-1.2692E-03	-1.2692E-03	-1.2692E-03
30.75	-1.3262E-03	-1.3262E-03	-1.3262E-03	-1.3262E-03
31.00	-1.3832E-03	-1.3832E-03	-1.3832E-03	-1.3832E-03
31.25	-1.4401E-03	-1.4401E-03	-1.4401E-03	-1.4401E-03
31.50	-1.4971E-03	-1.4971E-03	-1.4971E-03	-1.4971E-03
31.75	-1.5541E-03	-1.5541E-03	-1.5541E-03	-1.5541E-03
32.00	-1.6111E-03	-1.6111E-03	-1.6111E-03	-1.6111E-03
32.25	-1.6681E-03	-1.6681E-03	-1.6681E-03	-1.6681E-03
32.50	-1.7251E-03	-1.7251E-03	-1.7251E-03	-1.7251E-03
32.75	-1.7820E-03	-1.7820E-03	-1.7820E-03	-1.7820E-03
33.00	-1.8390E-03	-1.8390E-03	-1.8390E-03	-1.8390E-03
33.25	-1.8960E-03	-1.8960E-03	-1.8960E-03	-1.8960E-03
33.50	-1.9530E-03	-1.9530E-03	-1.9530E-03	-1.9530E-03
33.75	-2.0100E-03	-2.0100E-03	-2.0100E-03	-2.0100E-03
34.00	-2.0669E-03	-2.0669E-03	-2.0669E-03	-2.0669E-03
34.25	-2.1239E-03	-2.1239E-03	-2.1239E-03	-2.1239E-03
34.50	-2.1809E-03	-2.1809E-03	-2.1809E-03	-2.1809E-03
34.75	-2.2379E-03	-2.2379E-03	-2.2379E-03	-2.2379E-03
35.00	-2.2949E-03	-2.2949E-03	-2.2949E-03	-2.2949E-03
35.25	-2.3518E-03	-2.3518E-03	-2.3518E-03	-2.3518E-03
35.50	-2.4088E-03	-2.4088E-03	-2.4088E-03	-2.4088E-03
35.75	-2.4658E-03	-2.4658E-03	-2.4658E-03	-2.4658E-03
36.00	-2.5228E-03	-2.5228E-03	-2.5228E-03	-2.5228E-03
36.25	-2.5798E-03	-2.5798E-03	-2.5798E-03	-2.5798E-03
36.50	-2.6367E-03	-2.6367E-03	-2.6367E-03	-2.6367E-03
36.75	-2.6937E-03	-2.6937E-03	-2.6937E-03	-2.6937E-03
37.00	-2.7507E-03	-2.7507E-03	-2.7507E-03	-2.7507E-03
37.25	-2.8077E-03	-2.8077E-03	-2.8077E-03	-2.8077E-03
37.50	-2.8647E-03	-2.8647E-03	-2.8647E-03	-2.8647E-03
37.75	-2.9216E-03	-2.9216E-03	-2.9216E-03	-2.9216E-03
38.00	-2.9786E-03	-2.9786E-03	-2.9786E-03	-2.9786E-03
38.25	-3.0356E-03	-3.0356E-03	-3.0356E-03	-3.0356E-03
38.50	-3.0926E-03	-3.0926E-03	-3.0926E-03	-3.0926E-03
38.75	-3.1496E-03	-3.1496E-03	-3.1496E-03	-3.1496E-03
39.00	-3.2065E-03	-3.2065E-03	-3.2065E-03	-3.2065E-03
39.25	-3.2635E-03	-3.2635E-03	-3.2635E-03	-3.2635E-03
39.50	-3.3205E-03	-3.3205E-03	-3.3205E-03	-3.3205E-03
39.75	-3.3775E-03	-3.3775E-03	-3.3775E-03	-3.3775E-03
40.00	-3.4345E-03	-3.4345E-03	-3.4345E-03	-3.4345E-03

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 4

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E22-1-1	2.000E-04	34.0	2.000E-05	1.00
2	E22-2-1	2.000E-04	34.0	2.000E-05	1.00
3	E22-3-1	2.000E-04	27.3	2.000E-05	1.00
4	E22-4-1	2.000E-04	27.3	2.000E-05	1.00

TIME	VARIABLE 1	2	3	4
1.000	2.0000E-05	2.0000E-05	2.0000E-05	2.0000E-05
2.000	4.0000E-05	4.0000E-05	4.0000E-05	4.0000E-05
3.000	6.0000E-05	6.0000E-05	6.0000E-05	6.0000E-05
4.000	8.0000E-05	8.0000E-05	8.0000E-05	8.0000E-05
5.000	1.0000E-04	1.0000E-04	1.0000E-04	1.0000E-04
6.000	1.2000E-04	1.2000E-04	1.2000E-04	1.2000E-04
7.000	1.4000E-04	1.4000E-04	1.4000E-04	1.4000E-04
8.000	1.6000E-04	1.6000E-04	1.6000E-04	1.6000E-04
9.000	1.8000E-04	1.8000E-04	1.8000E-04	1.8000E-04
10.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
10.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
10.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
10.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
11.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
11.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
11.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
11.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
12.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
12.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
12.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
12.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
13.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
13.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
13.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
13.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
14.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
14.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
14.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
14.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
15.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
15.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
15.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
15.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
16.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
16.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
16.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
16.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
17.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
17.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
17.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
17.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
18.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
18.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
18.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
18.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
19.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
19.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
19.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
19.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
20.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
20.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
20.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
20.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
21.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
21.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
21.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
21.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
22.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
22.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
22.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04

22.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
23.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
23.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
23.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
23.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
24.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
24.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
24.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
24.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
25.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
25.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
25.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
25.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
26.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
26.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
26.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
26.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
27.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
27.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
27.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
27.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
28.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
28.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
28.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
28.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
29.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
29.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
29.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
29.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
30.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
30.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
30.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
30.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
31.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
31.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
31.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
31.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
32.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
32.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
32.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
32.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
33.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
33.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
33.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
33.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
34.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
34.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
34.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
34.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
35.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
35.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
35.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
35.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
36.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
36.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
36.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
36.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
37.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
37.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
37.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
37.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
38.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
38.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
38.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
38.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
39.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
39.25	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
39.50	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
39.75	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04
40.00	2.0000E-04	2.0000E-04	2.0000E-04	2.0000E-04

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 5

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E12-1-1	2.657E-02	40.0	-4.235E-21	5.00
2	E12-2-1	2.657E-02	40.0	-1.694E-21	5.00
3	E12-3-1	2.657E-02	40.0	.000E+00	5.00
4	E12-4-1	2.657E-02	40.0	-3.388E-21	6.00

TIME	VARIABLE 1	2	3	4
1.000	-8.4703E-22	-8.4703E-22	.0000E+00	.0000E+00
2.000	8.4703E-22	-8.4703E-22	3.3881E-21	.0000E+00
3.000	.0000E+00	8.4703E-22	3.3881E-21	.0000E+00
4.000	-1.6941E-21	8.4703E-22	3.3881E-21	.0000E+00
5.000	-4.2352E-21	-1.6941E-21	.0000E+00	-3.3881E-21
6.000	8.4703E-22	.0000E+00	6.7763E-21	-3.3881E-21
7.000	1.6941E-21	2.5411E-21	1.0164E-20	.0000E+00
8.000	4.2352E-21	2.5411E-21	1.0164E-20	.0000E+00
9.000	6.7763E-21	6.7763E-21	1.3553E-20	3.3881E-21
10.00	7.6233E-21	6.7763E-21	1.3553E-20	3.3881E-21
10.25	2.1760E-05	2.1760E-05	2.1760E-05	2.1760E-05
10.50	4.3520E-05	4.3520E-05	4.3520E-05	4.3520E-05
10.75	6.5280E-05	6.5280E-05	6.5280E-05	6.5280E-05
11.00	8.7040E-05	8.7040E-05	8.7040E-05	8.7040E-05
11.25	1.0880E-04	1.0880E-04	1.0880E-04	1.0880E-04
11.50	1.3056E-04	1.3056E-04	1.3056E-04	1.3056E-04
11.75	1.5232E-04	1.5232E-04	1.5232E-04	1.5232E-04
12.00	1.7408E-04	1.7408E-04	1.7408E-04	1.7408E-04
12.25	1.9584E-04	1.9584E-04	1.9584E-04	1.9584E-04
12.50	2.1760E-04	2.1760E-04	2.1760E-04	2.1760E-04
12.75	2.3936E-04	2.3936E-04	2.3936E-04	2.3936E-04
13.00	2.6112E-04	2.6112E-04	2.6112E-04	2.6112E-04
13.25	2.8288E-04	2.8288E-04	2.8288E-04	2.8288E-04
13.50	3.0464E-04	3.0464E-04	3.0464E-04	3.0464E-04
13.75	3.2640E-04	3.2640E-04	3.2640E-04	3.2640E-04
14.00	3.4816E-04	3.4816E-04	3.4816E-04	3.4816E-04
14.25	3.6992E-04	3.6992E-04	3.6992E-04	3.6992E-04
14.50	3.9168E-04	3.9168E-04	3.9168E-04	3.9168E-04
14.75	4.1344E-04	4.1344E-04	4.1344E-04	4.1344E-04
15.00	4.3520E-04	4.3520E-04	4.3520E-04	4.3520E-04
15.25	4.5696E-04	4.5696E-04	4.5696E-04	4.5696E-04
15.50	4.7872E-04	4.7872E-04	4.7872E-04	4.7872E-04
15.75	5.0048E-04	5.0048E-04	5.0048E-04	5.0048E-04
16.00	5.2224E-04	5.2224E-04	5.2224E-04	5.2224E-04
16.25	5.4400E-04	5.4400E-04	5.4400E-04	5.4400E-04
16.50	5.6576E-04	5.6576E-04	5.6576E-04	5.6576E-04
16.75	5.8752E-04	5.8752E-04	5.8752E-04	5.8752E-04
17.00	6.0928E-04	6.0928E-04	6.0928E-04	6.0928E-04
17.25	6.3104E-04	6.3104E-04	6.3104E-04	6.3104E-04
17.50	6.5280E-04	6.5280E-04	6.5280E-04	6.5280E-04
17.75	6.7456E-04	6.7456E-04	6.7456E-04	6.7456E-04
18.00	6.9632E-04	6.9632E-04	6.9632E-04	6.9632E-04
18.25	7.1808E-04	7.1808E-04	7.1808E-04	7.1808E-04
18.50	7.3984E-04	7.3984E-04	7.3984E-04	7.3984E-04
18.75	7.6160E-04	7.6160E-04	7.6160E-04	7.6160E-04
19.00	7.8336E-04	7.8336E-04	7.8336E-04	7.8336E-04
19.25	8.0512E-04	8.0512E-04	8.0512E-04	8.0512E-04
19.50	8.2688E-04	8.2688E-04	8.2688E-04	8.2688E-04
19.75	8.4864E-04	8.4864E-04	8.4864E-04	8.4864E-04
20.00	8.7040E-04	8.7040E-04	8.7040E-04	8.7040E-04
20.25	1.0698E-03	1.0698E-03	1.0698E-03	1.0698E-03
20.50	1.2691E-03	1.2691E-03	1.2691E-03	1.2691E-03
20.75	1.4685E-03	1.4685E-03	1.4685E-03	1.4685E-03
21.00	1.6678E-03	1.6678E-03	1.6678E-03	1.6678E-03
21.25	1.8672E-03	1.8672E-03	1.8672E-03	1.8672E-03
21.50	2.0666E-03	2.0666E-03	2.0666E-03	2.0666E-03
21.75	2.2659E-03	2.2659E-03	2.2659E-03	2.2659E-03
22.00	2.4653E-03	2.4653E-03	2.4653E-03	2.4653E-03
22.25	2.6646E-03	2.6646E-03	2.6646E-03	2.6646E-03
22.50	2.8640E-03	2.8640E-03	2.8640E-03	2.8640E-03
22.75	3.0633E-03	3.0633E-03	3.0633E-03	3.0633E-03
23.00	3.2627E-03	3.2627E-03	3.2627E-03	3.2627E-03
23.25	3.4621E-03	3.4621E-03	3.4621E-03	3.4621E-03
23.50	3.6614E-03	3.6614E-03	3.6614E-03	3.6614E-03
23.75	3.8608E-03	3.8608E-03	3.8608E-03	3.8608E-03

24.00	4.0601E-03	4.0601E-03	4.0601E-03	4.0601E-03
24.25	4.2595E-03	4.2595E-03	4.2595E-03	4.2595E-03
24.50	4.4589E-03	4.4589E-03	4.4589E-03	4.4589E-03
24.75	4.6582E-03	4.6582E-03	4.6582E-03	4.6582E-03
25.00	4.8576E-03	4.8576E-03	4.8576E-03	4.8576E-03
25.25	5.0569E-03	5.0569E-03	5.0569E-03	5.0569E-03
25.50	5.2563E-03	5.2563E-03	5.2563E-03	5.2563E-03
25.75	5.4557E-03	5.4557E-03	5.4557E-03	5.4557E-03
26.00	5.6550E-03	5.6550E-03	5.6550E-03	5.6550E-03
26.25	5.8544E-03	5.8544E-03	5.8544E-03	5.8544E-03
26.50	6.0537E-03	6.0537E-03	6.0537E-03	6.0537E-03
26.75	6.2531E-03	6.2531E-03	6.2531E-03	6.2531E-03
27.00	6.4524E-03	6.4524E-03	6.4524E-03	6.4524E-03
27.25	6.6518E-03	6.6518E-03	6.6518E-03	6.6518E-03
27.50	6.8512E-03	6.8512E-03	6.8512E-03	6.8512E-03
27.75	7.0505E-03	7.0505E-03	7.0505E-03	7.0505E-03
28.00	7.2499E-03	7.2499E-03	7.2499E-03	7.2499E-03
28.25	7.4492E-03	7.4492E-03	7.4492E-03	7.4492E-03
28.50	7.6486E-03	7.6486E-03	7.6486E-03	7.6486E-03
28.75	7.8480E-03	7.8480E-03	7.8480E-03	7.8480E-03
29.00	8.0473E-03	8.0473E-03	8.0473E-03	8.0473E-03
29.25	8.2467E-03	8.2467E-03	8.2467E-03	8.2467E-03
29.50	8.4460E-03	8.4460E-03	8.4460E-03	8.4460E-03
29.75	8.6454E-03	8.6454E-03	8.6454E-03	8.6454E-03
30.00	8.8448E-03	8.8448E-03	8.8448E-03	8.8448E-03
30.25	9.2878E-03	9.2878E-03	9.2878E-03	9.2878E-03
30.50	9.7308E-03	9.7308E-03	9.7308E-03	9.7308E-03
30.75	1.0174E-02	1.0174E-02	1.0174E-02	1.0174E-02
31.00	1.0617E-02	1.0617E-02	1.0617E-02	1.0617E-02
31.25	1.1060E-02	1.1060E-02	1.1060E-02	1.1060E-02
31.50	1.1503E-02	1.1503E-02	1.1503E-02	1.1503E-02
31.75	1.1946E-02	1.1946E-02	1.1946E-02	1.1946E-02
32.00	1.2389E-02	1.2389E-02	1.2389E-02	1.2389E-02
32.25	1.2832E-02	1.2832E-02	1.2832E-02	1.2832E-02
32.50	1.3275E-02	1.3275E-02	1.3275E-02	1.3275E-02
32.75	1.3718E-02	1.3718E-02	1.3718E-02	1.3718E-02
33.00	1.4161E-02	1.4161E-02	1.4161E-02	1.4161E-02
33.25	1.4604E-02	1.4604E-02	1.4604E-02	1.4604E-02
33.50	1.5047E-02	1.5047E-02	1.5047E-02	1.5047E-02
33.75	1.5490E-02	1.5490E-02	1.5490E-02	1.5490E-02
34.00	1.5933E-02	1.5933E-02	1.5933E-02	1.5933E-02
34.25	1.6376E-02	1.6376E-02	1.6376E-02	1.6376E-02
34.50	1.6819E-02	1.6819E-02	1.6819E-02	1.6819E-02
34.75	1.7262E-02	1.7262E-02	1.7262E-02	1.7262E-02
35.00	1.7705E-02	1.7705E-02	1.7705E-02	1.7705E-02
35.25	1.8148E-02	1.8148E-02	1.8148E-02	1.8148E-02
35.50	1.8591E-02	1.8591E-02	1.8591E-02	1.8591E-02
35.75	1.9034E-02	1.9034E-02	1.9034E-02	1.9034E-02
36.00	1.9477E-02	1.9477E-02	1.9477E-02	1.9477E-02
36.25	1.9920E-02	1.9920E-02	1.9920E-02	1.9920E-02
36.50	2.0363E-02	2.0363E-02	2.0363E-02	2.0363E-02
36.75	2.0806E-02	2.0806E-02	2.0806E-02	2.0806E-02
37.00	2.1249E-02	2.1249E-02	2.1249E-02	2.1249E-02
37.25	2.1692E-02	2.1692E-02	2.1692E-02	2.1692E-02
37.50	2.2135E-02	2.2135E-02	2.2135E-02	2.2135E-02
37.75	2.2578E-02	2.2578E-02	2.2578E-02	2.2578E-02
38.00	2.3021E-02	2.3021E-02	2.3021E-02	2.3021E-02
38.25	2.3464E-02	2.3464E-02	2.3464E-02	2.3464E-02
38.50	2.3907E-02	2.3907E-02	2.3907E-02	2.3907E-02
38.75	2.4350E-02	2.4350E-02	2.4350E-02	2.4350E-02
39.00	2.4793E-02	2.4793E-02	2.4793E-02	2.4793E-02
39.25	2.5236E-02	2.5236E-02	2.5236E-02	2.5236E-02
39.50	2.5679E-02	2.5679E-02	2.5679E-02	2.5679E-02
39.75	2.6123E-02	2.6123E-02	2.6123E-02	2.6123E-02
40.00	2.6566E-02	2.6566E-02	2.6566E-02	2.6566E-02

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 6

VARIABLE	MAXIMUM	TIME	MINIMUM	TIME
1 S11-1-1	1.964E-15	10.0	-1.491E+03	29.3

2	S11-2-1	8.882E-16	1.00	-1.491E+03	29.3
3	S11-3-1	6.217E-15	4.00	-1.491E+03	29.3
4	S11-4-1	4.441E-15	4.00	-1.491E+03	29.3

TIME	VARIABLE 1	2	3	4
1.000	1.7764E-15	8.8818E-16	1.7764E-15	2.6645E-15
2.000	.0000E+00	-2.6645E-15	8.8818E-16	-8.8818E-16
3.000	.0000E+00	-1.7764E-15	3.5527E-15	1.7764E-15
4.000	1.7764E-15	-8.8818E-16	6.2172E-15	4.4409E-15
5.000	.0000E+00	-3.5527E-15	5.3291E-15	3.5527E-15
6.000	1.2593E-15	-2.2934E-15	3.1222E-15	1.3459E-15
7.000	-8.1044E-17	-3.6338E-15	3.5150E-15	1.7386E-15
8.000	1.1782E-15	-2.3745E-15	2.1747E-15	3.9829E-16
9.000	7.0444E-16	-2.8483E-15	2.5674E-15	7.9104E-16
10.00	1.9637E-15	-1.5890E-15	2.9601E-15	1.1838E-15
10.25	-5.726	-5.726	-5.726	-5.726
10.50	-11.45	-11.45	-11.45	-11.45
10.75	-17.18	-17.18	-17.18	-17.18
11.00	-22.91	-22.91	-22.91	-22.91
11.25	-28.63	-28.63	-28.63	-28.63
11.50	-34.36	-34.36	-34.36	-34.36
11.75	-40.08	-40.08	-40.08	-40.08
12.00	-45.81	-45.81	-45.81	-45.81
12.25	-51.54	-51.54	-51.54	-51.54
12.50	-57.26	-57.26	-57.26	-57.26
12.75	-62.99	-62.99	-62.99	-62.99
13.00	-68.72	-68.72	-68.72	-68.72
13.25	-74.44	-74.44	-74.44	-74.44
13.50	-80.17	-80.17	-80.17	-80.17
13.75	-85.90	-85.90	-85.90	-85.90
14.00	-91.62	-91.62	-91.62	-91.62
14.25	-97.35	-97.35	-97.35	-97.35
14.50	-103.1	-103.1	-103.1	-103.1
14.75	-108.8	-108.8	-108.8	-108.8
15.00	-114.5	-114.5	-114.5	-114.5
15.25	-120.3	-120.3	-120.3	-120.3
15.50	-126.0	-126.0	-126.0	-126.0
15.75	-131.7	-131.7	-131.7	-131.7
16.00	-137.4	-137.4	-137.4	-137.4
16.25	-143.2	-143.2	-143.2	-143.2
16.50	-148.9	-148.9	-148.9	-148.9
16.75	-154.6	-154.6	-154.6	-154.6
17.00	-160.3	-160.3	-160.3	-160.3
17.25	-166.1	-166.1	-166.1	-166.1
17.50	-171.8	-171.8	-171.8	-171.8
17.75	-177.5	-177.5	-177.5	-177.5
18.00	-183.2	-183.2	-183.2	-183.2
18.25	-189.0	-189.0	-189.0	-189.0
18.50	-194.7	-194.7	-194.7	-194.7
18.75	-200.4	-200.4	-200.4	-200.4
19.00	-206.1	-206.1	-206.1	-206.1
19.25	-211.9	-211.9	-211.9	-211.9
19.50	-217.6	-217.6	-217.6	-217.6
19.75	-223.3	-223.3	-223.3	-223.3
20.00	-229.1	-229.1	-229.1	-229.1
20.25	-281.5	-281.5	-281.5	-281.5
20.50	-334.0	-334.0	-334.0	-334.0
20.75	-386.4	-386.4	-386.4	-386.4
21.00	-438.9	-438.9	-438.9	-438.9
21.25	-491.4	-491.4	-491.4	-491.4
21.50	-543.8	-543.8	-543.8	-543.8
21.75	-596.3	-596.3	-596.3	-596.3
22.00	-648.8	-648.8	-648.8	-648.8
22.25	-701.2	-701.2	-701.2	-701.2
22.50	-753.7	-753.7	-753.7	-753.7
22.75	-806.1	-806.1	-806.1	-806.1
23.00	-858.6	-858.6	-858.6	-858.6
23.25	-911.1	-911.1	-911.1	-911.1
23.50	-963.5	-963.5	-963.5	-963.5
23.75	-1016.	-1016.	-1016.	-1016.
24.00	-1068.	-1068.	-1068.	-1068.
24.25	-1121.	-1121.	-1121.	-1121.
24.50	-1173.	-1173.	-1173.	-1173.
24.75	-1219.	-1219.	-1219.	-1219.

25.00	-1257.	-1257.	-1257.	-1257.
25.25	-1290.	-1290.	-1290.	-1290.
25.50	-1319.	-1319.	-1319.	-1319.
25.75	-1345.	-1345.	-1345.	-1345.
26.00	-1368.	-1368.	-1368.	-1368.
26.25	-1388.	-1388.	-1388.	-1388.
26.50	-1407.	-1407.	-1407.	-1407.
26.75	-1423.	-1423.	-1423.	-1423.
27.00	-1437.	-1437.	-1437.	-1437.
27.25	-1449.	-1449.	-1449.	-1449.
27.50	-1459.	-1459.	-1459.	-1459.
27.75	-1468.	-1468.	-1468.	-1468.
28.00	-1475.	-1475.	-1475.	-1475.
28.25	-1481.	-1481.	-1481.	-1481.
28.50	-1486.	-1486.	-1486.	-1486.
28.75	-1489.	-1489.	-1489.	-1489.
29.00	-1491.	-1491.	-1491.	-1491.
29.25	-1491.	-1491.	-1491.	-1491.
29.50	-1491.	-1491.	-1491.	-1491.
29.75	-1490.	-1490.	-1490.	-1490.
30.00	-1489.	-1489.	-1489.	-1489.
30.25	-1480.	-1480.	-1480.	-1480.
30.50	-1471.	-1471.	-1471.	-1471.
30.75	-1460.	-1460.	-1460.	-1460.
31.00	-1448.	-1448.	-1448.	-1448.
31.25	-1434.	-1434.	-1434.	-1434.
31.50	-1419.	-1419.	-1419.	-1419.
31.75	-1403.	-1403.	-1403.	-1403.
32.00	-1387.	-1387.	-1387.	-1387.
32.25	-1370.	-1370.	-1370.	-1370.
32.50	-1352.	-1352.	-1352.	-1352.
32.75	-1335.	-1335.	-1335.	-1335.
33.00	-1316.	-1316.	-1316.	-1316.
33.25	-1298.	-1298.	-1298.	-1298.
33.50	-1279.	-1279.	-1279.	-1279.
33.75	-1261.	-1261.	-1261.	-1261.
34.00	-1242.	-1242.	-1242.	-1242.
34.25	-1224.	-1224.	-1224.	-1224.
34.50	-1205.	-1205.	-1205.	-1205.
34.75	-1187.	-1187.	-1187.	-1187.
35.00	-1169.	-1169.	-1169.	-1169.
35.25	-1151.	-1151.	-1151.	-1151.
35.50	-1133.	-1133.	-1133.	-1133.
35.75	-1116.	-1116.	-1116.	-1116.
36.00	-1098.	-1098.	-1098.	-1098.
36.25	-1081.	-1081.	-1081.	-1081.
36.50	-1064.	-1064.	-1064.	-1064.
36.75	-1048.	-1048.	-1048.	-1048.
37.00	-1032.	-1032.	-1032.	-1032.
37.25	-1016.	-1016.	-1016.	-1016.
37.50	-1000.0	-1000.0	-1000.0	-1000.0
37.75	-984.5	-984.5	-984.5	-984.5
38.00	-969.4	-969.4	-969.4	-969.4
38.25	-954.6	-954.6	-954.6	-954.6
38.50	-940.0	-940.0	-940.0	-940.0
38.75	-925.7	-925.7	-925.7	-925.7
39.00	-911.8	-911.8	-911.8	-911.8
39.25	-898.1	-898.1	-898.1	-898.1
39.50	-884.6	-884.6	-884.6	-884.6
39.75	-871.5	-871.5	-871.5	-871.5
40.00	-858.6	-858.6	-858.6	-858.6

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 7

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S22-1-1	164.	4.00	-1.826E-13	29.3
2	S22-2-1	164.	4.00	-1.826E-13	29.3
3	S22-3-1	164.	4.00	-1.826E-13	29.3
4	S22-4-1	164.	4.00	-1.826E-13	29.3

TIME	VARIABLE 1	2	3	4
1.000	40.92	40.92	40.92	40.92
2.000	81.84	81.84	81.84	81.84
3.000	122.8	122.8	122.8	122.8
4.000	163.7	163.7	163.7	163.7
5.000	.0000E+00	.0000E+00	.0000E+00	.0000E+00
6.000	-1.1516E-31	3.3032E-32	-1.8925E-31	1.0713E-31
7.000	-5.0822E-32	2.9345E-32	-2.2695E-31	6.9429E-32
8.000	-5.4229E-32	1.2024E-31	-1.3605E-31	1.6032E-31
9.000	-5.7396E-32	5.8633E-32	-1.6844E-31	1.2794E-31
10.00	-5.7589E-33	1.3757E-31	-8.9505E-32	2.0687E-31
10.25	-7.0127E-16	-7.0127E-16	-7.0127E-16	-7.0127E-16
10.50	-1.4025E-15	-1.4025E-15	-1.4025E-15	-1.4025E-15
10.75	-2.1038E-15	-2.1038E-15	-2.1038E-15	-2.1038E-15
11.00	-2.8051E-15	-2.8051E-15	-2.8051E-15	-2.8051E-15
11.25	-3.5064E-15	-3.5064E-15	-3.5064E-15	-3.5064E-15
11.50	-4.2076E-15	-4.2076E-15	-4.2076E-15	-4.2076E-15
11.75	-4.9089E-15	-4.9089E-15	-4.9089E-15	-4.9089E-15
12.00	-5.6102E-15	-5.6102E-15	-5.6102E-15	-5.6102E-15
12.25	-6.3115E-15	-6.3115E-15	-6.3115E-15	-6.3115E-15
12.50	-7.0127E-15	-7.0127E-15	-7.0127E-15	-7.0127E-15
12.75	-7.7140E-15	-7.7140E-15	-7.7140E-15	-7.7140E-15
13.00	-8.4153E-15	-8.4153E-15	-8.4153E-15	-8.4153E-15
13.25	-9.1166E-15	-9.1166E-15	-9.1166E-15	-9.1166E-15
13.50	-9.8178E-15	-9.8178E-15	-9.8178E-15	-9.8178E-15
13.75	-1.0519E-14	-1.0519E-14	-1.0519E-14	-1.0519E-14
14.00	-1.1220E-14	-1.1220E-14	-1.1220E-14	-1.1220E-14
14.25	-1.1922E-14	-1.1922E-14	-1.1922E-14	-1.1922E-14
14.50	-1.2623E-14	-1.2623E-14	-1.2623E-14	-1.2623E-14
14.75	-1.3324E-14	-1.3324E-14	-1.3324E-14	-1.3324E-14
15.00	-1.4025E-14	-1.4025E-14	-1.4025E-14	-1.4025E-14
15.25	-1.4727E-14	-1.4727E-14	-1.4727E-14	-1.4727E-14
15.50	-1.5428E-14	-1.5428E-14	-1.5428E-14	-1.5428E-14
15.75	-1.6129E-14	-1.6129E-14	-1.6129E-14	-1.6129E-14
16.00	-1.6831E-14	-1.6831E-14	-1.6831E-14	-1.6831E-14
16.25	-1.7532E-14	-1.7532E-14	-1.7532E-14	-1.7532E-14
16.50	-1.8233E-14	-1.8233E-14	-1.8233E-14	-1.8233E-14
16.75	-1.8934E-14	-1.8934E-14	-1.8934E-14	-1.8934E-14
17.00	-1.9636E-14	-1.9636E-14	-1.9636E-14	-1.9636E-14
17.25	-2.0337E-14	-2.0337E-14	-2.0337E-14	-2.0337E-14
17.50	-2.1038E-14	-2.1038E-14	-2.1038E-14	-2.1038E-14
17.75	-2.1739E-14	-2.1739E-14	-2.1739E-14	-2.1739E-14
18.00	-2.2441E-14	-2.2441E-14	-2.2441E-14	-2.2441E-14
18.25	-2.3142E-14	-2.3142E-14	-2.3142E-14	-2.3142E-14
18.50	-2.3843E-14	-2.3843E-14	-2.3843E-14	-2.3843E-14
18.75	-2.4545E-14	-2.4545E-14	-2.4545E-14	-2.4545E-14
19.00	-2.5246E-14	-2.5246E-14	-2.5246E-14	-2.5246E-14
19.25	-2.5947E-14	-2.5947E-14	-2.5947E-14	-2.5947E-14
19.50	-2.6648E-14	-2.6648E-14	-2.6648E-14	-2.6648E-14
19.75	-2.7350E-14	-2.7350E-14	-2.7350E-14	-2.7350E-14
20.00	-2.8051E-14	-2.8051E-14	-2.8051E-14	-2.8051E-14
20.25	-3.4476E-14	-3.4476E-14	-3.4476E-14	-3.4476E-14
20.50	-4.0901E-14	-4.0901E-14	-4.0901E-14	-4.0901E-14
20.75	-4.7325E-14	-4.7325E-14	-4.7325E-14	-4.7325E-14
21.00	-5.3750E-14	-5.3750E-14	-5.3750E-14	-5.3750E-14
21.25	-6.0175E-14	-6.0175E-14	-6.0175E-14	-6.0175E-14
21.50	-6.6600E-14	-6.6600E-14	-6.6600E-14	-6.6600E-14
21.75	-7.3025E-14	-7.3025E-14	-7.3025E-14	-7.3025E-14
22.00	-7.9450E-14	-7.9450E-14	-7.9450E-14	-7.9450E-14
22.25	-8.5875E-14	-8.5875E-14	-8.5875E-14	-8.5875E-14
22.50	-9.2299E-14	-9.2299E-14	-9.2299E-14	-9.2299E-14
22.75	-9.8724E-14	-9.8724E-14	-9.8724E-14	-9.8724E-14
23.00	-1.0515E-13	-1.0515E-13	-1.0515E-13	-1.0515E-13
23.25	-1.1157E-13	-1.1157E-13	-1.1157E-13	-1.1157E-13
23.50	-1.1800E-13	-1.1800E-13	-1.1800E-13	-1.1800E-13
23.75	-1.2442E-13	-1.2442E-13	-1.2442E-13	-1.2442E-13
24.00	-1.3085E-13	-1.3085E-13	-1.3085E-13	-1.3085E-13
24.25	-1.3727E-13	-1.3727E-13	-1.3727E-13	-1.3727E-13
24.50	-1.4370E-13	-1.4370E-13	-1.4370E-13	-1.4370E-13
24.75	-1.4924E-13	-1.4924E-13	-1.4924E-13	-1.4924E-13
25.00	-1.5390E-13	-1.5390E-13	-1.5390E-13	-1.5390E-13
25.25	-1.5793E-13	-1.5793E-13	-1.5793E-13	-1.5793E-13
25.50	-1.6149E-13	-1.6149E-13	-1.6149E-13	-1.6149E-13
25.75	-1.6466E-13	-1.6466E-13	-1.6466E-13	-1.6466E-13
26.00	-1.6749E-13	-1.6749E-13	-1.6749E-13	-1.6749E-13

26.25	-1.7001E-13	-1.7001E-13	-1.7001E-13	-1.7001E-13
26.50	-1.7225E-13	-1.7225E-13	-1.7225E-13	-1.7225E-13
26.75	-1.7422E-13	-1.7422E-13	-1.7422E-13	-1.7422E-13
27.00	-1.7595E-13	-1.7595E-13	-1.7595E-13	-1.7595E-13
27.25	-1.7744E-13	-1.7744E-13	-1.7744E-13	-1.7744E-13
27.50	-1.7872E-13	-1.7872E-13	-1.7872E-13	-1.7872E-13
27.75	-1.7980E-13	-1.7980E-13	-1.7980E-13	-1.7980E-13
28.00	-1.8068E-13	-1.8068E-13	-1.8068E-13	-1.8068E-13
28.25	-1.8139E-13	-1.8139E-13	-1.8139E-13	-1.8139E-13
28.50	-1.8193E-13	-1.8193E-13	-1.8193E-13	-1.8193E-13
28.75	-1.8231E-13	-1.8231E-13	-1.8231E-13	-1.8231E-13
29.00	-1.8254E-13	-1.8254E-13	-1.8254E-13	-1.8254E-13
29.25	-1.8263E-13	-1.8263E-13	-1.8263E-13	-1.8263E-13
29.50	-1.8260E-13	-1.8260E-13	-1.8260E-13	-1.8260E-13
29.75	-1.8248E-13	-1.8248E-13	-1.8248E-13	-1.8248E-13
30.00	-1.8229E-13	-1.8229E-13	-1.8229E-13	-1.8229E-13
30.25	-1.8121E-13	-1.8121E-13	-1.8121E-13	-1.8121E-13
30.50	-1.8014E-13	-1.8014E-13	-1.8014E-13	-1.8014E-13
30.75	-1.7881E-13	-1.7881E-13	-1.7881E-13	-1.7881E-13
31.00	-1.7729E-13	-1.7729E-13	-1.7729E-13	-1.7729E-13
31.25	-1.7561E-13	-1.7561E-13	-1.7561E-13	-1.7561E-13
31.50	-1.7380E-13	-1.7380E-13	-1.7380E-13	-1.7380E-13
31.75	-1.7187E-13	-1.7187E-13	-1.7187E-13	-1.7187E-13
32.00	-1.6986E-13	-1.6986E-13	-1.6986E-13	-1.6986E-13
32.25	-1.6777E-13	-1.6777E-13	-1.6777E-13	-1.6777E-13
32.50	-1.6562E-13	-1.6562E-13	-1.6562E-13	-1.6562E-13
32.75	-1.6343E-13	-1.6343E-13	-1.6343E-13	-1.6343E-13
33.00	-1.6120E-13	-1.6120E-13	-1.6120E-13	-1.6120E-13
33.25	-1.5896E-13	-1.5896E-13	-1.5896E-13	-1.5896E-13
33.50	-1.5669E-13	-1.5669E-13	-1.5669E-13	-1.5669E-13
33.75	-1.5442E-13	-1.5442E-13	-1.5442E-13	-1.5442E-13
34.00	-1.5215E-13	-1.5215E-13	-1.5215E-13	-1.5215E-13
34.25	-1.4988E-13	-1.4988E-13	-1.4988E-13	-1.4988E-13
34.50	-1.4763E-13	-1.4763E-13	-1.4763E-13	-1.4763E-13
34.75	-1.4539E-13	-1.4539E-13	-1.4539E-13	-1.4539E-13
35.00	-1.4316E-13	-1.4316E-13	-1.4316E-13	-1.4316E-13
35.25	-1.4096E-13	-1.4096E-13	-1.4096E-13	-1.4096E-13
35.50	-1.3879E-13	-1.3879E-13	-1.3879E-13	-1.3879E-13
35.75	-1.3664E-13	-1.3664E-13	-1.3664E-13	-1.3664E-13
36.00	-1.3451E-13	-1.3451E-13	-1.3451E-13	-1.3451E-13
36.25	-1.3242E-13	-1.3242E-13	-1.3242E-13	-1.3242E-13
36.50	-1.3036E-13	-1.3036E-13	-1.3036E-13	-1.3036E-13
36.75	-1.2834E-13	-1.2834E-13	-1.2834E-13	-1.2834E-13
37.00	-1.2634E-13	-1.2634E-13	-1.2634E-13	-1.2634E-13
37.25	-1.2438E-13	-1.2438E-13	-1.2438E-13	-1.2438E-13
37.50	-1.2246E-13	-1.2246E-13	-1.2246E-13	-1.2246E-13
37.75	-1.2057E-13	-1.2057E-13	-1.2057E-13	-1.2057E-13
38.00	-1.1872E-13	-1.1872E-13	-1.1872E-13	-1.1872E-13
38.25	-1.1690E-13	-1.1690E-13	-1.1690E-13	-1.1690E-13
38.50	-1.1512E-13	-1.1512E-13	-1.1512E-13	-1.1512E-13
38.75	-1.1337E-13	-1.1337E-13	-1.1337E-13	-1.1337E-13
39.00	-1.1166E-13	-1.1166E-13	-1.1166E-13	-1.1166E-13
39.25	-1.0998E-13	-1.0998E-13	-1.0998E-13	-1.0998E-13
39.50	-1.0834E-13	-1.0834E-13	-1.0834E-13	-1.0834E-13
39.75	-1.0673E-13	-1.0673E-13	-1.0673E-13	-1.0673E-13
40.00	-1.0515E-13	-1.0515E-13	-1.0515E-13	-1.0515E-13

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 8

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S12-1-1	1.491E+03	29.3	-1.473E-15	4.00
2	S12-2-1	1.491E+03	29.3	-1.123E-15	10.0
3	S12-3-1	1.491E+03	29.3	.000E+00	5.00
4	S12-4-1	1.491E+03	29.3	-1.689E-15	10.0

TIME	VARIABLE 1	2	3	4
1.000	-7.3655E-16	-7.3655E-16	.0000E+00	.0000E+00
2.000	7.3655E-16	-7.3655E-16	2.9462E-15	.0000E+00

3.000	.0000E+00	7.3655E-16	2.9462E-15	.0000E+00
4.000	-1.4731E-15	7.3655E-16	2.9462E-15	.0000E+00
5.000	-7.8886E-31	-3.9443E-31	.0000E+00	-7.3770E-31
6.000	9.4032E-16	-2.6972E-16	1.5453E-15	-8.7475E-16
7.000	4.1499E-16	-2.3962E-16	1.8532E-15	-5.6693E-16
8.000	4.4281E-16	-9.8183E-16	1.1110E-15	-1.3091E-15
9.000	4.6867E-16	-4.7877E-16	1.3754E-15	-1.0447E-15
10.00	4.7025E-17	-1.1233E-15	7.3086E-16	-1.6892E-15
10.25	5.726	5.726	5.726	5.726
10.50	11.45	11.45	11.45	11.45
10.75	17.18	17.18	17.18	17.18
11.00	22.91	22.91	22.91	22.91
11.25	28.63	28.63	28.63	28.63
11.50	34.36	34.36	34.36	34.36
11.75	40.08	40.08	40.08	40.08
12.00	45.81	45.81	45.81	45.81
12.25	51.54	51.54	51.54	51.54
12.50	57.26	57.26	57.26	57.26
12.75	62.99	62.99	62.99	62.99
13.00	68.72	68.72	68.72	68.72
13.25	74.44	74.44	74.44	74.44
13.50	80.17	80.17	80.17	80.17
13.75	85.90	85.90	85.90	85.90
14.00	91.62	91.62	91.62	91.62
14.25	97.35	97.35	97.35	97.35
14.50	103.1	103.1	103.1	103.1
14.75	108.8	108.8	108.8	108.8
15.00	114.5	114.5	114.5	114.5
15.25	120.3	120.3	120.3	120.3
15.50	126.0	126.0	126.0	126.0
15.75	131.7	131.7	131.7	131.7
16.00	137.4	137.4	137.4	137.4
16.25	143.2	143.2	143.2	143.2
16.50	148.9	148.9	148.9	148.9
16.75	154.6	154.6	154.6	154.6
17.00	160.3	160.3	160.3	160.3
17.25	166.1	166.1	166.1	166.1
17.50	171.8	171.8	171.8	171.8
17.75	177.5	177.5	177.5	177.5
18.00	183.2	183.2	183.2	183.2
18.25	189.0	189.0	189.0	189.0
18.50	194.7	194.7	194.7	194.7
18.75	200.4	200.4	200.4	200.4
19.00	206.1	206.1	206.1	206.1
19.25	211.9	211.9	211.9	211.9
19.50	217.6	217.6	217.6	217.6
19.75	223.3	223.3	223.3	223.3
20.00	229.1	229.1	229.1	229.1
20.25	281.5	281.5	281.5	281.5
20.50	334.0	334.0	334.0	334.0
20.75	386.4	386.4	386.4	386.4
21.00	438.9	438.9	438.9	438.9
21.25	491.4	491.4	491.4	491.4
21.50	543.8	543.8	543.8	543.8
21.75	596.3	596.3	596.3	596.3
22.00	648.8	648.8	648.8	648.8
22.25	701.2	701.2	701.2	701.2
22.50	753.7	753.7	753.7	753.7
22.75	806.1	806.1	806.1	806.1
23.00	858.6	858.6	858.6	858.6
23.25	911.1	911.1	911.1	911.1
23.50	963.5	963.5	963.5	963.5
23.75	1016.	1016.	1016.	1016.
24.00	1068.	1068.	1068.	1068.
24.25	1121.	1121.	1121.	1121.
24.50	1173.	1173.	1173.	1173.
24.75	1219.	1219.	1219.	1219.
25.00	1257.	1257.	1257.	1257.
25.25	1290.	1290.	1290.	1290.
25.50	1319.	1319.	1319.	1319.
25.75	1345.	1345.	1345.	1345.
26.00	1368.	1368.	1368.	1368.
26.25	1388.	1388.	1388.	1388.
26.50	1407.	1407.	1407.	1407.
26.75	1423.	1423.	1423.	1423.
27.00	1437.	1437.	1437.	1437.

27.25	1449.	1449.	1449.	1449.
27.50	1459.	1459.	1459.	1459.
27.75	1468.	1468.	1468.	1468.
28.00	1475.	1475.	1475.	1475.
28.25	1481.	1481.	1481.	1481.
28.50	1486.	1486.	1486.	1486.
28.75	1489.	1489.	1489.	1489.
29.00	1491.	1491.	1491.	1491.
29.25	1491.	1491.	1491.	1491.
29.50	1491.	1491.	1491.	1491.
29.75	1490.	1490.	1490.	1490.
30.00	1489.	1489.	1489.	1489.
30.25	1480.	1480.	1480.	1480.
30.50	1471.	1471.	1471.	1471.
30.75	1460.	1460.	1460.	1460.
31.00	1448.	1448.	1448.	1448.
31.25	1434.	1434.	1434.	1434.
31.50	1419.	1419.	1419.	1419.
31.75	1403.	1403.	1403.	1403.
32.00	1387.	1387.	1387.	1387.
32.25	1370.	1370.	1370.	1370.
32.50	1352.	1352.	1352.	1352.
32.75	1335.	1335.	1335.	1335.
33.00	1316.	1316.	1316.	1316.
33.25	1298.	1298.	1298.	1298.
33.50	1279.	1279.	1279.	1279.
33.75	1261.	1261.	1261.	1261.
34.00	1242.	1242.	1242.	1242.
34.25	1224.	1224.	1224.	1224.
34.50	1205.	1205.	1205.	1205.
34.75	1187.	1187.	1187.	1187.
35.00	1169.	1169.	1169.	1169.
35.25	1151.	1151.	1151.	1151.
35.50	1133.	1133.	1133.	1133.
35.75	1116.	1116.	1116.	1116.
36.00	1098.	1098.	1098.	1098.
36.25	1081.	1081.	1081.	1081.
36.50	1064.	1064.	1064.	1064.
36.75	1048.	1048.	1048.	1048.
37.00	1032.	1032.	1032.	1032.
37.25	1016.	1016.	1016.	1016.
37.50	1000.0	1000.0	1000.0	1000.0
37.75	984.5	984.5	984.5	984.5
38.00	969.4	969.4	969.4	969.4
38.25	954.6	954.6	954.6	954.6
38.50	940.0	940.0	940.0	940.0
38.75	925.7	925.7	925.7	925.7
39.00	911.8	911.8	911.8	911.8
39.25	898.1	898.1	898.1	898.1
39.50	884.6	884.6	884.6	884.6
39.75	871.5	871.5	871.5	871.5
40.00	858.6	858.6	858.6	858.6

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

WOC.abdat

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*HEADING
 SHEAR TEST RUN
*NODE,NSET=ALLNODES
    1, 0.00000E+00, 0.00000E+00, 0.00000E+00
**  2, 0.00000E+00, 5.00000E-01, 0.00000E+00
    3, 0.00000E+00, 1.00000E+00, 0.00000E+00
**  4, 0.00000E+00, 1.50000E+00, 0.00000E+00
**  5, 0.00000E+00, 2.00000E+00, 0.00000E+00
**  6, 5.00000E-01, 0.00000E+00, 0.00000E+00
**  8, 5.00000E-01, 1.00000E+00, 0.00000E+00
** 10, 5.00000E-01, 2.00000E+00, 0.00000E+00
   11, 1.00000E+00, 0.00000E+00, 0.00000E+00
** 12, 1.00000E+00, 5.00000E-01, 0.00000E+00
   13, 1.00000E+00, 1.00000E+00, 0.00000E+00
** 14, 1.00000E+00, 1.50000E+00, 0.00000E+00
** 15, 1.00000E+00, 2.00000E+00, 0.00000E+00
********************
*ELEMENT,TYPE=CPE4,ELSET=RCONC
1,1,11,13,3
********************
*MATERIAL,NAME=RCONC
*USER MATERIAL,CONSTANT=25
** BASIC PROPERTIES
      3,   3000.,  96E-6,    2.00E6,    0.15,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      0.,     0.,      0.,      0.,      0.,      0.,      0.,      0.
      4.,
*DEPVAR
2
*EXPANSION
 6.00E-06
********************
*ELSET,ELSET=G1017
**ELEMENT=CPE8R,MATERIAL=RCONC,SECTION=SO
1
*SOLIDSECTION,ELSET=G1017,MATERIAL=RCONC
 1.00E+00
********************
*ELSET,ELSET=ALLELEME
  1
*NSET,NSET=SHEARX
 3, 13
*NSET,NSET=UFIX
 1, 11
*PLOT

*DRAW
********************
*AMPLITUDE,TIME=A,NAME=DEAD
0.0,1.0,100.0,1.0
*AMPLITUDE,TIME=A,NAME=LIVE
0.0,0.000, 1.0,0.000, 2.0,0.156, 3.0,0.309
4.0,0.454, 5.0,0.588, 6.0,0.707, 7.0,0.809
8.0,0.891, 9.0,0.951, 10.0,0.988, 11.0,1.000
*AMPLITUDE,TIME=A,NAME=TEMP
0.0,1.0,100.0,1.0
*BOUNDARY
1,2,2,0.0
11,1,2,0.0
*RESTART,WRITE,FREQUENCY=10
********************
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=10
*STATIC,PTOL=1.0
10.,10.,.005,1.
*ELFILE,FREQUENCY=1,ELSET=ALLELEME
E
S
SDV
LOADS
NFORC
*NODEFILE,FREQUENCY=1,NSET=ALLNODES
U,V,A
RF
```

```
CF
*ELPRINT,FREQUENCY=0
*NODEPRINT,FREQUENCY=0
*BOUNDARY,OP=MOD
3,2,2,0.0008
13,2,2,0.0008
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.001
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.01
*END STEP
*STEP,INC=1000,AMPLITUDE=RAMP,CYCLE=40
*STATIC,PTOL=1.0,DIRECT=NOSTOP
0.25,10.,.005,1.0
*BOUNDARY,OP=MOD
3,1,1,.08
*END STEP
```

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SUMMARY OF JOB INFORMATION

STEP #	INC #	ATTEMP #	ITER #	TOT TIME LPF	TIME INC LPF INC	IF RIKS
1	1	1	1	1.00	1.00	
1	2	1	1	2.00	1.00	
1	3	1	1	3.00	1.00	
1	4	1	1	4.00	1.00	
1	5	1	1	5.00	1.00	
1	6	1	1	6.00	1.00	
1	7	1	1	7.00	1.00	
1	8	1	1	8.00	1.00	
1	9	1	1	9.00	1.00	
1	10	1	1	10.0	1.00	
2	1	1	1	.250	.250	
2	2	1	1	.500	.250	
2	3	1	1	.750	.250	
2	4	1	1	1.00	.250	
2	5	1	1	1.25	.250	
2	6	1	1	1.50	.250	
2	7	1	1	1.75	.250	
2	8	1	1	2.00	.250	
2	9	1	1	2.25	.250	
2	10	1	1	2.50	.250	
2	11	1	1	2.75	.250	
2	12	1	1	3.00	.250	
2	13	1	1	3.25	.250	
2	14	1	1	3.50	.250	
2	15	1	1	3.75	.250	
2	16	1	1	4.00	.250	
2	17	1	1	4.25	.250	
2	18	1	1	4.50	.250	
2	19	1	1	4.75	.250	
2	20	1	1	5.00	.250	
2	21	1	1	5.25	.250	
2	22	1	1	5.50	.250	
2	23	1	1	5.75	.250	
2	24	1	1	6.00	.250	
2	25	1	1	6.25	.250	
2	26	1	1	6.50	.250	
2	27	1	1	6.75	.250	
2	28	1	1	7.00	.250	
2	29	1	1	7.25	.250	
2	30	1	1	7.50	.250	
2	31	1	1	7.75	.250	
2	32	1	1	8.00	.250	
2	33	1	1	8.25	.250	
2	34	1	1	8.50	.250	
2	35	1	1	8.75	.250	
2	36	1	1	9.00	.250	
2	37	1	1	9.25	.250	
2	38	1	1	9.50	.250	
2	39	1	1	9.75	.250	
2	40	1	1	10.0	.250	
3	1	1	1	.250	.250	
3	2	1	1	.500	.250	
3	3	1	1	.750	.250	
3	4	1	1	1.00	.250	
3	5	1	1	1.25	.250	
3	6	1	1	1.50	.250	
3	7	1	1	1.75	.250	
3	8	1	1	2.00	.250	
3	9	1	1	2.25	.250	
3	10	1	1	2.50	.250	
3	11	1	1	2.75	.250	
3	12	1	1	3.00	.250	
3	13	1	1	3.25	.250	
3	14	1	1	3.50	.250	
3	15	1	1	3.75	.250	
3	16	1	1	4.00	.250	
3	17	1	1	4.25	.250	
3	18	1	1	4.50	.250	
3	19	1	1	4.75	.250	
3	20	1	1	5.00	.250	

3	21	1	1	5.25	.250
3	22	1	1	5.50	.250
3	23	1	1	5.75	.250
3	24	1	1	6.00	.250
3	25	1	1	6.25	.250
3	26	1	1	6.50	.250
3	27	1	1	6.75	.250
3	28	1	1	7.00	.250
3	29	1	1	7.25	.250
3	30	1	1	7.50	.250
3	31	1	1	7.75	.250
3	32	1	1	8.00	.250
3	33	1	1	8.25	.250
3	34	1	1	8.50	.250
3	35	1	1	8.75	.250
3	36	1	1	9.00	.250
3	37	1	1	9.25	.250
3	38	1	1	9.50	.250
3	39	1	1	9.75	.250
3	40	1	1	10.0	.250
4	1	1	1	.250	.250
4	2	1	1	.500	.250
4	3	1	1	.750	.250
4	4	1	1	1.00	.250
4	5	1	1	1.25	.250
4	6	1	1	1.50	.250
4	7	1	1	1.75	.250
4	8	1	1	2.00	.250
4	9	1	1	2.25	.250
4	10	1	1	2.50	.250
4	11	1	1	2.75	.250
4	12	1	1	3.00	.250
4	13	1	1	3.25	.250
4	14	1	1	3.50	.250
4	15	1	1	3.75	.250
4	16	1	1	4.00	.250
4	17	1	1	4.25	.250
4	18	1	1	4.50	.250
4	19	1	1	4.75	.250
4	20	1	1	5.00	.250
4	21	1	1	5.25	.250
4	22	1	1	5.50	.250
4	23	1	1	5.75	.250
4	24	1	1	6.00	.250
4	25	1	1	6.25	.250
4	26	1	1	6.50	.250
4	27	1	1	6.75	.250
4	28	1	1	7.00	.250
4	29	1	1	7.25	.250
4	30	1	1	7.50	.250
4	31	1	1	7.75	.250
4	32	1	1	8.00	.250
4	33	1	1	8.25	.250
4	34	1	1	8.50	.250
4	35	1	1	8.75	.250
4	36	1	1	9.00	.250
4	37	1	1	9.25	.250
4	38	1	1	9.50	.250
4	39	1	1	9.75	.250
4	40	1	1	10.0	.250

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POST-PLOTTING

STARTING REQUEST 1

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	U2-3	8.000E-04	40.0	8.000E-05	1.00
2	U2-13	8.000E-04	40.0	8.000E-05	1.00
3	U1-3	8.000E-02	40.0	1.412E-05	1.00
4	U1-13	7.666E-02	40.0	-6.086E-21	2.00
5	U2-1	8.184E-39	1.00	8.000E-42	3.00
6	U2-11	8.184E-39	1.00	-7.422E-39	38.0
7	U1-1	3.344E-03	40.0	1.412E-05	1.00
8	U1-11	1.484E-38	38.0	-2.099E-55	5.00

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	8.0000E-05	8.0000E-05	1.4118E-05	-3.6600E-21	8.1841E-39	8.1841E-39	1.4118E-05	.0000E+00
2.000	1.6000E-04	1.6000E-04	2.8235E-05	-6.0859E-21	8.1841E-39	8.1841E-39	2.8235E-05	4.0071E-55
3.000	2.4000E-04	2.4000E-04	2.8235E-05	4.9828E-21	8.0000E-42	8.0000E-42	2.8235E-05	4.5653E-56
4.000	3.2000E-04	3.2000E-04	2.8235E-05	1.0055E-20	8.0000E-42	8.0000E-42	2.8235E-05	-6.3508E-56
5.000	4.0000E-04	4.0000E-04	2.8235E-05	6.8457E-21	8.0000E-42	8.0000E-42	2.8235E-05	-2.0992E-55
6.000	4.8000E-04	4.8000E-04	2.8235E-05	1.3385E-20	8.0000E-42	8.0000E-42	2.8235E-05	-7.4475E-56
7.000	5.6000E-04	5.6000E-04	2.8235E-05	3.6994E-20	8.0000E-42	8.0000E-42	2.8235E-05	2.3105E-55
8.000	6.4000E-04	6.4000E-04	2.8235E-05	4.5313E-20	8.0000E-42	8.0000E-42	2.8235E-05	1.3221E-55
9.000	7.2000E-04	7.2000E-04	2.8235E-05	6.5648E-20	8.0000E-42	8.0000E-42	2.8235E-05	3.2805E-55
10.00	8.0000E-04	8.0000E-04	2.8235E-05	7.0287E-20	8.0000E-42	8.0000E-42	2.8235E-05	-3.2835E-56
10.25	8.0000E-04	8.0000E-04	5.2529E-05	2.3287E-05	1.0304E-40	-1.0304E-40	2.9243E-05	2.0608E-40
10.50	8.0000E-04	8.0000E-04	7.6824E-05	4.6574E-05	1.0304E-40	-1.0304E-40	3.0250E-05	2.0608E-40
10.75	8.0000E-04	8.0000E-04	1.0112E-04	6.9861E-05	1.0304E-40	-1.0304E-40	3.1257E-05	2.0608E-40
11.00	8.0000E-04	8.0000E-04	1.2541E-04	9.3148E-05	1.0304E-40	-1.0304E-40	3.2264E-05	2.0608E-40
11.25	8.0000E-04	8.0000E-04	1.4971E-04	1.1643E-04	1.0304E-40	-1.0304E-40	3.3271E-05	2.0608E-40
11.50	8.0000E-04	8.0000E-04	1.7400E-04	1.3972E-04	1.0304E-40	-1.0304E-40	3.4279E-05	2.0608E-40
11.75	8.0000E-04	8.0000E-04	1.9829E-04	1.6301E-04	1.0304E-40	-1.0304E-40	3.5286E-05	2.0608E-40
12.00	8.0000E-04	8.0000E-04	2.2259E-04	1.8630E-04	1.0304E-40	-1.0304E-40	3.6293E-05	2.0608E-40
12.25	8.0000E-04	8.0000E-04	2.4688E-04	2.0958E-04	1.0304E-40	-1.0304E-40	3.7300E-05	2.0608E-40
12.50	8.0000E-04	8.0000E-04	2.7118E-04	2.3287E-04	1.0304E-40	-1.0304E-40	3.8307E-05	2.0608E-40
12.75	8.0000E-04	8.0000E-04	2.9547E-04	2.5616E-04	1.0304E-40	-1.0304E-40	3.9315E-05	2.0608E-40
13.00	8.0000E-04	8.0000E-04	3.1976E-04	2.7944E-04	1.0304E-40	-1.0304E-40	4.0322E-05	2.0608E-40
13.25	8.0000E-04	8.0000E-04	3.4406E-04	3.0273E-04	1.0304E-40	-1.0304E-40	4.1329E-05	2.0608E-40
13.50	8.0000E-04	8.0000E-04	3.6835E-04	3.2602E-04	1.0304E-40	-1.0304E-40	4.2336E-05	2.0608E-40
13.75	8.0000E-04	8.0000E-04	3.9265E-04	3.4930E-04	1.0304E-40	-1.0304E-40	4.3343E-05	2.0608E-40
14.00	8.0000E-04	8.0000E-04	4.1694E-04	3.7259E-04	1.0304E-40	-1.0304E-40	4.4351E-05	2.0608E-40
14.25	8.0000E-04	8.0000E-04	4.4124E-04	3.9588E-04	1.0304E-40	-1.0304E-40	4.5358E-05	2.0608E-40
14.50	8.0000E-04	8.0000E-04	4.6553E-04	4.1916E-04	1.0304E-40	-1.0304E-40	4.6365E-05	2.0608E-40
14.75	8.0000E-04	8.0000E-04	4.8982E-04	4.4245E-04	1.0304E-40	-1.0304E-40	4.7372E-05	2.0608E-40
15.00	8.0000E-04	8.0000E-04	5.1412E-04	4.6574E-04	1.0304E-40	-1.0304E-40	4.8379E-05	2.0608E-40
15.25	8.0000E-04	8.0000E-04	5.3841E-04	4.8903E-04	1.0304E-40	-1.0304E-40	4.9387E-05	2.0608E-40
15.50	8.0000E-04	8.0000E-04	5.6271E-04	5.1231E-04	1.0304E-40	-1.0304E-40	5.0394E-05	2.0608E-40
15.75	8.0000E-04	8.0000E-04	5.8700E-04	5.3560E-04	1.0304E-40	-1.0304E-40	5.1401E-05	2.0608E-40
16.00	8.0000E-04	8.0000E-04	6.1129E-04	5.5889E-04	1.0304E-40	-1.0304E-40	5.2408E-05	2.0608E-40
16.25	8.0000E-04	8.0000E-04	6.3559E-04	5.8217E-04	1.0304E-40	-1.0304E-40	5.3416E-05	2.0608E-40
16.50	8.0000E-04	8.0000E-04	6.5988E-04	6.0546E-04	1.0304E-40	-1.0304E-40	5.4423E-05	2.0608E-40
16.75	8.0000E-04	8.0000E-04	6.8418E-04	6.2875E-04	1.0304E-40	-1.0304E-40	5.5430E-05	2.0608E-40
17.00	8.0000E-04	8.0000E-04	7.0847E-04	6.5203E-04	1.0304E-40	-1.0304E-40	5.6437E-05	2.0608E-40
17.25	8.0000E-04	8.0000E-04	7.3276E-04	6.7532E-04	1.0304E-40	-1.0304E-40	5.7444E-05	2.0608E-40
17.50	8.0000E-04	8.0000E-04	7.5706E-04	6.9861E-04	1.0304E-40	-1.0304E-40	5.8452E-05	2.0608E-40
17.75	8.0000E-04	8.0000E-04	7.8135E-04	7.2189E-04	1.0304E-40	-1.0304E-40	5.9459E-05	2.0608E-40
18.00	8.0000E-04	8.0000E-04	8.0565E-04	7.4518E-04	1.0304E-40	-1.0304E-40	6.0466E-05	2.0608E-40
18.25	8.0000E-04	8.0000E-04	8.2994E-04	7.6847E-04	1.0304E-40	-1.0304E-40	6.1473E-05	2.0608E-40
18.50	8.0000E-04	8.0000E-04	8.5424E-04	7.9175E-04	1.0304E-40	-1.0304E-40	6.2480E-05	2.0608E-40
18.75	8.0000E-04	8.0000E-04	8.7853E-04	8.1504E-04	1.0304E-40	-1.0304E-40	6.3488E-05	2.0608E-40
19.00	8.0000E-04	8.0000E-04	9.0282E-04	8.3833E-04	1.0304E-40	-1.0304E-40	6.4495E-05	2.0608E-40
19.25	8.0000E-04	8.0000E-04	9.2712E-04	8.6162E-04	1.0304E-40	-1.0304E-40	6.5502E-05	2.0608E-40
19.50	8.0000E-04	8.0000E-04	9.5141E-04	8.8490E-04	1.0304E-40	-1.0304E-40	6.6509E-05	2.0608E-40
19.75	8.0000E-04	8.0000E-04	9.7571E-04	9.0819E-04	1.0304E-40	-1.0304E-40	6.7516E-05	2.0608E-40
20.00	8.0000E-04	8.0000E-04	1.0000E-03	9.3148E-04	1.0304E-40	-1.0304E-40	6.8524E-05	2.0608E-40
20.25	8.0000E-04	8.0000E-04	1.2250E-03	1.1471E-03	9.5430E-40	-9.5430E-40	7.7852E-05	1.9086E-39
20.50	8.0000E-04	8.0000E-04	1.4500E-03	1.3628E-03	9.5430E-40	-9.5430E-40	8.7180E-05	1.9086E-39

20.75	8.0000E-04	8.0000E-04	1.6750E-03	1.5785E-03	9.5430E-40	-9.5430E-40	9.6509E-05	1.9086E-39
21.00	8.0000E-04	8.0000E-04	1.9000E-03	1.7942E-03	9.5430E-40	-9.5430E-40	1.0584E-04	1.9086E-39
21.25	8.0000E-04	8.0000E-04	2.1250E-03	2.0098E-03	9.5430E-40	-9.5430E-40	1.1517E-04	1.9086E-39
21.50	8.0000E-04	8.0000E-04	2.3500E-03	2.2255E-03	9.5430E-40	-9.5430E-40	1.2449E-04	1.9086E-39
21.75	8.0000E-04	8.0000E-04	2.5750E-03	2.4412E-03	9.5430E-40	-9.5430E-40	1.3382E-04	1.9086E-39
22.00	8.0000E-04	8.0000E-04	2.8000E-03	2.6569E-03	9.5430E-40	-9.5430E-40	1.4315E-04	1.9086E-39
22.25	8.0000E-04	8.0000E-04	3.0250E-03	2.8725E-03	9.5430E-40	-9.5430E-40	1.5248E-04	1.9086E-39
22.50	8.0000E-04	8.0000E-04	3.2500E-03	3.0882E-03	9.5430E-40	-9.5430E-40	1.6181E-04	1.9086E-39
22.75	8.0000E-04	8.0000E-04	3.4750E-03	3.3039E-03	9.5430E-40	-9.5430E-40	1.7113E-04	1.9086E-39
23.00	8.0000E-04	8.0000E-04	3.7000E-03	3.5195E-03	9.5430E-40	-9.5430E-40	1.8046E-04	1.9086E-39
23.25	8.0000E-04	8.0000E-04	3.9250E-03	3.7352E-03	9.5430E-40	-9.5430E-40	1.8979E-04	1.9086E-39
23.50	8.0000E-04	8.0000E-04	4.1500E-03	3.9509E-03	9.5430E-40	-9.5430E-40	1.9912E-04	1.9086E-39
23.75	8.0000E-04	8.0000E-04	4.3750E-03	4.1666E-03	9.5430E-40	-9.5430E-40	2.0845E-04	1.9086E-39
24.00	8.0000E-04	8.0000E-04	4.6000E-03	4.3822E-03	9.5430E-40	-9.5430E-40	2.1778E-04	1.9086E-39
24.25	8.0000E-04	8.0000E-04	4.8250E-03	4.5979E-03	9.5430E-40	-9.5430E-40	2.2710E-04	1.9086E-39
24.50	8.0000E-04	8.0000E-04	5.0500E-03	4.8136E-03	9.5430E-40	-9.5430E-40	2.3643E-04	1.9086E-39
24.75	8.0000E-04	8.0000E-04	5.2750E-03	5.0292E-03	9.5430E-40	-9.5430E-40	2.4576E-04	1.9086E-39
25.00	8.0000E-04	8.0000E-04	5.5000E-03	5.2449E-03	9.5430E-40	-9.5430E-40	2.5509E-04	1.9086E-39
25.25	8.0000E-04	8.0000E-04	5.7250E-03	5.4606E-03	9.5430E-40	-9.5430E-40	2.6442E-04	1.9086E-39
25.50	8.0000E-04	8.0000E-04	5.9500E-03	5.6763E-03	9.5430E-40	-9.5430E-40	2.7375E-04	1.9086E-39
25.75	8.0000E-04	8.0000E-04	6.1750E-03	5.8919E-03	9.5430E-40	-9.5430E-40	2.8307E-04	1.9086E-39
26.00	8.0000E-04	8.0000E-04	6.4000E-03	6.1076E-03	9.5430E-40	-9.5430E-40	2.9240E-04	1.9086E-39
26.25	8.0000E-04	8.0000E-04	6.6250E-03	6.3233E-03	9.5430E-40	-9.5430E-40	3.0173E-04	1.9086E-39
26.50	8.0000E-04	8.0000E-04	6.8500E-03	6.5389E-03	9.5430E-40	-9.5430E-40	3.1106E-04	1.9086E-39
26.75	8.0000E-04	8.0000E-04	7.0750E-03	6.7546E-03	9.5430E-40	-9.5430E-40	3.2039E-04	1.9086E-39
27.00	8.0000E-04	8.0000E-04	7.3000E-03	6.9703E-03	9.5430E-40	-9.5430E-40	3.2972E-04	1.9086E-39
27.25	8.0000E-04	8.0000E-04	7.5250E-03	7.1860E-03	9.5430E-40	-9.5430E-40	3.3904E-04	1.9086E-39
27.50	8.0000E-04	8.0000E-04	7.7500E-03	7.4016E-03	9.5430E-40	-9.5430E-40	3.4837E-04	1.9086E-39
27.75	8.0000E-04	8.0000E-04	7.9750E-03	7.6173E-03	9.5430E-40	-9.5430E-40	3.5770E-04	1.9086E-39
28.00	8.0000E-04	8.0000E-04	8.2000E-03	7.8330E-03	9.5430E-40	-9.5430E-40	3.6703E-04	1.9086E-39
28.25	8.0000E-04	8.0000E-04	8.4250E-03	8.0486E-03	9.5430E-40	-9.5430E-40	3.7636E-04	1.9086E-39
28.50	8.0000E-04	8.0000E-04	8.6500E-03	8.2643E-03	9.5430E-40	-9.5430E-40	3.8569E-04	1.9086E-39
28.75	8.0000E-04	8.0000E-04	8.8750E-03	8.4800E-03	9.5430E-40	-9.5430E-40	3.9501E-04	1.9086E-39
29.00	8.0000E-04	8.0000E-04	9.1000E-03	8.6957E-03	9.5430E-40	-9.5430E-40	4.0434E-04	1.9086E-39
29.25	8.0000E-04	8.0000E-04	9.3250E-03	8.9113E-03	9.5430E-40	-9.5430E-40	4.1367E-04	1.9086E-39
29.50	8.0000E-04	8.0000E-04	9.5500E-03	9.1270E-03	9.5430E-40	-9.5430E-40	4.2300E-04	1.9086E-39
29.75	8.0000E-04	8.0000E-04	9.7750E-03	9.3427E-03	9.5430E-40	-9.5430E-40	4.3233E-04	1.9086E-39
30.00	8.0000E-04	8.0000E-04	1.0000E-02	9.5583E-03	9.5430E-40	-9.5430E-40	4.4165E-04	1.9086E-39
30.25	8.0000E-04	8.0000E-04	1.1750E-02	1.1236E-02	7.4223E-39	-7.4223E-39	5.1421E-04	1.4845E-38
30.50	8.0000E-04	8.0000E-04	1.3500E-02	1.2913E-02	7.4223E-39	-7.4223E-39	5.8676E-04	1.4845E-38
30.75	8.0000E-04	8.0000E-04	1.5250E-02	1.4591E-02	7.4223E-39	-7.4223E-39	6.5931E-04	1.4845E-38
31.00	8.0000E-04	8.0000E-04	1.7000E-02	1.6268E-02	7.4223E-39	-7.4223E-39	7.3187E-04	1.4845E-38
31.25	8.0000E-04	8.0000E-04	1.8750E-02	1.7946E-02	7.4223E-39	-7.4223E-39	8.0442E-04	1.4845E-38
31.50	8.0000E-04	8.0000E-04	2.0500E-02	1.9623E-02	7.4223E-39	-7.4223E-39	8.7697E-04	1.4845E-38
31.75	8.0000E-04	8.0000E-04	2.2250E-02	2.1300E-02	7.4223E-39	-7.4223E-39	9.4953E-04	1.4845E-38
32.00	8.0000E-04	8.0000E-04	2.4000E-02	2.2978E-02	7.4223E-39	-7.4223E-39	1.0221E-03	1.4845E-38
32.25	8.0000E-04	8.0000E-04	2.5750E-02	2.4655E-02	7.4223E-39	-7.4223E-39	1.0946E-03	1.4845E-38
32.50	8.0000E-04	8.0000E-04	2.7500E-02	2.6333E-02	7.4223E-39	-7.4223E-39	1.1672E-03	1.4845E-38
32.75	8.0000E-04	8.0000E-04	2.9250E-02	2.8010E-02	7.4223E-39	-7.4223E-39	1.2397E-03	1.4845E-38
33.00	8.0000E-04	8.0000E-04	3.1000E-02	2.9688E-02	7.4223E-39	-7.4223E-39	1.3123E-03	1.4845E-38
33.25	8.0000E-04	8.0000E-04	3.2750E-02	3.1365E-02	7.4223E-39	-7.4223E-39	1.3848E-03	1.4845E-38
33.50	8.0000E-04	8.0000E-04	3.4500E-02	3.3043E-02	7.4223E-39	-7.4223E-39	1.4574E-03	1.4845E-38
33.75	8.0000E-04	8.0000E-04	3.6250E-02	3.4720E-02	7.4223E-39	-7.4223E-39	1.5300E-03	1.4845E-38
34.00	8.0000E-04	8.0000E-04	3.8000E-02	3.6397E-02	7.4223E-39	-7.4223E-39	1.6025E-03	1.4845E-38
34.25	8.0000E-04	8.0000E-04	3.9750E-02	3.8075E-02	7.4223E-39	-7.4223E-39	1.6751E-03	1.4845E-38
34.50	8.0000E-04	8.0000E-04	4.1500E-02	3.9752E-02	7.4223E-39	-7.4223E-39	1.7476E-03	1.4845E-38
34.75	8.0000E-04	8.0000E-04	4.3250E-02	4.1430E-02	7.4223E-39	-7.4223E-39	1.8202E-03	1.4845E-38
35.00	8.0000E-04	8.0000E-04	4.5000E-02	4.3107E-02	7.4223E-39	-7.4223E-39	1.8927E-03	1.4845E-38
35.25	8.0000E-04	8.0000E-04	4.6750E-02	4.4785E-02	7.4223E-39	-7.4223E-39	1.9653E-03	1.4845E-38
35.50	8.0000E-04	8.0000E-04	4.8500E-02	4.6462E-02	7.4223E-39	-7.4223E-39	2.0378E-03	1.4845E-38
35.75	8.0000E-04	8.0000E-04	5.0250E-02	4.8140E-02	7.4223E-39	-7.4223E-39	2.1104E-03	1.4845E-38
36.00	8.0000E-04	8.0000E-04	5.2000E-02	4.9817E-02	7.4223E-39	-7.4223E-39	2.1829E-03	1.4845E-38
36.25	8.0000E-04	8.0000E-04	5.3750E-02	5.1495E-02	7.4223E-39	-7.4223E-39	2.2555E-03	1.4845E-38
36.50	8.0000E-04	8.0000E-04	5.5500E-02	5.3172E-02	7.4223E-39	-7.4223E-39	2.3280E-03	1.4845E-38
36.75	8.0000E-04	8.0000E-04	5.7250E-02	5.4849E-02	7.4223E-39	-7.4223E-39	2.4006E-03	1.4845E-38
37.00	8.0000E-04	8.0000E-04	5.9000E-02	5.6527E-02	7.4223E-39	-7.4223E-39	2.4731E-03	1.4845E-38
37.25	8.0000E-04	8.0000E-04	6.0750E-02	5.8204E-02	7.4223E-39	-7.4223E-39	2.5457E-03	1.4845E-38
37.50	8.0000E-04	8.0000E-04	6.2500E-02	5.9882E-02	7.4223E-39	-7.4223E-39	2.6183E-03	1.4845E-38
37.75	8.0000E-04	8.0000E-04	6.4250E-02	6.1559E-02	7.4223E-39	-7.4223E-39	2.6908E-03	1.4845E-38
38.00	8.0000E-04	8.0000E-04	6.6000E-02	6.3237E-02	7.4223E-39	-7.4223E-39	2.7634E-03	1.4845E-38
38.25	8.0000E-04	8.0000E-04	6.7750E-02	6.4914E-02	7.4223E-39	-7.4223E-39	2.8359E-03	1.4845E-38
38.50	8.0000E-04	8.0000E-04	6.9500E-02	6.6592E-02	7.4223E-39	-7.4223E-39	2.9085E-03	1.4845E-38
38.75	8.0000E-04	8.0000E-04	7.1250E-02	6.8269E-02	7.4223E-39	-7.4223E-39	2.9810E-03	1.4845E-38
39.00	8.0000E-04	8.0000E-04	7.3000E-02	6.9946E-02	7.4223E-39	-7.4223E-39	3.0536E-03	1.4845E-38
39.25	8.0000E-04	8.0000E-04	7.4750E-02	7.1624E-02	7.4223E-39	-7.4223E-39	3.1261E-03	1.4845E-38
39.50	8.0000E-04	8.0000E-04	7.6500E-02	7.3301E-02	7.4223E-39	-7.4223E-39	3.1987E-03	1.4845E-38

39.75	8.0000E-04	8.0000E-04	7.8250E-02	7.4979E-02	7.4223E-39	-7.4223E-39	3.2712E-03	1.4845E-38
40.00	8.0000E-04	8.0000E-04	8.0000E-02	7.6656E-02	7.4223E-39	-7.4223E-39	3.3438E-03	1.4845E-38

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 2

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	RF1-3	1.489E+03	32.0	.000E+00	10.0
2	RF1-13	.000E+00	40.0	.000E+00	40.0
3	RF2-3	81.8	1.00	-745.	32.0
4	RF2-13	745.	32.0	-4.811E-16	6.00
5	RF1-1	.000E+00	40.0	.000E+00	40.0
6	RF1-11	2.776E-15	6.00	-1.489E+03	32.0
7	RF2-1	1.692E-15	6.00	-745.	32.0
8	RF2-11	745.	32.0	-81.8	1.00

TIME	VARIABLE 1	2	3	4	5	6	7	8
1.000	.0000E+00	.0000E+00	81.84	81.84	.0000E+00	2.6645E-15	-81.84	-81.84
2.000	.0000E+00	.0000E+00	-6.4099E-16	6.4099E-16	.0000E+00	-1.7169E-15	6.4099E-16	-6.4099E-16
3.000	.0000E+00	.0000E+00	-1.7407E-15	1.7407E-15	.0000E+00	-4.5951E-16	-1.1755E-16	1.1755E-16
4.000	.0000E+00	.0000E+00	-8.1645E-16	8.1645E-16	.0000E+00	6.5768E-16	8.0671E-16	-8.0671E-16
5.000	.0000E+00	.0000E+00	-6.7309E-17	6.7309E-17	.0000E+00	1.5759E-15	1.4782E-15	-1.4782E-15
6.000	.0000E+00	.0000E+00	4.8113E-16	-4.8113E-16	.0000E+00	2.7759E-15	1.6917E-15	-1.6917E-15
7.000	.0000E+00	.0000E+00	-2.1801E-16	2.1801E-16	.0000E+00	2.0691E-15	8.1582E-16	-8.1582E-16
8.000	.0000E+00	.0000E+00	-7.4838E-17	7.4838E-17	.0000E+00	2.4865E-15	9.0640E-16	-9.0640E-16
9.000	.0000E+00	.0000E+00	-2.7452E-16	2.7452E-16	.0000E+00	-9.4157E-16	6.5924E-16	-6.5924E-16
10.00	.0000E+00	.0000E+00	1.1147E-16	-1.1147E-16	.0000E+00	8.0300E-16	9.1539E-16	-9.1539E-16
10.25	2.061	.0000E+00	-1.030	1.030	.0000E+00	-2.061	-1.030	1.030
10.50	4.122	.0000E+00	-2.061	2.061	.0000E+00	-4.122	-2.061	2.061
10.75	6.182	.0000E+00	-3.091	3.091	.0000E+00	-6.182	-3.091	3.091
11.00	8.243	.0000E+00	-4.122	4.122	.0000E+00	-8.243	-4.122	4.122
11.25	10.30	.0000E+00	-5.152	5.152	.0000E+00	-10.30	-5.152	5.152
11.50	12.36	.0000E+00	-6.182	6.182	.0000E+00	-12.36	-6.182	6.182
11.75	14.43	.0000E+00	-7.213	7.213	.0000E+00	-14.43	-7.213	7.213
12.00	16.49	.0000E+00	-8.243	8.243	.0000E+00	-16.49	-8.243	8.243
12.25	18.55	.0000E+00	-9.274	9.274	.0000E+00	-18.55	-9.274	9.274
12.50	20.61	.0000E+00	-10.30	10.30	.0000E+00	-20.61	-10.30	10.30
12.75	22.67	.0000E+00	-11.33	11.33	.0000E+00	-22.67	-11.33	11.33
13.00	24.73	.0000E+00	-12.36	12.36	.0000E+00	-24.73	-12.36	12.36
13.25	26.79	.0000E+00	-13.40	13.40	.0000E+00	-26.79	-13.40	13.40
13.50	28.85	.0000E+00	-14.43	14.43	.0000E+00	-28.85	-14.43	14.43
13.75	30.91	.0000E+00	-15.46	15.46	.0000E+00	-30.91	-15.46	15.46
14.00	32.97	.0000E+00	-16.49	16.49	.0000E+00	-32.97	-16.49	16.49
14.25	35.03	.0000E+00	-17.52	17.52	.0000E+00	-35.03	-17.52	17.52
14.50	37.09	.0000E+00	-18.55	18.55	.0000E+00	-37.09	-18.55	18.55
14.75	39.15	.0000E+00	-19.58	19.58	.0000E+00	-39.15	-19.58	19.58
15.00	41.22	.0000E+00	-20.61	20.61	.0000E+00	-41.22	-20.61	20.61
15.25	43.28	.0000E+00	-21.64	21.64	.0000E+00	-43.28	-21.64	21.64
15.50	45.34	.0000E+00	-22.67	22.67	.0000E+00	-45.34	-22.67	22.67
15.75	47.40	.0000E+00	-23.70	23.70	.0000E+00	-47.40	-23.70	23.70
16.00	49.46	.0000E+00	-24.73	24.73	.0000E+00	-49.46	-24.73	24.73
16.25	51.52	.0000E+00	-25.76	25.76	.0000E+00	-51.52	-25.76	25.76
16.50	53.58	.0000E+00	-26.79	26.79	.0000E+00	-53.58	-26.79	26.79
16.75	55.64	.0000E+00	-27.82	27.82	.0000E+00	-55.64	-27.82	27.82
17.00	57.70	.0000E+00	-28.85	28.85	.0000E+00	-57.70	-28.85	28.85
17.25	59.76	.0000E+00	-29.88	29.88	.0000E+00	-59.76	-29.88	29.88
17.50	61.82	.0000E+00	-30.91	30.91	.0000E+00	-61.82	-30.91	30.91
17.75	63.88	.0000E+00	-31.94	31.94	.0000E+00	-63.88	-31.94	31.94
18.00	65.95	.0000E+00	-32.97	32.97	.0000E+00	-65.95	-32.97	32.97
18.25	68.01	.0000E+00	-34.00	34.00	.0000E+00	-68.01	-34.00	34.00
18.50	70.07	.0000E+00	-35.03	35.03	.0000E+00	-70.07	-35.03	35.03
18.75	72.13	.0000E+00	-36.06	36.06	.0000E+00	-72.13	-36.06	36.06
19.00	74.19	.0000E+00	-37.09	37.09	.0000E+00	-74.19	-37.09	37.09
19.25	76.25	.0000E+00	-38.12	38.12	.0000E+00	-76.25	-38.12	38.12
19.50	78.31	.0000E+00	-39.15	39.15	.0000E+00	-78.31	-39.15	39.15
19.75	80.37	.0000E+00	-40.19	40.19	.0000E+00	-80.37	-40.19	40.19
20.00	82.43	.0000E+00	-41.22	41.22	.0000E+00	-82.43	-41.22	41.22
20.25	101.5	.0000E+00	-50.76	50.76	.0000E+00	-101.5	-50.76	50.76
20.50	120.6	.0000E+00	-60.30	60.30	.0000E+00	-120.6	-60.30	60.30

20.75	139.7	.0000E+00	-69.84	69.84	.0000E+00	-139.7	-69.84	69.84
21.00	158.8	.0000E+00	-79.39	79.39	.0000E+00	-158.8	-79.39	79.39
21.25	177.9	.0000E+00	-88.93	88.93	.0000E+00	-177.9	-88.93	88.93
21.50	196.9	.0000E+00	-98.47	98.47	.0000E+00	-196.9	-98.47	98.47
21.75	216.0	.0000E+00	-108.0	108.0	.0000E+00	-216.0	-108.0	108.0
22.00	235.1	.0000E+00	-117.6	117.6	.0000E+00	-235.1	-117.6	117.6
22.25	254.2	.0000E+00	-127.1	127.1	.0000E+00	-254.2	-127.1	127.1
22.50	273.3	.0000E+00	-136.6	136.6	.0000E+00	-273.3	-136.6	136.6
22.75	292.4	.0000E+00	-146.2	146.2	.0000E+00	-292.4	-146.2	146.2
23.00	311.5	.0000E+00	-155.7	155.7	.0000E+00	-311.5	-155.7	155.7
23.25	330.5	.0000E+00	-165.3	165.3	.0000E+00	-330.5	-165.3	165.3
23.50	349.6	.0000E+00	-174.8	174.8	.0000E+00	-349.6	-174.8	174.8
23.75	368.7	.0000E+00	-184.4	184.4	.0000E+00	-368.7	-184.4	184.4
24.00	387.8	.0000E+00	-193.9	193.9	.0000E+00	-387.8	-193.9	193.9
24.25	406.9	.0000E+00	-203.4	203.4	.0000E+00	-406.9	-203.4	203.4
24.50	426.0	.0000E+00	-213.0	213.0	.0000E+00	-426.0	-213.0	213.0
24.75	445.1	.0000E+00	-222.5	222.5	.0000E+00	-445.1	-222.5	222.5
25.00	464.2	.0000E+00	-232.1	232.1	.0000E+00	-464.2	-232.1	232.1
25.25	483.2	.0000E+00	-241.6	241.6	.0000E+00	-483.2	-241.6	241.6
25.50	502.3	.0000E+00	-251.2	251.2	.0000E+00	-502.3	-251.2	251.2
25.75	521.4	.0000E+00	-260.7	260.7	.0000E+00	-521.4	-260.7	260.7
26.00	540.5	.0000E+00	-270.2	270.2	.0000E+00	-540.5	-270.2	270.2
26.25	559.6	.0000E+00	-279.8	279.8	.0000E+00	-559.6	-279.8	279.8
26.50	578.7	.0000E+00	-289.3	289.3	.0000E+00	-578.7	-289.3	289.3
26.75	597.8	.0000E+00	-298.9	298.9	.0000E+00	-597.8	-298.9	298.9
27.00	616.8	.0000E+00	-308.4	308.4	.0000E+00	-616.8	-308.4	308.4
27.25	635.9	.0000E+00	-318.0	318.0	.0000E+00	-635.9	-318.0	318.0
27.50	655.0	.0000E+00	-327.5	327.5	.0000E+00	-655.0	-327.5	327.5
27.75	674.1	.0000E+00	-337.0	337.0	.0000E+00	-674.1	-337.0	337.0
28.00	693.2	.0000E+00	-346.6	346.6	.0000E+00	-693.2	-346.6	346.6
28.25	712.3	.0000E+00	-356.1	356.1	.0000E+00	-712.3	-356.1	356.1
28.50	731.4	.0000E+00	-365.7	365.7	.0000E+00	-731.4	-365.7	365.7
28.75	750.4	.0000E+00	-375.2	375.2	.0000E+00	-750.4	-375.2	375.2
29.00	769.5	.0000E+00	-384.8	384.8	.0000E+00	-769.5	-384.8	384.8
29.25	788.6	.0000E+00	-394.3	394.3	.0000E+00	-788.6	-394.3	394.3
29.50	807.7	.0000E+00	-403.8	403.8	.0000E+00	-807.7	-403.8	403.8
29.75	826.8	.0000E+00	-413.4	413.4	.0000E+00	-826.8	-413.4	413.4
30.00	845.9	.0000E+00	-422.9	422.9	.0000E+00	-845.9	-422.9	422.9
30.25	994.3	.0000E+00	-497.2	497.2	.0000E+00	-994.3	-497.2	497.2
30.50	1143.	.0000E+00	-571.4	571.4	.0000E+00	-1143.	-571.4	571.4
30.75	1281.	.0000E+00	-640.7	640.7	.0000E+00	-1281.	-640.7	640.7
31.00	1370.	.0000E+00	-685.2	685.2	.0000E+00	-1370.	-685.2	685.2
31.25	1426.	.0000E+00	-713.0	713.0	.0000E+00	-1426.	-713.0	713.0
31.50	1461.	.0000E+00	-730.4	730.4	.0000E+00	-1461.	-730.4	730.4
31.75	1481.	.0000E+00	-740.5	740.5	.0000E+00	-1481.	-740.5	740.5
32.00	1489.	.0000E+00	-744.6	744.6	.0000E+00	-1489.	-744.6	744.6
32.25	1488.	.0000E+00	-744.2	744.2	.0000E+00	-1488.	-744.2	744.2
32.50	1482.	.0000E+00	-741.2	741.2	.0000E+00	-1482.	-741.2	741.2
32.75	1472.	.0000E+00	-736.1	736.1	.0000E+00	-1472.	-736.1	736.1
33.00	1459.	.0000E+00	-729.4	729.4	.0000E+00	-1459.	-729.4	729.4
33.25	1443.	.0000E+00	-721.4	721.4	.0000E+00	-1443.	-721.4	721.4
33.50	1425.	.0000E+00	-712.5	712.5	.0000E+00	-1425.	-712.5	712.5
33.75	1405.	.0000E+00	-702.7	702.7	.0000E+00	-1405.	-702.7	702.7
34.00	1385.	.0000E+00	-692.3	692.3	.0000E+00	-1385.	-692.3	692.3
34.25	1363.	.0000E+00	-681.4	681.4	.0000E+00	-1363.	-681.4	681.4
34.50	1340.	.0000E+00	-670.1	670.1	.0000E+00	-1340.	-670.1	670.1
34.75	1317.	.0000E+00	-658.6	658.6	.0000E+00	-1317.	-658.6	658.6
35.00	1294.	.0000E+00	-647.0	647.0	.0000E+00	-1294.	-647.0	647.0
35.25	1270.	.0000E+00	-635.2	635.2	.0000E+00	-1270.	-635.2	635.2
35.50	1247.	.0000E+00	-623.5	623.5	.0000E+00	-1247.	-623.5	623.5
35.75	1223.	.0000E+00	-611.7	611.7	.0000E+00	-1223.	-611.7	611.7
36.00	1200.	.0000E+00	-600.0	600.0	.0000E+00	-1200.	-600.0	600.0
36.25	1177.	.0000E+00	-588.5	588.5	.0000E+00	-1177.	-588.5	588.5
36.50	1154.	.0000E+00	-577.0	577.0	.0000E+00	-1154.	-577.0	577.0
36.75	1131.	.0000E+00	-565.7	565.7	.0000E+00	-1131.	-565.7	565.7
37.00	1109.	.0000E+00	-554.6	554.6	.0000E+00	-1109.	-554.6	554.6
37.25	1087.	.0000E+00	-543.6	543.6	.0000E+00	-1087.	-543.6	543.6
37.50	1066.	.0000E+00	-532.9	532.9	.0000E+00	-1066.	-532.9	532.9
37.75	1045.	.0000E+00	-522.4	522.4	.0000E+00	-1045.	-522.4	522.4
38.00	1024.	.0000E+00	-512.1	512.1	.0000E+00	-1024.	-512.1	512.1
38.25	1004.	.0000E+00	-502.1	502.1	.0000E+00	-1004.	-502.1	502.1
38.50	984.5	.0000E+00	-492.2	492.2	.0000E+00	-984.5	-492.2	492.2
38.75	965.3	.0000E+00	-482.6	482.6	.0000E+00	-965.3	-482.6	482.6
39.00	946.5	.0000E+00	-473.3	473.3	.0000E+00	-946.5	-473.3	473.3
39.25	928.3	.0000E+00	-464.1	464.1	.0000E+00	-928.3	-464.1	464.1
39.50	910.5	.0000E+00	-455.2	455.2	.0000E+00	-910.5	-455.2	455.2

39.75	893.1	.0000E+00	-446.6	446.6	.0000E+00	-893.1	-446.6	446.6
40.00	876.2	.0000E+00	-438.1	438.1	.0000E+00	-876.2	-438.1	438.1

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 3

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E11-1-1	-1.412E-05	1.00	-3.344E-03	40.0
2	E11-2-1	-1.412E-05	1.00	-3.344E-03	40.0
3	E11-3-1	-1.412E-05	1.00	-3.344E-03	40.0
4	E11-4-1	-1.412E-05	1.00	-3.344E-03	40.0

TIME	VARIABLE 1	2	3	4
1.000	-1.4118E-05	-1.4118E-05	-1.4118E-05	-1.4118E-05
2.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
3.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
4.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
5.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
6.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
7.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
8.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
9.000	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
10.00	-2.8235E-05	-2.8235E-05	-2.8235E-05	-2.8235E-05
10.25	-2.9243E-05	-2.9243E-05	-2.9243E-05	-2.9243E-05
10.50	-3.0250E-05	-3.0250E-05	-3.0250E-05	-3.0250E-05
10.75	-3.1257E-05	-3.1257E-05	-3.1257E-05	-3.1257E-05
11.00	-3.2264E-05	-3.2264E-05	-3.2264E-05	-3.2264E-05
11.25	-3.3271E-05	-3.3271E-05	-3.3271E-05	-3.3271E-05
11.50	-3.4279E-05	-3.4279E-05	-3.4279E-05	-3.4279E-05
11.75	-3.5286E-05	-3.5286E-05	-3.5286E-05	-3.5286E-05
12.00	-3.6293E-05	-3.6293E-05	-3.6293E-05	-3.6293E-05
12.25	-3.7300E-05	-3.7300E-05	-3.7300E-05	-3.7300E-05
12.50	-3.8307E-05	-3.8307E-05	-3.8307E-05	-3.8307E-05
12.75	-3.9315E-05	-3.9315E-05	-3.9315E-05	-3.9315E-05
13.00	-4.0322E-05	-4.0322E-05	-4.0322E-05	-4.0322E-05
13.25	-4.1329E-05	-4.1329E-05	-4.1329E-05	-4.1329E-05
13.50	-4.2336E-05	-4.2336E-05	-4.2336E-05	-4.2336E-05
13.75	-4.3343E-05	-4.3343E-05	-4.3343E-05	-4.3343E-05
14.00	-4.4351E-05	-4.4351E-05	-4.4351E-05	-4.4351E-05
14.25	-4.5358E-05	-4.5358E-05	-4.5358E-05	-4.5358E-05
14.50	-4.6365E-05	-4.6365E-05	-4.6365E-05	-4.6365E-05
14.75	-4.7372E-05	-4.7372E-05	-4.7372E-05	-4.7372E-05
15.00	-4.8379E-05	-4.8379E-05	-4.8379E-05	-4.8379E-05
15.25	-4.9387E-05	-4.9387E-05	-4.9387E-05	-4.9387E-05
15.50	-5.0394E-05	-5.0394E-05	-5.0394E-05	-5.0394E-05
15.75	-5.1401E-05	-5.1401E-05	-5.1401E-05	-5.1401E-05
16.00	-5.2408E-05	-5.2408E-05	-5.2408E-05	-5.2408E-05
16.25	-5.3416E-05	-5.3416E-05	-5.3416E-05	-5.3416E-05
16.50	-5.4423E-05	-5.4423E-05	-5.4423E-05	-5.4423E-05
16.75	-5.5430E-05	-5.5430E-05	-5.5430E-05	-5.5430E-05
17.00	-5.6437E-05	-5.6437E-05	-5.6437E-05	-5.6437E-05
17.25	-5.7444E-05	-5.7444E-05	-5.7444E-05	-5.7444E-05
17.50	-5.8452E-05	-5.8452E-05	-5.8452E-05	-5.8452E-05
17.75	-5.9459E-05	-5.9459E-05	-5.9459E-05	-5.9459E-05
18.00	-6.0466E-05	-6.0466E-05	-6.0466E-05	-6.0466E-05
18.25	-6.1473E-05	-6.1473E-05	-6.1473E-05	-6.1473E-05
18.50	-6.2480E-05	-6.2480E-05	-6.2480E-05	-6.2480E-05
18.75	-6.3488E-05	-6.3488E-05	-6.3488E-05	-6.3488E-05
19.00	-6.4495E-05	-6.4495E-05	-6.4495E-05	-6.4495E-05
19.25	-6.5502E-05	-6.5502E-05	-6.5502E-05	-6.5502E-05
19.50	-6.6509E-05	-6.6509E-05	-6.6509E-05	-6.6509E-05
19.75	-6.7516E-05	-6.7516E-05	-6.7516E-05	-6.7516E-05
20.00	-6.8524E-05	-6.8524E-05	-6.8524E-05	-6.8524E-05
20.25	-7.7852E-05	-7.7852E-05	-7.7852E-05	-7.7852E-05
20.50	-8.7180E-05	-8.7180E-05	-8.7180E-05	-8.7180E-05
20.75	-9.6509E-05	-9.6509E-05	-9.6509E-05	-9.6509E-05
21.00	-1.0584E-04	-1.0584E-04	-1.0584E-04	-1.0584E-04
21.25	-1.1517E-04	-1.1517E-04	-1.1517E-04	-1.1517E-04
21.50	-1.2449E-04	-1.2449E-04	-1.2449E-04	-1.2449E-04

21.75	-1.3382E-04	-1.3382E-04	-1.3382E-04	-1.3382E-04
22.00	-1.4315E-04	-1.4315E-04	-1.4315E-04	-1.4315E-04
22.25	-1.5248E-04	-1.5248E-04	-1.5248E-04	-1.5248E-04
22.50	-1.6181E-04	-1.6181E-04	-1.6181E-04	-1.6181E-04
22.75	-1.7113E-04	-1.7113E-04	-1.7113E-04	-1.7113E-04
23.00	-1.8046E-04	-1.8046E-04	-1.8046E-04	-1.8046E-04
23.25	-1.8979E-04	-1.8979E-04	-1.8979E-04	-1.8979E-04
23.50	-1.9912E-04	-1.9912E-04	-1.9912E-04	-1.9912E-04
23.75	-2.0845E-04	-2.0845E-04	-2.0845E-04	-2.0845E-04
24.00	-2.1778E-04	-2.1778E-04	-2.1778E-04	-2.1778E-04
24.25	-2.2710E-04	-2.2710E-04	-2.2710E-04	-2.2710E-04
24.50	-2.3643E-04	-2.3643E-04	-2.3643E-04	-2.3643E-04
24.75	-2.4576E-04	-2.4576E-04	-2.4576E-04	-2.4576E-04
25.00	-2.5509E-04	-2.5509E-04	-2.5509E-04	-2.5509E-04
25.25	-2.6442E-04	-2.6442E-04	-2.6442E-04	-2.6442E-04
25.50	-2.7375E-04	-2.7375E-04	-2.7375E-04	-2.7375E-04
25.75	-2.8307E-04	-2.8307E-04	-2.8307E-04	-2.8307E-04
26.00	-2.9240E-04	-2.9240E-04	-2.9240E-04	-2.9240E-04
26.25	-3.0173E-04	-3.0173E-04	-3.0173E-04	-3.0173E-04
26.50	-3.1106E-04	-3.1106E-04	-3.1106E-04	-3.1106E-04
26.75	-3.2039E-04	-3.2039E-04	-3.2039E-04	-3.2039E-04
27.00	-3.2972E-04	-3.2972E-04	-3.2972E-04	-3.2972E-04
27.25	-3.3904E-04	-3.3904E-04	-3.3904E-04	-3.3904E-04
27.50	-3.4837E-04	-3.4837E-04	-3.4837E-04	-3.4837E-04
27.75	-3.5770E-04	-3.5770E-04	-3.5770E-04	-3.5770E-04
28.00	-3.6703E-04	-3.6703E-04	-3.6703E-04	-3.6703E-04
28.25	-3.7636E-04	-3.7636E-04	-3.7636E-04	-3.7636E-04
28.50	-3.8569E-04	-3.8569E-04	-3.8569E-04	-3.8569E-04
28.75	-3.9501E-04	-3.9501E-04	-3.9501E-04	-3.9501E-04
29.00	-4.0434E-04	-4.0434E-04	-4.0434E-04	-4.0434E-04
29.25	-4.1367E-04	-4.1367E-04	-4.1367E-04	-4.1367E-04
29.50	-4.2300E-04	-4.2300E-04	-4.2300E-04	-4.2300E-04
29.75	-4.3233E-04	-4.3233E-04	-4.3233E-04	-4.3233E-04
30.00	-4.4165E-04	-4.4165E-04	-4.4165E-04	-4.4165E-04
30.25	-5.1421E-04	-5.1421E-04	-5.1421E-04	-5.1421E-04
30.50	-5.8676E-04	-5.8676E-04	-5.8676E-04	-5.8676E-04
30.75	-6.5931E-04	-6.5931E-04	-6.5931E-04	-6.5931E-04
31.00	-7.3187E-04	-7.3187E-04	-7.3187E-04	-7.3187E-04
31.25	-8.0442E-04	-8.0442E-04	-8.0442E-04	-8.0442E-04
31.50	-8.7697E-04	-8.7697E-04	-8.7697E-04	-8.7697E-04
31.75	-9.4953E-04	-9.4953E-04	-9.4953E-04	-9.4953E-04
32.00	-1.0221E-03	-1.0221E-03	-1.0221E-03	-1.0221E-03
32.25	-1.0946E-03	-1.0946E-03	-1.0946E-03	-1.0946E-03
32.50	-1.1672E-03	-1.1672E-03	-1.1672E-03	-1.1672E-03
32.75	-1.2397E-03	-1.2397E-03	-1.2397E-03	-1.2397E-03
33.00	-1.3123E-03	-1.3123E-03	-1.3123E-03	-1.3123E-03
33.25	-1.3848E-03	-1.3848E-03	-1.3848E-03	-1.3848E-03
33.50	-1.4574E-03	-1.4574E-03	-1.4574E-03	-1.4574E-03
33.75	-1.5300E-03	-1.5300E-03	-1.5300E-03	-1.5300E-03
34.00	-1.6025E-03	-1.6025E-03	-1.6025E-03	-1.6025E-03
34.25	-1.6751E-03	-1.6751E-03	-1.6751E-03	-1.6751E-03
34.50	-1.7476E-03	-1.7476E-03	-1.7476E-03	-1.7476E-03
34.75	-1.8202E-03	-1.8202E-03	-1.8202E-03	-1.8202E-03
35.00	-1.8927E-03	-1.8927E-03	-1.8927E-03	-1.8927E-03
35.25	-1.9653E-03	-1.9653E-03	-1.9653E-03	-1.9653E-03
35.50	-2.0378E-03	-2.0378E-03	-2.0378E-03	-2.0378E-03
35.75	-2.1104E-03	-2.1104E-03	-2.1104E-03	-2.1104E-03
36.00	-2.1829E-03	-2.1829E-03	-2.1829E-03	-2.1829E-03
36.25	-2.2555E-03	-2.2555E-03	-2.2555E-03	-2.2555E-03
36.50	-2.3280E-03	-2.3280E-03	-2.3280E-03	-2.3280E-03
36.75	-2.4006E-03	-2.4006E-03	-2.4006E-03	-2.4006E-03
37.00	-2.4731E-03	-2.4731E-03	-2.4731E-03	-2.4731E-03
37.25	-2.5457E-03	-2.5457E-03	-2.5457E-03	-2.5457E-03
37.50	-2.6183E-03	-2.6183E-03	-2.6183E-03	-2.6183E-03
37.75	-2.6908E-03	-2.6908E-03	-2.6908E-03	-2.6908E-03
38.00	-2.7634E-03	-2.7634E-03	-2.7634E-03	-2.7634E-03
38.25	-2.8359E-03	-2.8359E-03	-2.8359E-03	-2.8359E-03
38.50	-2.9085E-03	-2.9085E-03	-2.9085E-03	-2.9085E-03
38.75	-2.9810E-03	-2.9810E-03	-2.9810E-03	-2.9810E-03
39.00	-3.0536E-03	-3.0536E-03	-3.0536E-03	-3.0536E-03
39.25	-3.1261E-03	-3.1261E-03	-3.1261E-03	-3.1261E-03
39.50	-3.1987E-03	-3.1987E-03	-3.1987E-03	-3.1987E-03
39.75	-3.2712E-03	-3.2712E-03	-3.2712E-03	-3.2712E-03
40.00	-3.3438E-03	-3.3438E-03	-3.3438E-03	-3.3438E-03

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 4

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E22-1-1	8.000E-04	36.0	8.000E-05	1.00
2	E22-2-1	8.000E-04	36.0	8.000E-05	1.00
3	E22-3-1	8.000E-04	40.0	8.000E-05	1.00
4	E22-4-1	8.000E-04	40.0	8.000E-05	1.00

TIME	VARIABLE 1	2	3	4
1.000	8.0000E-05	8.0000E-05	8.0000E-05	8.0000E-05
2.000	1.6000E-04	1.6000E-04	1.6000E-04	1.6000E-04
3.000	2.4000E-04	2.4000E-04	2.4000E-04	2.4000E-04
4.000	3.2000E-04	3.2000E-04	3.2000E-04	3.2000E-04
5.000	4.0000E-04	4.0000E-04	4.0000E-04	4.0000E-04
6.000	4.8000E-04	4.8000E-04	4.8000E-04	4.8000E-04
7.000	5.6000E-04	5.6000E-04	5.6000E-04	5.6000E-04
8.000	6.4000E-04	6.4000E-04	6.4000E-04	6.4000E-04
9.000	7.2000E-04	7.2000E-04	7.2000E-04	7.2000E-04
10.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
10.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
10.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
10.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
11.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
11.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
11.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
11.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
12.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
12.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
12.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
12.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
13.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
13.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
13.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
13.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
14.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
14.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
14.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
14.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
15.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
15.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
15.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
15.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
16.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
16.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
16.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
16.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
17.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
17.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
17.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
17.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
18.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
18.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
18.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
18.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
19.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
19.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
19.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
19.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
20.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
20.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
20.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
20.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
21.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
21.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
21.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
21.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
22.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
22.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
22.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04

22.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
23.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
23.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
23.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
23.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
24.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
24.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
24.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
24.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
25.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
25.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
25.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
25.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
26.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
26.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
26.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
26.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
27.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
27.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
27.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
27.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
28.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
28.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
28.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
28.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
29.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
29.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
29.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
29.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
30.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
30.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
30.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
30.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
31.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
31.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
31.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
31.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
32.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
32.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
32.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
32.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
33.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
33.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
33.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
33.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
34.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
34.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
34.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
34.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
35.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
35.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
35.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
35.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
36.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
36.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
36.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
36.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
37.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
37.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
37.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
37.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
38.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
38.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
38.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
38.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
39.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
39.25	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
39.50	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
39.75	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04
40.00	8.0000E-04	8.0000E-04	8.0000E-04	8.0000E-04

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 5

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	E12-1-1	7.666E-02	40.0	-3.388E-21	1.00
2	E12-2-1	7.666E-02	40.0	-3.388E-21	2.00
3	E12-3-1	7.666E-02	40.0	.000E+00	1.00
4	E12-4-1	7.666E-02	40.0	.000E+00	2.00

TIME	VARIABLE 1	2	3	4
1.000	-3.3881E-21	-3.3881E-21	.0000E+00	.0000E+00
2.000	3.3881E-21	-3.3881E-21	1.3553E-20	.0000E+00
3.000	2.0329E-20	1.0164E-20	4.0658E-20	1.3553E-20
4.000	1.6941E-20	1.3553E-20	4.0658E-20	1.3553E-20
5.000	2.0329E-20	1.3553E-20	4.0658E-20	1.3553E-20
6.000	3.0493E-20	2.0329E-20	4.0658E-20	1.3553E-20
7.000	5.7598E-20	4.4046E-20	5.4210E-20	4.0658E-20
8.000	6.7763E-20	5.0822E-20	6.7763E-20	4.0658E-20
9.000	8.1315E-20	6.7763E-20	8.1315E-20	5.4210E-20
10.00	8.8091E-20	7.1151E-20	8.1315E-20	5.4210E-20
10.25	2.3287E-05	2.3287E-05	2.3287E-05	2.3287E-05
10.50	4.6574E-05	4.6574E-05	4.6574E-05	4.6574E-05
10.75	6.9861E-05	6.9861E-05	6.9861E-05	6.9861E-05
11.00	9.3148E-05	9.3148E-05	9.3148E-05	9.3148E-05
11.25	1.1643E-04	1.1643E-04	1.1643E-04	1.1643E-04
11.50	1.3972E-04	1.3972E-04	1.3972E-04	1.3972E-04
11.75	1.6301E-04	1.6301E-04	1.6301E-04	1.6301E-04
12.00	1.8630E-04	1.8630E-04	1.8630E-04	1.8630E-04
12.25	2.0958E-04	2.0958E-04	2.0958E-04	2.0958E-04
12.50	2.3287E-04	2.3287E-04	2.3287E-04	2.3287E-04
12.75	2.5616E-04	2.5616E-04	2.5616E-04	2.5616E-04
13.00	2.7944E-04	2.7944E-04	2.7944E-04	2.7944E-04
13.25	3.0273E-04	3.0273E-04	3.0273E-04	3.0273E-04
13.50	3.2602E-04	3.2602E-04	3.2602E-04	3.2602E-04
13.75	3.4930E-04	3.4930E-04	3.4930E-04	3.4930E-04
14.00	3.7259E-04	3.7259E-04	3.7259E-04	3.7259E-04
14.25	3.9588E-04	3.9588E-04	3.9588E-04	3.9588E-04
14.50	4.1916E-04	4.1916E-04	4.1916E-04	4.1916E-04
14.75	4.4245E-04	4.4245E-04	4.4245E-04	4.4245E-04
15.00	4.6574E-04	4.6574E-04	4.6574E-04	4.6574E-04
15.25	4.8903E-04	4.8903E-04	4.8903E-04	4.8903E-04
15.50	5.1231E-04	5.1231E-04	5.1231E-04	5.1231E-04
15.75	5.3560E-04	5.3560E-04	5.3560E-04	5.3560E-04
16.00	5.5889E-04	5.5889E-04	5.5889E-04	5.5889E-04
16.25	5.8217E-04	5.8217E-04	5.8217E-04	5.8217E-04
16.50	6.0546E-04	6.0546E-04	6.0546E-04	6.0546E-04
16.75	6.2875E-04	6.2875E-04	6.2875E-04	6.2875E-04
17.00	6.5203E-04	6.5203E-04	6.5203E-04	6.5203E-04
17.25	6.7532E-04	6.7532E-04	6.7532E-04	6.7532E-04
17.50	6.9861E-04	6.9861E-04	6.9861E-04	6.9861E-04
17.75	7.2189E-04	7.2189E-04	7.2189E-04	7.2189E-04
18.00	7.4518E-04	7.4518E-04	7.4518E-04	7.4518E-04
18.25	7.6847E-04	7.6847E-04	7.6847E-04	7.6847E-04
18.50	7.9175E-04	7.9175E-04	7.9175E-04	7.9175E-04
18.75	8.1504E-04	8.1504E-04	8.1504E-04	8.1504E-04
19.00	8.3833E-04	8.3833E-04	8.3833E-04	8.3833E-04
19.25	8.6162E-04	8.6162E-04	8.6162E-04	8.6162E-04
19.50	8.8490E-04	8.8490E-04	8.8490E-04	8.8490E-04
19.75	9.0819E-04	9.0819E-04	9.0819E-04	9.0819E-04
20.00	9.3148E-04	9.3148E-04	9.3148E-04	9.3148E-04
20.25	1.1471E-03	1.1471E-03	1.1471E-03	1.1471E-03
20.50	1.3628E-03	1.3628E-03	1.3628E-03	1.3628E-03
20.75	1.5785E-03	1.5785E-03	1.5785E-03	1.5785E-03
21.00	1.7942E-03	1.7942E-03	1.7942E-03	1.7942E-03
21.25	2.0098E-03	2.0098E-03	2.0098E-03	2.0098E-03
21.50	2.2255E-03	2.2255E-03	2.2255E-03	2.2255E-03
21.75	2.4412E-03	2.4412E-03	2.4412E-03	2.4412E-03
22.00	2.6569E-03	2.6569E-03	2.6569E-03	2.6569E-03
22.25	2.8725E-03	2.8725E-03	2.8725E-03	2.8725E-03
22.50	3.0882E-03	3.0882E-03	3.0882E-03	3.0882E-03
22.75	3.3039E-03	3.3039E-03	3.3039E-03	3.3039E-03
23.00	3.5195E-03	3.5195E-03	3.5195E-03	3.5195E-03
23.25	3.7352E-03	3.7352E-03	3.7352E-03	3.7352E-03
23.50	3.9509E-03	3.9509E-03	3.9509E-03	3.9509E-03
23.75	4.1666E-03	4.1666E-03	4.1666E-03	4.1666E-03

24.00	4.3822E-03	4.3822E-03	4.3822E-03	4.3822E-03
24.25	4.5979E-03	4.5979E-03	4.5979E-03	4.5979E-03
24.50	4.8136E-03	4.8136E-03	4.8136E-03	4.8136E-03
24.75	5.0292E-03	5.0292E-03	5.0292E-03	5.0292E-03
25.00	5.2449E-03	5.2449E-03	5.2449E-03	5.2449E-03
25.25	5.4606E-03	5.4606E-03	5.4606E-03	5.4606E-03
25.50	5.6763E-03	5.6763E-03	5.6763E-03	5.6763E-03
25.75	5.8919E-03	5.8919E-03	5.8919E-03	5.8919E-03
26.00	6.1076E-03	6.1076E-03	6.1076E-03	6.1076E-03
26.25	6.3233E-03	6.3233E-03	6.3233E-03	6.3233E-03
26.50	6.5389E-03	6.5389E-03	6.5389E-03	6.5389E-03
26.75	6.7546E-03	6.7546E-03	6.7546E-03	6.7546E-03
27.00	6.9703E-03	6.9703E-03	6.9703E-03	6.9703E-03
27.25	7.1860E-03	7.1860E-03	7.1860E-03	7.1860E-03
27.50	7.4016E-03	7.4016E-03	7.4016E-03	7.4016E-03
27.75	7.6173E-03	7.6173E-03	7.6173E-03	7.6173E-03
28.00	7.8330E-03	7.8330E-03	7.8330E-03	7.8330E-03
28.25	8.0486E-03	8.0486E-03	8.0486E-03	8.0486E-03
28.50	8.2643E-03	8.2643E-03	8.2643E-03	8.2643E-03
28.75	8.4800E-03	8.4800E-03	8.4800E-03	8.4800E-03
29.00	8.6957E-03	8.6957E-03	8.6957E-03	8.6957E-03
29.25	8.9113E-03	8.9113E-03	8.9113E-03	8.9113E-03
29.50	9.1270E-03	9.1270E-03	9.1270E-03	9.1270E-03
29.75	9.3427E-03	9.3427E-03	9.3427E-03	9.3427E-03
30.00	9.5583E-03	9.5583E-03	9.5583E-03	9.5583E-03
30.25	1.1236E-02	1.1236E-02	1.1236E-02	1.1236E-02
30.50	1.2913E-02	1.2913E-02	1.2913E-02	1.2913E-02
30.75	1.4591E-02	1.4591E-02	1.4591E-02	1.4591E-02
31.00	1.6268E-02	1.6268E-02	1.6268E-02	1.6268E-02
31.25	1.7946E-02	1.7946E-02	1.7946E-02	1.7946E-02
31.50	1.9623E-02	1.9623E-02	1.9623E-02	1.9623E-02
31.75	2.1300E-02	2.1300E-02	2.1300E-02	2.1300E-02
32.00	2.2978E-02	2.2978E-02	2.2978E-02	2.2978E-02
32.25	2.4655E-02	2.4655E-02	2.4655E-02	2.4655E-02
32.50	2.6333E-02	2.6333E-02	2.6333E-02	2.6333E-02
32.75	2.8010E-02	2.8010E-02	2.8010E-02	2.8010E-02
33.00	2.9688E-02	2.9688E-02	2.9688E-02	2.9688E-02
33.25	3.1365E-02	3.1365E-02	3.1365E-02	3.1365E-02
33.50	3.3043E-02	3.3043E-02	3.3043E-02	3.3043E-02
33.75	3.4720E-02	3.4720E-02	3.4720E-02	3.4720E-02
34.00	3.6397E-02	3.6397E-02	3.6397E-02	3.6397E-02
34.25	3.8075E-02	3.8075E-02	3.8075E-02	3.8075E-02
34.50	3.9752E-02	3.9752E-02	3.9752E-02	3.9752E-02
34.75	4.1430E-02	4.1430E-02	4.1430E-02	4.1430E-02
35.00	4.3107E-02	4.3107E-02	4.3107E-02	4.3107E-02
35.25	4.4785E-02	4.4785E-02	4.4785E-02	4.4785E-02
35.50	4.6462E-02	4.6462E-02	4.6462E-02	4.6462E-02
35.75	4.8140E-02	4.8140E-02	4.8140E-02	4.8140E-02
36.00	4.9817E-02	4.9817E-02	4.9817E-02	4.9817E-02
36.25	5.1495E-02	5.1495E-02	5.1495E-02	5.1495E-02
36.50	5.3172E-02	5.3172E-02	5.3172E-02	5.3172E-02
36.75	5.4849E-02	5.4849E-02	5.4849E-02	5.4849E-02
37.00	5.6527E-02	5.6527E-02	5.6527E-02	5.6527E-02
37.25	5.8204E-02	5.8204E-02	5.8204E-02	5.8204E-02
37.50	5.9882E-02	5.9882E-02	5.9882E-02	5.9882E-02
37.75	6.1559E-02	6.1559E-02	6.1559E-02	6.1559E-02
38.00	6.3237E-02	6.3237E-02	6.3237E-02	6.3237E-02
38.25	6.4914E-02	6.4914E-02	6.4914E-02	6.4914E-02
38.50	6.6592E-02	6.6592E-02	6.6592E-02	6.6592E-02
38.75	6.8269E-02	6.8269E-02	6.8269E-02	6.8269E-02
39.00	6.9946E-02	6.9946E-02	6.9946E-02	6.9946E-02
39.25	7.1624E-02	7.1624E-02	7.1624E-02	7.1624E-02
39.50	7.3301E-02	7.3301E-02	7.3301E-02	7.3301E-02
39.75	7.4979E-02	7.4979E-02	7.4979E-02	7.4979E-02
40.00	7.6656E-02	7.6656E-02	7.6656E-02	7.6656E-02

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 6

VARIABLE	MAXIMUM	TIME	MINIMUM	TIME
1 S11-1-1	9.426E-15	8.00	-1.489E+03	32.0

2	S11-2-1	3.553E-15	1.00	-1.489E+03	32.0
3	S11-3-1	1.016E-14	4.00	-1.489E+03	32.0
4	S11-4-1	1.066E-14	1.00	-1.489E+03	32.0

TIME	VARIABLE 1	2	3	4
1.000	7.1054E-15	3.5527E-15	7.1054E-15	1.0658E-14
2.000	.0000E+00	-1.0658E-14	3.5527E-15	-3.5527E-15
3.000	5.0371E-15	-5.6210E-15	5.1237E-15	-1.9817E-15
4.000	3.1419E-15	-7.5162E-15	1.0161E-14	3.0554E-15
5.000	4.7129E-15	-5.9452E-15	8.2656E-15	1.1602E-15
6.000	6.2839E-15	-4.3743E-15	9.8366E-15	2.7312E-15
7.000	7.8549E-15	-2.8033E-15	7.9415E-15	8.3603E-16
8.000	9.4258E-15	-1.2323E-15	6.0463E-15	-1.0591E-15
9.000	5.9845E-16	-1.0060E-14	4.1512E-15	-2.9543E-15
10.00	2.1694E-15	-8.4887E-15	9.1883E-15	2.0828E-15
10.25	-2.061	-2.061	-2.061	-2.061
10.50	-4.122	-4.122	-4.122	-4.122
10.75	-6.182	-6.182	-6.182	-6.182
11.00	-8.243	-8.243	-8.243	-8.243
11.25	-10.30	-10.30	-10.30	-10.30
11.50	-12.36	-12.36	-12.36	-12.36
11.75	-14.43	-14.43	-14.43	-14.43
12.00	-16.49	-16.49	-16.49	-16.49
12.25	-18.55	-18.55	-18.55	-18.55
12.50	-20.61	-20.61	-20.61	-20.61
12.75	-22.67	-22.67	-22.67	-22.67
13.00	-24.73	-24.73	-24.73	-24.73
13.25	-26.79	-26.79	-26.79	-26.79
13.50	-28.85	-28.85	-28.85	-28.85
13.75	-30.91	-30.91	-30.91	-30.91
14.00	-32.97	-32.97	-32.97	-32.97
14.25	-35.03	-35.03	-35.03	-35.03
14.50	-37.09	-37.09	-37.09	-37.09
14.75	-39.15	-39.15	-39.15	-39.15
15.00	-41.22	-41.22	-41.22	-41.22
15.25	-43.28	-43.28	-43.28	-43.28
15.50	-45.34	-45.34	-45.34	-45.34
15.75	-47.40	-47.40	-47.40	-47.40
16.00	-49.46	-49.46	-49.46	-49.46
16.25	-51.52	-51.52	-51.52	-51.52
16.50	-53.58	-53.58	-53.58	-53.58
16.75	-55.64	-55.64	-55.64	-55.64
17.00	-57.70	-57.70	-57.70	-57.70
17.25	-59.76	-59.76	-59.76	-59.76
17.50	-61.82	-61.82	-61.82	-61.82
17.75	-63.88	-63.88	-63.88	-63.88
18.00	-65.95	-65.95	-65.95	-65.95
18.25	-68.01	-68.01	-68.01	-68.01
18.50	-70.07	-70.07	-70.07	-70.07
18.75	-72.13	-72.13	-72.13	-72.13
19.00	-74.19	-74.19	-74.19	-74.19
19.25	-76.25	-76.25	-76.25	-76.25
19.50	-78.31	-78.31	-78.31	-78.31
19.75	-80.37	-80.37	-80.37	-80.37
20.00	-82.43	-82.43	-82.43	-82.43
20.25	-101.5	-101.5	-101.5	-101.5
20.50	-120.6	-120.6	-120.6	-120.6
20.75	-139.7	-139.7	-139.7	-139.7
21.00	-158.8	-158.8	-158.8	-158.8
21.25	-177.9	-177.9	-177.9	-177.9
21.50	-196.9	-196.9	-196.9	-196.9
21.75	-216.0	-216.0	-216.0	-216.0
22.00	-235.1	-235.1	-235.1	-235.1
22.25	-254.2	-254.2	-254.2	-254.2
22.50	-273.3	-273.3	-273.3	-273.3
22.75	-292.4	-292.4	-292.4	-292.4
23.00	-311.5	-311.5	-311.5	-311.5
23.25	-330.5	-330.5	-330.5	-330.5
23.50	-349.6	-349.6	-349.6	-349.6
23.75	-368.7	-368.7	-368.7	-368.7
24.00	-387.8	-387.8	-387.8	-387.8
24.25	-406.9	-406.9	-406.9	-406.9
24.50	-426.0	-426.0	-426.0	-426.0
24.75	-445.1	-445.1	-445.1	-445.1

25.00	-464.2	-464.2	-464.2	-464.2
25.25	-483.2	-483.2	-483.2	-483.2
25.50	-502.3	-502.3	-502.3	-502.3
25.75	-521.4	-521.4	-521.4	-521.4
26.00	-540.5	-540.5	-540.5	-540.5
26.25	-559.6	-559.6	-559.6	-559.6
26.50	-578.7	-578.7	-578.7	-578.7
26.75	-597.8	-597.8	-597.8	-597.8
27.00	-616.8	-616.8	-616.8	-616.8
27.25	-635.9	-635.9	-635.9	-635.9
27.50	-655.0	-655.0	-655.0	-655.0
27.75	-674.1	-674.1	-674.1	-674.1
28.00	-693.2	-693.2	-693.2	-693.2
28.25	-712.3	-712.3	-712.3	-712.3
28.50	-731.4	-731.4	-731.4	-731.4
28.75	-750.4	-750.4	-750.4	-750.4
29.00	-769.5	-769.5	-769.5	-769.5
29.25	-788.6	-788.6	-788.6	-788.6
29.50	-807.7	-807.7	-807.7	-807.7
29.75	-826.8	-826.8	-826.8	-826.8
30.00	-845.9	-845.9	-845.9	-845.9
30.25	-994.3	-994.3	-994.3	-994.3
30.50	-1143.	-1143.	-1143.	-1143.
30.75	-1281.	-1281.	-1281.	-1281.
31.00	-1370.	-1370.	-1370.	-1370.
31.25	-1426.	-1426.	-1426.	-1426.
31.50	-1461.	-1461.	-1461.	-1461.
31.75	-1481.	-1481.	-1481.	-1481.
32.00	-1489.	-1489.	-1489.	-1489.
32.25	-1488.	-1488.	-1488.	-1488.
32.50	-1482.	-1482.	-1482.	-1482.
32.75	-1472.	-1472.	-1472.	-1472.
33.00	-1459.	-1459.	-1459.	-1459.
33.25	-1443.	-1443.	-1443.	-1443.
33.50	-1425.	-1425.	-1425.	-1425.
33.75	-1405.	-1405.	-1405.	-1405.
34.00	-1385.	-1385.	-1385.	-1385.
34.25	-1363.	-1363.	-1363.	-1363.
34.50	-1340.	-1340.	-1340.	-1340.
34.75	-1317.	-1317.	-1317.	-1317.
35.00	-1294.	-1294.	-1294.	-1294.
35.25	-1270.	-1270.	-1270.	-1270.
35.50	-1247.	-1247.	-1247.	-1247.
35.75	-1223.	-1223.	-1223.	-1223.
36.00	-1200.	-1200.	-1200.	-1200.
36.25	-1177.	-1177.	-1177.	-1177.
36.50	-1154.	-1154.	-1154.	-1154.
36.75	-1131.	-1131.	-1131.	-1131.
37.00	-1109.	-1109.	-1109.	-1109.
37.25	-1087.	-1087.	-1087.	-1087.
37.50	-1066.	-1066.	-1066.	-1066.
37.75	-1045.	-1045.	-1045.	-1045.
38.00	-1024.	-1024.	-1024.	-1024.
38.25	-1004.	-1004.	-1004.	-1004.
38.50	-984.5	-984.5	-984.5	-984.5
38.75	-965.3	-965.3	-965.3	-965.3
39.00	-946.5	-946.5	-946.5	-946.5
39.25	-928.3	-928.3	-928.3	-928.3
39.50	-910.5	-910.5	-910.5	-910.5
39.75	-893.1	-893.1	-893.1	-893.1
40.00	-876.2	-876.2	-876.2	-876.2

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 7

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S22-1-1	164.	1.00	-1.824E-13	32.0
2	S22-2-1	164.	1.00	-1.824E-13	32.0
3	S22-3-1	164.	1.00	-1.824E-13	32.0
4	S22-4-1	164.	1.00	-1.824E-13	32.0

TIME	VARIABLE 1	2	3	4
1.000	163.7	163.7	163.7	163.7
2.000	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3.000	-2.0345E-31	-1.0695E-31	-4.9293E-31	-1.0695E-31
4.000	1.0122E-31	4.1138E-32	-2.6655E-31	1.1943E-31
5.000	2.2580E-31	2.3158E-31	-7.6107E-32	3.0987E-31
6.000	2.1964E-31	2.8226E-31	8.8250E-32	4.7423E-31
7.000	-3.5731E-32	7.6879E-32	3.2841E-32	2.1885E-31
8.000	-4.0567E-32	1.1666E-31	-1.6610E-32	3.4787E-31
9.000	-8.5217E-32	3.1725E-32	-6.1261E-32	3.0322E-31
10.00	-5.2478E-32	1.0118E-31	4.4917E-32	4.0939E-31
10.25	-2.5237E-16	-2.5237E-16	-2.5237E-16	-2.5237E-16
10.50	-5.0475E-16	-5.0475E-16	-5.0475E-16	-5.0475E-16
10.75	-7.5712E-16	-7.5712E-16	-7.5712E-16	-7.5712E-16
11.00	-1.0095E-15	-1.0095E-15	-1.0095E-15	-1.0095E-15
11.25	-1.2619E-15	-1.2619E-15	-1.2619E-15	-1.2619E-15
11.50	-1.5142E-15	-1.5142E-15	-1.5142E-15	-1.5142E-15
11.75	-1.7666E-15	-1.7666E-15	-1.7666E-15	-1.7666E-15
12.00	-2.0190E-15	-2.0190E-15	-2.0190E-15	-2.0190E-15
12.25	-2.2714E-15	-2.2714E-15	-2.2714E-15	-2.2714E-15
12.50	-2.5237E-15	-2.5237E-15	-2.5237E-15	-2.5237E-15
12.75	-2.7761E-15	-2.7761E-15	-2.7761E-15	-2.7761E-15
13.00	-3.0285E-15	-3.0285E-15	-3.0285E-15	-3.0285E-15
13.25	-3.2809E-15	-3.2809E-15	-3.2809E-15	-3.2809E-15
13.50	-3.5332E-15	-3.5332E-15	-3.5332E-15	-3.5332E-15
13.75	-3.7856E-15	-3.7856E-15	-3.7856E-15	-3.7856E-15
14.00	-4.0380E-15	-4.0380E-15	-4.0380E-15	-4.0380E-15
14.25	-4.2904E-15	-4.2904E-15	-4.2904E-15	-4.2904E-15
14.50	-4.5427E-15	-4.5427E-15	-4.5427E-15	-4.5427E-15
14.75	-4.7951E-15	-4.7951E-15	-4.7951E-15	-4.7951E-15
15.00	-5.0475E-15	-5.0475E-15	-5.0475E-15	-5.0475E-15
15.25	-5.2998E-15	-5.2998E-15	-5.2998E-15	-5.2998E-15
15.50	-5.5522E-15	-5.5522E-15	-5.5522E-15	-5.5522E-15
15.75	-5.8046E-15	-5.8046E-15	-5.8046E-15	-5.8046E-15
16.00	-6.0570E-15	-6.0570E-15	-6.0570E-15	-6.0570E-15
16.25	-6.3093E-15	-6.3093E-15	-6.3093E-15	-6.3093E-15
16.50	-6.5617E-15	-6.5617E-15	-6.5617E-15	-6.5617E-15
16.75	-6.8141E-15	-6.8141E-15	-6.8141E-15	-6.8141E-15
17.00	-7.0665E-15	-7.0665E-15	-7.0665E-15	-7.0665E-15
17.25	-7.3188E-15	-7.3188E-15	-7.3188E-15	-7.3188E-15
17.50	-7.5712E-15	-7.5712E-15	-7.5712E-15	-7.5712E-15
17.75	-7.8236E-15	-7.8236E-15	-7.8236E-15	-7.8236E-15
18.00	-8.0760E-15	-8.0760E-15	-8.0760E-15	-8.0760E-15
18.25	-8.3283E-15	-8.3283E-15	-8.3283E-15	-8.3283E-15
18.50	-8.5807E-15	-8.5807E-15	-8.5807E-15	-8.5807E-15
18.75	-8.8331E-15	-8.8331E-15	-8.8331E-15	-8.8331E-15
19.00	-9.0855E-15	-9.0855E-15	-9.0855E-15	-9.0855E-15
19.25	-9.3378E-15	-9.3378E-15	-9.3378E-15	-9.3378E-15
19.50	-9.5902E-15	-9.5902E-15	-9.5902E-15	-9.5902E-15
19.75	-9.8426E-15	-9.8426E-15	-9.8426E-15	-9.8426E-15
20.00	-1.0095E-14	-1.0095E-14	-1.0095E-14	-1.0095E-14
20.25	-1.2432E-14	-1.2432E-14	-1.2432E-14	-1.2432E-14
20.50	-1.4770E-14	-1.4770E-14	-1.4770E-14	-1.4770E-14
20.75	-1.7107E-14	-1.7107E-14	-1.7107E-14	-1.7107E-14
21.00	-1.9444E-14	-1.9444E-14	-1.9444E-14	-1.9444E-14
21.25	-2.1782E-14	-2.1782E-14	-2.1782E-14	-2.1782E-14
21.50	-2.4119E-14	-2.4119E-14	-2.4119E-14	-2.4119E-14
21.75	-2.6456E-14	-2.6456E-14	-2.6456E-14	-2.6456E-14
22.00	-2.8794E-14	-2.8794E-14	-2.8794E-14	-2.8794E-14
22.25	-3.1131E-14	-3.1131E-14	-3.1131E-14	-3.1131E-14
22.50	-3.3469E-14	-3.3469E-14	-3.3469E-14	-3.3469E-14
22.75	-3.5806E-14	-3.5806E-14	-3.5806E-14	-3.5806E-14
23.00	-3.8143E-14	-3.8143E-14	-3.8143E-14	-3.8143E-14
23.25	-4.0481E-14	-4.0481E-14	-4.0481E-14	-4.0481E-14
23.50	-4.2818E-14	-4.2818E-14	-4.2818E-14	-4.2818E-14
23.75	-4.5155E-14	-4.5155E-14	-4.5155E-14	-4.5155E-14
24.00	-4.7493E-14	-4.7493E-14	-4.7493E-14	-4.7493E-14
24.25	-4.9830E-14	-4.9830E-14	-4.9830E-14	-4.9830E-14
24.50	-5.2167E-14	-5.2167E-14	-5.2167E-14	-5.2167E-14
24.75	-5.4505E-14	-5.4505E-14	-5.4505E-14	-5.4505E-14
25.00	-5.6842E-14	-5.6842E-14	-5.6842E-14	-5.6842E-14
25.25	-5.9180E-14	-5.9180E-14	-5.9180E-14	-5.9180E-14
25.50	-6.1517E-14	-6.1517E-14	-6.1517E-14	-6.1517E-14
25.75	-6.3854E-14	-6.3854E-14	-6.3854E-14	-6.3854E-14
26.00	-6.6192E-14	-6.6192E-14	-6.6192E-14	-6.6192E-14

26.25	-6.8529E-14	-6.8529E-14	-6.8529E-14	-6.8529E-14
26.50	-7.0866E-14	-7.0866E-14	-7.0866E-14	-7.0866E-14
26.75	-7.3204E-14	-7.3204E-14	-7.3204E-14	-7.3204E-14
27.00	-7.5541E-14	-7.5541E-14	-7.5541E-14	-7.5541E-14
27.25	-7.7878E-14	-7.7878E-14	-7.7878E-14	-7.7878E-14
27.50	-8.0216E-14	-8.0216E-14	-8.0216E-14	-8.0216E-14
27.75	-8.2553E-14	-8.2553E-14	-8.2553E-14	-8.2553E-14
28.00	-8.4890E-14	-8.4890E-14	-8.4890E-14	-8.4890E-14
28.25	-8.7228E-14	-8.7228E-14	-8.7228E-14	-8.7228E-14
28.50	-8.9565E-14	-8.9565E-14	-8.9565E-14	-8.9565E-14
28.75	-9.1903E-14	-9.1903E-14	-9.1903E-14	-9.1903E-14
29.00	-9.4240E-14	-9.4240E-14	-9.4240E-14	-9.4240E-14
29.25	-9.6577E-14	-9.6577E-14	-9.6577E-14	-9.6577E-14
29.50	-9.8915E-14	-9.8915E-14	-9.8915E-14	-9.8915E-14
29.75	-1.0125E-13	-1.0125E-13	-1.0125E-13	-1.0125E-13
30.00	-1.0359E-13	-1.0359E-13	-1.0359E-13	-1.0359E-13
30.25	-1.2177E-13	-1.2177E-13	-1.2177E-13	-1.2177E-13
30.50	-1.3995E-13	-1.3995E-13	-1.3995E-13	-1.3995E-13
30.75	-1.5694E-13	-1.5694E-13	-1.5694E-13	-1.5694E-13
31.00	-1.6784E-13	-1.6784E-13	-1.6784E-13	-1.6784E-13
31.25	-1.7463E-13	-1.7463E-13	-1.7463E-13	-1.7463E-13
31.50	-1.7890E-13	-1.7890E-13	-1.7890E-13	-1.7890E-13
31.75	-1.8136E-13	-1.8136E-13	-1.8136E-13	-1.8136E-13
32.00	-1.8237E-13	-1.8237E-13	-1.8237E-13	-1.8237E-13
32.25	-1.8228E-13	-1.8228E-13	-1.8228E-13	-1.8228E-13
32.50	-1.8153E-13	-1.8153E-13	-1.8153E-13	-1.8153E-13
32.75	-1.8029E-13	-1.8029E-13	-1.8029E-13	-1.8029E-13
33.00	-1.7866E-13	-1.7866E-13	-1.7866E-13	-1.7866E-13
33.25	-1.7670E-13	-1.7670E-13	-1.7670E-13	-1.7670E-13
33.50	-1.7450E-13	-1.7450E-13	-1.7450E-13	-1.7450E-13
33.75	-1.7210E-13	-1.7210E-13	-1.7210E-13	-1.7210E-13
34.00	-1.6955E-13	-1.6955E-13	-1.6955E-13	-1.6955E-13
34.25	-1.6689E-13	-1.6689E-13	-1.6689E-13	-1.6689E-13
34.50	-1.6413E-13	-1.6413E-13	-1.6413E-13	-1.6413E-13
34.75	-1.6132E-13	-1.6132E-13	-1.6132E-13	-1.6132E-13
35.00	-1.5847E-13	-1.5847E-13	-1.5847E-13	-1.5847E-13
35.25	-1.5559E-13	-1.5559E-13	-1.5559E-13	-1.5559E-13
35.50	-1.5271E-13	-1.5271E-13	-1.5271E-13	-1.5271E-13
35.75	-1.4983E-13	-1.4983E-13	-1.4983E-13	-1.4983E-13
36.00	-1.4697E-13	-1.4697E-13	-1.4697E-13	-1.4697E-13
36.25	-1.4413E-13	-1.4413E-13	-1.4413E-13	-1.4413E-13
36.50	-1.4132E-13	-1.4132E-13	-1.4132E-13	-1.4132E-13
36.75	-1.3856E-13	-1.3856E-13	-1.3856E-13	-1.3856E-13
37.00	-1.3583E-13	-1.3583E-13	-1.3583E-13	-1.3583E-13
37.25	-1.3316E-13	-1.3316E-13	-1.3316E-13	-1.3316E-13
37.50	-1.3053E-13	-1.3053E-13	-1.3053E-13	-1.3053E-13
37.75	-1.2795E-13	-1.2795E-13	-1.2795E-13	-1.2795E-13
38.00	-1.2543E-13	-1.2543E-13	-1.2543E-13	-1.2543E-13
38.25	-1.2297E-13	-1.2297E-13	-1.2297E-13	-1.2297E-13
38.50	-1.2056E-13	-1.2056E-13	-1.2056E-13	-1.2056E-13
38.75	-1.1821E-13	-1.1821E-13	-1.1821E-13	-1.1821E-13
39.00	-1.1592E-13	-1.1592E-13	-1.1592E-13	-1.1592E-13
39.25	-1.1368E-13	-1.1368E-13	-1.1368E-13	-1.1368E-13
39.50	-1.1150E-13	-1.1150E-13	-1.1150E-13	-1.1150E-13
39.75	-1.0938E-13	-1.0938E-13	-1.0938E-13	-1.0938E-13
40.00	-1.0731E-13	-1.0731E-13	-1.0731E-13	-1.0731E-13

THE REQUEST HAS BEEN TABULATED

STARTING REQUEST 8

VARIABLE		MAXIMUM	TIME	MINIMUM	TIME
1	S12-1-1	1.489E+03	32.0	-2.946E-15	1.00
2	S12-2-1	1.489E+03	32.0	-2.946E-15	1.00
3	S12-3-1	1.489E+03	32.0	-7.206E-16	6.00
4	S12-4-1	1.489E+03	32.0	-3.872E-15	6.00

TIME	VARIABLE 1	2	3	4
1.000	-2.9462E-15	-2.9462E-15	.0000E+00	.0000E+00
2.000	3.9443E-31	-3.9443E-31	-1.2789E-31	.0000E+00

3.000	1.6613E-15	8.7334E-16	4.0251E-15	8.7334E-16
4.000	-8.2652E-16	-3.3591E-16	2.1766E-15	-9.7518E-16
5.000	-1.8438E-15	-1.8910E-15	6.2146E-16	-2.5303E-15
6.000	-1.7935E-15	-2.3048E-15	-7.2062E-16	-3.8724E-15
7.000	2.9177E-16	-6.2777E-16	-2.6817E-16	-1.7871E-15
8.000	3.3125E-16	-9.5260E-16	1.3563E-16	-2.8405E-15
9.000	6.9585E-16	-2.5905E-16	5.0023E-16	-2.4759E-15
10.00	4.2851E-16	-8.2622E-16	-3.6677E-16	-3.3430E-15
10.25	2.061	2.061	2.061	2.061
10.50	4.122	4.122	4.122	4.122
10.75	6.182	6.182	6.182	6.182
11.00	8.243	8.243	8.243	8.243
11.25	10.30	10.30	10.30	10.30
11.50	12.36	12.36	12.36	12.36
11.75	14.43	14.43	14.43	14.43
12.00	16.49	16.49	16.49	16.49
12.25	18.55	18.55	18.55	18.55
12.50	20.61	20.61	20.61	20.61
12.75	22.67	22.67	22.67	22.67
13.00	24.73	24.73	24.73	24.73
13.25	26.79	26.79	26.79	26.79
13.50	28.85	28.85	28.85	28.85
13.75	30.91	30.91	30.91	30.91
14.00	32.97	32.97	32.97	32.97
14.25	35.03	35.03	35.03	35.03
14.50	37.09	37.09	37.09	37.09
14.75	39.15	39.15	39.15	39.15
15.00	41.22	41.22	41.22	41.22
15.25	43.28	43.28	43.28	43.28
15.50	45.34	45.34	45.34	45.34
15.75	47.40	47.40	47.40	47.40
16.00	49.46	49.46	49.46	49.46
16.25	51.52	51.52	51.52	51.52
16.50	53.58	53.58	53.58	53.58
16.75	55.64	55.64	55.64	55.64
17.00	57.70	57.70	57.70	57.70
17.25	59.76	59.76	59.76	59.76
17.50	61.82	61.82	61.82	61.82
17.75	63.88	63.88	63.88	63.88
18.00	65.95	65.95	65.95	65.95
18.25	68.01	68.01	68.01	68.01
18.50	70.07	70.07	70.07	70.07
18.75	72.13	72.13	72.13	72.13
19.00	74.19	74.19	74.19	74.19
19.25	76.25	76.25	76.25	76.25
19.50	78.31	78.31	78.31	78.31
19.75	80.37	80.37	80.37	80.37
20.00	82.43	82.43	82.43	82.43
20.25	101.5	101.5	101.5	101.5
20.50	120.6	120.6	120.6	120.6
20.75	139.7	139.7	139.7	139.7
21.00	158.8	158.8	158.8	158.8
21.25	177.9	177.9	177.9	177.9
21.50	196.9	196.9	196.9	196.9
21.75	216.0	216.0	216.0	216.0
22.00	235.1	235.1	235.1	235.1
22.25	254.2	254.2	254.2	254.2
22.50	273.3	273.3	273.3	273.3
22.75	292.4	292.4	292.4	292.4
23.00	311.5	311.5	311.5	311.5
23.25	330.5	330.5	330.5	330.5
23.50	349.6	349.6	349.6	349.6
23.75	368.7	368.7	368.7	368.7
24.00	387.8	387.8	387.8	387.8
24.25	406.9	406.9	406.9	406.9
24.50	426.0	426.0	426.0	426.0
24.75	445.1	445.1	445.1	445.1
25.00	464.2	464.2	464.2	464.2
25.25	483.2	483.2	483.2	483.2
25.50	502.3	502.3	502.3	502.3
25.75	521.4	521.4	521.4	521.4
26.00	540.5	540.5	540.5	540.5
26.25	559.6	559.6	559.6	559.6
26.50	578.7	578.7	578.7	578.7
26.75	597.8	597.8	597.8	597.8
27.00	616.8	616.8	616.8	616.8

27.25	635.9	635.9	635.9	635.9
27.50	655.0	655.0	655.0	655.0
27.75	674.1	674.1	674.1	674.1
28.00	693.2	693.2	693.2	693.2
28.25	712.3	712.3	712.3	712.3
28.50	731.4	731.4	731.4	731.4
28.75	750.4	750.4	750.4	750.4
29.00	769.5	769.5	769.5	769.5
29.25	788.6	788.6	788.6	788.6
29.50	807.7	807.7	807.7	807.7
29.75	826.8	826.8	826.8	826.8
30.00	845.9	845.9	845.9	845.9
30.25	994.3	994.3	994.3	994.3
30.50	1143.	1143.	1143.	1143.
30.75	1281.	1281.	1281.	1281.
31.00	1370.	1370.	1370.	1370.
31.25	1426.	1426.	1426.	1426.
31.50	1461.	1461.	1461.	1461.
31.75	1481.	1481.	1481.	1481.
32.00	1489.	1489.	1489.	1489.
32.25	1488.	1488.	1488.	1488.
32.50	1482.	1482.	1482.	1482.
32.75	1472.	1472.	1472.	1472.
33.00	1459.	1459.	1459.	1459.
33.25	1443.	1443.	1443.	1443.
33.50	1425.	1425.	1425.	1425.
33.75	1405.	1405.	1405.	1405.
34.00	1385.	1385.	1385.	1385.
34.25	1363.	1363.	1363.	1363.
34.50	1340.	1340.	1340.	1340.
34.75	1317.	1317.	1317.	1317.
35.00	1294.	1294.	1294.	1294.
35.25	1270.	1270.	1270.	1270.
35.50	1247.	1247.	1247.	1247.
35.75	1223.	1223.	1223.	1223.
36.00	1200.	1200.	1200.	1200.
36.25	1177.	1177.	1177.	1177.
36.50	1154.	1154.	1154.	1154.
36.75	1131.	1131.	1131.	1131.
37.00	1109.	1109.	1109.	1109.
37.25	1087.	1087.	1087.	1087.
37.50	1066.	1066.	1066.	1066.
37.75	1045.	1045.	1045.	1045.
38.00	1024.	1024.	1024.	1024.
38.25	1004.	1004.	1004.	1004.
38.50	984.5	984.5	984.5	984.5
38.75	965.3	965.3	965.3	965.3
39.00	946.5	946.5	946.5	946.5
39.25	928.3	928.3	928.3	928.3
39.50	910.5	910.5	910.5	910.5
39.75	893.1	893.1	893.1	893.1
40.00	876.2	876.2	876.2	876.2

THE REQUEST HAS BEEN TABULATED

END OF RUN

RUN SUMMARY:
TOTAL OF 0 INCREMENTS
0 CUTBACKS IN AUTOMATIC INCREMENTATION
0 ITERATIONS
0 PASSES THROUGH THE EQUATION SOLVER OF WHICH
0 REPRESENT(S) DECOMPOSITION OF THE MASS MATRIX

Appendix B

HALF-MILLION-GALLON TANK PRESSURIZATION ANALYSIS

DESIGN CALCULATION

(1) Drawing _____ (2) Doc. No. WHC-SD-WM-TI-623 (3) Page _____ of _____
(4) Building _____ (5) Rev. 0 (6) Job No. _____
(7) Subject Half-Million-Gallon Tank Pressurization Analysis
(8) Originator Phillip R. Kirch Date 5/27/94
(9) Checker [illegible] Date 6/8/94

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2.0 METHODOLOGY B2-1

3.0 MODEL DESCRIPTION B3-1
3.1 Tank Geometry B3-1
3.2 Model Development B3-1

4.0 LOAD DESCRIPTION B4-1
4.1 Tank Deadweight B4-1
4.2 Soil Pressure B4-1
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5.0 RESULTS B5-1
5.1 Convergence B5-1
5.2 Capacity B5-2
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Attachment 1 ABAQUS Analysis Input File for Half-Million-Gallon Tank
Attachment 2 ABAQUS Analysis Input File - Refined Analysis for Half-Million-Gallon Tank
Attachment 3 Spreadsheet for Determination of Convergence Indicator for Half-Million-Gallon Tank
Attachment 4 Spreadsheet for Determination of Relative Dome Displacements for Half-Million-Gallon Tank
Attachment 5 Spreadsheet for Determination of Relative Dome Displacements -Refined Analysis, for Half-Million-Gallon Tank
Attachment 6 Spreadsheet Summary of Dome Rebar Stress for Half-Million-Gallon Tank

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(9) Checker [illegible] Date [illegible]

1.0 PURPOSE AND SCOPE

A finite-element analysis was performed to determine the ultimate static internal pressure that could be structurally sustained by a typical half-million gallon single-shell waste tank. The internal pressure under consideration is due to a postulated explosion. The tanks contain chemical wastes which generate potentially explosive gas. Although ignition of these gasses is unlikely, issues of public safety require evaluations of this beyond-design-basis event.

The scope of this effort includes analysis using a model previously developed for the evaluation of in situ conditions of tank 241-C-106. The model is not intended to envelop the geometry of all half-million-gallon single-shell tanks. This calculation documents the finite-element model and the associated static pressurization analysis results. The evaluation was performed on the basis of global instability failure. Permanent structural damage, including concrete cracking and rebar yielding, may occur before the point of structural instability.

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(8) Originator Phillip R. Kurk Date 5/27/94
(9) Checker [illegible] Date 6/8/94

2.0 METHODOLOGY

A finite-element model of tank 241-C-106 was previously developed for the evaluation of in situ conditions (Julyk et al. 1993). For convenience, this model was utilized to represent half-million-gallon single-shell tanks for the analysis of static pressurization loading. Although the geometry of tank 241-C-106 does not envelop all half-million-gallon single-shell waste tanks, the analysis does provide an indication of the capacity levels exhibited by these tanks.

The analysis was performed with ABAQUS version 4.9, a general-purpose finite-element computer program. The user-defined material subroutine of the ANACAP-U concrete analysis package was used to model the constitutive behavior of the concrete. Nonlinear response was considered through the application of incremental loads. Loading consisted of gravity loads and a static internal pressure loading, which was applied to all internal concrete elements.

Refer to Appendix B to this report for a discussion of the failure criteria used in the evaluation of this tank.

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(8) Originator [illegible] Date 5/27/94
(9) Checker [illegible] Date [illegible]

3.0 MODEL DESCRIPTION

3.1 Tank Geometry

Tank 241-C-106 is a half-million-gallon tank that is approximately 77-ft. in diameter internally and 33-ft. tall, measured from the bottom of the floor slab to the dome apex. The tank is buried approximately 7 ft. at the dome apex. The minimum dome thickness is 15 in. and the cylindrical wall is 12-in. thick. The tank floor slab is 6-in. thick with a 2-in. layer of grout and a 3-ply asphaltic membrane layer between the slab and liner. The steel liner thickness is 1/4 in. except at the knuckle transition between the floor and wall, where a 5/16-in. plate is used. Although the liner is not structurally connected to the concrete shell, it is stiffened with 5x3½x5/16 angles that form circumferential rings spaced uniformly along the height of the wall. Figure 3-1 provides a schematic of the tank considered in this analysis.

3.2 Model Development

The model used to represent the half-million-gallon single-shell tanks is virtually the same as that used in the in situ evaluation of tank 241-C-106 (Julyk et al. 1993). The primary difference in the model is that the concrete strength here has been defined as 3000 lbf/in^2, the minimum specified compressive strength for tank 241-C-106, rather than the Hanford concrete properties determined from testing.

In the previous in situ analysis, the first load steps were performed to obtain a geostatic state of stress in the soil corresponding to the completed construction of the tank and backfill of the soil. Additional load steps were analyzed by way of ABAQUS restart runs to evaluate the in situ condition. For the internal pressurization analysis within the scope of this calculation, the analysis is continued from the point of the completed construction, and does not consider the specific in situ loadings.

The structure and loading are axisymmetric, and the tank was modelled accordingly. Reinforcing bars were modelled with ABAQUS subelements to be superimposed on the axisymmetric continuum elements representing the concrete. The soil surrounding the tank was explicitly modelled as a continuum. Figure 3-2 is a mesh plot of the complete model including the soil elements. Figures 3-3 and 3-4 are mesh plots of the tank only, the latter of which includes rebar subelements.

Complete documentation of all modelling aspects, including element types, boundary conditions, and material properties, is provided in Julyk et al. (1993). Chapter 4 of this

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calculation discusses the loading applied to the model. The analysis input files are listed in Attachments 1 and 2 to this calculation.

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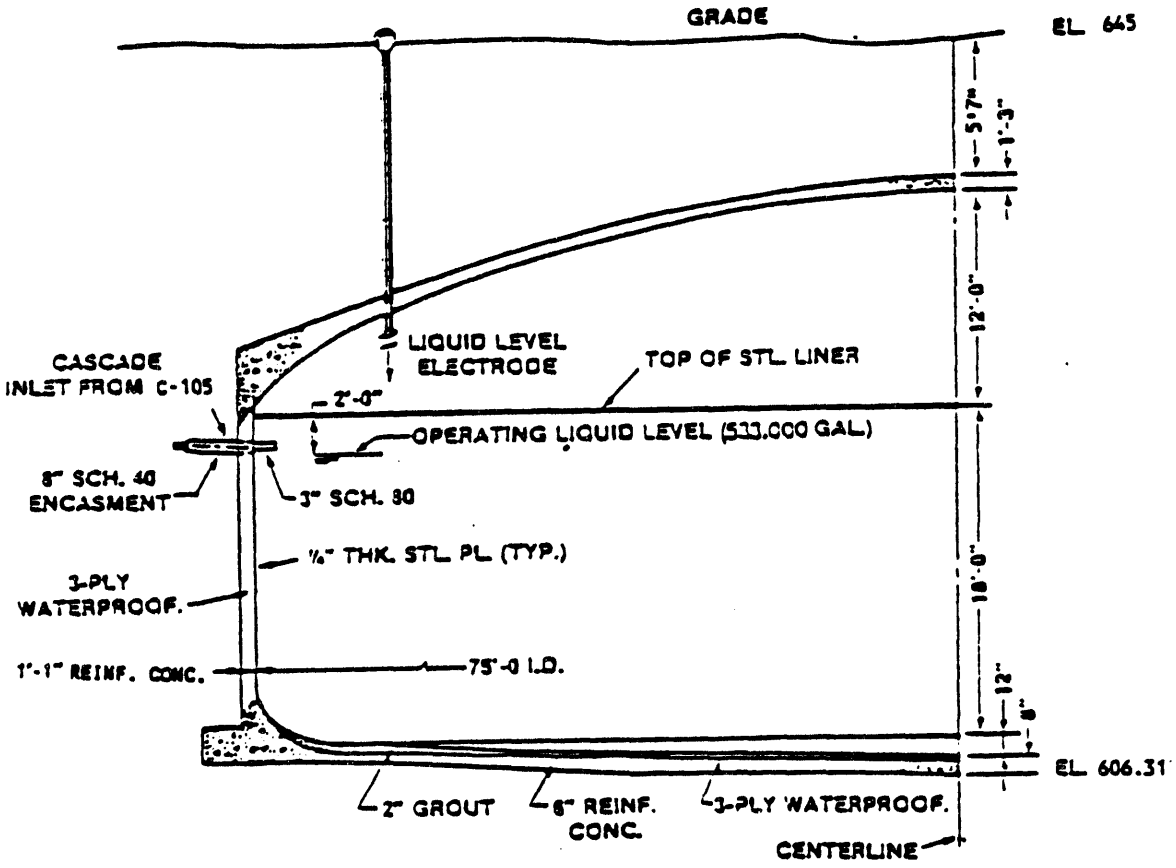
Figure 3-1
Schematic of Half-Million-Gallon Single-Shell Tank



1 ft (') = 0.3048 m
1 in. (") = 0.0254 m

Abbreviations

I.D.	= inside diameter
El	= elevation
Reinf. Conc.	= reinforced concrete
Sch.	= schedule
Thk.	= thick
Pl	= plate
Typ	= typical
Stl	= steel
gal	= gallon

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(4) Building _____ (5) Rev. 0 (6) Job No. _____
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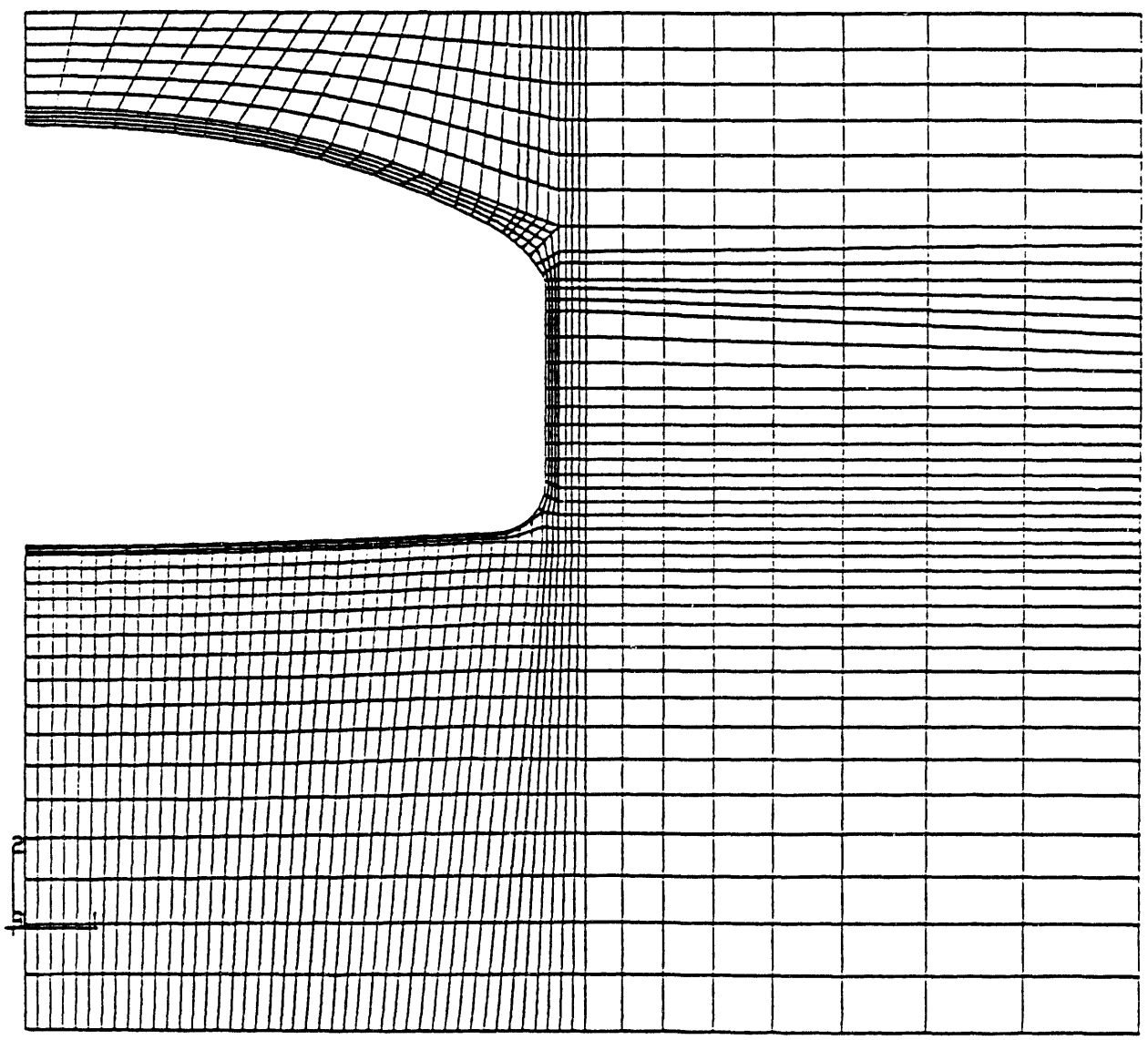
(9) Checker [illegible] Date 6/8/94

Figure 3-2
Finite-Element Mesh Plot of the Complete Half-Million-Gallon Tank Model



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(4) Building _____ (5) Rev. 0 (6) Job No. _____
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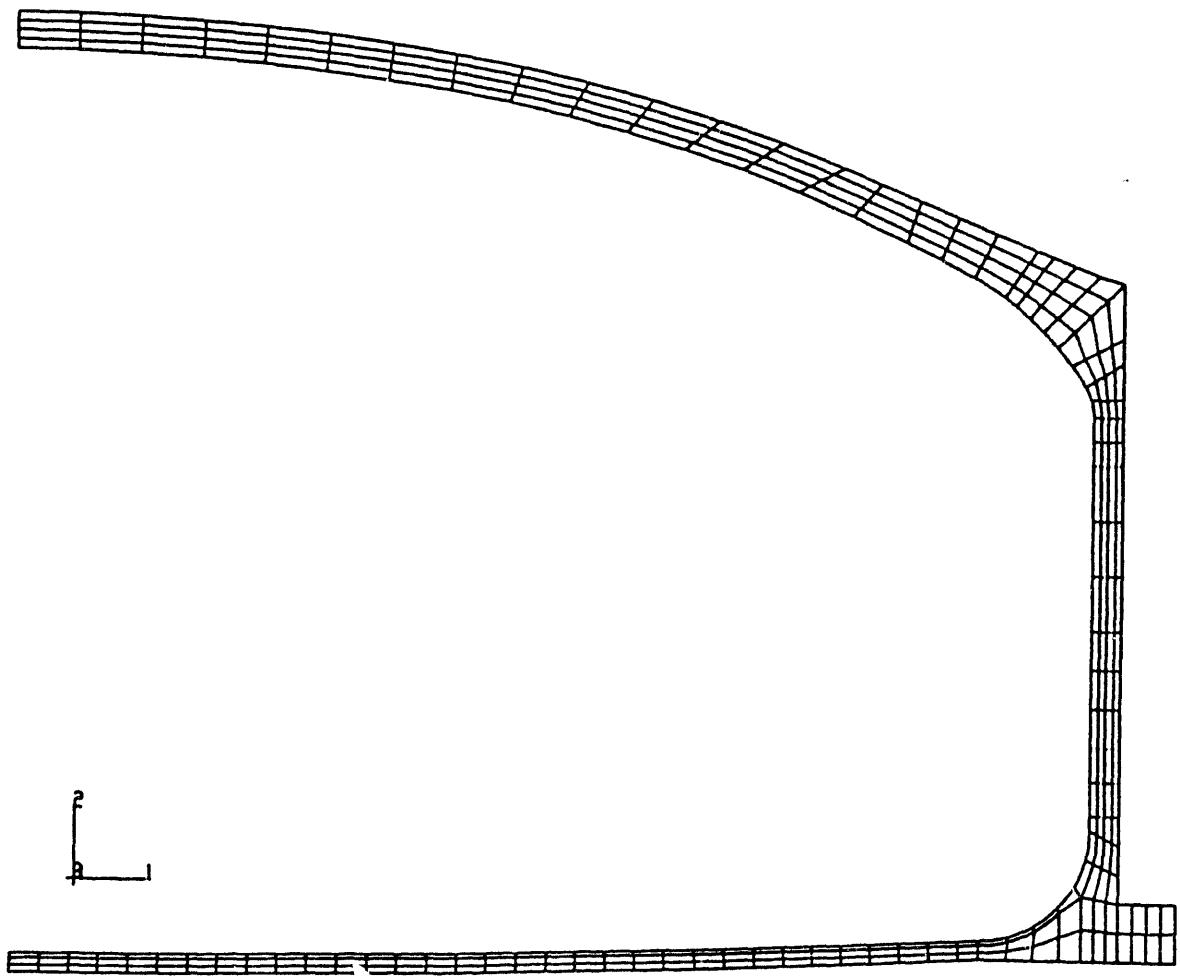
(8) Originator Phillip R. Pyle Date 5/27/94
(9) Checker [illegible] Date 6/8/94

Figure 3-3
Finite-Element Mesh Plot of the Half-Million-Gallon Tank Model



DESIGN CALCULATION

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(4) Building _____ (5) Rev. 0 (6) Job No. _____
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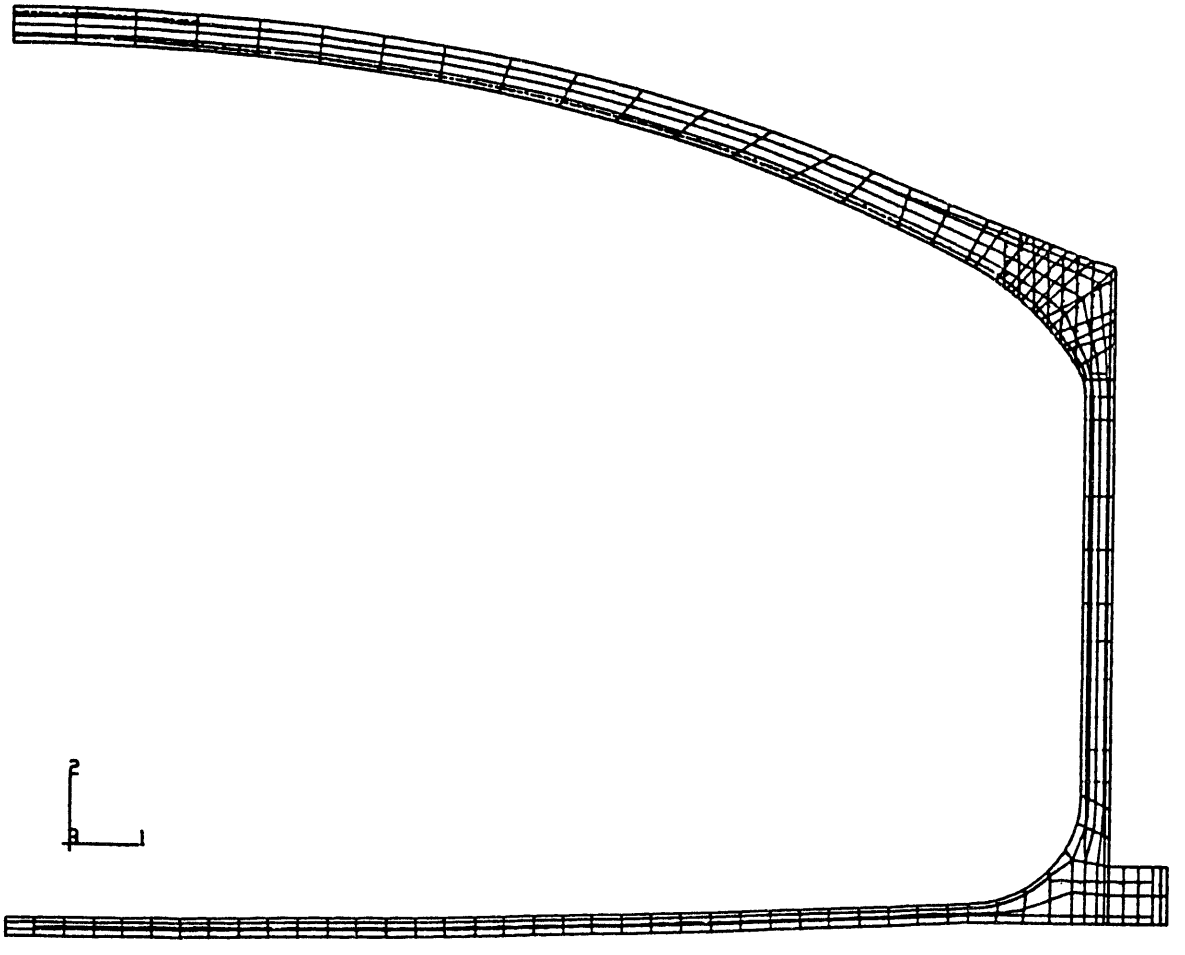
(8) Originator Phillip R. Kaus Date 5/27/94
(9) Checker [illegible] Date 6/8/94

Figure 3-4
Finite-Element Mesh Plot of the Half-Million-Gallon Tank Model with Rebar Sub-elements shown



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4.0 LOAD DESCRIPTION

4.1 Tank Deadweight

Gravitational acceleration was applied to all tank component masses. All concrete elements were defined with a mass density of 0.000225 lbf-sec^2/in^4 (150 lbf/ft^3), and all reinforcement and liner elements were defined with a mass density of 0.000734 lbf-sec^2/in^4 (490 lbf/ft^3).

4.2 Soil Pressure

As discussed in Julyk et al. (1993), soil element layers were added to the model over several load steps, to simulate the construction sequence of the tank, with regard to backfilling operations, and arrive at an initial nonzero state of soil stress. Figure 4-1 provides a sketch of the soil layers modelled in the analysis. Because the soil is explicitly modelled, lateral soil pressure on the tank walls and soil overburden on the tank dome were internally developed within the analysis. Overburden soil was modelled to a depth of 7'-0" at the dome apex.

4.3 Hydrostatic Waste Loads

Waste contained in the tank has been considered by defining a hydrostatic load on the basis of a waste depth of 17 ft. A specific gravity of 2.0 (corresponding to solid waste) was assumed along the tank floor and to an elevation of 35 in. above the lowest interior point in the tank. For points above 35 in., up to the 17-ft. total waste depth, a specific gravity of 1.0 was assumed for the liquid portion of the waste. The modelling of two discrete waste layers is intended to approximate the actual variation in waste density, in which the heavier liquids and suspended solids tend to settle with time.

4.4 Internal Pressure

The static internal pressure, representative of the hydrogen burn loading, was applied in two load steps. The first step applied a pressure of 14.7 lbf/in^2 which corresponds to the estimated pressure required to crack the dome. In the second step of the analysis, the pressure was gradually increased until the numerical algorithms failed at a pressure of approximately 28.0 lbf/in^2. The pressure loadings were applied directly

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to all interior concrete elements since the waste liquid and liner would transfer the load to the concrete in the presence of overpressure.

A refined analysis was performed that applied smaller load increments in the region that a jump in relative dome displacement occurred (see Chapter 5). In the refined analysis, the first step applied an internal pressure of 13 lbf/in^2, and the second step increased the pressure to 16 lbf/in^2.

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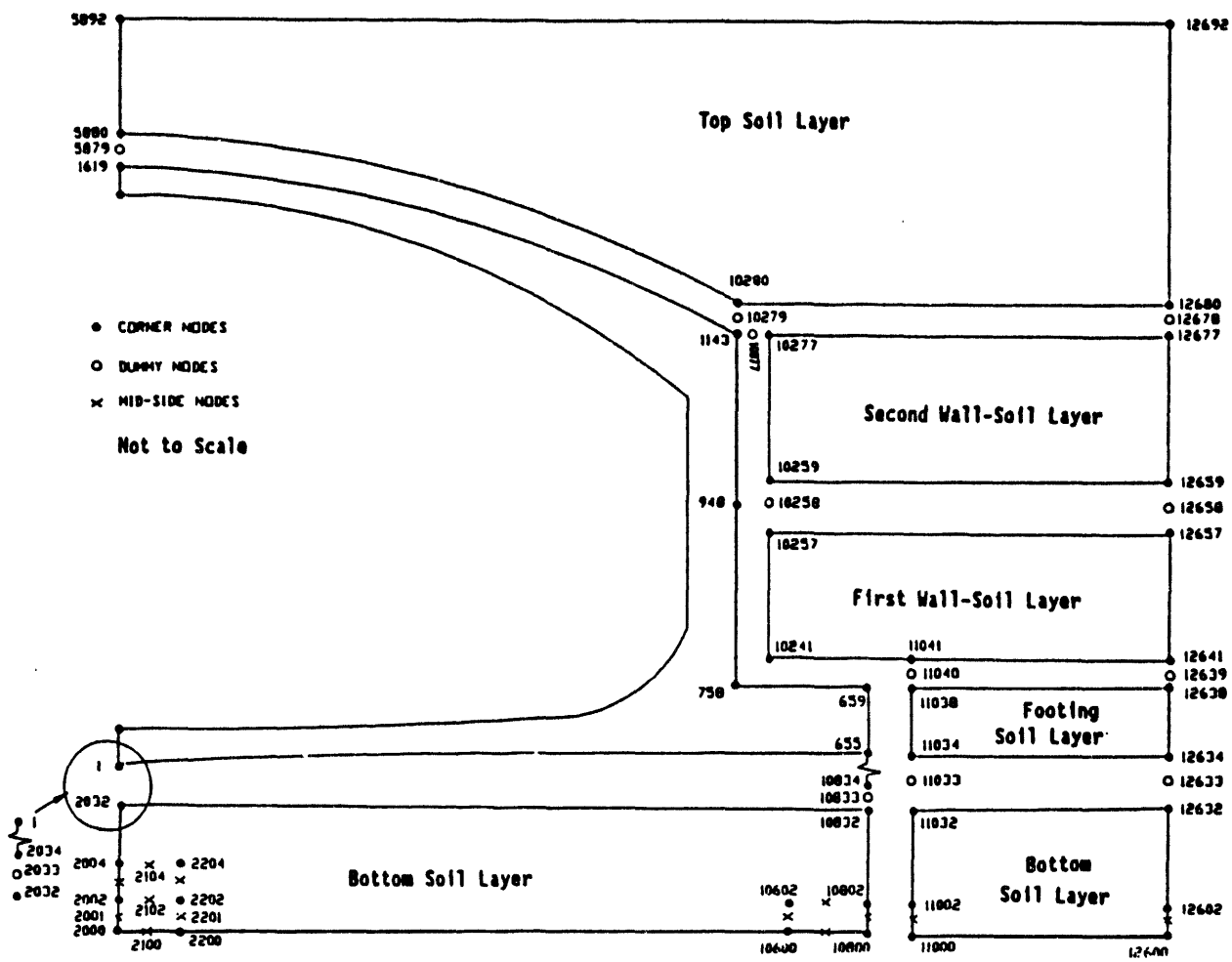
Figure 4-1
Discrete Soil Layers Used in the Half-Million-Gallon Tank Analysis



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5.0 RESULTS

Table 5-1 summarizes the computer input and output files used for this analysis. Also summarized are the spreadsheet files used in postprocessing the results. Hard copies of the relevant files are included as attachments to this calculation.

5.1 Convergence

Convergence, on the basis of force equilibrium, can be difficult to obtain for increments involving nonlinear behavior of concrete. Use of the ANACAP-U constitutive model is especially challenging because tension stiffening is modelled only to a minor degree. The "NO STOP" option was specified, which allows continuation of the analyses even if the equilibrium tolerances are not satisfied at all nodes after the specified maximum number of iterations is performed for a given increment. An equilibrium tolerance of 100 lbf was defined for load steps involving internal pressure loading.

Normal ABAQUS convergence, based on equilibrium tolerances, has been obtained throughout the linear-response portion of the analysis and partially into the nonlinear-response portion. As a rough measure of convergence for the remaining iterations involving nonlinear response, a quantity called the "convergence indicator" was computed. The convergence indicator is based on convergence of the maximum displacement increments which are available in the ABAQUS ".about" file.

Figure 5-1 plots and defines the convergence indicator for load increments that did not meet the normal ABAQUS convergence criteria. The convergence indicator provides a measure of the asymptotic behavior of the solution in terms of a pseudo second derivative of the maximum displacement increments. The first derivative is calculated by taking the difference of succeeding maximum displacement increments from one iteration to the next. If the absolute-value of the difference is decreasing with each successive iteration, the solution is classified as convergent. This is represented as a positive value on the plot of the convergence indicator. Because two degrees of freedom (DOF) are involved, they are combined to a single DOF by performing a square-root-sum-of-squares on the displacement increment components. The specific equation for the convergence indicator is as follows:

$$CI = \sqrt{(ux_1 - ux_2)^2 + (uy_1 - uy_2)^2} - \sqrt{(ux_2 - ux_3)^2 + (uy_2 - uy_3)^2}$$

where

CI = Convergence Indicator

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ux_j = Maximum Radial Displacement Increment in Iteration j
uy_j = Maximum Vertical Displacement Increment in Iteration j

The plot shows that convergence is obtained to an internal pressure of approximately 28 lbf/in^2, and then the solution integrity degrades rapidly.

5.2 Capacity

Figure 5-2 is a history plot of the relative dome displacement (i.e., the displacement difference between the dome apex and haunch). Figure 5-3 also plots the relative dome displacement, but focuses on internal pressures up to 18 lbf/in^2. An internal pressure of approximately 7 lbf/in^2 balances the deadweight of the dome and soil. The displacement response continues linearly to an internal pressure of approximately 14 lbf/in^2, at which point the response becomes nonlinear, and the dome displacement increases rapidly with the application of small pressure increments. Beyond this discontinuity "jump", the displacement history curve is shown to slightly level, and then begin to increase in slope.

A refined analysis was performed that applied smaller load increments in the region of the jump in displacement. The corresponding displacement history is plotted in Figure 5-4, which shows that the refinement sharpened the jump. The internal pressure of 14 lbf/in^2 at this jump is conservatively defined as the effective capacity of the half-million-gallon tank. Additional capacity, determined on the basis of the ASME criteria discussed in Section 4.3 of Appendix A, would be relatively small.

Figure 5-5 shows crack plots of the tank cross-section immediately preceding and following the jump in dome displacement. Prior to the jump, the dome is uncracked, while after the jump, much cracking is evident.

5.3 Rebar Stress

Consideration of rebar bond failure is necessary, as this type of failure is not addressed in the concrete constitutive model and is crucial to the ultimate capacity of reinforced concrete in tension. A failure criteria for rebar bond has been developed in Julyk et al. (1993) resulting in the following equation:

$$f_s = \frac{4l_s}{d_b}\left(1.2 + 3\frac{C}{d_b} + 50\frac{d_b}{l_s}\right)\sqrt{f_c'}$$

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where

f_s	=	longitudinal rebar limit stress for splitting bond failure (lbf/in^2)
l_s	=	splice or bond length (see below)
C	=	smaller of cover dimension or ½ of spacing between splices or rebar = 3 in. (rebar cover - dwg. D-6)
d_b	=	rebar diameter = 0.75 in.
f'_c	=	compressive strength of concrete = 3000 lbf/in^2

Reference 22 specifies that splice lengths are to be 40 bar diameters for single-shell tanks in farm 241. However, a conservative value of 12 in. will be used here which corresponds to the minimum splice length allowed per ACI 349 (Ref. 23). A 23-percent reduction factor is applied to the stress limit which is applicable to top-cast rebar. Reference 22 prescribes an additional capacity reduction factor of 0.63 for square rebar. The half-million-gallon 241-C-106 tank utilizes square rebar in the haunch regions only. Because the haunch was determined to not be critical for internal pressurization, the additional capacity reduction is not applied here. Based on the above, f_s = 44,000 lbf/in^2.

Figure 5-6 is a plot of rebar stress history for critical elements in the tank dome. The rebar stress is shown to remain below 2500 lbf/in^2 up to an internal pressure of 14 lbf/in^2, beyond which the stress increases rapidly with the addition of internal pressure increments. This behavior closely parallels that of the relative dome displacement. Since the calculated splitting bond failure limit of 44,000 lbf/in^2 occurs beyond the jump in rebar stress, the capacity of 14 lbf/in^2, defined on the basis of relative dome displacement, still controls.

5.4 Conclusions

A finite-element analysis was performed for tank 241-C-106 to determine the general internal pressure capacity of typical Hanford half-million-gallon single-shell waste tanks. The analysis indicates that an internal pressure of 14 lbf/in^2 causes excessive cracking in the tank dome, resulting in dome displacements that increase sharply with incremental pressure increases. This pressure should not be used as an enveloping value for all half-million-gallon single-shell tanks since no attempt was made to envelope geometries and material properties for these tanks. Additionally, 14 lbf/in^2 represents the instability failure point. Permanent structural damage may occur before the point of structural instability.

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Table 5-1
Computer File Descriptions

File Name	Description
PRESS.abdat	ABAQUS input file for the static pressurization analysis.
DISINCS.xls	Worksheet for computing the convergence indicator
DISINCS.xlc	Chart of the computed convergence indicator.
DOMDIS.xls	Spreadsheet for determination of relative dome displacement history.
DOMDISA.xlc	Chart of relative dome displacement history from 0 - 30 lbf/in^2 of internal pressure.
DOMDISB.xlc	Chart of relative dome displacement history from 0 - 18 lbf/in^2 of internal pressure.
DOMDISR.xls	Spreadsheet for determination of relative dome displacement history for the refined analysis.
DOMEDISR.xlc	Chart of relative dome displacement history for the refined analysis
REBAR.xls	Spreadsheet to summarize stress history for selected dome rebar.
REBAR.xlc	Chart of stress history for selected dome rebar.

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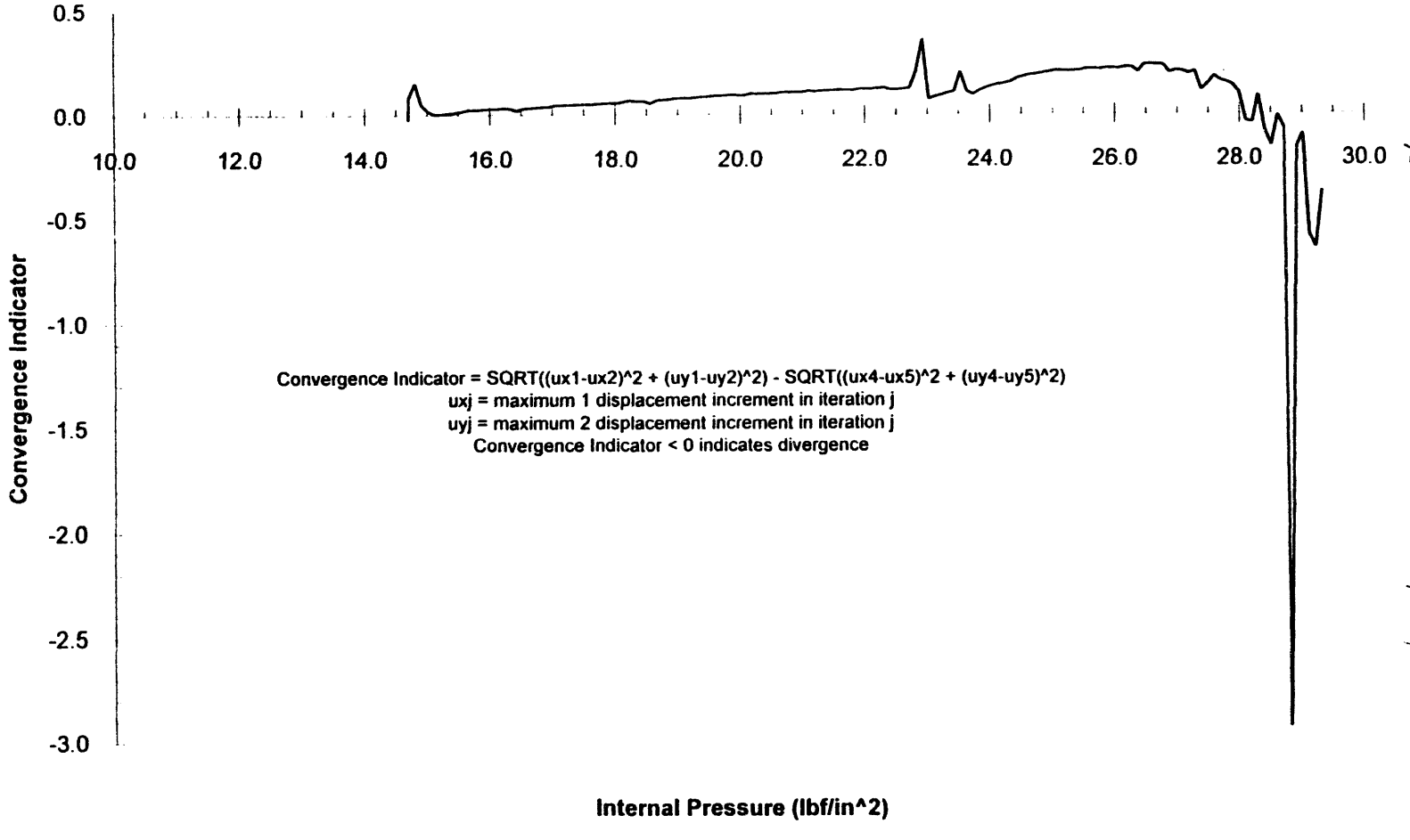
Figure 5-1
Convergence Indicator for Pressurization of Half-Million Gallon Tank



DISINCS.XLC

DESIGN CALCULATION

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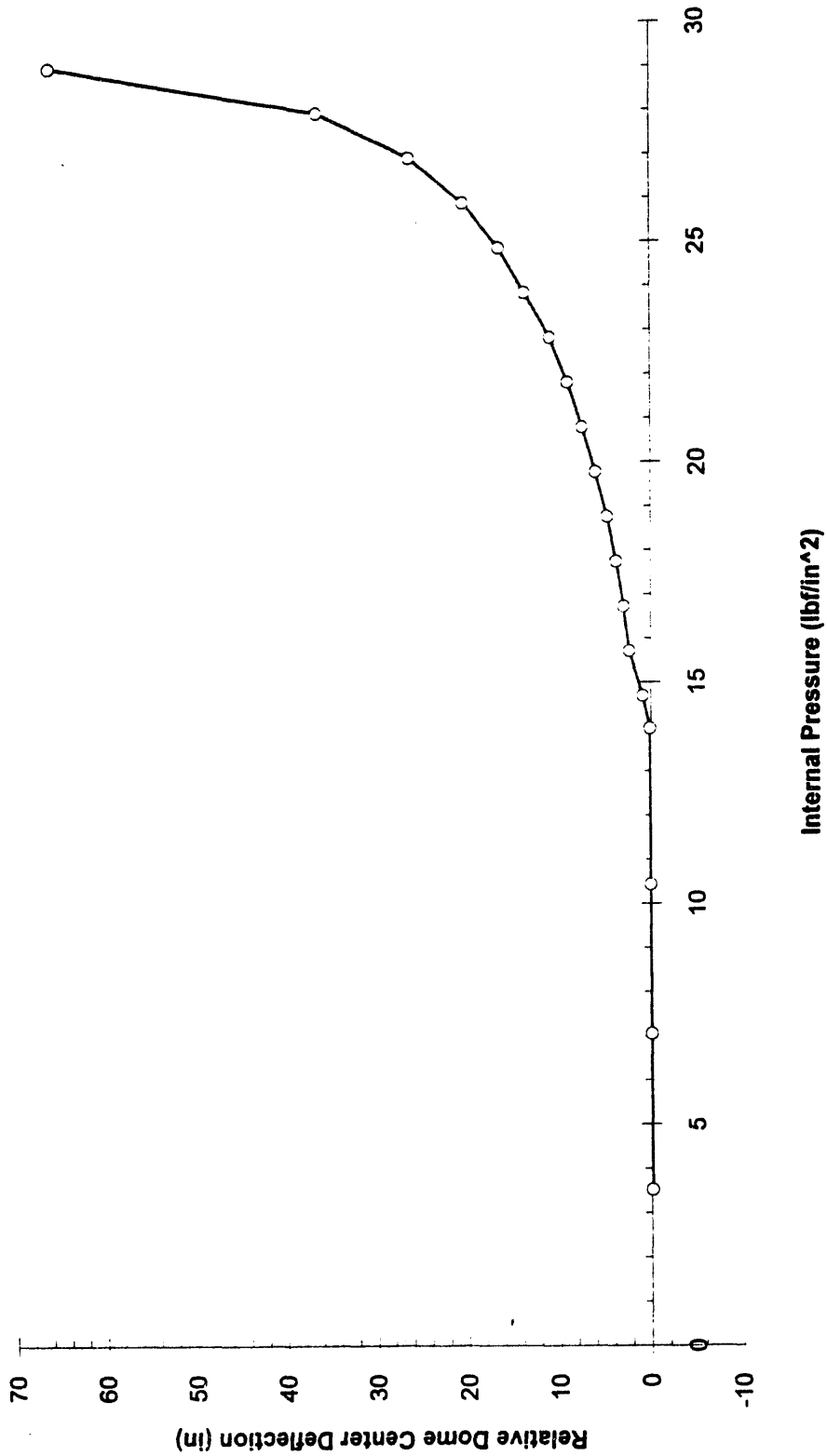
(9) Checker Dudley R. Kirk Date 5/27/94

Figure 5-2
Relative Dome Displacement of Half-Million-Gallon Tank under Deadweight and Internal Pressure



DOMDISA.XLC

DESIGN CALCULATION

(1) Drawing ____ (2) Doc. No. WHC-SD-WM-TI-623 (3) Page ____ of ____
(4) Building ____ (5) Rev. 0 (6) Job No. ____
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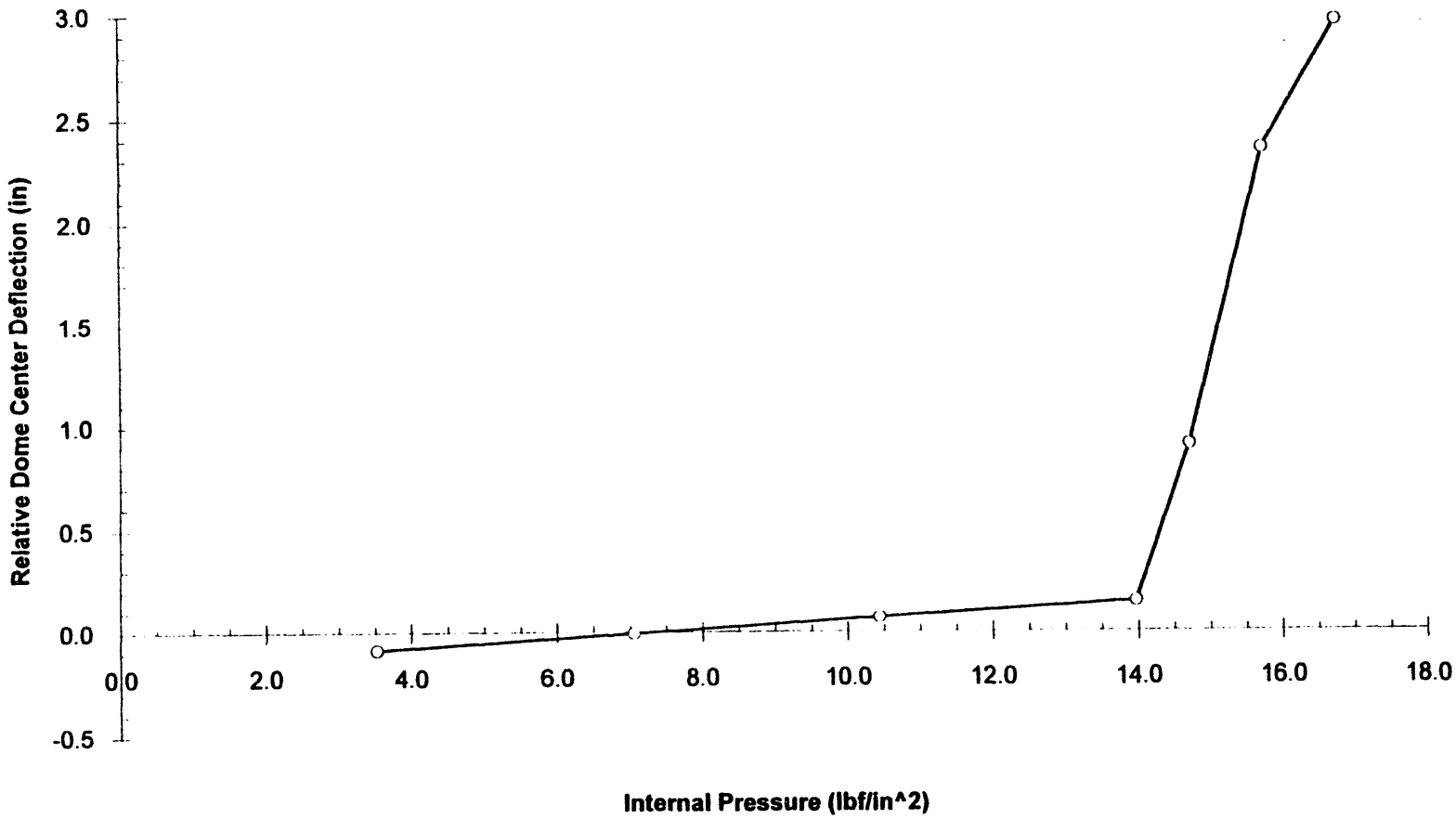
(8) Originator [signature] Date 5/27/94
(9) Checker Philip R. Kirk Date 5/27/94

Figure 5-3
Relative Dome Displacement for Half-Million-Gallon Tank under Deadweight and Internal Pressure



DOMDISB.XLC

DESIGN CALCULATION

(1) Drawing _____ (2) Doc. No. WHC-SD-WM-TI-623 (3) Page _____ of _____
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(9) Checker Phillip R. Kyle Date 5/27/94

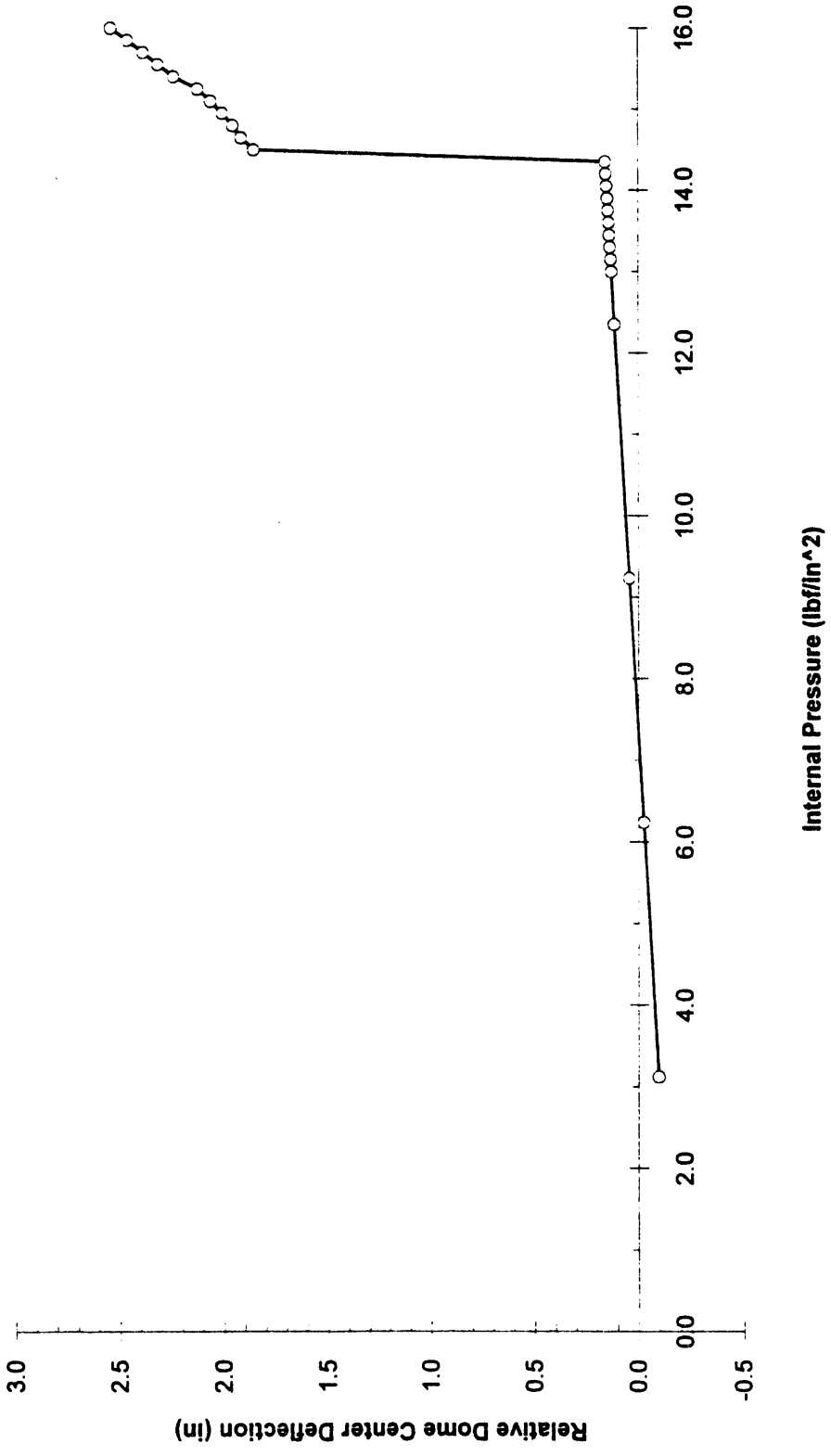

Figure 5-4
Relative Dome Displacement of Half-Million-Gallon Tank under Deadweight and Internal Pressure

DOMDISR.XLC

DESIGN CALCULATION

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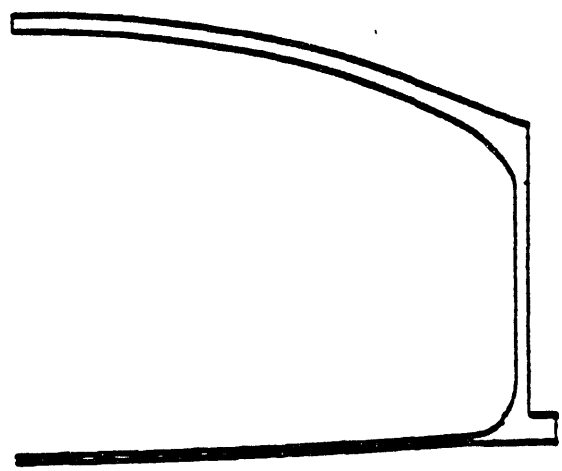
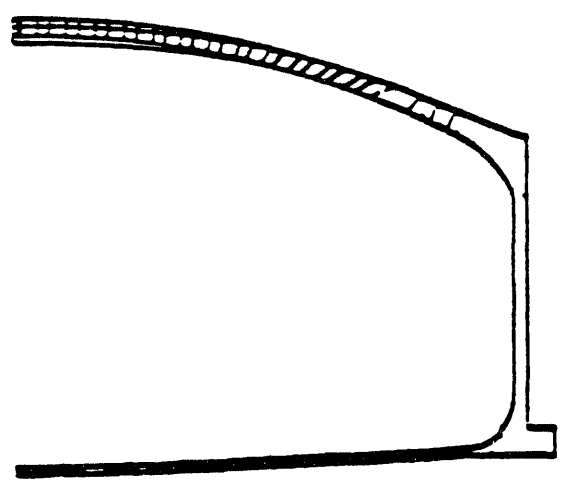
Figure 5-5
Cracking of the Tank



(a) Before Jump in Displacement



(b) After Jump in Displacement

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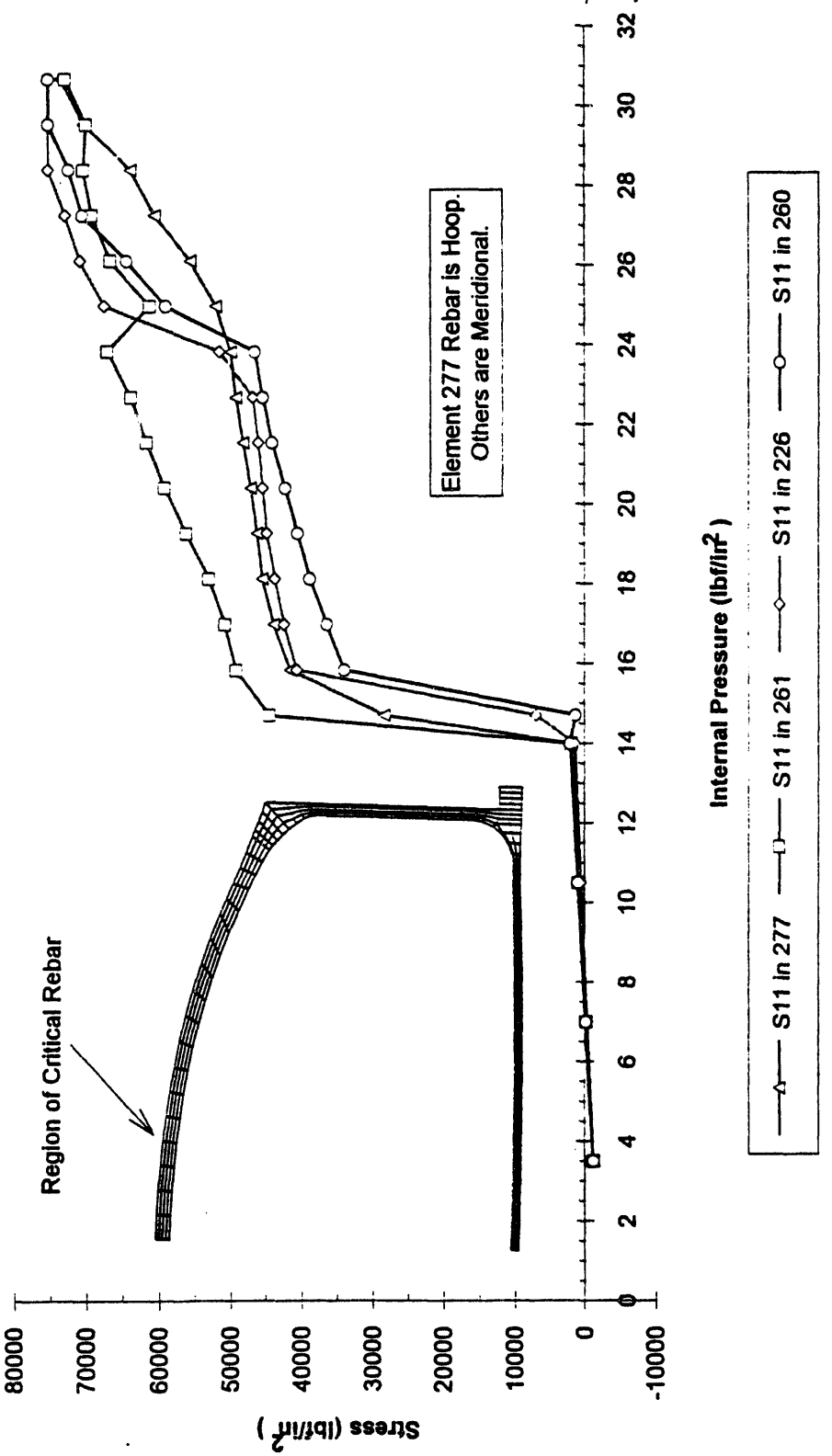
(9) Checker Phillip R. Kyle Date 5/27/94

Figure 5-6
Rebar Stresses for Selected Elements of Half-Million-Gallon Tank Under Deadweight and Internal Pressure Loading



REBAR.XLC

DESIGN CALCULATION

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(8) Originator [illegible] Date 5/27/94
(9) Checker [illegible] Date 6/8/94

6.0 REFERENCES

ACI 349, 1990, *Code Requirements for Nuclear Safety-Related Concrete Structures*, ACI 349-90, American Concrete Institute, Detroit, Michigan.

HKS, 1989, *ABAQUS User's Manual*, Version 4.8 with 4.9 Supplement, Hibbitt, Karlsson, and Sorensen, Inc., Pawtucket, Rhode Island.

James, R. J., 1992, *ANACAP-U, ANATECH Concrete Analysis Package Version 92-2.2, Theory Manual*, ANA-QA-119, Rev. 0, ANATECH Research Corporation, San Diego, California.

James, R. J., 1993, *ANACAP-U, ANATECH Concrete Analysis Package Version 92-2.2, User's Manual*, ANA-QA-118, Rev. 3, ANATECH Research Corporation, San Diego, California.

Julyk, L.J., et al., 1993, *Tank 241-C-106 Structural Integrity Evaluation for In Situ Conditions*, WHC-SD-W320-ANAL-001, Revision 0, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

ABAQUS ANALYSIS INPUT FILE FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 5/27/94
Date

Checked by: Phillip R. Kish 5/27/94
Date

PRESS.abdat

```
*HEADING
INTERNAL PRESSURE - NOMINAL 3000 PSI CONCRETE
***** this runstream has additional comments added ******
***  define concrete nodes  ***
*NODE,NSET=TNODES
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    2, 1.10652E-10, 1.50000E+00, 0.00000E+00
    3, 1.10628E-10, 3.00000E+00, 0.00000E+00
    4, 1.10604E-10, 4.50000E+00, 0.00000E+00
    6, 6.19812E+00, 2.80653E-03, 0.00000E+00
    8, 6.19541E+00, 3.00281E+00, 0.00000E+00
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   12, 1.23935E+01, 1.51122E+00, 0.00000E+00
   13, 1.23908E+01, 3.01122E+00, 0.00000E+00
   14, 1.23881E+01, 4.51122E+00, 0.00000E+00
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158,	1.92032E+02,	5.69572E+00,	0.00000E+00
161,	1.98312E+02,	2.87369E+00,	0.00000E+00
162,	1.98269E+02,	4.37306E+00,	0.00000E+00
163,	1.98225E+02,	5.87243E+00,	0.00000E+00
164,	1.98182E+02,	7.37180E+00,	0.00000E+00
166,	2.04508E+02,	3.05609E+00,	0.00000E+00
168,	2.04418E+02,	6.05475E+00,	0.00000E+00
171,	2.10703E+02,	3.24410E+00,	0.00000E+00
172,	2.10657E+02,	4.74339E+00,	0.00000E+00
173,	2.10611E+02,	6.24268E+00,	0.00000E+00
174,	2.10564E+02,	7.74196E+00,	0.00000E+00
176,	2.16898E+02,	3.43772E+00,	0.00000E+00
178,	2.16803E+02,	6.43621E+00,	0.00000E+00
181,	2.23093E+02,	3.63695E+00,	0.00000E+00
182,	2.23044E+02,	5.13615E+00,	0.00000E+00
183,	2.22995E+02,	6.63535E+00,	0.00000E+00
184,	2.22946E+02,	8.13456E+00,	0.00000E+00
186,	2.29288E+02,	3.84179E+00,	0.00000E+00
188,	2.29187E+02,	6.84010E+00,	0.00000E+00
191,	2.35482E+02,	4.05224E+00,	0.00000E+00
192,	2.35431E+02,	5.55135E+00,	0.00000E+00
193,	2.35379E+02,	7.05046E+00,	0.00000E+00
194,	2.35327E+02,	8.54957E+00,	0.00000E+00
196,	2.41677E+02,	4.26830E+00,	0.00000E+00
198,	2.41571E+02,	7.26642E+00,	0.00000E+00
201,	2.47871E+02,	4.48996E+00,	0.00000E+00
202,	2.47816E+02,	5.98898E+00,	0.00000E+00
203,	2.47762E+02,	7.48800E+00,	0.00000E+00
204,	2.47708E+02,	8.98701E+00,	0.00000E+00
206,	2.54065E+02,	4.71724E+00,	0.00000E+00
208,	2.53953E+02,	7.71517E+00,	0.00000E+00
211,	2.60258E+02,	4.95013E+00,	0.00000E+00
212,	2.60201E+02,	6.44905E+00,	0.00000E+00
213,	2.60144E+02,	7.94796E+00,	0.00000E+00
214,	2.60087E+02,	9.44688E+00,	0.00000E+00
216,	2.66452E+02,	5.18863E+00,	0.00000E+00
218,	2.66335E+02,	8.18635E+00,	0.00000E+00
221,	2.72645E+02,	5.43273E+00,	0.00000E+00
222,	2.72586E+02,	6.93154E+00,	0.00000E+00
223,	2.72526E+02,	8.43035E+00,	0.00000E+00
224,	2.72466E+02,	9.92916E+00,	0.00000E+00
226,	2.78838E+02,	5.68245E+00,	0.00000E+00
228,	2.78716E+02,	8.67996E+00,	0.00000E+00
231,	2.85031E+02,	5.93777E+00,	0.00000E+00
232,	2.84969E+02,	7.43647E+00,	0.00000E+00
233,	2.84906E+02,	8.93517E+00,	0.00000E+00
234,	2.84844E+02,	1.04339E+01,	0.00000E+00
236,	2.91224E+02,	6.19870E+00,	0.00000E+00
238,	2.91096E+02,	9.19598E+00,	0.00000E+00
241,	2.97416E+02,	6.46524E+00,	0.00000E+00
242,	2.97351E+02,	7.96382E+00,	0.00000E+00
243,	2.97286E+02,	9.46240E+00,	0.00000E+00
244,	2.97221E+02,	1.09610E+01,	0.00000E+00
246,	3.03608E+02,	6.73738E+00,	0.00000E+00
248,	3.03475E+02,	9.73443E+00,	0.00000E+00
251,	3.09800E+02,	7.01514E+00,	0.00000E+00
252,	3.09732E+02,	8.51360E+00,	0.00000E+00
253,	3.09665E+02,	1.00121E+01,	0.00000E+00
254,	3.09597E+02,	1.15105E+01,	0.00000E+00
256,	3.15992E+02,	7.29850E+00,	0.00000E+00
258,	3.15853E+02,	1.02953E+01,	0.00000E+00
261,	3.22183E+02,	7.58747E+00,	0.00000E+00
262,	3.22113E+02,	9.08580E+00,	0.00000E+00
263,	3.22042E+02,	1.05841E+01,	0.00000E+00
264,	3.21972E+02,	1.20825E+01,	0.00000E+00
266,	3.28374E+02,	7.88204E+00,	0.00000E+00
268,	3.28231E+02,	1.08786E+01,	0.00000E+00
271,	3.34565E+02,	8.18222E+00,	0.00000E+00
272,	3.34492E+02,	9.68043E+00,	0.00000E+00
273,	3.34419E+02,	1.11786E+01,	0.00000E+00
274,	3.34345E+02,	1.26768E+01,	0.00000E+00
276,	3.40756E+02,	8.48801E+00,	0.00000E+00
278,	3.40607E+02,	1.14843E+01,	0.00000E+00
281,	3.46946E+02,	8.79941E+00,	0.00000E+00
282,	3.46870E+02,	1.02975E+01,	0.00000E+00
283,	3.46794E+02,	1.17955E+01,	0.00000E+00
284,	3.46718E+02,	1.32936E+01,	0.00000E+00
286,	3.53136E+02,	9.11641E+00,	0.00000E+00
288,	3.52981E+02,	1.21124E+01,	0.00000E+00
291,	3.59326E+02,	9.43901E+00,	0.00000E+00
292,	3.59247E+02,	1.09369E+01,	0.00000E+00
293,	3.59168E+02,	1.24349E+01,	0.00000E+00
294,	3.59090E+02,	1.39328E+01,	0.00000E+00
296,	3.65515E+02,	9.76722E+00,	0.00000E+00
298,	3.65355E+02,	1.27629E+01,	0.00000E+00
301,	3.71704E+02,	1.01010E+01,	0.00000E+00
302,	3.71623E+02,	1.15988E+01,	0.00000E+00
303,	3.71542E+02,	1.30966E+01,	0.00000E+00
304,	3.71460E+02,	1.45944E+01,	0.00000E+00
306,	3.77893E+02,	1.04405E+01,	0.00000E+00
308,	3.77728E+02,	1.34359E+01,	0.00000E+00
311,	3.84082E+02,	1.07855E+01,	0.00000E+00
312,	3.83998E+02,	1.22831E+01,	0.00000E+00
313,	3.83913E+02,	1.37808E+01,	0.00000E+00
314,	3.83829E+02,	1.52784E+01,	0.00000E+00
316,	3.90270E+02,	1.11361E+01,	0.00000E+00
318,	3.90099E+02,	1.41312E+01,	0.00000E+00
329,	3.96458E+02,	1.14923E+01,	0.00000E+00
330,	3.96371E+02,	1.29898E+01,	0.00000E+00
331,	3.96284E+02,	1.44873E+01,	0.00000E+00
332,	3.96197E+02,	1.59848E+01,	0.00000E+00
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340,	4.04875E+02,	1.35000E+01,	0.00000E+00
341,	4.04875E+02,	1.50000E+01,	0.00000E+00
342,	4.04875E+02,	1.65000E+01,	0.00000E+00
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345,	1.10563E-10,	7.00000E+00,	0.00000E+00
346,	1.10547E-10,	8.00000E+00,	0.00000E+00
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349,	6.19088E+00,	8.00280E+00,	0.00000E+00
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352,	1.23818E+01,	8.01121E+00,	0.00000E+00
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355,	1.85726E+01,	8.02523E+00,	0.00000E+00
356,	2.47707E+01,	6.04487E+00,	0.00000E+00
357,	2.47671E+01,	7.04486E+00,	0.00000E+00
358,	2.47635E+01,	8.04485E+00,	0.00000E+00
359,	3.09633E+01,	6.07010E+00,	0.00000E+00
361,	3.09543E+01,	8.07008E+00,	0.00000E+00
362,	3.71560E+01,	6.10095E+00,	0.00000E+00
363,	3.71505E+01,	7.10093E+00,	0.00000E+00
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556, 4.16813E+02, 2.15717E+01, 0.00000E+00

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561,	4.28437E+02,	2.53136E+01,	0.00000E+00
562,	4.27937E+02,	2.61796E+01,	0.00000E+00
565,	4.32954E+02,	2.95316E+01,	0.00000E+00
567,	4.38197E+02,	3.28026E+01,	0.00000E+00
570,	4.04875E+02,	1.20000E+01,	0.00000E+00
577,	4.10547E+02,	1.20000E+01,	0.00000E+00
579,	4.10852E+02,	1.52059E+01,	0.00000E+00
581,	4.11157E+02,	1.84117E+01,	0.00000E+00
582,	4.16218E+02,	1.20000E+01,	0.00000E+00
583,	4.16496E+02,	1.39100E+01,	0.00000E+00
584,	4.16774E+02,	1.58199E+01,	0.00000E+00
585,	4.17053E+02,	1.77299E+01,	0.00000E+00
586,	4.17331E+02,	1.96398E+01,	0.00000E+00
587,	4.21890E+02,	1.20000E+01,	0.00000E+00
589,	4.22591E+02,	1.68316E+01,	0.00000E+00
591,	4.23292E+02,	2.16633E+01,	0.00000E+00
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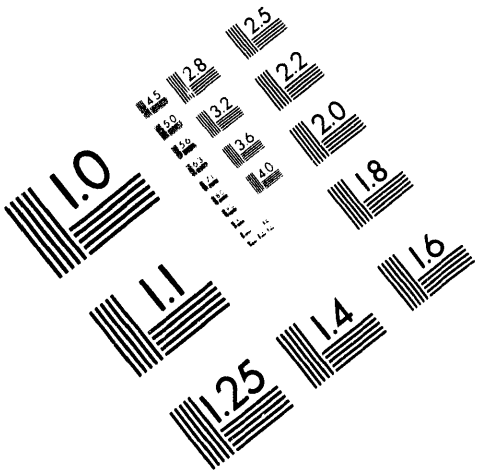

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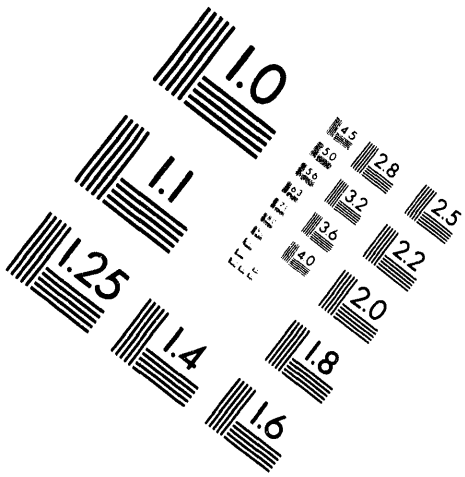

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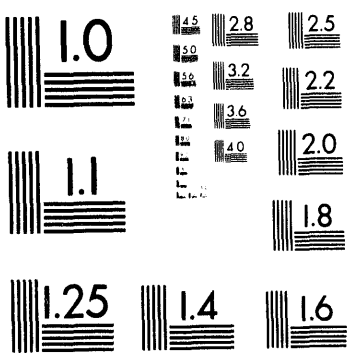
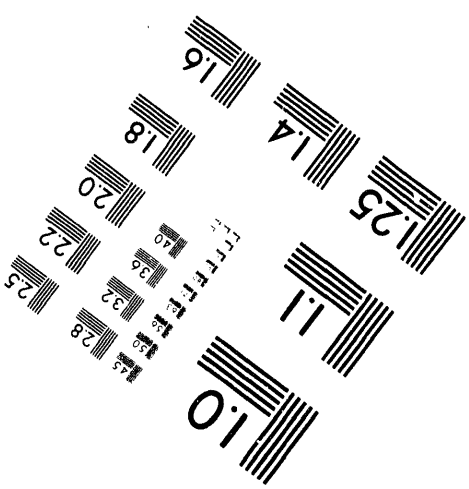
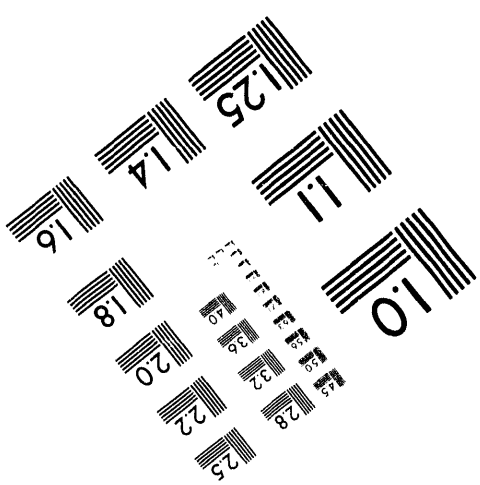
Inches







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6 of 6

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1388,	3.18455E+02,	3.33571E+02,	0.00000E+00
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1392,	3.27645E+02,	3.38873E+02,	0.00000E+00
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1422,	2.65986E+02,	3.46573E+02,	0.00000E+00
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1426,	2.72313E+02,	3.52823E+02,	0.00000E+00
1428,	2.75477E+02,	3.55949E+02,	0.00000E+00
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1437,	2.62258E+02,	3.59643E+02,	0.00000E+00
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1467,	2.04796E+02,	3.61371E+02,	0.00000E+00
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1470,	2.06796E+02,	3.66729E+02,	0.00000E+00
1471,	2.07463E+02,	3.68514E+02,	0.00000E+00
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1473,	2.08796E+02,	3.72086E+02,	0.00000E+00
1474,	2.09462E+02,	3.73872E+02,	0.00000E+00
1475,	2.10129E+02,	3.75658E+02,	0.00000E+00
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1493,	1.82361E+02,	3.80599E+02,	0.00000E+00
1494,	1.67237E+02,	3.67749E+02,	0.00000E+00
1496,	1.67786E+02,	3.71460E+02,	0.00000E+00
1498,	1.68335E+02,	3.75170E+02,	0.00000E+00
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1504,	1.54709E+02,	3.71429E+02,	0.00000E+00
1505,	1.54963E+02,	3.73287E+02,	0.00000E+00
1506,	1.55216E+02,	3.75145E+02,	0.00000E+00
1507,	1.55470E+02,	3.77004E+02,	0.00000E+00
1508,	1.55723E+02,	3.78862E+02,	0.00000E+00
1509,	1.55977E+02,	3.80720E+02,	0.00000E+00
1510,	1.56230E+02,	3.82578E+02,	0.00000E+00
1511,	1.56484E+02,	3.84436E+02,	0.00000E+00
1512,	1.41654E+02,	3.71248E+02,	0.00000E+00
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1518,	1.43049E+02,	3.82413E+02,	0.00000E+00
1520,	1.43514E+02,	3.86135E+02,	0.00000E+00
1521,	1.28834E+02,	3.72780E+02,	0.00000E+00
1522,	1.29046E+02,	3.74643E+02,	0.00000E+00
1523,	1.29257E+02,	3.76506E+02,	0.00000E+00
1524,	1.29469E+02,	3.78370E+02,	0.00000E+00
1525,	1.29680E+02,	3.80233E+02,	0.00000E+00
1526,	1.29892E+02,	3.82096E+02,	0.00000E+00
1527,	1.30103E+02,	3.83960E+02,	0.00000E+00
1528,	1.30314E+02,	3.85823E+02,	0.00000E+00
1529,	1.30526E+02,	3.87687E+02,	0.00000E+00
1530,	1.15998E+02,	3.74166E+02,	0.00000E+00
1532,	1.16379E+02,	3.77897E+02,	0.00000E+00
1534,	1.16760E+02,	3.81629E+02,	0.00000E+00
1536,	1.17140E+02,	3.85360E+02,	0.00000E+00
1538,	1.17521E+02,	3.89091E+02,	0.00000E+00
1539,	1.03147E+02,	3.75407E+02,	0.00000E+00
1540,	1.03316E+02,	3.77275E+02,	0.00000E+00
1541,	1.03485E+02,	3.79142E+02,	0.00000E+00
1542,	1.03655E+02,	3.81010E+02,	0.00000E+00
1543,	1.03824E+02,	3.82878E+02,	0.00000E+00
1544,	1.03993E+02,	3.84745E+02,	0.00000E+00
1545,	1.04163E+02,	3.86613E+02,	0.00000E+00
1546,	1.04332E+02,	3.88480E+02,	0.00000E+00
1547,	1.04501E+02,	3.90348E+02,	0.00000E+00
1548,	9.02825E+01,	3.76503E+02,	0.00000E+00
1550,	9.05788E+01,	3.80241E+02,	0.00000E+00
1552,	9.08751E+01,	3.83980E+02,	0.00000E+00
1554,	9.11715E+01,	3.87719E+02,	0.00000E+00
1556,	9.14678E+01,	3.91458E+02,	0.00000E+00
1557,	7.74065E+01,	3.77452E+02,	0.00000E+00
1558,	7.75335E+01,	3.79323E+02,	0.00000E+00
1559,	7.76606E+01,	3.81194E+02,	0.00000E+00
1560,	7.77876E+01,	3.83065E+02,	0.00000E+00
1561,	7.79146E+01,	3.84936E+02,	0.00000E+00
1562,	7.80417E+01,	3.86807E+02,	0.00000E+00
1563,	7.81687E+01,	3.88678E+02,	0.00000E+00
1564,	7.82957E+01,	3.90549E+02,	0.00000E+00
1565,	7.84228E+01,	3.92419E+02,	0.00000E+00
1566,	6.45206E+01,	3.78256E+02,	0.00000E+00
1568,	6.47324E+01,	3.82001E+02,	0.00000E+00
1570,	6.49441E+01,	3.85745E+02,	0.00000E+00
1572,	6.51559E+01,	3.89489E+02,	0.00000E+00
1574,	6.53677E+01,	3.93234E+02,	0.00000E+00
1575,	5.16264E+01,	3.78914E+02,	0.00000E+00

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 1576, 5.17111E+01, 3.80787E+02, 0.00000E+00
 1577, 5.17959E+01, 3.82660E+02, 0.00000E+00
 1578, 5.18806E+01, 3.84534E+02, 0.00000E+00
 1579, 5.19653E+01, 3.86407E+02, 0.00000E+00
 1580, 5.20500E+01, 3.88280E+02, 0.00000E+00
 1581, 5.21347E+01, 3.90153E+02, 0.00000E+00
 1582, 5.22195E+01, 3.92027E+02, 0.00000E+00
 1583, 5.23042E+01, 3.93900E+02, 0.00000E+00
 1584, 3.87256E+01, 3.79426E+02, 0.00000E+00
 1586, 3.88527E+01, 3.83174E+02, 0.00000E+00
 1588, 3.89798E+01, 3.86922E+02, 0.00000E+00
 1590, 3.91069E+01, 3.90670E+02, 0.00000E+00
 1592, 3.92340E+01, 3.94418E+02, 0.00000E+00
 1593, 2.58198E+01, 3.79791E+02, 0.00000E+00
 1594, 2.58622E+01, 3.81666E+02, 0.00000E+00
 1595, 2.59046E+01, 3.83541E+02, 0.00000E+00
 1596, 2.59469E+01, 3.85415E+02, 0.00000E+00
 1597, 2.59893E+01, 3.87290E+02, 0.00000E+00
 1598, 2.60317E+01, 3.89164E+02, 0.00000E+00
 1599, 2.60741E+01, 3.91039E+02, 0.00000E+00
 1600, 2.61164E+01, 3.92913E+02, 0.00000E+00
 1601, 2.61588E+01, 3.94788E+02, 0.00000E+00
 1602, 1.29107E+01, 3.80011E+02, 0.00000E+00
 1604, 1.29531E+01, 3.83761E+02, 0.00000E+00
 1606, 1.29955E+01, 3.87510E+02, 0.00000E+00
 1608, 1.30379E+01, 3.91260E+02, 0.00000E+00
 1610, 1.30802E+01, 3.95010E+02, 0.00000E+00
 1611, 1.95524E-12, 3.80084E+02, 0.00000E+00
 1612, 1.95846E-12, 3.81959E+02, 0.00000E+00
 1613, 1.96167E-12, 3.83834E+02, 0.00000E+00
 1614, 1.96489E-12, 3.85709E+02, 0.00000E+00
 1615, 1.96811E-12, 3.87584E+02, 0.00000E+00
 1616, 1.97132E-12, 3.89459E+02, 0.00000E+00
 1617, 1.97454E-12, 3.91334E+02, 0.00000E+00
 1618, 1.97775E-12, 3.93209E+02, 0.00000E+00
 1619, 1.98097E-12, 3.95084E+02, 0.00000E+00
********************
**** sprbs spring interface nodes below slab
*NODE,NSET=SPRBS
2034,+1.10676E-10, 0.00000E+00, 0.00000E+00
2134, 6.19812E+00, 2.80653E-03, 0.00000E+00
2234, 1.23962E+01, 1.12261E-02, 0.00000E+00
2334, 1.85943E+01, 2.52588E-02, 0.00000E+00
2434, 2.47924E+01, 4.49045E-02, 0.00000E+00
2534, 3.09905E+01, 7.01632E-02, 0.00000E+00
2634, 3.71886E+01, 1.01035E-01, 0.00000E+00
2734, 4.33866E+01, 1.37520E-01, 0.00000E+00
2834, 4.95846E+01, 1.79617E-01, 0.00000E+00
2934, 5.57825E+01, 2.27328E-01, 0.00000E+00
3034, 6.19804E+01, 2.80652E-01, 0.00000E+00
3134, 6.81782E+01, 3.39588E-01, 0.00000E+00
3234, 7.43760E+01, 4.04137E-01, 0.00000E+00
3334, 8.05738E+01, 4.74299E-01, 0.00000E+00
3434, 8.67714E+01, 5.50073E-01, 0.00000E+00
3534, 9.29690E+01, 6.31461E-01, 0.00000E+00
3634, 9.91665E+01, 7.18460E-01, 0.00000E+00
3734, 1.05364E+02, 8.11072E-01, 0.00000E+00
3834, 1.11561E+02, 9.09297E-01, 0.00000E+00
3934, 1.17759E+02, 1.01313E+00, 0.00000E+00
4034, 1.23956E+02, 1.12258E+00, 0.00000E+00
4134, 1.30153E+02, 1.23764E+00, 0.00000E+00
4234, 1.36350E+02, 1.35832E+00, 0.00000E+00
4334, 1.42547E+02, 1.48460E+00, 0.00000E+00
4434, 1.48743E+02, 1.61650E+00, 0.00000E+00
4534, 1.54940E+02, 1.75401E+00, 0.00000E+00
4634, 1.61136E+02, 1.89713E+00, 0.00000E+00
4734, 1.67333E+02, 2.04586E+00, 0.00000E+00
4834, 1.73529E+02, 2.20021E+00, 0.00000E+00
4934, 1.79725E+02, 2.36016E+00, 0.00000E+00
5034, 1.85921E+02, 2.52573E+00, 0.00000E+00
5134, 1.92117E+02, 2.69690E+00, 0.00000E+00
5234, 1.98312E+02, 2.87369E+00, 0.00000E+00
5334, 2.04508E+02, 3.05609E+00, 0.00000E+00
5434, 2.10703E+02, 3.24410E+00, 0.00000E+00
5534, 2.16898E+02, 3.43772E+00, 0.00000E+00
5634, 2.23093E+02, 3.63695E+00, 0.00000E+00
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5734, 2.29288E+02, 3.84179E+00, 0.00000E+00
5834, 2.35482E+02, 4.05224E+00, 0.00000E+00
5934, 2.41677E+02, 4.26830E+00, 0.00000E+00
6034, 2.47871E+02, 4.48996E+00, 0.00000E+00
6134, 2.54065E+02, 4.71724E+00, 0.00000E+00
6234, 2.60258E+02, 4.95013E+00, 0.00000E+00
6334, 2.66452E+02, 5.18863E+00, 0.00000E+00
6434, 2.72645E+02, 5.43273E+00, 0.00000E+00
6534, 2.78838E+02, 5.68245E+00, 0.00000E+00
6634, 2.85031E+02, 5.93777E+00, 0.00000E+00
6734, 2.91224E+02, 6.19870E+00, 0.00000E+00
6834, 2.97416E+02, 6.46524E+00, 0.00000E+00
6934, 3.03608E+02, 6.73738E+00, 0.00000E+00
7034, 3.09800E+02, 7.01514E+00, 0.00000E+00
7134, 3.15992E+02, 7.29850E+00, 0.00000E+00
7234, 3.22183E+02, 7.58747E+00, 0.00000E+00
7334, 3.28374E+02, 7.88204E+00, 0.00000E+00
7434, 3.34565E+02, 8.18222E+00, 0.00000E+00
7534, 3.40756E+02, 8.48801E+00, 0.00000E+00
7634, 3.46946E+02, 8.79941E+00, 0.00000E+00
7734, 3.53136E+02, 9.11641E+00, 0.00000E+00
7834, 3.59326E+02, 9.43901E+00, 0.00000E+00
7934, 3.65515E+02, 9.76722E+00, 0.00000E+00
8034, 3.71704E+02, 1.01010E+01, 0.00000E+00
8134, 3.77893E+02, 1.04405E+01, 0.00000E+00
8234, 3.84082E+02, 1.07855E+01, 0.00000E+00
8334, 3.90270E+02, 1.11361E+01, 0.00000E+00
8434, 3.96458E+02, 1.14923E+01, 0.00000E+00
8534, 4.00667E+02, 1.17449E+01, 0.00000E+00
8634, 4.04875E+02, 1.20000E+01, 0.00000E+00
8734, 4.10547E+02, 1.20000E+01, 0.00000E+00
8834, 4.16218E+02, 1.20000E+01, 0.00000E+00
8934, 4.21890E+02, 1.20000E+01, 0.00000E+00
9034, 4.27561E+02, 1.20000E+01, 0.00000E+00
9134, 4.33233E+02, 1.20000E+01, 0.00000E+00
9234, 4.38905E+02, 1.20000E+01, 0.00000E+00
9334, 4.43522E+02, 1.20000E+01, 0.00000E+00
9434, 4.48000E+02, 1.20000E+01, 0.00000E+00
9534, 4.50500E+02, 1.20000E+01, 0.00000E+00
9634, 4.53000E+02, 1.20000E+01, 0.00000E+00
9734, 4.55500E+02, 1.20000E+01, 0.00000E+00
9834, 4.58000E+02, 1.20000E+01, 0.00000E+00
9934, 4.60500E+02, 1.20000E+01, 0.00000E+00
10034, 4.63000E+02, 1.20000E+01, 0.00000E+00
10134, 4.66000E+02, 1.20000E+01, 0.00000E+00
10234, 4.69000E+02, 1.20000E+01, 0.00000E+00
10334, 4.72000E+02, 1.20000E+01, 0.00000E+00
10434, 4.75000E+02, 1.20000E+01, 0.00000E+00
10534, 4.78000E+02, 1.20000E+01, 0.00000E+00
10634, 4.81000E+02, 1.20000E+01, 0.00000E+00
10734, 4.84000E+02, 1.20000E+01, 0.00000E+00
10834, 4.87000E+02, 1.20000E+01, 0.00000E+00
*** fist set of mother nodes below slab
*NCOPY,CHANGE NUMBER=-1,OLD SET=SPRBS, SHIFT, NEW SET=MOM1
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** first set of master nodes to copy from
*NCOPY,CHANGE NUMBER=-2,OLD SET=SPRBS, SHIFT, NEW SET=MASTR1
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*************************** SOIL BELOW SLAB ************
*NODE,NSET=BOTSOIL
2000 ,0.,-420.,0.
10800,487.,-420.,0.
*NGEN,NSET=BOTSOIL
2000,10800,100
*NFILL,BIAS=1.1,TWO STEP,NSET=BOTSOIL
BOTSOIL,MASTR1,32,1
*** SPLF-- LEFT SIDE OF WOULD BE SLIP PLANE
*NSET,NSET=SPLF,GENERATE
10800,10832,1
*** SPRT-- RIGHT SIDE OF WOULD BE SLIP PLANE
*NCOPY, CHANGE NUMBER=200, OLD SET=SPLF, SHIFT, NEW SET=SPRT
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** RTBC-- RIGHT SIDE BOUNDARY BELOW SLAB ELEVATION
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*NCOPY, CHANGE NUMBER=1600, OLD SET=SPRT, SHIFT, NEW SET=RTBC
480.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NFILL,BIAS=.85,TWO STEP,NSET=BTRTSOIL
SPRT,RTBC,16,100
********************** SIDE FOOTING  INTERFACE *****************
*NODE,NSET=SPRSF
10834, 4.87000E+02, 1.20000E+01, 0.00000E+00
10835, 4.87000E+02, 1.80000E+01, 0.00000E+00
10836, 4.87000E+02, 2.40000E+01, 0.00000E+00
10837, 4.87000E+02, 3.00000E+01, 0.00000E+00
10838, 4.87000E+02, 3.60000E+01, 0.00000E+00
*** 2ND MOTHER NODE SET HORIZIONTAL FOOTING INTERFACE
*NCOPY, CHANGE NUMBER=100, OLD SET=SPRSF, SHIFT, NEW SET=MOM2
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** FOOTING SOIL INTERFACE NODES
*NCOPY, CHANGE NUMBER=200, OLD SET=SPRSF, SHIFT, NEW SET=SFS
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY, CHANGE NUMBER=1600, OLD SET=SFS, SHIFT, NEW SET=SFBC
480.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NFILL,BIAS=.85,TWO STEP,NSET=FOOTSOIL
SFS,SFBC,16,100
*NSET,NSET=MASTR2,GENERATE
11034,12634,100
*** 3RD MOTHER NODE SET SIDE SOIL AT BOTTOM SLAB ELEV.
*NCOPY,CHANGE NUMBER=-1,OLD SET=MASTR2, SHIFT, NEW SET=MOM3
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** SOIL OVER FOOTING
*NODE,NSET=SOILTF
10241, 4.63000E+02, 3.60000E+01, 0.00000E+00
10341, 4.66000E+02, 3.60000E+01, 0.00000E+00
10441, 4.69000E+02, 3.60000E+01, 0.00000E+00
10541, 4.72000E+02, 3.60000E+01, 0.00000E+00
10641, 4.75000E+02, 3.60000E+01, 0.00000E+00
10741, 4.78000E+02, 3.60000E+01, 0.00000E+00
10841, 4.81000E+02, 3.60000E+01, 0.00000E+00
10941, 4.84000E+02, 3.60000E+01, 0.00000E+00
11041, 4.87000E+02, 3.60000E+01, 0.00000E+00
**
*** 4TH MOTHER NODE SET ON TOP OF FOOTING
*NCOPY,CHANGE NUMBER=-1,OLD SET=SOILTF, SHIFT, NEW SET=MOM4
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=-2,OLD SET=SOILTF, SHIFT, NEW SET=SPRFT
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NODE,NSET=SPR1WALL
10041, 4.63000E+02, 3.60000E+01, 0.00000E+00
10042, 4.63000E+02, 4.20000E+01, 0.00000E+00
10043, 4.63000E+02, 4.80000E+01, 0.00000E+00
10044, 4.63000E+02, 5.40000E+01, 0.00000E+00
10045, 4.63000E+02, 6.00000E+01, 0.00000E+00
10046, 4.63000E+02, 6.60000E+01, 0.00000E+00
10047, 4.63000E+02, 7.20000E+01, 0.00000E+00
10048, 4.63000E+02, 7.90000E+01, 0.00000E+00
10049, 4.63000E+02, 8.60000E+01, 0.00000E+00
10050, 4.63000E+02, 9.30000E+01, 0.00000E+00
10051, 4.63000E+02, 1.00000E+02, 0.00000E+00
10052, 4.63000E+02, 1.08000E+02, 0.00000E+00
10053, 4.63000E+02, 1.16000E+02, 0.00000E+00
10054, 4.63000E+02, 1.24000E+02, 0.00000E+00
10055, 4.63000E+02, 1.32000E+02, 0.00000E+00
10056, 4.63000E+02, 1.40000E+02, 0.00000E+00
10057, 4.63000E+02, 1.48000E+02, 0.00000E+00
*** 5th mother node set between wsoil1 and wall
*NCOPY, CHANGE NUMBER=100, OLD SET=SPR1WALL, SHIFT, NEW SET=MOM5
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=200, OLD SET=SPR1WALL, SHIFT, NEW SET=MASTR7
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** BOTTOM SET OF SIDE SOIL
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*** WOULD-BE SLIP PLANE NODES ABOVE FOOTING
*NCOPY, CHANGE NUMBER=800, OLD SET=MASTR7, SHIFT, NEW SET=SLP1
24.0,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NFILL,NSET=WSOIL1
MASTR7,SLP1,8,100
*** WOULD-BE SLIP PLANE NODES ABOVE FOOTING
*** BOUNDARY NODES OF WSOIL1
*NCOPY, CHANGE NUMBER=1600, OLD SET=SLP1, SHIFT, NEW SET=WSOILBC1
480.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NFILL,BIAS=.85,TWO STEP,NSET=WSOIL1
SLP1,WSOILBC1,16,100
*NSET,NSET=MASTR3,GENERATE
11141,12641,100
*** 4TH MOTHER NODE SET BETWEEN SOIL FOOTING LAYER AND WSOIL1
*NCOPY,CHANGE NUMBER=-1,OLD SET=MASTR3, SHIFT, NEW SET=MOM4
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NODE,NSET=SPR2WALL
10059, 4.63000E+02, 1.48000E+02, 0.00000E+00
10060, 4.63000E+02, 1.59333E+02, 0.00000E+00
10061, 4.63000E+02, 1.70667E+02, 0.00000E+00
10062, 4.63000E+02, 1.82000E+02, 0.00000E+00
10063, 4.63000E+02, 1.93333E+02, 0.00000E+00
10064, 4.63000E+02, 2.04667E+02, 0.00000E+00
10065, 4.63000E+02, 2.16000E+02, 0.00000E+00
10066, 4.63000E+02, 2.21000E+02, 0.00000E+00
10067, 4.63000E+02, 2.26000E+02, 0.00000E+00
10068, 4.63000E+02, 2.31000E+02, 0.00000E+00
10069, 4.63000E+02, 2.36000E+02, 0.00000E+00
10070, 4.63000E+02, 2.39750E+02, 0.00000E+00
10071, 4.63000E+02, 2.43500E+02, 0.00000E+00
10072, 4.63000E+02, 2.51000E+02, 0.00000E+00
10073, 4.63000E+02, 2.58500E+02, 0.00000E+00
10074, 4.63000E+02, 2.63500E+02, 0.00000E+00
10075, 4.63000E+02, 2.68500E+02, 0.00000E+00
10076, 4.63000E+02, 2.79750E+02, 0.00000E+00
10077, 4.63000E+02, 2.91000E+02, 0.00000E+00
*** 5TH MOTHER NODE SET BETWEEN BOTTOM HALF OF WALL AND SIDE SOIL
*NCOPY,CHANGE NUMBER=100,OLD SET=SPR2WALL, SHIFT, NEW SET=MOM5
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=200,OLD SET=SPR2WALL, SHIFT, NEW SET=MASTR8
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NODE,NSET=N12659
12659, 967.0, 1.48000E+02, 0.00000E+00
*NODE,NSET=N12677
12677, 967.0, 2.91000E+02, 0.00000E+00
*** BOUNDARY NODES FOR TOP SIDE-SOIL LAYER
*NFILL,NSET=WSOILBC2
N12659,N12677,18,1
*** 2ND WOULD-BE SLIP PLANE
*NCOPY, CHANGE NUMBER=800, OLD SET=MASTR8, SHIFT, NEW SET=SLP2
24.0,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NFILL,NSET=WSOIL2
MASTR8,SLP2,8,100
*NFILL,BIAS=.85,TWO STEP,NSET=WSOIL2
SLP2,WSOILBC2,16,100
*NSET,NSET=MASTR4,GENERATE
10259,12659,100
*** 6TH MOTHER NODE SET BETWEEN WSOIL1 AND WSOIL2
*NCOPY,CHANGE NUMBER=-1, OLD SET=MASTR4, SHIFT, NEW SET=MOM6
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NSET,NSET=MASTR5,GENERATE
10277,12677,100
*** 7th mother node set between wsoil2 and topsoil
*NCOPY, CHANGE NUMBER=2, OLD SET=MASTR5, SHIFT, NEW SET=MOM7
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*NODE,NSET=SPRTD
10278, 4.63000E+02, 2.91000E+02, 0.00000E+00
10178, 4.58039E+02, 2.92444E+02, 0.00000E+00
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10078, 4.53077E+02, 2.93887E+02, 0.00000E+00
 9978, 4.47979E+02, 2.95838E+02, 0.00000E+00
 9878, 4.42881E+02, 2.97789E+02, 0.00000E+00
 9778, 4.38365E+02, 2.99593E+02, 0.00000E+00
 9678, 4.33849E+02, 3.01397E+02, 0.00000E+00
 9578, 4.30388E+02, 3.02642E+02, 0.00000E+00
 9478, 4.26926E+02, 3.03887E+02, 0.00000E+00
 9378, 4.18459E+02, 3.07120E+02, 0.00000E+00
 9278, 4.09993E+02, 3.10354E+02, 0.00000E+00
 9178, 4.01923E+02, 3.13629E+02, 0.00000E+00
 9078, 3.93854E+02, 3.16904E+02, 0.00000E+00
 8978, 3.85784E+02, 3.20178E+02, 0.00000E+00
 8878, 3.77715E+02, 3.23453E+02, 0.00000E+00
 8778, 3.69645E+02, 3.26728E+02, 0.00000E+00
 8678, 3.61576E+02, 3.30003E+02, 0.00000E+00
 8578, 3.53506E+02, 3.33277E+02, 0.00000E+00
 8478, 3.45436E+02, 3.36552E+02, 0.00000E+00
 8378, 3.32239E+02, 3.41524E+02, 0.00000E+00
 8278, 3.18957E+02, 3.46263E+02, 0.00000E+00
 8178, 3.05594E+02, 3.50769E+02, 0.00000E+00
 8078, 2.92154E+02, 3.55039E+02, 0.00000E+00
 7978, 2.78641E+02, 3.59074E+02, 0.00000E+00
 7878, 2.65059E+02, 3.62870E+02, 0.00000E+00
 7778, 2.51413E+02, 3.66428E+02, 0.00000E+00
 7678, 2.37706E+02, 3.69746E+02, 0.00000E+00
 7578, 2.23943E+02, 3.72823E+02, 0.00000E+00
 7478, 2.10129E+02, 3.75658E+02, 0.00000E+00
 7378, 1.96267E+02, 3.78250E+02, 0.00000E+00
 7278, 1.82361E+02, 3.80599E+02, 0.00000E+00
 7178, 1.69433E+02, 3.82591E+02, 0.00000E+00
 7078, 1.56484E+02, 3.84436E+02, 0.00000E+00
 6978, 1.43514E+02, 3.86135E+02, 0.00000E+00
 6878, 1.30526E+02, 3.87687E+02, 0.00000E+00
 6778, 1.17521E+02, 3.89091E+02, 0.00000E+00
 6678, 1.04501E+02, 3.90348E+02, 0.00000E+00
 6578, 9.14678E+01, 3.91458E+02, 0.00000E+00
 6478, 7.84228E+01, 3.92419E+02, 0.00000E+00
 6378, 6.53677E+01, 3.93234E+02, 0.00000E+00
 6278, 5.23042E+01, 3.93900E+02, 0.00000E+00
 6178, 3.92340E+01, 3.94418E+02, 0.00000E+00
 6078, 2.61588E+01, 3.94788E+02, 0.00000E+00
 5978, 1.30802E+01, 3.95010E+02, 0.00000E+00
 5878,+1.98097E-12, 3.95084E+02, 0.00000E+00
*** master set of node to copy from between wsoil2 and topsoil
*NCOPY, CHANGE NUMBER=3, OLD SET=MASTR5, SHIFT, NEW SET=MASTR6
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** 7th mother node set between (wsoil2,sprtd) and topsoil
*NCOPY, CHANGE NUMBER=1, OLD SET=SPRTD, SHIFT, NEW SET=MOM7
0.,0.,0.
*** adding to the mastr6 set, nodes over the dome
1.,0.,0.,-1.,0.,0., 0.
*NCOPY, CHANGE NUMBER=2, OLD SET=SPRTD, SHIFT, NEW SET=MASTR6
0.,0.,0.
1.,0.,0.,-1.,0.,0., 0.
*** nodes on top surface are evenly distributed and filled in.
*NODE,NSET=N5892
5892,0.,479.104,0.
*NODE,NSET=N11092
11092,487.,479.104,0.
*NODE,NSET=N12692
12692,967.,479.104,0.
*NFILL,NSET=TOPSOIL,BIAS=1.09,TWO STEP
N5892,N11092,52,100
*NFILL,NSET=TOPSOIL,BIAS=.85,TWO STEP
N11092,N12692,16,100
*NFILL,NSET=TOPSOIL
MASTR6,TOPSOIL,12,1
*******************************************************************
***  concrete tank elements ***
*ELEMENT,TYPE=CAX8R,ELSET=RCONC
    1    1   11   13    3    6   12    8    2
    2    3   13  350  344    8   14  347    4
    3   11   21   23   13   16   22   18   12
    4   13   23  356  350   18   24  353   14
    5   21   31   33   23   26   32   28   22
```

6	23	33	362	356	28	34	359	24
7	31	41	43	33	36	42	38	32
8	33	43	368	362	38	44	365	34
9	41	51	53	43	46	52	48	42
10	43	53	374	368	48	54	371	44
11	51	61	63	53	56	62	58	52
12	53	63	380	374	58	64	377	54
13	61	71	73	63	66	72	68	62
14	63	73	386	380	68	74	383	64
15	71	81	83	73	76	82	78	72
16	73	83	392	386	78	84	389	74
17	81	91	93	83	86	92	88	82
18	83	93	398	392	88	94	395	84
19	91	101	103	93	96	102	98	92
20	93	103	404	398	98	104	401	94
21	101	111	113	103	106	112	108	102
22	103	113	410	404	108	114	407	104
23	111	121	123	113	116	122	118	112
24	113	123	416	410	118	124	413	114
25	121	131	133	123	126	132	128	122
26	123	133	422	416	128	134	419	124
27	131	141	143	133	136	142	138	132
28	133	143	428	422	138	144	425	134
29	141	151	153	143	146	152	148	142
30	143	153	434	428	148	154	431	144
31	151	161	163	153	156	162	158	152
32	153	163	440	434	158	164	437	154
33	161	171	173	163	166	172	168	162
34	163	173	446	440	168	174	443	164
35	171	181	183	173	176	182	178	172
36	173	183	452	446	178	184	449	174
37	181	191	193	183	186	192	188	182
38	183	193	458	452	188	194	455	184
39	191	201	203	193	196	202	198	192
40	193	203	464	458	198	204	461	194
41	201	211	213	203	206	212	208	202
42	203	213	470	464	208	214	467	204
43	211	221	223	213	216	222	218	212
44	213	223	476	470	218	224	473	214
45	221	231	233	223	226	232	228	222
46	223	233	482	476	228	234	479	224
47	231	241	243	233	236	242	238	232
48	233	243	488	482	238	244	485	234
49	241	251	253	243	246	252	248	242
50	243	253	494	488	248	254	491	244
51	251	261	263	253	256	262	258	252
52	253	263	500	494	258	264	497	254
53	261	271	273	263	266	272	268	262
54	263	273	506	500	268	274	503	264
55	271	281	283	273	276	282	278	272
56	273	283	512	506	278	284	509	274
57	281	291	293	283	286	292	288	282
58	283	293	518	512	288	294	515	284
59	291	301	303	293	296	302	298	292
60	293	303	524	518	298	304	521	294
61	301	311	313	303	306	312	308	302
62	303	313	530	524	308	314	527	304
63	311	329	331	313	316	330	318	312
64	313	331	539	530	318	332	533	314
65	329	570	341	331	334	340	336	330
66	331	341	548	539	336	342	542	332
103	570	582	584	341	577	583	579	340
104	341	584	586	548	579	585	581	342
105	582	592	594	584	587	593	589	583
106	584	594	596	586	589	595	591	585
107	592	602	604	594	597	603	599	593
108	594	604	606	596	599	605	601	595
109	751	625	627	617	620	626	622	616
110	617	627	629	758	622	628	624	618
111	625	635	637	627	630	636	632	626
112	627	637	639	629	632	638	634	628
113	635	645	647	637	640	646	642	636
114	637	647	649	639	642	648	644	638
115	645	655	657	647	650	656	652	646
116	647	657	659	649	652	658	654	648
117	606	752	661	608	738	662	609	567

118	661	752	685	674	662	686	675	611
119	674	685	704	711	675	695	703	693
120	711	704	794	784	703	716	789	714
121	752	768	678	685	763	688	677	686
122	685	678	706	704	677	697	705	695
123	704	706	804	794	705	718	799	716
124	768	778	680	678	773	690	679	688
125	678	680	708	706	679	699	707	697
126	706	708	814	804	707	720	809	718
127	778	758	682	680	783	692	681	690
128	680	682	710	708	681	701	709	699
129	708	710	824	814	709	722	819	720
130	602	745	742	604	734	741	736	603
131	604	742	752	606	736	743	738	605
132	745	764	766	742	759	765	761	741
133	742	766	768	752	761	767	763	743
134	764	774	776	766	769	775	771	765
135	766	776	778	768	771	777	773	767
136	774	751	617	776	779	616	781	775
137	776	617	758	778	781	618	783	777
138	784	794	796	786	789	795	791	785
139	786	796	843	829	791	797	836	787
140	794	804	806	796	799	805	801	795
141	796	806	857	843	801	807	850	797
142	804	814	816	806	809	815	811	805
143	806	816	871	857	811	817	864	807
144	814	824	826	816	819	825	821	815
145	816	826	885	871	821	827	878	817
146	829	843	845	831	836	844	838	830
147	831	845	847	833	838	846	840	832
148	833	847	906	892	840	848	899	834
149	843	857	859	845	850	858	852	844
150	845	859	861	847	852	860	854	846
151	847	861	920	906	854	862	913	848
152	857	871	873	859	864	872	866	858
153	859	873	875	861	866	874	868	860
154	861	875	934	920	868	876	927	862
155	871	885	887	873	878	886	880	872
156	873	887	889	875	880	888	882	874
157	875	889	948	934	882	890	941	876
158	892	906	908	894	899	907	901	893
159	894	908	910	896	901	909	903	895
160	896	910	965	955	903	911	960	897
161	906	920	922	908	913	921	915	907
162	908	922	924	910	915	923	917	909
163	910	924	975	965	917	925	970	911
164	920	934	936	922	927	935	929	921
165	922	936	938	924	929	937	931	923
166	924	938	985	975	931	939	980	925
167	934	948	950	936	941	949	943	935
168	936	950	952	938	943	951	945	937
169	938	952	995	985	945	953	990	939
170	955	965	967	957	960	966	962	956
171	957	967	969	1002	962	968	964	958
172	965	975	977	967	970	976	972	966
173	967	977	979	969	972	978	974	968
174	975	985	987	977	980	986	982	976
175	977	987	989	979	982	988	984	978
176	985	995	997	987	990	996	992	986
177	987	997	1045	989	992	998	994	988
178	1002	969	1083	1081	964	1074	1082	1072
179	1081	1083	1101	1099	1082	1092	1100	1090
180	1099	1101	1119	1117	1100	1110	1118	1108
181	1117	1119	1137	1135	1118	1128	1136	1126
182	1135	1137	1155	1153	1136	1146	1154	1144
183	1153	1155	1173	1171	1154	1164	1172	1162
184	1171	1173	1191	1189	1172	1182	1190	1180
185	1189	1191	1209	1207	1190	1200	1208	1198
186	1207	1209	1227	1235	1208	1218	1226	1216
187	969	979	1085	1083	974	1076	1084	1074
188	1083	1085	1103	1101	1084	1094	1102	1092
189	1101	1103	1121	1119	1102	1112	1120	1110
190	1119	1121	1139	1137	1120	1130	1138	1128
191	1137	1139	1157	1155	1138	1148	1156	1146
192	1155	1157	1175	1173	1156	1166	1174	1164
193	1173	1175	1193	1191	1174	1184	1192	1182

194	1191	1193	1211	1209	1192	1202	1210	1200
195	1209	1211	1229	1227	1210	1220	1228	1218
196	979	989	1087	1085	984	1078	1086	1076
197	1085	1087	1105	1103	1086	1096	1104	1094
198	1103	1105	1123	1121	1104	1114	1122	1112
199	1121	1123	1141	1139	1122	1132	1140	1130
200	1139	1141	1159	1157	1140	1150	1158	1148
201	1157	1159	1177	1175	1158	1168	1176	1166
202	1175	1177	1195	1193	1176	1186	1194	1184
203	1193	1195	1213	1211	1194	1204	1212	1202
204	1211	1213	1231	1229	1212	1222	1230	1220
205	989	1045	1089	1087	994	1080	1088	1078
206	1087	1089	1107	1105	1088	1098	1106	1096
207	1105	1107	1125	1123	1106	1116	1124	1114
208	1123	1125	1143	1141	1124	1134	1142	1132
209	1141	1143	1161	1159	1142	1152	1160	1150
210	1159	1161	1179	1177	1160	1170	1178	1168
211	1177	1179	1197	1195	1178	1188	1196	1186
212	1195	1197	1215	1213	1196	1206	1214	1204
213	1213	1215	1289	1231	1214	1224	1232	1222
214	1235	1227	1325	1323	1226	1316	1324	1314
215	1323	1325	1343	1341	1324	1334	1342	1332
216	1341	1343	1361	1359	1342	1352	1360	1350
217	1359	1361	1379	1377	1360	1370	1378	1368
218	1377	1379	1397	1395	1378	1388	1396	1386
219	1395	1397	1415	1413	1396	1406	1414	1404
220	1413	1415	1433	1431	1414	1424	1432	1422
221	1431	1433	1451	1449	1432	1442	1450	1440
222	1449	1451	1469	1467	1450	1460	1468	1458
223	1467	1469	1487	1485	1468	1478	1486	1476
224	1485	1487	1505	1503	1486	1496	1504	1494
225	1503	1505	1523	1521	1504	1514	1522	1512
226	1521	1523	1541	1539	1522	1532	1540	1530
227	1539	1541	1559	1557	1540	1550	1558	1548
228	1557	1559	1577	1575	1558	1568	1576	1566
229	1575	1577	1595	1593	1576	1586	1594	1584
230	1593	1595	1613	1611	1594	1604	1612	1602
231	1227	1229	1327	1325	1228	1318	1326	1316
232	1325	1327	1345	1343	1326	1336	1344	1334
233	1343	1345	1363	1361	1344	1354	1362	1352
234	1361	1363	1381	1379	1362	1372	1380	1370
235	1379	1381	1399	1397	1380	1390	1398	1388
236	1397	1399	1417	1415	1398	1408	1416	1406
237	1415	1417	1435	1433	1416	1426	1434	1424
238	1433	1435	1453	1451	1434	1444	1452	1442
239	1451	1453	1471	1469	1452	1462	1470	1460
240	1469	1471	1489	1487	1470	1480	1488	1478
241	1487	1489	1507	1505	1488	1498	1506	1496
242	1505	1507	1525	1523	1506	1516	1524	1514
243	1523	1525	1543	1541	1524	1534	1542	1532
244	1541	1543	1561	1559	1542	1552	1560	1550
245	1559	1561	1579	1577	1560	1570	1578	1568
246	1577	1579	1597	1595	1578	1588	1596	1586
247	1595	1597	1615	1613	1596	1606	1614	1604
248	1229	1231	1329	1327	1230	1320	1328	1318
249	1327	1329	1347	1345	1328	1338	1346	1336
250	1345	1347	1365	1363	1346	1356	1364	1354
251	1363	1365	1383	1381	1364	1374	1382	1372
252	1381	1383	1401	1399	1382	1392	1400	1390
253	1399	1401	1419	1417	1400	1410	1418	1408
254	1417	1419	1437	1435	1418	1428	1436	1426
255	1435	1437	1455	1453	1436	1446	1454	1444
256	1453	1455	1473	1471	1454	1464	1472	1462
257	1471	1473	1491	1489	1472	1482	1490	1480
258	1489	1491	1509	1507	1490	1500	1508	1498
259	1507	1509	1527	1525	1508	1518	1526	1516
260	1525	1527	1545	1543	1526	1536	1544	1534
261	1543	1545	1563	1561	1544	1554	1562	1552
262	1561	1563	1581	1579	1562	1572	1580	1570
263	1579	1581	1599	1597	1580	1590	1598	1588
264	1597	1599	1617	1615	1598	1608	1616	1606
265	[illegible]	1289	1331	1329	1232	1322	1330	1320
266	1329	1331	1349	1347	1330	1340	1348	1338
267	[illegible]	[illegible]	1367	1365	1348	1358	1366	1356
268	[illegible]	[illegible]	1385	1383	1366	1376	1384	1374
269	1383	1385	1403	1401	1384	1394	1402	1392

```
  270 1401 1403 1421 1419 1402 1412 1420 1410
  271 1419 1421 1439 1437 1420 1430 1438 1428
  272 1437 1439 1457 1455 1438 1448 1456 1446
  273 1455 1457 1475 1473 1456 1466 1474 1464
  274 1473 1475 1493 1491 1474 1484 1492 1482
  275 1491 1493 1511 1509 1492 1502 1510 1500
  276 1509 1511 1529 1527 1510 1520 1528 1518
  277 1527 1529 1547 1545 1528 1538 1546 1536
  278 1545 1547 1565 1563 1546 1556 1564 1554
  279 1563 1565 1583 1581 1564 1574 1582 1572
  280 1581 1583 1601 1599 1582 1592 1600 1590
  281 1599 1601 1619 1617 1600 1610 1618 1608
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*** unreinforced refractory concrete under liner ***
*ELEMENT,TYPE=CAX8R,ELSET=GROUT
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   68  350  356  358  352  353  357  355  351
   69  356  362  364  358  359  363  361  357
   70  362  368  370  364  365  369  367  363
   71  368  374  376  370  371  375  373  369
   72  374  380  382  376  377  381  379  375
   73  380  386  388  382  383  387  385  381
   74  386  392  394  388  389  393  391  387
   75  392  398  400  394  395  399  397  393
   76  398  404  406  400  401  405  403  399
   77  404  410  412  406  407  411  409  405
   78  410  416  418  412  413  417  415  411
   79  416  422  424  418  419  423  421  417
   80  422  428  430  424  425  429  427  423
   81  428  434  436  430  431  435  433  429
   82  434  440  442  436  437  441  439  435
   83  440  446  448  442  443  447  445  441
   84  446  452  454  448  449  453  451  447
   85  452  458  460  454  455  459  457  453
   86  458  464  466  460  461  465  463  459
   87  464  470  472  466  467  471  469  465
   88  470  476  478  472  473  477  475  471
   89  476  482  484  478  479  483  481  477
   90  482  488  490  484  485  489  487  483
   91  488  494  496  490  491  495  493  489
   92  494  500  502  496  497  501  499  495
   93  500  506  508  502  503  507  505  501
   94  506  512  514  508  509  513  511  507
   95  512  518  520  514  515  519  517  513
   96  518  524  526  520  521  525  523  519
   97  524  530  532  526  527  531  529  525
   98  530  539  541  532  533  540  535  531
   99  539  548  550  541  542  549  544  540
  100  548  586  556  550  581  555  553  549
  101  586  596  562  556  591  561  559  555
  102  596  606  608  562  601  567  565  561
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*** rebar in basemat ***
************************
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
2,1.72000E-01,9.73257E-01,3.33236E-01
4,1.72000E-01,9.29995E-01,3.33090E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
4,2.00000E-01,4.17073E+00,0.00000E+00
0.00000E+00,3.55107E-01,0.00000E+00,6.66000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
6,1.72000E-01,8.86732E-01,3.32958E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
6,2.00000E-01,6.95120E+00,0.00000E+00
0.00000E+00,3.68734E-01,0.00000E+00,6.44893E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
8,1.72000E-01,8.43469E-01,3.32840E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
8,2.00000E-01,9.73165E+00,0.00000E+00
0.00000E+00,3.74881E-01,0.00000E+00,6.31266E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
10,1.72000E-01,8.00206E-01,3.32735E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
10,2.00000E-01,1.25121E+01,0.00000E+00
0.00000E+00,3.73549E-01,0.00000E+00,6.25119E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
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12,1.72000E-01,7.56943E-01,3.32645E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
12,2.00000E-01,1.52924E+01,0.00000E+00
0.00000E+00,3.64736E-01,0.00000E+00,6.26451E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
14,1.72000E-01,7.13680E-01,3.32569E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
14,2.00000E-01,1.80728E+01,0.00000E+00
0.00000E+00,3.48445E-01,0.00000E+00,6.35264E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
16,1.72000E-01,6.70417E-01,3.32507E-01
16,1.72000E-01,6.70417E-01,3.32507E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
16,2.00000E-01,2.08530E+01,0.00000E+00
0.00000E+00,3.24673E-01,0.00000E+00,6.51555E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
18,1.72000E-01,6.14775E-01,3.32448E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
18,2.00000E-01,9.32015E+00,0.00000E+00
0.00000E+00,3.59592E-01,0.00000E+00,6.58925E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
20,1.72000E-01,5.59134E-01,3.32411E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
20,2.00000E-01,1.04165E+01,0.00000E+00
0.00000E+00,3.70629E-01,0.00000E+00,6.40408E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
22,1.72000E-01,5.03493E-01,3.32398E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
22,2.00000E-01,1.15129E+01,0.00000E+00
0.00000E+00,3.74187E-01,0.00000E+00,6.29371E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
24,1.72000E-01,4.47852E-01,3.32409E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
24,2.00000E-01,1.26092E+01,0.00000E+00
0.00000E+00,3.70265E-01,0.00000E+00,6.25813E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
26,1.72000E-01,3.92210E-01,3.32442E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
26,2.00000E-01,1.37055E+01,0.00000E+00
0.00000E+00,3.58864E-01,0.00000E+00,6.29735E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
28,1.72000E-01,3.32498E-01,3.36570E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
28,2.00000E-01,1.48017E+01,0.00000E+00
0.00000E+00,3.39983E-01,0.00000E+00,6.41136E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
30,1.72000E-01,2.80917E-01,3.32578E-01
30,1.72000E-01,2.80917E-01,3.32578E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
30,2.00000E-01,9.90131E+00,0.00000E+00
0.00000E+00,3.49411E-01,0.00000E+00,6.73997E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
32,1.72000E-01,2.37654E-01,3.32656E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
32,2.00000E-01,1.05840E+01,0.00000E+00
0.00000E+00,3.65338E-01,0.00000E+00,6.50589E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
34,1.72000E-01,1.94391E-01,3.32748E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
34,2.00000E-01,1.12666E+01,0.00000E+00
0.00000E+00,3.73787E-01,0.00000E+00,6.34662E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
36,1.72000E-01,1.51128E-01,3.32854E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
36,2.00000E-01,1.19492E+01,0.00000E+00
0.00000E+00,3.74755E-01,0.00000E+00,6.26213E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
38,1.72000E-01,1.07865E-01,3.32973E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
38,2.00000E-01,1.26318E+01,0.00000E+00
0.00000E+00,3.68244E-01,0.00000E+00,6.25245E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
40,1.72000E-01,6.46019E-02,3.33107E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
40,2.00000E-01,1.33143E+01,0.00000E+00
0.00000E+00,3.54253E-01,0.00000E+00,6.31756E-01
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
42,1.72000E-01,2.13389E-02,3.33255E-01
42,1.72000E-01,9.78076E-01,3.33253E-01
42,1.72000E-01,9.78076E-01,3.33253E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
42,2.00000E-01,1.39968E+01,0.00000E+00
0.00000E+00,3.32782E-01,0.00000E+00,6.45747E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
44,1.72000E-01,9.21046E-01,3.33061E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
44,2.00000E-01,1.05913E+01,0.00000E+00
0.00000E+00,3.54655E-01,0.00000E+00,6.66127E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
46,1.72000E-01,8.64016E-01,3.32894E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
46,2.00000E-01,1.10837E+01,0.00000E+00
0.00000E+00,3.67958E-01,0.00000E+00,6.45345E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
48,1.72000E-01,8.06986E-01,3.32751E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
48,2.00000E-01,1.15760E+01,0.00000E+00
0.00000E+00,3.73780E-01,0.00000E+00,6.32042E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
50,1.72000E-01,7.49956E-01,3.32632E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
50,2.00000E-01,1.20683E+01,0.00000E+00
0.00000E+00,3.72124E-01,0.00000E+00,6.26220E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
52,1.72000E-01,6.92926E-01,3.32538E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
52,2.00000E-01,1.25605E+01,0.00000E+00
0.00000E+00,3.62987E-01,0.00000E+00,6.27876E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
54,1.72000E-01,6.35903E-01,3.32467E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
54,2.00000E-01,1.30527E+01,0.00000E+00
0.00000E+00,3.46371E-01,0.00000E+00,6.37013E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
56,1.72000E-01,5.78885E-01,3.32422E-01
56,1.87000E-01,5.78885E-01,3.32422E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
56,2.00000E-01,1.35449E+01,0.00000E+00
0.00000E+00,3.22275E-01,0.00000E+00,6.53629E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
58,1.87000E-01,6.14087E-01,3.32447E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
58,2.00000E-01,1.09254E+01,0.00000E+00
0.00000E+00,3.64294E-01,0.00000E+00,6.55918E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
60,1.87000E-01,6.49288E-01,3.32482E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
60,2.00000E-01,1.13083E+01,0.00000E+00
0.00000E+00,3.77025E-01,0.00000E+00,6.35706E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
62,1.87000E-01,6.84493E-01,3.32526E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
62,2.00000E-01,1.16913E+01,0.00000E+00
0.00000E+00,3.82276E-01,0.00000E+00,6.22975E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
64,1.87000E-01,7.19703E-01,3.32579E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
64,2.00000E-01,1.20742E+01,0.00000E+00
0.00000E+00,3.80048E-01,0.00000E+00,6.17724E-01
66,2.00000E-01,1.23986E+01,0.00000E+00
0.00000E+00,3.71766E-01,0.00000E+00,6.19952E-01
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***  rebar in knuckle and footing ***
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
103,4.40000E-01,7.16539E+00,0.00000E+00
0.00000E+00,8.18082E-01,8.47547E-01,0.00000E+00
104,4.40000E-01,7.17024E+00,0.00000E+00
1.52453E-01,0.00000E+00,0.00000E+00,9.58334E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
104,1.87000E-01,5.64880E-02,3.21439E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
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104,2.00000E-01,1.27157E+01,0.00000E+00
0.00000E+00,2.55669E-01,0.00000E+00,6.28234E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
105,4.40000E-01,7.36337E+00,0.00000E+00
0.00000E+00,5.02108E-01,0.00000E+00,1.81918E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
105,2.00000E-01,1.30582E+01,0.00000E+00
0.00000E+00,8.72902E-01,4.47995E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
106,1.87000E-01,1.31337E-01,1.34226E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
106,2.00000E-01,1.30774E+01,0.00000E+00
5.52005E-01,0.00000E+00,0.00000E+00,7.44331E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
107,4.40000E-01,7.56134E+00,0.00000E+00
0.00000E+00,3.11015E-01,0.00000E+00,4.97892E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
107,1.87000E-01,2.80377E-01,7.91872E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
109,1.00000E+00,7.50000E-01,3.33333E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
109,4.40000E-01,8.13323E+00,0.00000E+00
0.00000E+00,2.60417E-01,0.00000E+00,7.39583E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
110,1.00000E+00,7.50000E-01,4.16667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
110,2.00000E-01,2.43997E+01,0.00000E+00
0.00000E+00,4.79167E-01,0.00000E+00,5.20833E-01
111,4.40000E-01,8.23795E+00,0.00000E+00
0.00000E+00,2.60417E-01,0.00000E+00,7.39583E-01
112,2.00000E-01,2.47139E+01,0.00000E+00
0.00000E+00,4.79167E-01,0.00000E+00,5.20833E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
113,1.00000E+00,8.33333E-02,3.33333E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
113,4.40000E-01,8.34267E+00,0.00000E+00
0.00000E+00,2.60417E-01,0.00000E+00,7.39583E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
114,1.00000E+00,8.33333E-02,4.16667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
114,2.00000E-01,2.50280E+01,0.00000E+00
0.00000E+00,4.79167E-01,0.00000E+00,5.20833E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
115,1.00000E+00,4.16667E-01,3.33333E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
115,4.40000E-01,8.44739E+00,0.00000E+00
5.72917E-01,0.00000E+00,4.27083E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
116,1.00000E+00,4.16667E-01,4.16667E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
116,4.40000E-01,8.44739E+00,0.00000E+00
5.72917E-01,0.00000E+00,4.27083E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
119,4.40000E-01,1.18104E+01,0.00000E+00
0.00000E+00,1.51721E-01,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
119,6.00000E-01,9.61621E-01,9.45437E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
120,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
120,6.00000E-01,9.37667E-01,7.23537E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
121,4.40000E-01,1.17941E+01,0.00000E+00
0.00000E+00,3.88912E-02,9.10444E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
121,4.40000E-01,1.17941E+01,0.00000E+00
1.00000E+00,1.10000E-07,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
121,6.00000E-01,9.62540E-01,3.01858E-01
121,6.00000E-01,3.06955E-01,9.87648E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
122,4.40000E-01,1.18992E+01,0.00000E+00
8.95555E-02,0.00000E+00,0.00000E+00,7.42244E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
122,4.40000E-01,1.18992E+01,0.00000E+00
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5.27145E-02,0.00000E+00,0.00000E+00,8.48279E-01
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122,6.00000E-01,1.38350E-01,4.66236E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
124,4.40000E-01,1.19250E+01,0.00000E+00
2.50000E-02,0.00000E+00,0.00000E+00,9.61109E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
124,4.40000E-01,1.19250E+01,0.00000E+00
1.10000E-07,0.00000E+00,0.00000E+00,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
127,4.40000E-01,1.20559E+01,0.00000E+00
6.25000E-01,0.00000E+00,5.52616E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
127,4.40000E-01,1.20559E+01,0.00000E+00
6.00000E-01,0.00000E+00,5.89457E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
127,6.00000E-01,3.54982E-01,4.34540E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
128,4.40000E-01,1.20769E+01,0.00000E+00
4.47384E-01,0.00000E+00,6.25000E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
128,4.40000E-01,1.20769E+01,0.00000E+00
4.10543E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
128,6.00000E-01,1.54148E-01,2.24507E-01
128,6.00000E-01,9.35585E-02,7.17377E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
129,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
129,6.00000E-01,6.26667E-02,2.40418E-01
129,6.00000E-01,6.26667E-02,8.13541E-01
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130,1.00000E+00,5.05250E-01,3.39735E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
130,4.40000E-01,7.73970E+00,0.00000E+00
0.00000E+00,2.31481E-01,0.00000E+00,6.88985E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
131,1.00000E+00,5.05249E-01,4.42336E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
131,2.00000E-01,2.32191E+01,0.00000E+00
0.00000E+00,3.14815E-01,0.00000E+00,2.33434E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
132,1.00000E+00,7.00000E-01,3.01923E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
132,4.40000E-01,7.86271E+00,0.00000E+00
0.00000E+00,2.40385E-01,0.00000E+00,7.68519E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
133,1.00000E+00,7.00000E-01,2.90566E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
133,2.00000E-01,2.35881E+01,0.00000E+00
0.00000E+00,3.65385E-01,0.00000E+00,6.85185E-01
134,4.40000E-01,7.94997E+00,0.00000E+00
0.00000E+00,2.50000E-01,0.00000E+00,7.59615E-01
134,4.40000E-01,1.19250E+01,0.00000E+00
2.50000E-02,0.00000E+00,9.75000E-01,0.00000E+00
135,2.00000E-01,2.38499E+01,0.00000E+00
0.00000E+00,4.20000E-01,0.00000E+00,6.34615E-01
135,4.40000E-01,1.19250E+01,0.00000E+00
2.50000E-02,0.00000E+00,9.75000E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
136,1.00000E+00,3.00000E-01,3.26000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
136,4.40000E-01,8.03724E+00,0.00000E+00
0.00000E+00,2.60417E-01,0.00000E+00,7.50000E-01
136,4.40000E-01,1.20559E+01,0.00000E+00
6.25000E-01,0.00000E+00,3.75000E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
137,1.00000E+00,3.00000E-01,3.78000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
137,2.00000E-01,2.41117E+01,0.00000E+00
0.00000E+00,4.79167E-01,0.00000E+00,5.80000E-01
137,4.40000E-01,1.20559E+01,0.00000E+00
6.25000E-01,0.00000E+00,3.75000E-01,0.00000E+00
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***  rebar in wall ***
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
138,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
138,6.00000E-01,9.37667E-01,2.85714E-01
138,6.00000E-01,9.37667E-01,7.14286E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
139,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
139,6.00000E-01,9.37667E-01,1.42857E-01
139,6.00000E-01,9.37667E-01,5.71429E-01
139,6.00000E-01,9.37667E-01,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
144,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
144,6.00000E-01,6.26667E-02,2.85714E-01
144,6.00000E-01,6.26667E-02,7.14286E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
145,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
145,6.00000E-01,6.26667E-02,1.42857E-01
145,6.00000E-01,6.26667E-02,5.71429E-01
145,6.00000E-01,6.26667E-02,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
146,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
146,6.00000E-01,9.37667E-01,4.54747E-13
146,6.00000E-01,9.37667E-01,5.00000E-01
146,6.00000E-01,9.37667E-01,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
147,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
147,6.00000E-01,9.37667E-01,5.00000E-01
147,6.00000E-01,9.37667E-01,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
148,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
148,6.00000E-01,9.37667E-01,3.79430E-12
148,6.00000E-01,9.37667E-01,5.00000E-01
148,6.00000E-01,9.37667E-01,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
155,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
155,6.00000E-01,6.26667E-02,4.54747E-13
155,6.00000E-01,6.26667E-02,5.00000E-01
155,6.00000E-01,6.26667E-02,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
156,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
156,6.00000E-01,6.26667E-02,4.72511E-13
156,6.00000E-01,6.26667E-02,5.00000E-01
156,6.00000E-01,6.26667E-02,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
157,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
157,6.00000E-01,6.26667E-02,3.19744E-13
157,6.00000E-01,6.26667E-02,5.00000E-01
157,6.00000E-01,6.26667E-02,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
158,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
158,6.00000E-01,9.37667E-01,3.52941E-01
158,6.00000E-01,9.37667E-01,7.94118E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
159,4.40000E-01,1.18464E+01,0.00000E+00
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6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
159,6.00000E-01,9.37667E-01,2.35294E-01
159,6.00000E-01,9.37667E-01,6.76471E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
160,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
160,6.00000E-01,9.37667E-01,1.17647E-01
160,6.00000E-01,9.37667E-01,5.58824E-01
160,6.00000E-01,9.37667E-01,1.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
167,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
167,6.00000E-01,6.26667E-02,3.52941E-01
167,6.00000E-01,6.26667E-02,7.94118E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
168,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
168,6.00000E-01,6.26667E-02,2.35294E-01
168,6.00000E-01,6.26667E-02,6.76471E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
169,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
169,6.00000E-01,6.26667E-02,1.17647E-01
169,6.00000E-01,6.26667E-02,5.58824E-01
169,6.00000E-01,6.26667E-02,1.00000E+00
*********************************
*** rebar in haunch (via ANAGEN) ***
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
170,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
170,6.00000E-01,9.37667E-01,3.55271E-15
170,6.00000E-01,9.37667E-01,6.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
171,4.40000E-01,1.18464E+01,0.00000E+00
6.66667E-01,0.00000E+00,3.33333E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
171,6.00000E-01,9.37667E-01,2.00000E-01
171,6.00000E-01,9.37667E-01,8.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
176,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
176,6.00000E-01,6.26667E-02,3.55271E-15
176,6.00000E-01,6.26667E-02,6.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
177,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.66667E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
177,6.00000E-01,6.26667E-02,2.00000E-01
177,6.00000E-01,6.26667E-02,8.00000E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
178,3.10000E-01,2.49398E+01,0.00000E+00
6.86667E-01,0.00000E+00,3.68584E-02,0.00000E+00
179,3.10000E-01,2.48872E+01,0.00000E+00
9.63142E-01,6.74611E-02,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
180,4.40000E-01,4.95443E+01,0.00000E+00
4.33646E-01,0.00000E+00,6.49870E-01,0.00000E+00
180,4.40000E-01,4.95443E+01,0.00000E+00
4.33646E-01,0.00000E+00,6.49870E-01,0.00000E+00
180,4.40000E-01,2.47722E+01,0.00000E+00
4.33646E-01,0.00000E+00,6.49870E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
180,3.10000E-01,2.47722E+01,0.00000E+00
0.00000E+00,9.87274E-01,0.00000E+00,9.20850E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
180,1.56250E+00,6.74099E-01,4.31384E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
181,4.40000E-01,4.89800E+01,0.00000E+00
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3.25948E-01,0.00000E+00,7.68434E-01,0.00000E+00
181,4.40000E-01,4.89800E+01,0.00000E+00
3.25948E-01,0.00000E+00,7.68434E-01,0.00000E+00
181,4.40000E-01,2.44900E+01,0.00000E+00
3.25948E-01,0.00000E+00,7.68434E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
181,1.56250E+00,4.32623E-01,3.86312E-01
181,1.56250E+00,7.12950E-01,7.38938E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
182,3.10000E-01,2.42077E+01,0.00000E+00
7.71417E-01,2.26073E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
182,1.56250E+00,3.56986E-01,3.52652E-01
182,1.56250E+00,7.73117E-01,7.54903E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
183,3.10000E-01,2.38570E+01,0.00000E+00
8.81914E-01,9.81608E-02,0.00000E+00,0.00000E+00
183,3.10000E-01,2.38570E+01,0.00000E+00
0.00000E+00,9.61315E-01,0.00000E+00,8.45987E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
183,1.56250E+00,4.64581E-01,4.13158E-01
183,1.56250E+00,9.87603E-01,8.16747E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
184,3.10000E-01,2.35037E+01,0.00000E+00
0.00000E+00,8.63606E-01,0.00000E+00,8.22795E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
184,1.56250E+00,5.11704E-01,4.00475E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
185,3.10000E-01,2.31599E+01,0.00000E+00
0.00000E+00,9.66129E-01,0.00000E+00,7.46640E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
185,1.56250E+00,7.48765E-01,6.15267E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
186,4.40000E-01,4.57688E+01,0.00000E+00
4.18183E-01,0.00000E+00,6.03121E-01,0.00000E+00
186,4.40000E-01,4.57688E+01,0.00000E+00
4.18183E-01,0.00000E+00,6.03121E-01,0.00000E+00
186,4.40000E-01,2.28844E+01,0.00000E+00
4.18183E-01,0.00000E+00,6.03121E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
186,1.00000E+00,5.46361E-01,9.63059E-01
186,1.00000E+00,5.86321E-01,3.71963E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
187,1.56250E+00,1.08019E-01,4.13503E-01
188,1.56250E+00,2.87638E-01,8.19422E-02
188,1.56250E+00,5.31843E-01,6.31034E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
188,3.10000E-01,2.50676E+01,0.00000E+00
0.00000E+00,2.38689E-01,0.00000E+00,6.75067E-01
189,3.10000E-01,2.49854E+01,0.00000E+00
4.31010E-01,7.52552E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
189,1.56250E+00,7.83823E-01,1.16252E-01
189,1.56250E+00,8.13188E-02,8.58316E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
189,3.10000E-01,2.49854E+01,0.00000E+00
0.00000E+00,6.19733E-01,0.00000E+00,2.96632E-01
190,3.10000E-01,2.47839E+01,0.00000E+00
1.04738E-02,0.00000E+00,3.45653E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
190,1.56250E+00,3.40946E-01,2.24667E-01
190,1.56250E+00,5.48656E-01,5.46345E-01
190,1.56250E+00,7.09246E-01,8.45059E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
190,3.10000E-01,2.47839E+01,0.00000E+00
0.00000E+00,3.36548E-01,0.00000E+00,5.43994E-01
191,3.10000E-01,2.45822E+01,0.00000E+00
6.54347E-01,2.97774E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
191,1.56250E+00,5.37419E-03,9.41835E-02
191,1.56250E+00,4.40172E-01,4.92022E-01
191,1.56250E+00,9.32439E-01,8.85391E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
191,3.10000E-01,2.45822E+01,0.00000E+00
0.00000E+00,7.09498E-02,0.00000E+00,6.67370E-01
192,3.10000E-01,2.41755E+01,0.00000E+00
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9.20272E-01,5.73505E-02,0.00000E+00,0.00000E+00
192,3.10000E-01,2.41755E+01,0.00000E+00
0.00000E+00,8.04272E-01,0.00000E+00,9.01839E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
192,1.56250E+00,2.43388E-01,1.53325E-01
192,1.56250E+00,7.74816E-01,5.40435E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
192,3.10000E-01,2.41755E+01,0.00000E+00
0.00000E+00,4.43972E-01,0.00000E+00,6.32613E-01
193,3.10000E-01,2.37625E+01,0.00000E+00
5.72553E-02,5.95541E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
193,1.56250E+00,5.73222E-01,2.10831E-01
193,1.56250E+00,1.87420E-01,8.41580E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
193,3.10000E-01,2.37625E+01,0.00000E+00
0.00000E+00,6.36525E-01,0.00000E+00,3.64690E-01
194,3.10000E-01,2.33748E+01,0.00000E+00
2.32202E-01,5.13957E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
194,1.56250E+00,9.51012E-01,3.22058E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
195,3.10000E-01,2.30690E+01,0.00000E+00
5.33463E-02,2.12504E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
195,1.56250E+00,6.48445E-01,7.30360E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
195,3.10000E-01,2.30690E+01,0.00000E+00
0.00000E+00,6.44544E-01,0.00000E+00,3.37033E-01
197,3.10000E-01,2.52480E+01,0.00000E+00
0.00000E+00,1.85775E-01,0.00000E+00,7.61311E-01
198,3.10000E-01,2.51987E+01,0.00000E+00
0.00000E+00,0.00000E+00,8.64234E-01,2.47448E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
198,1.56250E+00,8.51522E-02,5.65144E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
198,3.10000E-01,2.51987E+01,0.00000E+00
0.00000E+00,5.32106E-01,0.00000E+00,3.80267E-01
199,3.10000E-01,2.50777E+01,0.00000E+00
1.35766E-01,0.00000E+00,4.62722E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
199,1.56250E+00,3.18165E-01,1.48229E-02
199,1.56250E+00,4.32635E-01,2.92836E-01
199,1.56250E+00,5.35064E-01,5.64980E-01
199,1.56250E+00,6.20273E-01,8.28731E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
199,3.10000E-01,2.50777E+01,0.00000E+00
0.00000E+00,2.55947E-01,0.00000E+00,6.63452E-01
199,3.10000E-01,2.50777E+01,0.00000E+00
0.00000E+00,9.04865E-01,7.37690E-01,0.00000E+00
200,3.10000E-01,2.49567E+01,0.00000E+00
5.37278E-01,3.53095E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
200,1.56250E+00,8.51143E-01,1.42064E-01
200,1.56250E+00,1.99186E-02,1.94484E-01
200,1.56250E+00,5.32954E-01,5.95119E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
200,3.10000E-01,2.49567E+01,0.00000E+00
2.62310E-01,0.00000E+00,0.00000E+00,9.29050E-01
201,3.10000E-01,2.44939E+01,0.00000E+00
9.58630E-01,2.62269E-02,0.00000E+00,0.00000E+00
201,3.10000E-01,2.44939E+01,0.00000E+00
0.00000E+00,6.84504E-01,0.00000E+00,9.42649E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
201,1.56250E+00,4.74130E-01,2.63637E-01
201,1.56250E+00,3.58270E-01,9.03239E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
201,3.10000E-01,2.44939E+01,0.00000E+00
0.00000E+00,5.11290E-01,0.00000E+00,5.56028E-01
202,3.10000E-01,2.40214E+01,0.00000E+00
3.34767E-01,3.79475E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
202,1.56250E+00,9.98404E-01,2.64472E-01
202,1.56250E+00,2.16541E-01,5.94271E-01
202,1.56250E+00,9.13089E-01,9.50502E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
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202,3.10000E-01,2.40214E+01,0.00000E+00
0.00000E+00,6.37622E-01,0.00000E+00,3.63475E-01
203,3.10000E-01,2.35896E+01,0.00000E+00
7.71423E-01,1.39807E-01,0.00000E+00,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
203,1.56250E+00,7.87183E-01,8.13929E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
204,3.10000E-01,2.32535E+01,0.00000E+00
8.45334E-01,3.25196E-02,0.00000E+00,0.00000E+00
204,3.10000E-01,2.32535E+01,0.00000E+00
0.00000E+00,4.09297E-01,0.00000E+00,7.87496E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
204,1.56250E+00,6.27279E-01,2.80796E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
204,3.10000E-01,2.32535E+01,0.00000E+00
0.00000E+00,6.27531E-01,0.00000E+00,3.55456E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
205,4.40000E-01,1.20820E+01,0.00000E+00
3.33333E-01,0.00000E+00,6.11038E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
205,4.40000E-01,6.35897E+00,0.00000E+00
3.33333E-01,0.00000E+00,6.11038E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
205,1.56250E+00,3.52137E-02,4.04402E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
206,4.40000E-01,1.20785E+01,0.00000E+00
3.88962E-01,0.00000E+00,5.16899E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
206,4.40000E-01,6.35709E+00,0.00000E+00
3.88962E-01,0.00000E+00,5.16899E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
206,1.56250E+00,8.72605E-02,4.19214E-02
206,1.56250E+00,1.48088E-01,4.28997E-01
206,1.56250E+00,2.10597E-01,8.17558E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
207,4.40000E-01,1.20707E+01,0.00000E+00
4.83101E-01,0.00000E+00,3.75097E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
207,4.40000E-01,6.35298E+00,0.00000E+00
4.83101E-01,0.00000E+00,3.75097E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
207,1.56250E+00,2.69515E-01,2.37353E-01
207,1.56250E+00,3.98331E-01,7.15505E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
208,4.40000E-01,6.34290E+00,0.00000E+00
6.24903E-01,0.00000E+00,2.94310E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
208,1.56250E+00,4.51009E-01,9.94937E-02
208,1.56250E+00,4.83695E-01,3.37646E-01
208,1.56250E+00,5.12658E-01,5.73984E-01
208,1.56250E+00,5.37914E-01,8.08516E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
209,4.40000E-01,5.06626E+01,0.00000E+00
5.35716E-01,0.00000E+00,4.18061E-01,0.00000E+00
209,4.40000E-01,5.06626E+01,0.00000E+00
5.35716E-01,0.00000E+00,4.18061E-01,0.00000E+00
209,4.40000E-01,2.53313E+01,0.00000E+00
5.35716E-01,0.00000E+00,4.18061E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
209,4.40000E-01,1.26656E+01,0.00000E+00
5.35716E-01,0.00000E+00,4.18061E-01,0.00000E+00
209,4.40000E-01,1.26656E+01,0.00000E+00
5.35716E-01,0.00000E+00,4.18061E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
209,1.56250E+00,6.60471E-01,7.35832E-02
209,1.56250E+00,4.17271E-01,5.42122E-01
209,1.56250E+00,1.06696E-01,9.91032E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
210,4.40000E-01,4.96248E+01,0.00000E+00
5.81939E-01,0.00000E+00,4.60260E-01,0.00000E+00
210,4.40000E-01,4.96248E+01,0.00000E+00
5.81939E-01,0.00000E+00,4.60260E-01,0.00000E+00
210,4.40000E-01,2.48124E+01,0.00000E+00
5.81939E-01,0.00000E+00,4.60260E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
210,4.40000E-01,1.24062E+01,0.00000E+00
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5.81939E-01,0.00000E+00,4.60260E-01,0.00000E+00
210,4.40000E-01,1.24062E+01,0.00000E+00
5.81939E-01,0.00000E+00,4.60260E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
210,1.56250E+00,7.15345E-01,3.51744E-01
210,1.56250E+00,6.49269E-02,6.18682E-01
210,1.56250E+00,7.08102E-01,9.49257E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
211,4.40000E-01,4.85605E+01,0.00000E+00
5.39740E-01,0.00000E+00,5.20572E-01,0.00000E+00
211,4.40000E-01,4.85605E+01,0.00000E+00
5.39740E-01,0.00000E+00,5.20572E-01,0.00000E+00
211,4.40000E-01,2.42802E+01,0.00000E+00
5.39740E-01,0.00000E+00,5.20572E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
211,4.40000E-01,1.21401E+01,0.00000E+00
5.39740E-01,0.00000E+00,5.20572E-01,0.00000E+00
211,4.40000E-01,1.21401E+01,0.00000E+00
5.39740E-01,0.00000E+00,5.20572E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
211,1.56250E+00,6.85015E-01,6.11984E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
212,4.40000E-01,4.76089E+01,0.00000E+00
4.79428E-01,0.00000E+00,5.28824E-01,0.00000E+00
212,4.40000E-01,4.76089E+01,0.00000E+00
4.79428E-01,0.00000E+00,5.28824E-01,0.00000E+00
212,4.40000E-01,2.38045E+01,0.00000E+00
4.79428E-01,0.00000E+00,5.28824E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
212,4.40000E-01,1.19022E+01,0.00000E+00
4.79428E-01,0.00000E+00,5.28824E-01,0.00000E+00
212,4.40000E-01,1.19022E+01,0.00000E+00
4.79428E-01,0.00000E+00,5.28824E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
212,1.56250E+00,6.65827E-01,3.81096E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
213,4.40000E-01,4.68761E+01,0.00000E+00
4.71176E-01,0.00000E+00,5.85781E-01,0.00000E+00
213,4.40000E-01,4.68761E+01,0.00000E+00
4.71176E-01,0.00000E+00,5.85781E-01,0.00000E+00
213,4.40000E-01,2.34380E+01,0.00000E+00
4.71176E-01,0.00000E+00,5.85781E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
213,1.00000E+00,5.65327E-01,9.76355E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
213,4.40000E-01,1.17190E+01,0.00000E+00
4.71176E-01,0.00000E+00,5.85781E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
213,1.56250E+00,6.70387E-01,1.10930E-01
213,1.56250E+00,6.64965E-01,4.70862E-01
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***  rebar in dome ******
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*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
214,4.40000E-01,4.42915E+01,0.00000E+00
3.93732E-01,0.00000E+00,6.04918E-01,0.00000E+00
214,4.40000E-01,4.42915E+01,0.00000E+00
3.93732E-01,0.00000E+00,6.04918E-01,0.00000E+00
214,4.40000E-01,2.21458E+01,0.00000E+00
3.93727E-01,0.00000E+00,6.03943E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
214,1.00000E+00,5.75701E-01,5.31804E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
215,4.40000E-01,4.26944E+01,0.00000E+00
3.95082E-01,0.00000E+00,5.30348E-01,0.00000E+00
215,4.40000E-01,4.26944E+01,0.00000E+00
3.95082E-01,0.00000E+00,5.30348E-01,0.00000E+00
215,4.40000E-01,2.13472E+01,0.00000E+00
3.96057E-01,0.00000E+00,5.28265E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
215,1.00000E+00,6.23505E-01,6.64094E-01
215,1.00000E+00,5.93749E-01,9.91152E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
216,4.40000E-01,4.10821E+01,0.00000E+00
4.42491E-01,0.00000E+00,5.35720E-01,0.00000E+00
216,4.40000E-01,4.10821E+01,0.00000E+00
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4.42491E-01,0.00000E+00,5.35720E-01,0.00000E+00
216,4.40000E-01,2.05411E+01,0.00000E+00
4.41227E-01,0.00000E+00,5.32171E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
216,4.40000E-01,6.64554E-01,6.72744E-01
216,1.00000E+00,6.40211E-01,1.54638E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
217,4.40000E-01,3.86424E+01,0.00000E+00
4.83937E-01,0.00000E+00,5.42228E-01,0.00000E+00
217,4.40000E-01,3.86424E+01,0.00000E+00
4.83937E-01,0.00000E+00,5.42228E-01,0.00000E+00
217,4.40000E-01,1.93212E+01,0.00000E+00
4.79443E-01,0.00000E+00,5.38476E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
217,4.40000E-01,6.80253E-01,7.16003E-01
217,4.40000E-01,6.67821E-01,1.86858E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
218,4.40000E-01,3.61693E+01,0.00000E+00
5.28087E-01,0.00000E+00,5.36397E-01,0.00000E+00
218,4.40000E-01,3.61693E+01,0.00000E+00
5.28087E-01,0.00000E+00,5.36397E-01,0.00000E+00
218,4.40000E-01,1.80847E+01,0.00000E+00
5.18691E-01,0.00000E+00,5.33109E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
218,4.40000E-01,7.01718E-01,7.01947E-01
218,4.40000E-01,6.88045E-01,2.18902E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
219,4.40000E-01,3.35231E+01,0.00000E+00
5.74831E-01,0.00000E+00,5.27778E-01,0.00000E+00
219,4.40000E-01,3.35231E+01,0.00000E+00
5.74831E-01,0.00000E+00,5.27778E-01,0.00000E+00
219,4.40000E-01,1.67616E+01,0.00000E+00
5.59730E-01,0.00000E+00,5.26027E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
219,4.40000E-01,7.20976E-01,6.71780E-01
219,4.40000E-01,7.04890E-01,1.88865E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
220,4.40000E-01,3.08446E+01,0.00000E+00
4.72222E-01,0.00000E+00,4.01789E-01,0.00000E+00
220,4.40000E-01,3.08446E+01,0.00000E+00
4.72222E-01,0.00000E+00,4.01789E-01,0.00000E+00
220,4.40000E-01,1.54223E+01,0.00000E+00
6.03689E-01,0.00000E+00,5.17252E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
220,4.40000E-01,7.36989E-01,6.40592E-01
220,4.40000E-01,7.18701E-01,1.57623E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
221,4.40000E-01,2.81372E+01,0.00000E+00
4.83664E-01,0.00000E+00,4.24563E-01,0.00000E+00
221,4.40000E-01,2.81372E+01,0.00000E+00
4.83664E-01,0.00000E+00,4.24563E-01,0.00000E+00
221,4.40000E-01,1.40686E+01,0.00000E+00
4.82748E-01,0.00000E+00,4.04772E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
221,4.40000E-01,7.49503E-01,6.08359E-01
221,4.40000E-01,7.29031E-01,1.25378E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
222,4.40000E-01,2.54040E+01,0.00000E+00
4.97853E-01,0.00000E+00,4.46513E-01,0.00000E+00
222,4.40000E-01,2.54040E+01,0.00000E+00
4.97853E-01,0.00000E+00,4.46513E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
222,4.40000E-01,7.58118E-01,5.75333E-01
222,4.40000E-01,7.35517E-01,9.23826E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
223,4.40000E-01,2.26484E+01,0.00000E+00
5.14586E-01,0.00000E+00,4.67129E-01,0.00000E+00
223,4.40000E-01,2.26484E+01,0.00000E+00
5.14586E-01,0.00000E+00,4.67129E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
223,4.40000E-01,7.62545E-01,5.41812E-01
223,4.40000E-01,7.37912E-01,5.89301E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
224,4.40000E-01,1.98739E+01,0.00000E+00
5.34227E-01,0.00000E+00,5.70905E-01,0.00000E+00
224,4.40000E-01,1.98739E+01,0.00000E+00
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5.33906E-01,0.00000E+00,4.80355E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
224,4.40000E-01,7.36911E-01,9.54321E-01
224,4.40000E-01,7.53046E-01,4.86654E-01
224,4.40000E-01,7.34984E-01,1.89430E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
225,4.40000E-01,1.70538E+01,0.00000E+00
4.29095E-01,0.00000E+00,5.19843E-01,0.00000E+00
225,4.40000E-01,1.70538E+01,0.00000E+00
5.52431E-01,0.00000E+00,4.89180E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
225,4.40000E-01,7.41145E-01,8.89699E-01
225,4.40000E-01,7.52558E-01,4.22142E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
226,4.40000E-01,1.42249E+01,0.00000E+00
6.05172E-01,0.00000E+00,5.52893E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
226,4.40000E-01,7.44728E-01,8.25077E-01
226,4.40000E-01,7.51419E-01,3.57630E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
227,4.40000E-01,1.13887E+01,0.00000E+00
4.47107E-01,0.00000E+00,5.54712E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
227,4.40000E-01,7.47659E-01,7.60456E-01
227,4.40000E-01,7.49628E-01,2.93119E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
227,3.30000E-01,7.07926E-01,8.86944E-01
227,3.30000E-01,7.19516E-01,5.40247E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
228,4.40000E-01,8.54662E+00,0.00000E+00
4.45288E-01,0.00000E+00,4.00270E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
228,4.40000E-01,7.49938E-01,6.95924E-01
228,4.40000E-01,7.47186E-01,2.28568E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
228,3.30000E-01,7.05335E-01,9.27200E-01
228,3.30000E-01,7.19107E-01,5.80434E-01
228,3.30000E-01,7.14081E-01,2.33942E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
228,4.40000E-01,1.47623E+01,0.00000E+00
6.41855E-01,0.00000E+00,3.70760E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
229,2.30000E-01,7.06578E-01,9.07695E-01
229,2.30000E-01,7.18444E-01,6.20621E-01
229,3.30000E-01,7.18444E-01,6.20621E-01
229,3.30000E-01,7.15598E-01,2.74197E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
229,4.40000E-01,9.84578E+00,0.00000E+00
6.29240E-01,0.00000E+00,2.27027E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
230,2.30000E-01,7.13901E-01,7.68668E-01
230,2.30000E-01,7.19531E-01,4.81831E-01
230,2.30000E-01,7.12283E-01,1.94932E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
230,4.50000E-01,1.47725E+01,0.00000E+00
6.77239E-01,0.00000E+00,2.75076E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
252,4.40000E-01,3.72599E+01,0.00000E+00
0.00000E+00,5.70897E-01,1.00841E-02,0.00000E+00
252,4.40000E-01,3.72599E+01,0.00000E+00
0.00000E+00,5.70897E-01,1.00841E-02,0.00000E+00
252,4.40000E-01,1.86300E+01,0.00000E+00
0.00000E+00,3.45265E-01,2.26803E-02,0.00000E+00
253,4.40000E-01,3.44580E+01,0.00000E+00
0.00000E+00,2.35652E-01,5.60177E-02,0.00000E+00
253,4.40000E-01,3.44580E+01,0.00000E+00
9.89916E-01,4.72081E-02,0.00000E+00,0.00000E+00
253,4.40000E-01,3.44580E+01,0.00000E+00
0.00000E+00,2.35652E-01,5.60177E-02,0.00000E+00
253,4.40000E-01,3.44580E+01,0.00000E+00
9.89916E-01,4.72081E-02,0.00000E+00,0.00000E+00
253,4.40000E-01,1.72290E+01,0.00000E+00
0.00000E+00,3.41293E-01,7.10948E-02,0.00000E+00
253,4.40000E-01,1.72290E+01,0.00000E+00
9.77320E-01,1.11854E-01,0.00000E+00,0.00000E+00
254,4.40000E-01,3.16217E+01,0.00000E+00
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0.00000E+00,3.12538E-01,8.61090E-02,0.00000E+00
254,4.40000E-01,3.16217E+01,0.00000E+00
9.43982E-01,3.27372E-01,0.00000E+00,0.00000E+00
254,4.40000E-01,3.16217E+01,0.00000E+00
0.00000E+00,3.12538E-01,8.61090E-02,0.00000E+00
254,4.40000E-01,3.16217E+01,0.00000E+00
9.43982E-01,3.27372E-01,0.00000E+00,0.00000E+00
254,4.40000E-01,1.58108E+01,0.00000E+00
0.00000E+00,5.08159E-01,9.07587E-02,0.00000E+00
254,4.40000E-01,1.58108E+01,0.00000E+00
9.28905E-01,5.18068E-01,0.00000E+00,0.00000E+00
255,4.40000E-01,2.87547E+01,0.00000E+00
0.00000E+00,4.47899E-01,9.84617E-02,0.00000E+00
255,4.40000E-01,2.87547E+01,0.00000E+00
9.13891E-01,6.89127E-01,0.00000E+00,0.00000E+00
255,4.40000E-01,2.87547E+01,0.00000E+00
0.00000E+00,4.47899E-01,9.84617E-02,0.00000E+00
255,4.40000E-01,2.87547E+01,0.00000E+00
9.13891E-01,6.89127E-01,0.00000E+00,0.00000E+00
255,4.40000E-01,1.43773E+01,0.00000E+00
9.09241E-01,0.00000E+00,2.41133E-02,0.00000E+00
256,4.40000E-01,2.58604E+01,0.00000E+00
0.00000E+00,6.02829E-01,9.18768E-02,0.00000E+00
256,4.40000E-01,2.58604E+01,0.00000E+00
9.01538E-01,0.00000E+00,2.25589E-02,0.00000E+00
256,4.40000E-01,2.58604E+01,0.00000E+00
0.00000E+00,6.02829E-01,9.18768E-02,0.00000E+00
256,4.40000E-01,2.58604E+01,0.00000E+00
9.01538E-01,0.00000E+00,2.25589E-02,0.00000E+00
257,4.40000E-01,2.29423E+01,0.00000E+00
9.08123E-01,0.00000E+00,6.68119E-02,0.00000E+00
257,4.40000E-01,2.29423E+01,0.00000E+00
9.08123E-01,0.00000E+00,6.68119E-02,0.00000E+00
258,4.40000E-01,2.00042E+01,0.00000E+00
9.33639E-01,0.00000E+00,1.72826E-01,0.00000E+00
258,4.40000E-01,2.00042E+01,0.00000E+00
9.33330E-01,0.00000E+00,8.24585E-02,0.00000E+00
259,4.40000E-01,1.71656E+01,0.00000E+00
8.27174E-01,0.00000E+00,1.21871E-01,0.00000E+00
259,4.40000E-01,1.71656E+01,0.00000E+00
9.54729E-01,0.00000E+00,9.16609E-02,0.00000E+00
260,4.40000E-01,1.43181E+01,0.00000E+00
0.00000E+00,4.56776E-02,1.53676E-01,0.00000E+00
260,4.40000E-01,1.43181E+01,0.00000E+00
8.78129E-01,5.84624E-01,0.00000E+00,0.00000E+00
261,4.40000E-01,1.14633E+01,0.00000E+00
8.46324E-01,0.00000E+00,1.57236E-01,0.00000E+00
262,4.40000E-01,8.60264E+00,0.00000E+00
8.42764E-01,0.00000E+00,3.31340E-03,0.00000E+00
265,4.40000E-01,4.50651E+01,0.00000E+00
4.14219E-01,0.00000E+00,6.89501E-01,0.00000E+00
265,4.40000E-01,4.50651E+01,0.00000E+00
4.14219E-01,0.00000E+00,6.89501E-01,0.00000E+00
265,4.40000E-01,2.25325E+01,0.00000E+00
4.14219E-01,0.00000E+00,6.89501E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
265,1.00000E+00,4.71645E-01,9.94829E-01
265,1.00000E+00,5.20116E-01,4.84946E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
265,4.40000E-01,1.12663E+01,0.00000E+00
4.14219E-01,0.00000E+00,6.89501E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
266,4.40000E-01,4.33121E+01,0.00000E+00
3.10499E-01,0.00000E+00,7.93116E-01,0.00000E+00
266,4.40000E-01,4.33121E+01,0.00000E+00
3.10499E-01,0.00000E+00,7.93116E-01,0.00000E+00
266,4.40000E-01,2.16560E+01,0.00000E+00
3.10499E-01,0.00000E+00,7.93116E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
266,1.00000E+00,4.24430E-01,5.05861E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
266,4.40000E-01,1.08280E+01,0.00000E+00
3.10499E-01,0.00000E+00,7.93116E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
267,4.40000E-01,4.15569E+01,0.00000E+00
2.06884E-01,0.00000E+00,9.10655E-01,0.00000E+00
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267,4.40000E-01,4.15569E+01,0.00000E+00
2.06884E-01,0.00000E+00,9.10655E-01,0.00000E+00
267,4.40000E-01,2.07784E+01,0.00000E+00
2.06884E-01,0.00000E+00,9.10655E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
267,1.00000E+00,3.26133E-01,4.87370E-01
267,1.00000E+00,3.74957E-01,1.66827E-02
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
268,4.40000E-01,3.96834E+01,0.00000E+00
8.93448E-02,0.00000E+00,9.87915E-01,0.00000E+00
268,4.40000E-01,3.96834E+01,0.00000E+00
8.93448E-02,0.00000E+00,9.87915E-01,0.00000E+00
268,4.40000E-01,1.98417E+01,0.00000E+00
8.93448E-02,0.00000E+00,9.87915E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
268,4.40000E-01,2.12701E-01,7.44043E-01
268,4.40000E-01,2.60295E-01,1.24011E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
269,4.40000E-01,3.78053E+01,0.00000E+00
1.34364E-02,0.00000E+00,0.00000E+00,4.29103E-01
269,4.40000E-01,3.78053E+01,0.00000E+00
1.34364E-02,0.00000E+00,0.00000E+00,4.29103E-01
269,4.40000E-01,1.89026E+01,0.00000E+00
1.19816E-02,0.00000E+00,0.00000E+00,6.54735E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
269,4.40000E-01,2.23367E-01,6.68943E-01
269,4.40000E-01,2.27030E-01,2.15997E-01
270,4.40000E-01,2.08297E-01,5.68508E-01
270,4.40000E-01,1.99628E-01,1.15236E-01
271,4.40000E-01,1.65186E-01,9.19001E-01
271,4.40000E-01,1.93521E-01,4.68865E-01
271,4.40000E-01,1.71950E-01,1.57622E-02
272,4.40000E-01,1.63479E-01,8.22646E-01
272,4.40000E-01,1.79324E-01,3.69996E-01
273,4.40000E-01,1.63050E-01,7.25307E-01
273,4.40000E-01,1.65990E-01,2.71855E-01
274,4.40000E-01,1.63986E-01,6.28031E-01
274,4.40000E-01,1.53785E-01,1.74367E-01
275,4.40000E-01,1.33219E-01,9.97405E-01
275,4.40000E-01,1.52586E-01,5.35087E-01
275,4.40000E-01,1.38280E-01,7.26599E-02
276,4.40000E-01,1.38724E-01,9.22151E-01
276,4.40000E-01,1.52606E-01,4.59715E-01
277,4.40000E-01,1.43335E-01,8.46880E-01
277,4.40000E-01,1.51731E-01,3.84343E-01
278,4.40000E-01,1.47053E-01,7.71510E-01
278,4.40000E-01,1.49961E-01,3.08971E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
278,3.30000E-01,3.07719E-01,8.87031E-01
278,3.30000E-01,3.19375E-01,5.40258E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
279,4.40000E-01,1.49878E-01,6.96139E-01
279,4.40000E-01,1.47298E-01,2.33600E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
279,3.30000E-01,3.05198E-01,9.27255E-01
279,3.30000E-01,3.19053E-01,5.80545E-01
279,3.30000E-01,3.13956E-01,2.33583E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
279,4.40000E-01,1.49075E+01,0.00000E+00
2.41088E-01,0.00000E+00,7.71539E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
280,2.30000E-01,3.06537E-01,9.07794E-01
280,2.30000E-01,3.18476E-01,6.20831E-01
280,3.30000E-01,3.18476E-01,6.20831E-01
280,3.30000E-01,3.15580E-01,2.73806E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
280,4.40000E-01,9.94236E+00,0.00000E+00
2.28461E-01,0.00000E+00,6.26488E-01,0.00000E+00
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,NAME=HOOP,SINGLE
281,2.30000E-01,3.13996E-01,7.68966E-01
281,2.30000E-01,3.19651E-01,4.81785E-01
281,2.30000E-01,3.12317E-01,1.94662E-01
*REBAR,ELEMENT=CONTINUUM,MATERIAL=REMAT1,GEOMETRY=SKEW,NAME=SKEW
281,4.50000E-01,1.49177E+01,0.00000E+00
2.76955E-01,0.00000E+00,6.74863E-01,0.00000E+00
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***  rebar in haunch (input manually) ***
*****************************************
*REBAR,ELEMENT=CONTINUUM,MAT=REMAT1,GEOMETRY=SKEW,NAME=SKEW
179,4.40000E-01,4.95443E+01,0.00000E+00
5.00000E-01,0.00000E+00,5.66000E-01,0.00000E+00
179,4.40000E-01,4.95443E+01,0.00000E+00
5.00000E-01,0.00000E+00,5.66000E-01,0.00000E+00
179,4.40000E-01,2.47722E+01,0.00000E+00
5.00000E-01,0.00000E+00,5.66000E-01,0.00000E+00
180,3.10000E-01,2.49854E+01,0.00000E+00
0.00000E+00, .7, 0., .2
181,3.10000E-01,2.47839E+01,0.00000E+00
0, .456, 0, .357
181,3.10000E-01,2.42077E+01,0.00000E+00
0, 0, .226, .8
182,3.10000E-01,2.47839E+01,0.00000E+00
0., .313, 0., .4
182,3.10000E-01,2.42077E+01,0.00000E+00
0, 0, .118, .9
182,4.40000E-01,4.95443E+01,0.00000E+00
.232, 0., .675, 0.
182,4.40000E-01,4.95443E+01,0.00000E+00
.232, 0., .675, 0.
182,4.40000E-01,2.47722E+01,0.00000E+00
.232, 0., .675, 0.
183,3.10000E-01,2.41755E+01,0.00000E+00
0., .367, 0., .75
183,4.40000E-01,4.95443E+01,0.00000E+00
.325, 0., .675, 0.
183,4.40000E-01,4.95443E+01,0.00000E+00
.325, 0., .675, 0.
183,4.40000E-01,2.47722E+01,0.00000E+00
.325, 0., .675, 0.
184,3.10000E-01,2.37625E+01,0.00000E+00
0., .635, 0., .35
184,4.40000E-01,4.95443E+01,0.00000E+00
.325, 0., .63, 0.
184,4.40000E-01,4.95443E+01,0.00000E+00
.325, 0., .63, 0.
184,4.40000E-01,2.47722E+01,0.00000E+00
.325, 0., .63, 0.
185,4.40000E-01,4.6E+01,0.00000E+00
.37, 0., .582, 0.
185,4.40000E-01,4.6E+01,0.00000E+00
.37, 0., .582, 0.
185,4.40000E-01,2.3E+01,0.00000E+00
.37, 0., .582, 0.
186,3.10000E-01,2.30690E+01,0.00000E+00
0.00000E+00, .7, 0., .3
188,3.10000E-01,2.49854E+01,0.00000E+00
0., 0., .6, .9
191,3.10000E-01,2.44939E+01,0.00000E+00
0., 0., .07, .7
193,3.10000E-01,2.33748E+01,0.00000E+00
0., 0., .8, .2
200,3.10000E-01,2.45822E+01,0.00000E+00
0., 0., .05, .7
201,3.10000E-01,2.40214E+01,0.00000E+00
0., 0., .6, .2
202,3.10000E-01,2.35896E+01,0.00000E+00
0., 0., .2, .404
203,3.10000E-01,2.33748E+01,0.00000E+00
0., 0., .2, .5
207,3.10000E-01,2.51987E+01,0.00000E+00
0., .4, 0., .5
208,3.10000E-01,2.50777E+01,0.00000E+00
0., .2, 0., .75
208,3.10000E-01,2.50777E+01,0.00000E+00
0., .8, 0., .1
209,3.10000E-01,2.49567E+01,0.00000E+00
0., .95, 0., .65
210,3.10000E-01,2.44939E+01,0.00000E+00
0., .55, 0., .5
210,3.10000E-01,2.44939E+01,0.00000E+00
0., 0., .35, .35
210,3.10000E-01,2.47839E+01,0.00000E+00
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0., .55, 0., .95
211,3.10000E-01,2.40214E+01,0.00000E+00
0., .6, 0., .362
211,3.10000E-01,2.40214E+01,0.00000E+00
0., .8, 0., .6
212,3.10000E-01,2.35896E+01,0.00000E+00
0., .7, 0., .8
213,3.10000E-01,2.33748E+01,0.00000E+00
0., .2, 0., .95
213,3.10000E-01,2.32535E+01,0.00000E+00
0., .6, 0., .4
*****************************************************************
** interface spring elements
***  vertical springs between basemat and soil ***
*ELEMENT,TYPE=SPRING2,ELSET=SPRBS
2034, 2034,    1
2134, 2134,    6
2234, 2234,   11
2334, 2334,   16
2434, 2434,   21
2534, 2534,   26
2634, 2634,   31
2734, 2734,   36
2834, 2834,   41
2934, 2934,   46
3034, 3034,   51
3134, 3134,   56
3234, 3234,   61
3334, 3334,   66
3434, 3434,   71
3534, 3534,   76
3634, 3634,   81
3734, 3734,   86
3834, 3834,   91
3934, 3934,   96
4034, 4034,  101
4134, 4134,  106
4234, 4234,  111
4334, 4334,  116
4434, 4434,  121
4534, 4534,  126
4634, 4634,  131
4734, 4734,  136
4834, 4834,  141
4934, 4934,  146
5034, 5034,  151
5134, 5134,  156
5234, 5234,  161
5334, 5334,  166
5434, 5434,  171
5534, 5534,  176
5634, 5634,  181
5734, 5734,  186
5834, 5834,  191
5934, 5934,  196
6034, 6034,  201
6134, 6134,  206
6234, 6234,  211
6334, 6334,  216
6434, 6434,  221
6534, 6534,  226
6634, 6634,  231
6734, 6734,  236
6834, 6834,  241
6934, 6934,  246
7034, 7034,  251
7134, 7134,  256
7234, 7234,  261
7334, 7334,  266
7434, 7434,  271
7534, 7534,  276
7634, 7634,  281
7734, 7734,  286
7834, 7834,  291
7934, 7934,  296
8034, 8034,  301
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8134, 8134,  306
8234, 8234,  311
8334, 8334,  316
8434, 8434,  329
8534, 8534,  334
8634, 8634,  570
8734, 8734,  577
8834, 8834,  582
8934, 8934,  587
9034, 9034,  592
9134, 9134,  597
9234, 9234,  602
9334, 9334,  734
9434, 9434,  745
9534, 9534,  759
9634, 9634,  764
9734, 9734,  769
9834, 9834,  774
9934, 9934,  779
10034,10034,  751
10134,10134,  620
10234,10234,  625
10334,10334,  630
10434,10434,  635
10534,10534,  640
10634,10634,  645
10734,10734,  650
10834,10834,  655
** horizontal footing springs note element 10934=10834 horiz.
*ELEMENT,TYPE=SPRING2,ELSET=SPRSF
10934, 655,10834
10835, 656,10835
10836, 657,10836
10837, 658,10837
10838, 659,10838
** horizontal notension springs between soil (below and side of tank)
*ELEMENT,TYPE=SPRING2,ELSET=SLIP
10800,  10800,11000
*ELGEN,ELSET=SLIP
10800,33,1
** vertical springs over footing
*ELEMENT,TYPE=SPRING2,ELSET=SPRFT
10239,  758,10239
10339,  624,10339
10439,  629,10439
10539,  634,10539
10639,  639,10639
10739,  644,10739
10839,  649,10839
10939, 654,10939
11039, 659, 11039
** horizontal wall/soil springs bottom half
*ELEMENT,TYPE=SPRING2,ELSET=SPR1WALL
10041,  758,10041
10042,  692,10042
10043,  682,10043
10044,  701,10044
10045,  710,10045
10046,  722,10046
10047,  824,10047
10048,  825,10048
10049,  826,10049
10050,  827,10050
10051,  885,10051
10052,  886,10052
10053,  887,10053
10054,  888,10054
10055,  889,10055
10056,  890,10056
10057,  948,10057
** horizontal wall/soil springs top half
*ELEMENT,TYPE=SPRING2,ELSET=SPR2WALL
10060,  949,10060
10061,  950,10061
10062,  951,10062
10063,  952,10063
```

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10064,  953,10064
10065,  995,10065
10066,  996,10066
10067,  997,10067
10068,  998,10068
10069, 1045,10069
10070, 1080,10070
10071, 1089,10071
10072, 1098,10072
10073, 1107,10073
10074, 1116,10074
10075, 1125,10075
10076, 1134,10076
10077, 1143,10077
*ELEMENT,TYPE=SPRING2
10278, 1143, 10278
****  soil elements below basemat elevation ***
*ELEMENT,TYPE=CAX8R,ELSET=BOTSOIL
2000, 2000, 2200, 2202, 2002, 2100, 2201, 2102, 2001
*ELGEN,ELSET=BOTSOIL
2000,44,200,200,16,2,2
*ELEMENT,TYPE=CAX8R,ELSET=BOTSOIL
11000, 11000, 11200, 11202, 11002, 11100, 11201, 11102, 11001
*ELGEN,ELSET=BOTSOIL
11000,8,200,200,16,2,2
****  soil elements alongside footing  ****
*ELEMENT,TYPE=CAX8R,ELSET=FOOTSOIL
11034, 11034, 11234, 11236, 11036, 11134, 11235, 11136, 11035
*ELGEN,ELSET=FOOTSOIL
11034,8,200,200,2,2,2
****  soil elements alongside lower half of tank wall ****
*ELEMENT,TYPE=CAX8R,ELSET=WSOIL1
10241, 10241, 10441, 10443, 10243, 10341, 10442, 10343, 10242
*ELGEN,ELSET=WSOIL1
10241,12,200,200,8,2,2
****  soil elements alongside top half of tank wall  ****
*ELEMENT,TYPE=CAX8R,ELSET=WSOIL2
10259, 10259, 10459, 10461, 10261, 10359, 10460, 10361, 10260
*ELGEN,ELSET=WSOIL2
10259,12,200,200,9,2,2
*ELEMENT,TYPE=CAX8R,ELEMENT=TOPSOIL
5880, 5880, 6080, 6082, 5882, 5980, 6081, 5982, 5881
****  soil elements above haunch elevation  ****
*ELGEN,ELSET=TOPSOIL
5880,34,200,200,6,2,2
************************************
***  all tank/soil and soil/soil springs ****
*ELSET,ELSET=ALLSPRNG
SPRBS,SPRSF,SLIP,SPRFT,SPR1WALL,SPR2WALL
****************************************
** The Global Coordinates of the nodes corresponding to the "Dome-top" are
** rotated, such that the new Global coordinates for these nodes shall be
** radial and tangential to the Dome surface.
**
*NSET,NSET=R1155,GENERATE
** Tank Nodes
1493,1619,9
** Spring, Dummy, Soil Nodes
5878,7278,100
5879,7279,100
5880,7280,100
**
*NSET,NSET=R804,GENERATE
** Tank Nodes
1385,1484,9
** Spring, Dummy, Soil Nodes
7378,8478,100
7379,8479,100
7380,8480,100
**
*NSET,NSET=FLAT,GENERATE
** Tank Nodes
1152,1224,9
1289,1289,1
1322,1376,9
** Spring, Dummy, Soil Nodes
```

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8578,10178,100
8579,10179,100
8580,10180,100
**
*NSET,NSET=N553
553
*NSET,NSET=N556
556
*NSET,NSET=N559
559
*NSET,NSET=N562
562
*NSET,NSET=N565
565
*NSET,NSET=N608
608
*NSET,NSET=N609
609
*NSET,NSET=N661
661
*NSET,NSET=N611
611
*NSET,NSET=N674
674
*NSET,NSET=N693
693
*NODE,NSET=STEELBOT
 2035,+1.10547E-10, 8.00000E+00, 0.00000E+00
 2135, 6.19088E+00, 8.00280E+00, 0.00000E+00
 2235, 1.23818E+01, 8.01121E+00, 0.00000E+00
 2335, 1.85726E+01, 8.02523E+00, 0.00000E+00
 2435, 2.47635E+01, 8.04485E+00, 0.00000E+00
 2535, 3.09543E+01, 8.07008E+00, 0.00000E+00
 2635, 3.71451E+01, 8.10092E+00, 0.00000E+00
 2735, 4.33359E+01, 8.13736E+00, 0.00000E+00
 2835, 4.95266E+01, 8.17941E+00, 0.00000E+00
 2935, 5.57173E+01, 8.22706E+00, 0.00000E+00
 3035, 6.19079E+01, 8.28032E+00, 0.00000E+00
 3135, 6.80985E+01, 8.33919E+00, 0.00000E+00
 3235, 7.42891E+01, 8.40366E+00, 0.00000E+00
 3335, 8.04796E+01, 8.47374E+00, 0.00000E+00
 3435, 8.66700E+01, 8.54943E+00, 0.00000E+00
 3535, 9.28603E+01, 8.63072E+00, 0.00000E+00
 3635, 9.90506E+01, 8.71762E+00, 0.00000E+00
 3735, 1.05241E+02, 8.81012E+00, 0.00000E+00
 3835, 1.11431E+02, 8.90823E+00, 0.00000E+00
 3935, 1.17621E+02, 9.01195E+00, 0.00000E+00
 4035, 1.23811E+02, 9.12127E+00, 0.00000E+00
 4135, 1.30001E+02, 9.23620E+00, 0.00000E+00
 4235, 1.36190E+02, 9.35673E+00, 0.00000E+00
 4335, 1.42380E+02, 9.48287E+00, 0.00000E+00
 4435, 1.48569E+02, 9.61461E+00, 0.00000E+00
 4535, 1.54759E+02, 9.75196E+00, 0.00000E+00
 4635, 1.60948E+02, 9.89491E+00, 0.00000E+00
 4735, 1.67137E+02, 1.00435E+01, 0.00000E+00
 4835, 1.73326E+02, 1.01976E+01, 0.00000E+00
 4935, 1.79515E+02, 1.03574E+01, 0.00000E+00
 5035, 1.85704E+02, 1.05228E+01, 0.00000E+00
 5135, 1.91892E+02, 1.06938E+01, 0.00000E+00
 5235, 1.98080E+02, 1.08703E+01, 0.00000E+00
 5335, 2.04269E+02, 1.10525E+01, 0.00000E+00
 5435, 2.10457E+02, 1.12403E+01, 0.00000E+00
 5535, 2.16644E+02, 1.14337E+01, 0.00000E+00
 5635, 2.22832E+02, 1.16327E+01, 0.00000E+00
 5735, 2.29020E+02, 1.18373E+01, 0.00000E+00
 5835, 2.35207E+02, 1.20475E+01, 0.00000E+00
 5935, 2.41394E+02, 1.22633E+01, 0.00000E+00
 6035, 2.47581E+02, 1.24847E+01, 0.00000E+00
 6135, 2.53768E+02, 1.27117E+01, 0.00000E+00
 6235, 2.59954E+02, 1.29443E+01, 0.00000E+00
 6335, 2.66141E+02, 1.31826E+01, 0.00000E+00
 6435, 2.72327E+02, 1.34264E+01, 0.00000E+00
 6535, 2.78512E+02, 1.36758E+01, 0.00000E+00
 6635, 2.84698E+02, 1.39308E+01, 0.00000E+00
 6735, 2.90883E+02, 1.41915E+01, 0.00000E+00
 6835, 2.97069E+02, 1.44577E+01, 0.00000E+00
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 6935, 3.03254E+02, 1.47295E+01, 0.00000E+00
 7035, 3.09438E+02, 1.50069E+01, 0.00000E+00
 7135, 3.15623E+02, 1.52900E+01, 0.00000E+00
 7235, 3.21807E+02, 1.55786E+01, 0.00000E+00
 7335, 3.27991E+02, 1.58728E+01, 0.00000E+00
 7435, 3.34174E+02, 1.61727E+01, 0.00000E+00
 7535, 3.40358E+02, 1.64781E+01, 0.00000E+00
 7635, 3.46541E+02, 1.67891E+01, 0.00000E+00
 7735, 3.52723E+02, 1.71058E+01, 0.00000E+00
 7835, 3.58906E+02, 1.74280E+01, 0.00000E+00
 7935, 3.65088E+02, 1.77558E+01, 0.00000E+00
 8035, 3.71270E+02, 1.80892E+01, 0.00000E+00
 8135, 3.77452E+02, 1.84283E+01, 0.00000E+00
 8235, 3.83633E+02, 1.87729E+01, 0.00000E+00
 8335, 3.89814E+02, 1.91231E+01, 0.00000E+00
 8435, 3.95994E+02, 1.94789E+01, 0.00000E+00
 8535, 4.00435E+02, 1.97380E+01, 0.00000E+00
 8635, 4.04875E+02, 2.00000E+01, 0.00000E+00
*NCOPY,CHANGE NUMBER=8182,OLD SET=N553, SHIFT, NEW SET=STEELKNL
-.0013053,.0099144,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8279,OLD SET=N556, SHIFT, NEW SET=STEELKNL
-.0025882,.0096593,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8376,OLD SET=N559, SHIFT, NEW SET=STEELKNL
-.0038268,.0092388,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8473,OLD SET=N562, SHIFT, NEW SET=STEELKNL
-.005,.0086603,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8570,OLD SET=N565, SHIFT, NEW SET=STEELKNL
-.0060876,.0079335,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8627,OLD SET=N608, SHIFT, NEW SET=STEELKNL
-.0070711,.0070711,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8726,OLD SET=N609, SHIFT, NEW SET=STEELKNL
-.0079335,.0060876,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8774,OLD SET=N661, SHIFT, NEW SET=STEELKNL
-.0086603,.005,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8924,OLD SET=N611, SHIFT, NEW SET=STEELKNL
-.0092388,.0038268,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=8961,OLD SET=N674, SHIFT, NEW SET=STEELKNL
-.0096593,.0025882,0.
1.,0.,0.,-1.,0.,0., 0.
*NCOPY,CHANGE NUMBER=9042,OLD SET=N693, SHIFT, NEW SET=STEELKNL
-.0099144,.0013053,0.
1.,0.,0.,-1.,0.,0., 0.
*NODE,NSET=STEELWAL
 9835, 4.51000E+02, 6.61242E+01, 0.00000E+00
 9836, 4.51000E+02, 6.90621E+01, 0.00000E+00
 9837, 4.51000E+02, 7.20000E+01, 0.00000E+00
 9838, 4.51000E+02, 7.90000E+01, 0.00000E+00
 9839, 4.51000E+02, 8.60000E+01, 0.00000E+00
 9840, 4.51000E+02, 9.30000E+01, 0.00000E+00
 9841, 4.51000E+02, 1.00000E+02, 0.00000E+00
 9842, 4.51000E+02, 1.08000E+02, 0.00000E+00
 9843, 4.51000E+02, 1.16000E+02, 0.00000E+00
 9844, 4.51000E+02, 1.24000E+02, 0.00000E+00
 9845, 4.51000E+02, 1.32000E+02, 0.00000E+00
 9846, 4.51000E+02, 1.40000E+02, 0.00000E+00
 9847, 4.51000E+02, 1.48000E+02, 0.00000E+00
 9848, 4.51000E+02, 1.59333E+02, 0.00000E+00
 9849, 4.51000E+02, 1.70667E+02, 0.00000E+00
 9850, 4.51000E+02, 1.82000E+02, 0.00000E+00
 9851, 4.51000E+02, 1.93333E+02, 0.00000E+00
 9852, 4.51000E+02, 2.04667E+02, 0.00000E+00
 9853, 4.51000E+02, 2.16000E+02, 0.00000E+00
 9854, 4.51000E+02, 2.21000E+02, 0.00000E+00
 9855, 4.51000E+02, 2.26000E+02, 0.00000E+00
 9856, 4.51000E+02, 2.31000E+02, 0.00000E+00
 9857, 4.51000E+02, 2.36000E+02, 0.00000E+00
*NODE,NSET=STIFFENR
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 9637, 4.46000E+02, 7.20000E+01, 0.00000E+00
 9645, 4.46000E+02, 1.32000E+02, 0.00000E+00
 9651, 4.46000E+02, 1.93333E+02, 0.00000E+00
 9657, 4.46000E+02, 2.36000E+02, 0.00000E+00
 9737, 4.48500E+02, 7.20000E+01, 0.00000E+00
 9745, 4.48500E+02, 1.32000E+02, 0.00000E+00
 9751, 4.48500E+02, 1.93333E+02, 0.00000E+00
 9757, 4.48500E+02, 2.36000E+02, 0.00000E+00
***  liner elements  ***
*ELEMENT,TYPE=SAX2,ELSET=STEELBOT
2035,2035,2135,2235
*ELGEN,ELSET=STEELBOT
2035,32,200,200
***  more liner elements  ***
*ELEMENT,TYPE=SAX2,ELSET=STEELKNL
8435,8435,8535,8635
*ELGEN,ELSET=STEELKNL
8435,7,200,200
*ELEMENT,TYPE=SAX2,ELSET=STEELKNL
9835,9835,9836,9837
9837,9837,9838,9839
***  more liner elements  ***
*ELEMENT,TYPE=SAX2,ELSET=STEELWAL
9839,9839,9840,9841
*ELGEN,ELSET=STEELWAL
9839,9,2,2
***  steel stiffeners (angles) for liner ****
*ELEMENT,TYPE=SAX2,ELSET=STIFFENR
 9637,9637,9737,9837
 9645,9645,9745,9845
 9651,9651,9751,9851
 9657,9657,9757,9857
*SHELLSECTION,ELSET=STEELBOT,MATERIAL=LINER
 0.25,5
*SHELLSECTION,ELSET=STEELWAL,MATERIAL=LINER
 0.25,5
*SHELLSECTION,ELSET=STEELKNL,MATERIAL=LINER
 0.3125,5
*SHELLSECTION,ELSET=STIFFENR,MATERIAL=LINER
 0.512,5
*** t=.512 IS USED FOR STIFFENER SO  AREA OF L5X3-1/2X5/16 =2.56
*MATERIAL,NAME=LINER
*DENSITY
 7.34E-4
*ELASTIC
29.5E6, .3, 70
28.8E6, .3, 200
28.3E6, .3, 300
27.7E6, .3, 400
*PLASTIC
33000, 0., 70.
60000, .209, 70.
30110, 0., 200
60000, .209, 200
29180, 0., 300
60000, .210, 300
28260, 0., 400
60000, .210, 400
*EXPANSION,ZERO=70
6.41E-6, 70
6.50E-6, 100
6.67E-6, 200
6.87E-6, 300
7.07E-6, 400
***  springs between liner and basemat ****
*ELEMENT,TYPE=SPRING2,ELSET=SPRBOTY
 2036,346, 2035
 2136,349, 2135
 2236,352, 2235
 2336,355, 2335
 2436,358, 2435
 2536,361, 2535
 2636,364, 2635
 2736,367, 2735
 2836,370, 2835
 2936,373, 2935
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3036,376, 3035
3136,379, 3135
3236,382, 3235
3336,385, 3335
3436,388, 3435
3536,391, 3535
3636,394, 3635
3736,397, 3735
3836,400, 3835
3936,403, 3935
4036,406, 4035
4136,409, 4135
4236,412, 4235
4336,415, 4335
4436,418, 4435
4536,421, 4535
4636,424, 4635
4736,427, 4735
4836,430, 4835
4936,433, 4935
5036,436, 5035
5136,439, 5135
5236,442, 5235
5336,445, 5335
5436,448, 5435
5536,451, 5535
5636,454, 5635
5736,457, 5735
5836,460, 5835
5936,463, 5935
6036,466, 6035
6136,469, 6135
6236,472, 6235
6336,475, 6335
6436,478, 6435
6536,481, 6535
6636,484, 6635
6736,487, 6735
6836,490, 6835
6936,493, 6935
7036,496, 7035
7136,499, 7135
7236,502, 7235
7336,505, 7335
7436,508, 7435
7536,511, 7535
7636,514, 7635
7736,517, 7735
7836,520, 7835
7936,523, 7935
8036,526, 8035
8136,529, 8135
8236,532, 8235
8336,535, 8335
8436,541, 8435
8536,544, 8535
8636,550, 8635
*** springs between liner and concrete knuckle ****
*ELEMENT,TYPE=SPRING2,ELSET=SPRKNL
8736,8735, 553
8836,8835, 556
8936,8935, 559
9036,9035, 562
9136,9135, 565
9236,9235, 608
9336,9335, 609
9436,9435, 661
9536,9535, 611
9636,9635, 674
9736,9735, 693
*** springs between liner and concrete wall ****
*ELEMENT,TYPE=SPRING2,ELSET=SPRWALX
 9935, 9835,711
 9936, 9836,714
 9937, 9837,784
 9938, 9838,785
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 9939, 9839,786
 9940, 9840,787
 9941, 9841,829
 9942, 9842,830
 9943, 9843,831
 9944, 9844,832
 9945, 9845,833
 9946, 9846,834
 9947, 9847,892
 9948, 9848,893
 9949, 9849,894
 9950, 9850,895
 9951, 9851,896
 9952, 9852,897
 9953, 9853,955
 9954, 9854,956
 9955, 9855,957
 9956, 9856,958
 9957, 9857,1002
****  transform nodes at dome/soil interface into local coord sys  ***
*TRANSFORM,NSET=R1155,TYPE=C
0.0,-759.916,0.0,0.0,-759.916,0.00001
**
*TRANSFORM,NSET=R804,TYPE=C
55.41,-413.315,0.0,55.41,-413.315,0.00001
**
*TRANSFORM,NSET=FLAT
.358,.9335,0, -.9335,.358,0
**
*ORIENTATION,NAME=KNL,SYSTEM=CYL,DEFINITION=COORDINATES
404.875,66.125,0,  404.875,66.125,1
****************
***  all springs are nonlinear to permit gaps with little
***  associated force at liner/concrete and concrete/soil
***  interfaces.
****************************
***  springs acting normal to inside of knuckle ***
*SPRING,ELSET=SPRKNL,ORIENT=KNL,NONLINEAR
1,1
***  point-wise force-deflection relation  ***
-50.,-500.
0.,0.
1000.,.001
1.0E+11,100.
******************
***  all liner/concrete springs ***
*ELSET,ELSET=STEELSPR
SPRBOTY,SPRKNL,SPRWALX,
***  all liner elements  ***
*ELSET,ELSET=STEELALL
STEELBOT,STEELKNL,STEELWAL,STIFFENR,
****************
*** springs acting horizontally ***
*ELSET,ELSET=NLCP1
SPRWALX,SPRSF,SL[illegible],SPR1WALL,SPR2WALL
*SPRING,ELSET=NLCP1,NONLINEAR
1,1
-50.,-500.
0.,0.
1000.,.001
1.0E+11,100.
***********************
***  springs acting vertically  ***
*ELSET,ELSET=NLCP2
SPRBOTY,SPRBS,SPRFT,10278
*SPRING,ELSET=NLCP2,NONLINEAR
2,2
-50.,-500.
0.,0.
1000.,.001
1.0E+11,100.
*******************
****************************
*MATERIAL,NAME=RCONC
*USER MATERIAL, CONSTANTS=25
      3,   3000.,  100E-6,    3.119E6,    0.15,      0.,      0.,      0.
```

```
     0.,     0.,     0.,     0.,     0.,     0.,     0.,     0.
     0.,     0.,     0.,     0.,     0.,     0.,     0.,     0.
     4.,
*DEPVAR
44
*DENSITY
 2.25E-04
*EXPANSION
1.6E-6
********************
***  non-UMAT concrete (not used)  ****
*MATERIAL,NAME=ECONC
*DENSITY
 2.25E-04
*ELASTIC
4.066E6,.15
**---------- ASSUME FY=.5*FMAX, EMAX=2*FMAX/E
*CONCRETE
2250.,0.
4500.,.0011
*FAILURE RATIOS
1.16,.0722
*TENSION STIFFENING
0.,1.E-3
*SHEAR RETENTION
1.,1.E-2
*EXPANSION
 5.7E-06
********************
***  soft elastic material for refractory concrete  ***
*MATERIAL,NAME=GROUT
*DENSITY
 2.25E-04
*ELASTIC
 3.12E+04, 1.50E-01
*EXPANSION
 5.7E-06
**************************
***  rebar material  ***
*MATERIAL,NAME=REMAT1
*DENSITY
 7.34E-04
*ELASTIC
28.3E+06,.3,70.
27.6E+06,.3,200.
27.0E+06,.3,300.
26.5E+06,.3,400.
*EXPANSION
 6.50E-06
*PLASTIC
38000,     0,70
40000,0.0001,70
45000, 0.001,70
49000, 0.005,70
52000, 0.012,70
60000,  0.02,70
70000,  0.05,70
75000,  0.15,70
****
38000,     0,100
40000,0.0001,100
45000, 0.001,100
49000, 0.005,100
52000, 0.012,100
60000,  0.02,100
70000,  0.05,100
75000,  0.15,100
****
34580,     0,200
36400,0.0001,200
40950, 0.001,200
44590, 0.005,200
47320, 0.012,200
54600,  0.02,200
63700,  0.05,200
68250,  0.15,200
```

```
****
33725,     0,300
35500,0.0001,300
39938, 0.001,300
43488, 0.005,300
46150, 0.012,300
53250,  0.02,300
62125,  0.05,300
66563,  0.15,300
****
32585,     0,400
34300,0.0001,400
38588, 0.001,400
42018, 0.005,400
44590, 0.012,400
51450,  0.02,400
60025,  0.05,400
64313,  0.15,400
************************
***  field-variable-dependent soil material  ***
*MATERIAL,NAME=SOIL
*DENSITY
1.647E-04
*ELASTIC,DEPENDENCIES=1
3000.0,0.35,,-100.0
3000.0,0.35,,0.0
3000.0,0.35,,13.9
5620.0,0.35,,27.8
8440.0,0.35,,55.6
8440.0,0.35,,100.0
20000.0,0.35,,250.0
20000.0,0.35,,350.0
*DRUCKER PRAGER
35.2,1.,35.2
*YIELD,DEPENDENCIES=1
37.3,0.0,,-100.0
37.3,0.0,,0.0
37.3,0.0,,13.9
78.6,0.0,,27.8
128.1,0.0,,55.6
128.1,0.0,,100.0
1000.,0.0,,250.0
1000.,0.0,,350.0
******************************
*SOLIDSECTION,ELSET=RCONC,MATERIAL=RCONC
*SOLIDSECTION,ELSET=GROUT,MATERIAL=GROUT
*SOLIDSECTION,ELSET=BOTSOIL,MATERIAL=SOIL
*ELSET,ELSET=FILLSOIL
FOOTSOIL,WSOIL1,WSOIL2,TOPSOIL
*SOLIDSECTION,ELSET=FILLSOIL,MATERIAL=SOIL
***************************
***  node sets for imposing boundary conditions and
***   constraint equations  ****************
*******************************************
***  H1x node set is at soil/basemat interface where
***  x = B if a soil node, x = D if a dummy node,
***  x = T if a spring node.
***************************
*NSET,NSET=H1B,GENERATE
2032,10832,100
*NSET,NSET=H1D,GENERATE
2033,10833,100
*NSET,NSET=H1T,GENERATE
2034,10834,100
************
*** BOTSOIL/FOOTSOIL interface nodes where
*** x = B if a BOTSOIL node, x = D if a dummy node,
*** x = T if a FOOTSOIL node.
*NSET,NSET=H2B,GENERATE
11032,12632,100
*NSET,NSET=H2D,GENERATE
11033,12633,100
*NSET,NSET=H2T,GENERATE
11034,12634,100
************
***  footing/WSOIL1 interface nodes  ***
```

```
*NSET,NSET=H3B,GENERATE
10239,11039,100
*NSET,NSET=H3D,GENERATE
10240,11040,100
*NSET,NSET=H3T,GENERATE
10241,11041,100
************
***  FOOTSOIL/WSOIL1 interface nodes  ***
*NSET,NSET=H4B,GENERATE
11138,12638,100
*NSET,NSET=H4D,GENERATE
11140,12640,100
*NSET,NSET=H4T,GENERATE
11141,12641,100
*************
***  WSOIL1/WSOIL2 interface nodes  ***
*NSET,NSET=H5B,GENERATE
10257,12657,100
*NSET,NSET=H5D,GENERATE
10258,12658,100
*NSET,NSET=H5T,GENERATE
10259,12659,100
*********************
***  WSOIL2/TOPSOIL interface nodes  ***
*NSET,NSET=H6B,GENERATE
10377,12677,100
*NSET,NSET=H6D,GENERATE
10379,12679,100
*NSET,NSET=H6T,GENERATE
10380,12680,100
*********************
***  dome/TOPSOIL interface nodes  ***
*NSET,NSET=H7B,GENERATE
1152,1224,9
1289,1289,1
1322,1376,9
1493,1619,9
1385,1484,9
*NSET,NSET=H7D,GENERATE
5879,10179,100
*NSET,NSET=H7T,GENERATE
5880,10180,100
*********************
***  footing/FOOTSOIL interface nodes  ***
*NSET,NSET=V1L,GENERATE
10834,10838
*NSET,NSET=V1D,GENERATE
10934,10938
*NSET,NSET=V1R,GENERATE
11034,11038
*********************
***  wall/WSOIL1 interface nodes  ***
*NSET,NSET=V2L,GENERATE
10041,10057
*NSET,NSET=V2D,GENERATE
10141,10157
*NSET,NSET=V2R,GENERATE
10241,10257
*********************
***  wall/WSOIL2 interface nodes  ***
*NSET,NSET=V3L,GENERATE
10060,10077
*NSET,NSET=V3D,GENERATE
10160,10177
*NSET,NSET=V3R,GENERATE
10260,10277
**********************
***  soil-to-soil interface nodes in BOTSOIL  ***
*NSET,NSET=V4L,GENERATE
10800,10832
*NSET,NSET=V4R,GENERATE
11000,11032
******************************
***  Constraint equations to introduce new material in
***  an undeformed/unstressed state.
*EQUATION
```

```
3
H1T,2,-1.0, H1D,2,1.0, H1B,2,1.0
3
V1L,1,1.0, V1D,1,1.0, V1R,1,-1.0
3
V2L,1,1.0, V2D,1,1.0, V2R,1,-1.0
3
V3L,1,1.0, V3D,1,1.0, V3R,1,-1.0
***  tie soil-to-soil interface in BOTSOIL vertically  ***
2
V4L,2,1.0, V4R,2,-1.0
3
H2B,1,1.0, H2D,1,1.0, H2T,1,-1.0
3
H2B,2,1.0, H2D,2,1.0, H2T,2,-1.0
3
H3B,2,1.0, H3D,2,1.0, H3T,2,-1.0
3
H4B,1,1.0, H4D,1,1.0, H4T,1,-1.0
3
H4B,2,1.0, H4D,2,1.0, H4T,2,-1.0
3
11038,1,1.0, 11040,1,1.0, 11041,1,-1.0
3
11038,2,1.0, 10938,2,1.0, 11041,2,-1.0
3
H5B,1,1.0, H5D,1,1.0, H5T,1,-1.0
3
H5B,2,1.0, H5D,2,1.0, H5T,2,-1.0
3
H6B,1,1.0, H6D,1,1.0, H6T,1,-1.0
3
H6B,2,1.0, H6D,2,1.0, H6T,2,-1.0
3
10277,1,1.0, 10279,1,1.0, 10280,1,-1.0
3
10277,2,1.0, 10177,2,1.0, 10280,2,-1.0
*************************************
****  equations at dome/soil interface are in coordinate system
****  normal to the dome; there are no springs at this interface.
*EQUATION
3
 1152,1,1.0, 10179,1,1.0, 10180,1,-1.0
3
 1161,1,1.0, 10079,1,1.0, 10080,1,-1.0
3
 1170,1,1.0,  9979,1,1.0, 9980,1,-1.0
3
 1179,1,1.0,  9879,1,1.0, 9880,1,-1.0
3
 1188,1,1.0,  9779,1,1.0, 9780,1,-1.0
3
 1197,1,1.0,  9679,1,1.0, 9680,1,-1.0
3
 1206,1,1.0,  9579,1,1.0, 9580,1,-1.0
3
 1215,1,1.0,  9479,1,1.0, 9480,1,-1.0
3
 1224,1,1.0,  9379,1,1.0, 9380,1,-1.0
3
 1289,1,1.0,  9279,1,1.0, 9280,1,-1.0
3
 1322,1,1.0,  9179,1,1.0, 9180,1,-1.0
3
 1331,1,1.0,  9079,1,1.0, 9080,1,-1.0
3
 1340,1,1.0,  8979,1,1.0, 8980,1,-1.0
3
 1349,1,1.0,  8879,1,1.0, 8880,1,-1.0
3
 1358,1,1.0,  8779,1,1.0, 8780,1,-1.0
3
 1367,1,1.0,  8679,1,1.0, 8680,1,-1.0
3
 1376,1,1.0,  8579,1,1.0, 8580,1,-1.0
3
```

```
 1385,1,1.0,  8479,1,1.0, 8480,1,-1.0
3
 1394,1,1.0, 8379,1,1.0,  8380,1,-1.0
3
 1403,1,1.0, 8279,1,1.0,  8280,1,-1.0
3
 1412,1,1.0, 8179,1,1.0,  8180,1,-1.0
3
 1421,1,1.0, 8079,1,1.0,  8080,1,-1.0
3
 1430,1,1.0, 7979,1,1.0,  7980,1,-1.0
3
 1439,1,1.0, 7879,1,1.0,  7880,1,-1.0
3
 1448,1,1.0, 7779 1,1.0,  7780,1,-1.0
3
 1457,1,1.0, 7679,1,1.0,  7680,1,-1.0
3
 1466,1,1.0, 7579,1,1.0,  7580,1,-1.0
3
 1475,1,1.0, 7479,1,1.0,  7480,1,-1.0
3
 1484,1,1.0, 7379,1,1.0,  7380,1,-1.0
3
 1493,1,1.0, 7279,1,1.0,  7280,1,-1.0
3
  1502,1,1.0, 7179,1,1.0, 7180,1,-1.0
3
  1511,1,1.0, 7079,1,1.0, 7080,1,-1.0
3
  1520,1,1.0, 6979,1,1.0, 6980,1,-1.0
3
  1529,1,1.0, 6879,1,1.0, 6880,1,-1.0
3
  1538,1,1.0, 6779,1,1.0, 6780,1,-1.0
3
  1547,1,1.0, 6679,1,1.0, 6680,1,-1.0
3
  1556,1,1.0, 6579,1,1.0, 6580,1,-1.0
3
  1565,1,1.0, 6479,1,1.0, 6480,1,-1.0
3
  1574,1,1.0, 6379,1,1.0, 6380,1,-1.0
3
  1583,1,1.0, 6279,1,1.0, 6280,1,-1.0
3
  1592,1,1.0, 6179,1,1.0, 6180,1,-1.0
3
  1601,1,1.0, 6079,1,1.0, 6080,1,-1.0
3
  1610,1,1.0, 5979,1,1.0, 5980,1,-1.0
3
  1619,1,1.0, 5879,1,1.0, 5880,1,-1.0
3
10278,2,1.0, 10279,2,1.0, 10280,2,-1.0
*******************************
*ELSET,ELSET=ALLSOIL
BOTSOIL,FOOTSOIL,WSOIL1,WSOIL2,TOPSOIL
*NSET,NSET=ALLNODES,GENERATE
1,12692
***  nodes at y = -420. (bottom boundary)  ***
*NSET,NSET=BOTTOM,GENERATE
2000,10800,100
11000,12600,100
***  nodes at x = 967. (outer boundary)  ***
*NSET,NSET=SIDE,GENERATE
12600,12692
***  nodes at axis of symmetry  ***
*NSET,NSET=INSIDE1,GENERATE
1,4
344,346
1611,1618
2000,2034
5881,5892
***  transformed nodes at axis of symmetry  ***
*NSET,NSET=INSIDE2
```

```
1619,5880
***  nodes to constrain in 1-direction  ***
*NSET,NSET=FIX1
SIDE,INSIDE1
***  nodes to constrain in 2-direction  ***
*NSET,NSET=FIX2
BOTTOM,INSIDE2
*** GENERATE ELEMENT SETS FOR APPLYING COMPACTION LOAD ***
***  (NOTE: compaction loads are NOT applied in this model)  ***
*ELSET,ELSET=TOPF1,GENERATE
11036,12436,100
*ELSET,ELSET=TOPF2,GENERATE
10255,12455,100
*ELSET,ELSET=TOPF3,GENERATE
10275,12475,100
*ELSET,ELSET=TOPF4,GENERATE
5890,12490,100
***  all tank elements including liner  ***
*ELSET,ELSET=TANK
RCONC,GROUT,STEELALL
***  tank nodes NOT including liner  ***
*NSET,NSET=TANK,GENERATE
1,1619
**********************
*BOUNDARY
FIX2,2,2,0.
FIX1,1,1,0.
H1D,2,2,0.
H2T,1,2,0.
V1R,1,1,0.
H3T,2,2,0.
H4T,1,2,0.
11041,1,2,0.
V2R,1,1,0.
H5T,1,2,0.
V3R,1,1,0.
H6T,1,2,0.
10280,1,2,0.
H7T,1,1,0.
*INITIAL CONDITIONS,TYPE=FIELD,VARIABLE=1
*** field variable is set to the mean geostatic stress in undisturbed soil
TANK,0.0
    2000,    39.624
    2001,    38.548
    2002,    37.473
    2003,    36.495
    2004,    35.518
    2005,    34.629
    2006,    33.740
    2007,    32.933
    2008,    32.124
    2009,    31.390
    2010,    30.655
    2011,    29.988
    2012,    29.320
    2013,    28.713
    2014,    28.106
    2015,    27.554
    2016,    27.002
    2017,    26.500
    2018,    25.999
    2019,    25.543
    2020,    25.087
    2021,    24.672
    2022,    24.258
    2023,    23.881
    2024,    23.504
    2025,    23.161
    2026,    22.818
    2027,    22.507
    2028,    22.195
    2029,    21.912
    2030,    21.629
    2031,    21.372
    2032,    21.114
    2100,    39.624
```

2102,	37.473
2104,	35.518
2106,	33.740
2108,	32.124
2110,	30.655
2112,	29.320
2114,	28.106
2116,	27.002
2118,	25.999
2120,	25.087
2122,	24.257
2124,	23.504
2126,	22.818
2128,	22.195
2130,	21.629
2132,	21.114
2200,	39.624
2201,	38.548
2202,	37.473
2203,	36.495
2204,	35.518
2205,	34.629
2206,	33.740
2207,	32.932
2208,	32.124
2209,	31.390
2210,	30.655
2211,	29.987
2212,	29.320
2213,	28.713
2214,	28.106
2215,	27.554
2216,	27.002
2217,	26.500
2218,	25.999
2219,	25.542
2220,	25.086
2221,	24.672
2222,	24.257
2223,	23.880
2224,	23.503
2225,	23.161
2226,	22.818
2227,	22.506
2228,	22.195
2229,	21.912
2230,	21.629
2231,	21.371
2232,	21.114
2300,	39.624
2302,	37.473
2304,	35.518
2306,	33.740
2308,	32.124
2310,	30.655
2312,	29.319
2314,	28.105
2316,	27.002
2318,	25.998
2320,	25.086
2322,	24.257
2324,	23.503
2326,	22.817
2328,	22.194
2330,	21.628
2332,	21.113
2400,	39.624
2401,	38.548
2402,	37.473
2403,	36.495
2404,	35.517
2405,	34.628
2406,	33.740
2407,	32.932
2408,	32.123
2409,	31.389
2410,	30.655
2411,	29.986
2412,	29.319
2413,	28.712
2414,	28.105
2415,	27.553
2416,	27.001
2417,	26.499
2418,	25.998
2419,	25.542
2420,	25.085
2421,	24.671
2422,	24.256
2423,	23.879
2424,	23.502
2425,	23.159
2426,	22.817
2427,	22.505
2428,	22.194
2429,	21.910
2430,	21.627
2431,	21.370
2432,	21.112
2500,	39.624
2502,	37.473
2504,	35.517
2506,	33.740
2508,	32.123
2510,	30.654
2512,	29.318
2514,	28.104
2516,	27.000
2518,	25.997
2520,	25.084
2522,	24.255
2524,	23.501
2526,	22.816
2528,	22.192
2530,	21.626
2532,	21.111
2600,	39.624
2601,	38.548
2602,	37.473
2603,	36.495
2604,	35.517
2605,	34.628
2606,	33.739
2607,	32.931
2608,	32.123
2609,	31.388
2610,	30.653
2611,	29.986
2612,	29.317
2613,	28.710
2614,	28.103
2615,	27.551
2616,	26.999
2617,	26.497
2618,	25.995
2619,	25.539
2620,	25.083
2621,	24.669
2622,	24.254
2623,	23.877
2624,	23.500
2625,	23.157
2626,	22.814
2627,	22.503
2628,	22.191
2629,	21.908
2630,	21.625
2631,	21.367
2632,	21.110
2700,	39.624
2702,	37.472
2704,	35.516

2706,	33.738
2708,	32.122
2710,	30.652
2712,	29.317
2714,	28.102
2716,	26.998
2718,	25.995
2720,	25.082
2722,	24.253
2724,	23.498
2726,	22.813
2728,	22.190
2730,	21.623
2732,	21.108
2800,	39.624
2801,	38.548
2802,	37.472
2803,	36.494
2804,	35.516
2805,	34.627
2806,	33.738
2807,	32.929
2808,	32.121
2809,	31.387
2810,	30.651
2811,	29.983
2812,	29.316
2813,	28.708
2814,	28.101
2815,	27.549
2816,	26.997
2817,	26.495
2818,	25.993
2819,	25.537
2820,	25.081
2821,	24.666
2822,	24.251
2823,	23.874
2824,	23.497
2825,	23.154
2826,	22.811
2827,	22.500
2828,	22.188
2829,	21.905
2830,	21.621
2831,	21.364
2832,	21.106
2900,	39.624
2902,	37.472
2904,	35.516
2906,	33.737
2908,	32.120
2910,	30.651
2912,	29.314
2914,	28.100
2916,	26.995
2918,	25.991
2920,	25.079
2922,	24.249
2924,	23.495
2926,	22.809
2928,	22.186
2930,	21.619
2932,	21.104
3000,	39.624
3001,	38.548
3002,	37.471
3003,	36.493
3004,	35.515
3005,	34.626
3006,	33.736
3007,	32.928
3008,	32.119
3009,	31.384
3010,	30.649
3011,	29.981
3012,	29.313
3013,	28.706
3014,	28.098
3015,	27.546
3016,	26.994
3017,	26.492
3018,	25.990
3019,	25.534
3020,	25.077
3021,	24.662
3022,	24.247
3023,	23.870
3024,	23.493
3025,	23.150
3026,	22.807
3027,	22.495
3028,	22.184
3029,	21.900
3030,	21.617
3031,	21.359
3032,	21.102
3100,	39.624
3102,	37.471
3104,	35.515
3106,	33.736
3108,	32.118
3110,	30.648
3112,	29.312
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12149,	17.324
12151,	16.707
12153,	16.002
12155,	15.297
12157,	14.592
12159,	14.592
12161,	13.755
12163,	12.919
12165,	12.082
12167,	11.501
12169,	10.918
12171,	10.387
12173,	9.705
12175,	9.123
12177,	8.290
12180,	8.290
12182,	6.908
12184,	5.526
12186,	4.145
12188,	2.763
12190,	1.382
12192,	0.000
12234,	20.585
12235,	20.321
12236,	20.056
12237,	19.792
12238,	19.528
12241,	19.528
12242,	19.263
12243,	18.999
12244,	18.734
12245,	18.470
12246,	18.206
12247,	17.941
12248,	17.633
12249,	17.324
12250,	17.016
12251,	16.707
12252,	16.355
12253,	16.002
12254,	15.649
12255,	15.297
12256,	14.944
12257,	14.592
12259,	14.592
12260,	14.185
12261,	13.778
12262,	13.371
12263,	12.963
12264,	12.556
12265,	12.149
12266,	11.849
12267,	11.548
12268,	11.247
12269,	10.947
12270,	10.667
12271,	10.387
12272,	10.045
12273,	9.702
12274,	9.402
12275,	9.101
12276,	8.696
12277,	8.290
12280,	8.290
12281,	7.599
12282,	6.908
12283,	6.217
12284,	5.526
12285,	4.835
12286,	4.145
12287,	3.454
12288,	2.763
12289,	2.072
12290,	1.382
12291,	0.691
12292,	0.000
12334,	20.585
12336,	20.056
12338,	19.528
12341,	19.528
12343,	18.999
12345,	18.470
12347,	17.941
12349,	17.324
12351,	16.707
12353,	16.002
12355,	15.297
12357,	14.592
12359,	14.592
12361,	13.804
12363,	13.016
12365,	12.228
12367,	11.604
12369,	10.980
12371,	10.388
12373,	9.699
12375,	9.075
12377,	8.290
12380,	8.290
12382,	6.908
12384,	5.526
12386,	4.145
12388,	2.763
12390,	1.382

12392,	0.000
12434,	20.585
12435,	20.321
12436,	20.056
12437,	19.792
12438,	19.528
12441,	19.528
12442,	19.263
12443,	18.999
12444,	18.734
12445,	18.470
12446,	18.206
12447,	17.941
12448,	17.633
12449,	17.324
12450,	17.016
12451,	16.707
12452,	16.355
12453,	16.002
12454,	15.649
12455,	15.297
12456,	14.944
12457,	14.592
12459,	14.592
12460,	14.211
12461,	13.830
12462,	13.449
12463,	13.068
12464,	12.687
12465,	12.306
12466,	11.983
12467,	11.660
12468,	11.336
12469,	11.013
12470,	10.701
12471,	10.389
12472,	10.043
12473,	9.697
12474,	9.373
12475,	9.050
12476,	8.670
12477,	8.290
12480,	8.290
12481,	7.599
12482,	6.908
12483,	6.217
12484,	5.526
12485,	4.835
12486,	4.145
12487,	3.454
12488,	2.763
12489,	2.072
12490,	1.382
12491,	0.691
12492,	0.000
12534,	20.585
12536,	20.056
12538,	19.528
12541,	19.528
12543,	18.999
12545,	18.470
12547,	17.941
12549,	17.324
12551,	16.707
12553,	16.002
12555,	15.297
12557,	14.592
12559,	14.592
12561,	13.861
12563,	13.129
12565,	12.399
12567,	11.725
12569,	11.052
12571,	10.390
12573,	9.693
12575,	9.020

```
   12577,     8.290
   12580,     8.290
   12582,     6.908
   12584,     5.526
   12586,     4.145
   12588,     2.763
   12590,     1.382
   12592,     0.000
   12634,    20.585
   12635,    20.321
   12636,    20.056
   12637,    19.792
   12638,    19.528
   12641,    19.528
   12642,    19.263
   12643,    18.999
   12644,    18.734
   12645,    18.470
   12646,    18.206
   12647,    17.941
   12648,    17.633
   12649,    17.324
   12650,    17.016
   12651,    16.707
   12652,    16.355
   12653,    16.002
   12654,    15.649
   12655,    15.297
   12656,    14.944
   12657,    14.592
   12659,    14.592
   12660,    14.242
   12661,    13.891
   12662,    13.542
   12663,    13.191
   12664,    12.841
   12665,    12.491
   12666,    12.141
   12667,    11.791
   12668,    11.441
   12669,    11.091
   12670,    10.740
   12671,    10.391
   12672,    10.040
   12673,     9.690
   12674,     9.340
   12675,     8.990
   12676,     8.640
   12677,     8.290
   12680,     8.290
   12681,     7.599
   12682,     6.908
   12683,     6.217
   12684,     5.526
   12685,     4.835
   12686,     4.145
   12687,     3.454
   12688,     2.763
   12689,     2.072
   12690,     1.382
   12691,     0.691
   12692,     0.000
*INITIAL CONDTIONS,TYPE=FIELD
***  overwrite field variable for nodes in soil under tank
***  such that this soil behaves elastically.
BOTSOIL, 300.
BTRTSOIL, 300.
*INITIAL CONDITIONS,TYPE=TEMPERATURE
ALLNODES, 70.
***  amplitude curve for compaction load (NOT USED) ***
** *AMPLITUDE,NAME=COMPAC
** 0,0,  .4,1,  .6,1,  1,0
***  amplitude curve for step 2 (from converged ABAQUS concrete run) ***
*AMPLITUDE,NAME=STEP2
0.04348,5.00E-04,0.08696,1.00E-03,0.13044,1.75E-03,0.17392,2.88E-03,
0.2174,4.56E-03,0.26088,7.09E-03,0.30436,1.09E-02,0.34784,1.47E-02,
```

```
0.39132,1.85E-02,0.4348,2.23E-02,0.47828,2.80E-02,0.52176,3.65E-02,
0.56524,4.93E-02,0.60872,6.86E-02,0.6522,9.74E-02,0.69568,0.141,
0.73916,0.206,0.78264,0.27,0.82612,0.335,0.8696,0.433,
0.91308,0.579,0.95656,0.797,1,1
*** element set for hydrostatic loading on liner
***    region of high density waste
*ELSET,ELSET=SG2,GENERATE
2035,9035,200
*RESTART,WRITE,FREQ=10
** 1 ****** START WITH ONLY TANK AND SOIL BENEATH TANK *******
*STEP,INC=200,CYC=5,NLGEOM
*STATIC,DIRECT=NOSTOP,PTOL=10.
1,1
*MODEL CHANGE,REMOVE
TOPSOIL,WSOIL2,WSOIL1,FOOTSOIL
*END STEP
** 2 **********************
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10.
.043478, 1
*DLOAD,AMP=STEP2
BOTSOIL, GRAV,386,0,-1,0
TANK,    GRAV,386,0,-1,0
****  OUTPUT CONTROL ******
*ELFILE,FREQ=100
S,E
*ELFILE,FREQ=100,ELSET=RCONC
S,E,TEMP,SDV
*ELFILE,FREQ=100,ELSET=STEELALL
TEMP
*ELFILE,FREQ=100,REBAR
S,E,IE
*NODEFILE,FREQ=100
U,RF
*ELPRINT,FREQ=0
*NODEPRINT,FREQ=100
U
*PLOT,COLORS=16,OUTPUT=BINARY,FREQ=100
c106q - scale factor = 50
15,,9,9,5,1,.1,.1
.3
*PLOT MODE,FILL=NO
*ELSET,ELSET=NOSHELL
ALLSOIL,RCONC,GROUT
*DETAIL,ELSET=NOSHELL
** *CENTER
** 580,-28,0
** *ZOOM,FACTOR=8
*CONTOUR,DEFORM,FACTOR=50
PRESS,3,10000,10001
*END STEP
** 3 ****** ADD FOOTSOIL ****************
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10.
1,1
*MODEL CHANGE,INCLUDE
FOOTSOIL,
*BOUNDARY,OP=NEW
FIX2,2,2,0.
FIX1,1,1,0.
H1D,2,2,0.
H3T,2,2,0.
H4T,1,2,0.
11041,1,2,0.
V2R,1,1,0.
H5T,1,2,0.
V3R,1,1,0.
H6T,1,2,0.
10280,1,2,0.
H7T,1,1,0.
*BOUNDARY,OP=NEW,FIXED
H2D,1,2
V1D,1,1
*END STEP
** 4 ***** GRAVITY ***********
*STEP,INC=200,CYC=5
```

```
*STATIC,DIRECT=NOSTOP,PTOL=10.
.10, 1
*DLOAD
FOOTSOIL,GRAV,386,0,-1,0
*END STEP
****** COMPACTION LOAD ON FOOTSOIL  **********
***  (skip compaction)  ***
** 5 ********** ADD WSOIL1 ***************
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10.
1,1
*MODEL CHANGE,INCLUDE
WSOIL1,
*BOUNDARY,OP=NEW
FIX2,2,2,0.
FIX1,1,1,0.
H1D,2,2,0.
H5T,1,2,0.
V3R,1,1,0.
H6T,1,2,0.
10280,1,2,0.
H7T,1,1,0.
*BOUNDARY,OP=NEW,FIXED
H2D,1,2
V1D,1,1
H3D,2,2
H4D,1,2
11040,1
10938,2
V2D,1,1
*END STEP
** 6 *** GRAVITY *************
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10.
.25, 1
*DLOAD
WSOIL1,GRAV,386,0,-1,0
*END STEP
****** COMPACTION LOAD ON WSOIL1  **********
***  (skip compaction)  ***
** 7 ********  ADD WSOIL2  ***************
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10.
1,1
*MODEL CHANGE,INCLUDE
WSOIL2,
*BOUNDARY,OP=NEW
FIX2,2,2,0.
FIX1,1,1,0.
H1D,2,2,0.
H6T,1,2,0.
10280,1,2,0.
H7T,1,1,0.
*BOUNDARY,OP=NEW,FIXED
H2D,1,2
V1D,1,1
H3D,2,2
H4D,1,2
11040,1
10938,2
V2D,1,1
H5D,1,2
V3D,1,1
10177,1,1
*END STEP
** 8 ***** GRAVITY ***********
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10
.05,1
*DLOAD
WSOIL2,GRAV,386,0,-1,0
*END STEP
******  COMPACTION LOAD ON WSOIL2  **********
***  (skip compaction)  ***
** 9 *********** ADD TOPSOIL ***************
*STEP,INC=200,CYC=5
```

```
*STATIC,DIRECT=NOSTOP,PTOL=10
1,1
*MODEL CHANGE,INCLUDE
TOPSOIL,
*BOUNDARY,OP=NEW
FIX2,2,2,0.
FIX1,1,1,0.
H1D,2,2,0.
*BOUNDARY,OP=NEW,FIXED
H2D,1,2
V1D,1,1
H3D,2,2
H4D,1,2
11040,1
10938,2
V2D,1,1
H5D,1,2
V3D,1,1
H6D,1,2
10279,1,2
10177,1,2
H7D,1,1
*END STEP
** 10 ******* GRAVITY *********
*STEP,INC=200,CYC=5
*STATIC,DIRECT=NOSTOP,PTOL=10
.025,1
*DLOAD
TOPSOIL,GRAV,386,0,-1,0
*END STEP
**  11  ********* HYDRO (WASTE) LOAD *********
*STEP,INC=200,CYC=5
initial hydro loads
*STATIC,DIRECT=NOSTOP,PTOL=10
.1,1
*** waste depth = 17 ft ***
*DLOAD
9849, HP, -7.37, 212.0, 8
9847, HP, -7.37, 212.0, 8
9845, HP, -7.37, 212.0, 8
9843, HP, -7.37, 212.0, 8
9841, HP, -7.37, 212.0, 8
9839, HP, -7.37, 212.0, 8
9837, HP, -7.37, 212.0, 8
9835, HP, -7.37, 212.0, 8
9635, HP, -7.37, 212.0, 8
9435, HP, -7.37, 212.0, 8
9235, HP, -8.63, 127.5, 8
SG2,HP, -8.63, 127.5, 8
*END STEP
*******************
*STEP,INC=100,CYC=4
convert to umat=3
*STATIC,PTOL=100,DIRECT=NOSTOP
1, 1
*FIELD
TANK,1.
*END STEP
*******************
*ELSET,ELSET=INSID3,GENERATE
67,102
117,117
*ELSET,ELSET=INSID4,GENERATE
118,120
138,139
146,148
158,160
170,171
178,186
214,230
*STEP,INC=9999,CYC=5
*STATIC,PTOL=100.,DIRECT=NOSTOP
0.0238,1.
*DLOAD
INSID3,P3,14.7
INSID4,P4,14.7
```

```
*NODE PRINT,FREQ=0
*ELPRINT,FREQ=0
*NODEFILE,FREQ=10
U
*ELFILE,ELSET=RCONC,FREQ=10
S,E,SDV
NFORC
*ELFILE,ELSET=RCONC,FREQ=10,REBAR=HOOP
S,E
*ELFILE,ELSET=RCONC,FREQ=10,REBAR
S,E
*END STEP
*STEP,INC=9999,CYC=5
*STATIC,PTOL=100.,DIRECT=NOSTOP
0.005,1.
*DLOAD
INSID3,P3,35.
INSID4,P4,35.
*NODE PRINT,FREQ=0
*ELPRINT,FREQ=0
*NODEFILE,FREQ=10
U
*ELFILE,ELSET=RCONC,FREQ=10
S,E,SDV
NFORC
*ELFILE,ELSET=RCONC,FREQ=10,REBAR=HOOP
S,E
*ELFILE,ELSET=RCONC,FREQ=10,REBAR
S,E
*END STEP
```

ATTACHMENT 2

ABAQUS ANALYSIS INPUT FILE - REFINED ANALYSIS FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 5/27/94
Date

Checked by: _____ 5/27/94
Date

Refined Analysis - changes only (as noted), compared to PRESS.abdat

```
*STEP,INC=9999,CYC=5
*STATIC,PTOL=100.,DIRECT=NOSTOP
0.0238,1.
*DLOAD
**
**** revise pressure load to 13 psi **
**
INSID3,P3,13.0
INSID4,P4,13.0
*NODE PRINT,FREQ=0
*ELPRINT,FREQ=0
*NODEFILE,FREQ=10
U
*ELFILE,ELSET=RCONC,FREQ=10
S,E,SDV
NFORC
*ELFILE,ELSET=RCONC,FREQ=10,REBAR=HOOP
S,E
*ELFILE,ELSET=RCONC,FREQ=10,REBAR
S,E
*END STEP
*STEP,INC=9999,CYC=5
*STATIC,PTOL=100.,DIRECT=NOSTOP
0.005,1.
*DLOAD
**
**** revise pressure load to 16 psi **
**
INSID3,P3,16.
INSID4,P4,16.
*NODE PRINT,FREQ=0
*ELPRINT,FREQ=0
*NODEFILE,FREQ=10
U
*ELFILE,ELSET=RCONC,FREQ=10
S,E,SDV
NFORC
*ELFILE,ELSET=RCONC,FREQ=10,REBAR=HOOP
S,E
*ELFILE,ELSET=RCONC,FREQ=10,REBAR
S,E
*END STEP
```

ATTACHMENT 3

SPREADSHEET FOR DETERMINATION OF CONVERGENCE INDICATOR FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 6/8/94
Date

Checked by: Phillip R Keith 5/27/94
Date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Step	Inc	Pressure (psi)	ux1	uy1	ux2	uy2	ux3	uy3	ux4	uy4	ux5	uy5	(ux1-ux2)^2
2	13	42	14.7	2.07E-03	1.07E-02	2.64E-03	1.96E-02	6.74E-03	4.06E-02	1.27E-02	7.12E-02	1.85E-02	0.103	3.29E-07
3	13	43	14.7	4.33E-02	0.244	7.60E-02	0.405	9.99E-02	0.522	0.121	0.615	0.139	0.696	1.07E-03
4	14	1	14.8	7.81E-02	0.394	0.12	0.579	0.128	0.638	0.134	0.681	0.141	0.717	1.76E-03
5	14	2	14.9	8.66E-02	0.317	0.106	0.38	0.117	0.414	0.124	0.436	0.128	0.45	3.77E-04
6	14	3	15.0	1.56E-02	6.87E-02	1.80E-02	9.26E-02	1.90E-02	0.1	1.95E-02	0.106	1.99E-02	0.11	5.95E-06
7	14	4	15.1	-1.28E-02	7.31E-02	-1.35E-02	7.76E-02	-1.32E-02	7.84E-02	1.28E-02	7.76E-02	1.28E-02	7.81E-02	5.04E-07
8	14	5	15.2	5.10E-03	2.73E-02	5.66E-03	3.24E-02	5.85E-03	3.14E-02	5.88E-03	3.14E-02	5.88E-03	3.14E-02	3.08E-07
9	14	6	15.3	5.03E-03	2.63E-02	6.07E-03	3.48E-02	6.15E-03	3.56E-02	6.15E-03	3.57E-02	6.15E-03	3.57E-02	1.09E-06
10	14	7	15.4	5.02E-03	2.63E-02	6.70E-03	3.83E-02	7.03E-03	3.90E-02	7.14E-03	3.95E-02	7.25E-03	3.99E-02	2.81E-06
11	14	8	15.5	5.12E-03	2.67E-02	6.93E-03	4.19E-02	7.21E-03	4.39E-02	7.25E-03	4.43E-02	7.26E-03	4.43E-02	3.29E-06
12	14	9	15.6	5.02E-03	2.62E-02	7.96E-03	4.91E-02	8.23E-03	5.10E-02	8.26E-03	5.12E-02	8.27E-03	5.13E-02	8.65E-06
13	14	10	15.7	5.02E-03	2.62E-02	8.31E-03	5.17E-02	8.48E-03	5.39E-02	8.56E-03	5.47E-02	8.59E-03	5.49E-02	1.09E-05
14	14	11	15.8	5.21E-03	2.74E-02	8.29E-03	5.35E-02	8.69E-03	5.67E-02	9.26E-03	5.73E-02	9.43E-03	5.79E-02	9.46E-06
15	14	12	15.9	5.16E-03	2.69E-02	9.14E-03	5.57E-02	9.57E-03	5.87E-02	9.73E-03	5.96E-02	9.82E-03	6.01E-02	1.59E-05
16	14	13	16.0	5.19E-03	2.65E-02	9.29E-03	5.60E-02	9.64E-03	5.87E-02	9.71E-03	5.94E-02	9.74E-03	5.97E-02	1.68E-05
17	14	14	16.1	5.07E-03	2.59E-02	9.31E-03	5.60E-02	9.76E-03	5.90E-02	9.86E-03	5.97E-02	9.90E-03	6.00E-02	1.80E-05
18	14	15	16.2	6.45E-03	2.91E-02	1.01E-02	6.18E-02	1.06E-02	6.53E-02	1.12E-02	6.53E-02	1.17E-02	6.59E-02	1.34E-05
19	14	16	16.3	5.17E-03	2.61E-02	9.74E-03	5.85E-02	1.03E-02	6.17E-02	1.04E-02	6.24E-02	1.01E-02	6.18E-02	2.09E-05
20	14	17	16.4	1.25E-02	3.61E-02	1.51E-02	5.82E-02	1.53E-02	6.04E-02	1.53E-02	6.09E-02	1.54E-02	6.10E-02	6.55E-06
21	14	18	16.5	5.15E-03	2.60E-02	9.62E-03	5.83E-02	1.03E-02	6.27E-02	1.05E-02	6.37E-02	1.05E-02	6.41E-02	2.00E-05
22	14	19	16.6	5.13E-03	2.59E-02	1.00E-02	6.08E-02	1.06E-02	6.44E-02	1.07E-02	6.50E-02	1.08E-02	6.52E-02	2.42E-05
23	14	20	16.7	5.09E-03	2.57E-02	1.06E-02	6.30E-02	1.12E-02	6.68E-02	1.13E-02	6.75E-02	1.13E-02	6.77E-02	2.99E-05
24	14	21	16.8	5.08E-03	2.57E-02	1.07E-02	6.41E-02	1.14E-02	6.81E-02	1.15E-02	6.88E-02	1.16E-02	6.91E-02	3.20E-05
25	14	22	16.9	5.07E-03	2.56E-02	1.09E-02	6.64E-02	1.17E-02	7.15E-02	1.18E-02	7.26E-02	1.19E-02	7.30E-02	3.37E-05
26	14	23	17.0	5.07E-03	2.55E-02	1.20E-02	7.23E-02	1.29E-02	7.77E-02	1.31E-02	7.88E-02	1.32E-02	7.92E-02	4.83E-05
27	14	24	17.1	5.15E-03	2.57E-02	1.24E-02	7.41E-02	1.34E-02	8.00E-02	1.36E-02	8.14E-02	1.37E-02	8.20E-02	5.23E-05
28	14	25	17.2	5.23E-03	2.59E-02	1.27E-02	7.62E-02	1.37E-02	8.22E-02	1.39E-02	8.35E-02	1.40E-02	8.38E-02	5.65E-05
29	14	26	17.3	5.05E-03	2.53E-02	1.26E-02	7.53E-02	1.36E-02	8.12E-02	1.38E-02	8.22E-02	1.39E-02	8.25E-02	5.75E-05
30	14	27	17.4	5.04E-03	2.53E-02	1.27E-02	7.59E-02	1.37E-02	8.17E-02	1.39E-02	8.30E-02	1.40E-02	8.33E-02	5.92E-05
31	14	29	17.6	5.03E-03	2.51E-02	1.30E-02	7.69E-02	1.40E-02	8.30E-02	1.42E-02	8.39E-02	1.42E-02	8.41E-02	6.31E-05
32	14	30	17.7	5.02E-03	2.51E-02	1.36E-02	7.99E-02	1.46E-02	8.59E-02	1.48E-02	8.72E-02	1.49E-02	8.78E-02	7.34E-05
33	14	31	17.8	5.02E-03	2.50E-02	1.38E-02	8.12E-02	1.49E-02	8.72E-02	1.51E-02	8.83E-02	1.51E-02	8.87E-02	7.78E-05
34	14	32	17.9	5.01E-03	2.49E-02	1.40E-02	8.25E-02	1.50E-02	8.87E-02	1.53E-02	9.03E-02	1.53E-02	9.07E-02	8.12E-05
35	14	33	18.0	5.42E-03	2.56E-02	1.43E-02	8.54E-02	1.55E-02	9.26E-02	1.59E-02	9.54E-02	1.63E-02	9.79E-02	7.88E-05
36	14	34	18.2	6.85E-03	3.06E-02	1.59E-02	9.64E-02	1.82E-02	0.111	1.86E-02	0.114	1.88E-02	0.115	8.11E-05
37	14	35	18.3	7.00E-03	2.63E-02	1.59E-02	9.64E-02	1.76E-02	0.106	1.80E-02	0.108	1.81E-02	0.109	7.94E-05
38	14	36	18.4	5.11E-03	2.50E-02	1.64E-02	9.25E-02	1.82E-02	0.102	1.87E-02	0.104	1.89E-02	0.106	1.28E-04
39	14	37	18.5	6.03E-03	2.92E-02	1.71E-02	9.72E-02	1.86E-02	0.104	1.88E-02	0.105	1.87E-02	0.105	1.23E-04
40	14	38	18.6	9.61E-03	3.15E-02	1.57E-02	8.81E-02	1.70E-02	9.45E-02	1.72E-02	9.55E-02	1.72E-02	9.57E-02	3.66E-05

	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	(uy1-uy2)^2	(ux2-ux3)^2	(uy2-uy3)^2	(ux3-ux4)^2	(uy3-uy4)^2	(ux4-ux5)^2	(uy4-uy5)^2	SQR(N+O)	SQR(P+Q)	SQR(R+S)	SQR(T+U)	Criteria	Criteria
2	8.03E-05	1.68E-05	4.38E-04	3.52E-05	9.36E-04	3.42E-05	1.01E-03	0.0090	0.0213	0.0312	0.0324	-1	-0.02
3	2.59E-02	5.68E-04	1.37E-02	4.47E-04	8.65E-03	3.24E-04	6.56E-03	0.1643	0.1194	0.0954	0.0830	1	0.08
4	3.42E-02	6.40E-05	3.48E-03	3.60E-05	1.85E-03	4.90E-05	1.30E-03	0.1897	0.0595	0.0434	0.0367	1	0.15
5	3.97E-03	1.21E-04	1.16E-03	4.90E-05	4.84E-04	1.60E-05	1.96E-04	0.0659	0.0357	0.0231	0.0146	1	0.05
6	5.69E-04	1.00E-06	5.51E-05	2.12E-07	3.60E-05	1.52E-07	1.60E-05	0.0240	0.0075	0.0060	0.0040	1	0.02
7	2.08E-05	1.02E-07	5.93E-07	6.74E-04	5.48E-07	1.60E-09	2.21E-07	0.0046	0.0008	0.0260	0.0005	1	0.00
8	2.56E-05	3.92E-08	1.02E-06	6.25E-10	2.50E-09	1.00E-12	0.00E+00	0.0051	0.0010	0.0001	0.0000	1	0.01
9	7.16E-05	5.78E-09	6.89E-07	9.00E-12	1.60E-09	1.00E-12	1.00E-10	0.0085	0.0008	0.0000	0.0000	1	0.01
10	1.45E-04	1.07E-07	4.62E-07	1.19E-08	2.30E-07	1.28E-08	1.94E-07	0.0122	0.0008	0.0005	0.0005	1	0.01
11	2.30E-04	7.78E-08	4.08E-06	1.85E-09	1.23E-07	3.60E-11	2.50E-09	0.0153	0.0020	0.0004	0.0001	1	0.02
12	5.22E-04	7.29E-08	3.76E-06	1.02E-09	5.29E-08	3.60E-11	1.60E-09	0.0230	0.0020	0.0002	0.0000	1	0.02
13	6.51E-04	2.79E-08	4.71E-06	7.23E-09	6.40E-07	5.76E-10	7.84E-08	0.0257	0.0022	0.0008	0.0003	1	0.03
14	6.80E-04	1.65E-07	1.02E-05	3.24E-07	3.60E-07	2.76E-08	3.72E-07	0.0263	0.0032	0.0008	0.0006	1	0.03
15	8.31E-04	1.85E-07	8.88E-06	2.46E-08	9.22E-07	7.57E-09	2.50E-07	0.0291	0.0030	0.0010	0.0005	1	0.03
16	8.72E-04	1.28E-07	7.18E-06	4.23E-09	5.04E-07	1.22E-09	6.25E-08	0.0298	0.0027	0.0007	0.0003	1	0.03
17	9.08E-04	2.00E-07	8.64E-06	9.41E-09	4.90E-07	1.52E-09	9.00E-08	0.0304	0.0030	0.0007	0.0003	1	0.03
18	1.07E-03	2.60E-07	1.25E-05	3.84E-07	6.40E-09	2.03E-07	4.62E-07	0.0329	0.0036	0.0006	0.0008	1	0.03
19	1.05E-03	2.93E-07	1.03E-05	1.44E-08	5.18E-07	1.02E-07	3.48E-07	0.0327	0.0033	0.0007	0.0007	1	0.03
20	4.89E-04	4.84E-08	4.71E-06	2.50E-09	2.12E-07	4.00E-10	2.25E-08	0.0223	0.0022	0.0005	0.0002	1	0.02
21	1.04E-03	4.64E-07	1.91E-05	2.56E-08	9.80E-07	4.90E-09	1.44E-07	0.0326	0.0044	0.0010	0.0004	1	0.03
22	1.21E-03	3.48E-07	1.30E-05	1.21E-08	4.49E-07	9.00E-10	3.61E-08	0.0352	0.0036	0.0007	0.0002	1	0.03
23	1.39E-03	3.84E-07	1.44E-05	1.21E-08	4.90E-07	1.60E-09	3.61E-08	0.0377	0.0038	0.0007	0.0002	1	0.04
24	1.47E-03	4.49E-07	1.64E-05	1.44E-08	5.33E-07	1.60E-09	4.84E-08	0.0388	0.0041	0.0007	0.0002	1	0.04
25	1.66E-03	6.56E-07	2.64E-05	2.25E-08	1.28E-06	3.60E-09	1.60E-07	0.0411	0.0052	0.0011	0.0004	1	0.04
26	2.18E-03	8.28E-07	2.92E-05	2.89E-08	1.25E-06	3.60E-09	1.52E-07	0.0472	0.0055	0.0011	0.0004	1	0.05
27	2.35E-03	1.00E-06	3.45E-05	4.41E-08	2.02E-06	4.90E-09	3.02E-07	0.0490	0.0060	0.0014	0.0006	1	0.05
28	2.53E-03	9.60E-07	3.66E-05	4.84E-08	1.61E-06	2.50E-09	9.61E-08	0.0509	0.0061	0.0013	0.0003	1	0.05
29	2.50E-03	1.00E-06	3.42E-05	3.24E-08	1.10E-06	2.50E-09	5.29E-08	0.0506	0.0059	0.0011	0.0002	1	0.05
30	2.56E-03	9.22E-07	3.43E-05	4.84E-08	1.61E-06	2.50E-09	8.41E-08	0.0512	0.0059	0.0013	0.0003	1	0.05
31	2.68E-03	1.10E-06	3.68E-05	2.89E-08	8.46E-07	9.00E-10	2.89E-08	0.0524	0.0062	0.0009	0.0002	1	0.05
32	3.00E-03	1.04E-06	3.66E-05	2.89E-08	1.51E-06	1.21E-08	3.72E-07	0.0555	0.0061	0.0012	0.0006	1	0.05
33	3.15E-03	1.08E-06	3.62E-05	2.89E-08	1.21E-06	4.90E-09	1.30E-07	0.0568	0.0061	0.0011	0.0004	1	0.06
34	3.31E-03	1.00E-06	3.94E-05	6.76E-08	2.43E-06	3.60E-09	1.85E-07	0.0582	0.0064	0.0016	0.0004	1	0.06
35	3.59E-03	1.42E-06	5.07E-05	1.68E-07	8.01E-06	1.30E-07	6.30E-06	0.0605	0.0072	0.0029	0.0025	1	0.06
36	4.34E-03	5.29E-06	2.12E-04	1.76E-07	9.00E-06	3.61E-08	1.00E-06	0.0665	0.0148	0.0030	0.0010	1	0.07
37	4.91E-03	2.96E-06	9.31E-05	1.02E-07	4.00E-06	1.69E-08	1.00E-06	0.0707	0.0098	0.0020	0.0010	1	0.07
38	4.56E-03	3.24E-06	9.02E-05	2.12E-07	4.00E-06	6.25E-08	4.00E-06	0.0685	0.0097	0.0021	0.0020	1	0.07
39	4.63E-03	2.07E-06	4.62E-05	3.24E-08	1.00E-06	3.60E-09	0.00E+00	0.0689	0.0070	0.0010	0.0001	1	0.07
40	3.20E-03	1.66E-06	4.15E-05	5.29E-08	9.03E-07	1.60E-09	3.61E-08	0.0569	0.0066	0.0010	0.0002	1	0.06

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
I	Step	Inc	Pressure (psi)	ux1	uy1	ux2	uy2	ux3	uy3	ux4	uy4	ux5	uy5	(ux1-ux2)^2
41	14	39	18.7	5.03E-03	2.48E-02	1.69E-02	9.58E-02	1.85E-02	0.104	1.88E-02	0.105	1.89E-02	0.105	1.40E-04
42	14	40	18.8	5.05E-03	2.48E-02	1.72E-02	9.81E-02	1.93E-02	0.106	1.96E-02	0.108	1.97E-02	0.108	1.48E-04
43	14	41	18.9	5.02E-03	2.47E-02	1.80E-02	9.95E-02	2.01E-02	0.109	2.05E-02	0.111	2.06E-02	0.111	1.69E-04
44	14	42	19.0	5.01E-03	2.46E-02	1.93E-02	0.104	2.15E-02	0.114	2.20E-02	0.116	2.21E-02	0.117	2.03E-04
45	14	43	19.1	5.06E-03	2.49E-02	1.99E-02	0.107	2.18E-02	0.116	2.23E-02	0.118	2.24E-02	0.119	2.20E-04
46	14	44	19.2	5.09E-03	2.48E-02	1.99E-02	0.106	2.20E-02	0.117	2.25E-02	0.119	2.26E-02	0.12	2.20E-04
47	14	45	19.3	5.05E-03	2.47E-02	2.06E-02	0.109	2.27E-02	0.12	2.32E-02	0.122	2.33E-02	0.123	2.41E-04
48	14	46	19.4	5.79E-03	2.53E-02	2.08E-02	0.112	2.34E-02	0.124	2.38E-02	0.126	2.40E-02	0.127	2.25E-04
49	14	47	19.5	5.15E-03	2.46E-02	2.14E-02	0.113	2.40E-02	0.125	2.45E-02	0.127	2.46E-02	0.128	2.62E-04
50	14	48	19.6	5.19E-03	2.48E-02	2.22E-02	0.116	2.46E-02	0.128	2.51E-02	0.13	2.52E-02	0.131	2.88E-04
51	14	49	19.7	5.03E-03	2.43E-02	2.25E-02	0.117	2.49E-02	0.129	2.54E-02	0.131	2.56E-02	0.132	3.05E-04
52	14	50	19.8	5.02E-03	2.42E-02	2.27E-02	0.119	2.53E-02	0.131	2.58E-02	0.133	2.61E-02	0.135	3.14E-04
53	14	51	19.9	5.14E-03	2.43E-02	2.35E-02	0.121	2.63E-02	0.134	2.68E-02	0.137	2.71E-02	0.138	3.38E-04
54	14	52	20.0	6.47E-03	2.64E-02	2.45E-02	0.126	2.71E-02	0.139	2.79E-02	0.142	3.50E-02	0.143	3.25E-04
55	14	53	20.1	3.78E-02	2.70E-02	6.28E-02	0.127	7.46E-02	0.145	8.37E-02	0.153	9.07E-02	0.157	6.26E-04
56	14	54	20.2	2.14E-02	3.20E-02	2.68E-02	0.137	2.96E-02	0.154	3.05E-02	0.16	3.10E-02	0.163	2.98E-05
57	14	55	20.3	6.05E-03	2.91E-02	2.54E-02	0.131	2.83E-02	0.145	2.90E-02	0.149	2.92E-02	0.15	3.73E-04
58	14	56	20.4	5.24E-03	2.50E-02	2.51E-02	0.127	2.81E-02	0.141	2.88E-02	0.144	2.89E-02	0.144	3.94E-04
59	14	57	20.5	5.11E-03	2.42E-02	2.55E-02	0.128	2.85E-02	0.142	2.93E-02	0.146	2.95E-02	0.147	4.14E-04
60	14	58	20.6	5.11E-03	2.41E-02	2.57E-02	0.129	2.90E-02	0.146	2.98E-02	0.15	3.00E-02	0.151	4.24E-04
61	14	59	20.7	5.17E-03	2.30E-02	2.60E-02	0.133	2.93E-02	0.149	3.01E-02	0.152	3.03E-02	0.153	4.35E-04
62	14	60	20.8	5.09E-03	2.40E-02	2.60E-02	0.132	2.94E-02	0.148	3.02E-02	0.152	3.05E-02	0.153	4.36E-04
63	14	61	20.9	5.09E-03	2.39E-02	2.64E-02	0.134	2.97E-02	0.15	3.05E-02	0.153	3.07E-02	0.154	4.54E-04
64	14	62	21.0	5.08E-03	2.38E-02	2.65E-02	0.134	3.06E-02	0.153	3.16E-02	0.158	3.20E-02	0.16	4.57E-04
65	14	63	21.1	5.07E-03	2.31E-02	2.73E-02	0.138	3.08E-02	0.155	3.17E-02	0.159	3.20E-02	0.16	4.93E-04
66	14	64	21.2	5.07E-03	2.37E-02	2.71E-02	0.136	3.07E-02	0.153	3.15E-02	0.157	3.18E-02	0.158	4.83E-04
67	14	65	21.3	5.16E-03	2.41E-02	2.79E-02	0.14	3.15E-02	0.157	3.24E-02	0.16	3.26E-02	0.162	5.15E-04
68	14	66	21.4	5.16E-03	2.41E-02	2.81E-02	0.14	3.19E-02	0.158	3.27E-02	0.162	3.29E-02	0.163	5.27E-04
69	14	67	21.5	5.13E-03	2.39E-02	2.83E-02	0.141	3.21E-02	0.159	3.30E-02	0.164	3.33E-02	0.165	5.38E-04
70	14	68	21.6	5.05E-03	2.34E-02	2.84E-02	0.142	3.21E-02	0.16	3.30E-02	0.163	3.32E-02	0.164	5.45E-04
71	14	69	21.7	5.05E-03	2.33E-02	2.86E-02	0.143	3.24E-02	0.161	3.32E-02	0.164	3.34E-02	0.166	5.53E-04
72	14	70	21.8	5.06E-03	2.34E-02	2.87E-02	0.143	3.26E-02	0.161	3.35E-02	0.165	3.39E-02	0.168	5.60E-04
73	14	71	21.9	5.40E-03	2.45E-02	2.96E-02	0.148	3.37E-02	0.167	3.47E-02	0.172	3.51E-02	0.174	5.86E-04
74	14	72	22.0	6.14E-03	2.54E-02	3.00E-02	0.15	3.41E-02	0.17	3.52E-02	0.174	3.55E-02	0.176	5.71E-04
75	14	73	22.1	5.84E-03	2.61E-02	3.03E-02	0.151	3.47E-02	0.173	3.58E-02	0.178	3.63E-02	0.181	5.99E-04
76	14	74	22.2	6.52E-03	2.64E-02	3.13E-02	0.157	3.63E-02	0.182	3.79E-02	0.19	3.85E-02	0.194	6.13E-04
77	14	75	22.3	6.87E-03	2.57E-02	3.17E-02	0.159	3.65E-02	0.182	3.80E-02	0.19	3.87E-02	0.194	6.15E-04
78	14	76	22.4	5.37E-03	2.43E-02	3.01E-02	0.148	3.41E-02	0.167	3.51E-02	0.172	3.56E-02	0.175	6.11E-04
79	14	77	22.5	6.53E-03	2.58E-02	3.03E-02	0.149	3.43E-02	0.169	3.53E-02	0.174	3.56E-02	0.175	5.64E-04

	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
I	(uy1-uy2)^2	(ux2-ux3)^2	(uy2-uy3)^2	(ux3-ux4)^2	(uy3-uy4)^2	(ux4-ux5)^2	(uy4-uy5)^2	SQR(N+O)	SQR(P+Q)	SQR(R+S)	SQR(T+U)	Criteria	Criteria
41	5.03E-03	2.72E-06	6.81E-05	7.84E-08	1.00E-06	3.60E-09	0.00E+00	0.0719	0.0084	0.0010	0.0001	1	0.07
42	5.37E-03	4.41E-06	6.23E-05	7.29E-08	4.00E-06	1.21E-08	0.00E+00	0.0743	0.0082	0.0020	0.0001	1	0.07
43	5.59E-03	4.54E-06	9.08E-05	1.16E-07	4.00E-06	6.40E-09	0.00E+00	0.0759	0.0098	0.0020	0.0001	1	0.08
44	6.31E-03	5.02E-06	1.00E-04	2.12E-07	4.00E-06	1.69E-08	1.00E-06	0.0807	0.0102	0.0021	0.0010	1	0.08
45	6.75E-03	3.72E-06	8.10E-05	2.02E-07	4.00E-06	1.21E-08	1.00E-06	0.0835	0.0092	0.0020	0.0010	1	0.08
46	6.59E-03	4.49E-06	1.21E-04	2.12E-07	4.00E-06	1.21E-08	1.00E-06	0.0825	0.0112	0.0021	0.0010	1	0.08
47	7.11E-03	4.33E-06	1.21E-04	2.40E-07	4.00E-06	1.96E-08	1.00E-06	0.0858	0.0112	0.0021	0.0010	1	0.08
48	7.52E-03	6.55E-06	1.44E-04	2.12E-07	4.00E-06	2.89E-08	1.00E-06	0.0880	0.0123	0.0021	0.0010	1	0.09
49	7.82E-03	6.81E-06	1.44E-04	2.60E-07	4.00E-06	1.96E-08	1.00E-06	0.0899	0.0123	0.0021	0.0010	1	0.09
50	8.32E-03	5.86E-06	1.44E-04	2.81E-07	4.00E-06	1.69E-08	1.00E-06	0.0928	0.0122	0.0021	0.0010	1	0.09
51	8.60E-03	5.86E-06	1.44E-04	2.30E-07	4.00E-06	3.24E-08	1.00E-06	0.0944	0.0122	0.0021	0.0010	1	0.09
52	9.00E-03	6.40E-06	1.44E-04	2.60E-07	4.00E-06	8.41E-08	4.00E-06	0.0965	0.0123	0.0021	0.0020	1	0.09
53	9.36E-03	7.40E-06	1.69E-04	3.36E-07	9.00E-06	6.25E-08	1.00E-06	0.0985	0.0133	0.0031	0.0010	1	0.10
54	9.92E-03	6.86E-06	1.69E-04	6.24E-07	9.00E-06	4.98E-05	1.00E-06	0.1012	0.0133	0.0031	0.0071	1	0.09
55	9.99E-03	1.40E-04	3.24E-04	8.26E-05	6.40E-05	4.84E-05	1.60E-05	0.1030	0.0216	0.0121	0.0080	1	0.10
56	1.10E-02	7.34E-06	2.89E-04	9.80E-07	3.60E-05	2.50E-07	9.00E-06	0.1052	0.0172	0.0061	0.0030	1	0.10
57	1.04E-02	8.76E-06	1.96E-04	4.62E-07	1.60E-05	4.84E-08	1.00E-06	0.1038	0.0143	0.0041	0.0010	1	0.10
58	1.04E-02	9.24E-06	1.96E-04	3.84E-07	9.00E-06	2.89E-08	0.00E+00	0.1039	0.0143	0.0031	0.0002	1	0.10
59	1.08E-02	9.42E-06	1.96E-04	5.63E-07	1.60E-05	6.76E-08	1.00E-06	0.1058	0.0143	0.0041	0.0010	1	0.10
60	1.10E-02	1.12E-05	2.89E-04	5.48E-07	1.60E-05	5.76E-08	1.00E-06	0.1069	0.0173	0.0041	0.0010	1	0.11
61	1.21E-02	1.10E-05	2.56E-04	5.33E-07	9.00E-06	4.00E-08	1.00E-06	0.1119	0.0163	0.0031	0.0010	1	0.11
62	1.17E-02	1.20E-05	2.56E-04	5.78E-07	1.60E-05	7.84E-08	1.00E-06	0.1100	0.0164	0.0041	0.0010	1	0.11
63	1.21E-02	1.12E-05	2.56E-04	5.63E-07	9.00E-06	4.00E-08	1.00E-06	0.1121	0.0163	0.0031	0.0010	1	0.11
64	1.21E-02	1.69E-05	3.61E-04	1.14E-06	2.50E-05	1.37E-07	4.00E-06	0.1122	0.0194	0.0051	0.0020	1	0.11
65	1.32E-02	1.25E-05	2.89E-04	8.65E-07	1.60E-05	5.76E-08	1.00E-06	0.1170	0.0174	0.0041	0.0010	1	0.12
66	1.26E-02	1.35E-05	2.89E-04	6.24E-07	1.60E-05	5.76E-08	1.00E-06	0.1145	0.0174	0.0041	0.0010	1	0.11
67	1.34E-02	1.35E-05	2.89E-04	6.72E-07	9.00E-06	6.25E-08	4.00E-06	0.1181	0.0174	0.0031	0.0020	1	0.12
68	1.34E-02	1.40E-05	3.24E-04	6.56E-07	1.60E-05	5.29E-08	1.00E-06	0.1182	0.0184	0.0041	0.0010	1	0.12
69	1.37E-02	1.39E-05	3.24E-04	9.02E-07	2.50E-05	7.29E-08	1.00E-06	0.1194	0.0184	0.0051	0.0010	1	0.12
70	1.41E-02	1.39E-05	3.24E-04	6.89E-07	9.00E-06	5.29E-08	1.00E-06	0.1209	0.0184	0.0031	0.0010	1	0.12
71	1.43E-02	1.47E-05	3.24E-04	6.24E-07	9.00E-06	5.29E-08	4.00E-06	0.1219	0.0184	0.0031	0.0020	1	0.12
72	1.43E-02	1.53E-05	3.24E-04	7.40E-07	1.60E-05	1.60E-07	9.00E-06	0.1219	0.0184	0.0041	0.0030	1	0.12
73	1.52E-02	1.66E-05	3.61E-04	1.08E-06	2.50E-05	1.52E-07	4.00E-06	0.1258	0.0194	0.0051	0.0020	1	0.12
74	1.55E-02	1.66E-05	4.00E-04	1.08E-06	1.60E-05	1.52E-07	4.00E-06	0.1269	0.0204	0.0041	0.0020	1	0.12
75	1.56E-02	1.94E-05	4.84E-04	1.23E-06	2.50E-05	2.02E-07	9.00E-06	0.1273	0.0224	0.0051	0.0030	1	0.12
76	1.71E-02	2.53E-05	6.25E-04	2.50E-06	6.40E-05	3.97E-07	1.60E-05	0.1330	0.0255	0.0082	0.0040	1	0.13
77	1.78E-02	2.30E-05	5.29E-04	2.25E-06	6.40E-05	4.76E-07	1.60E-05	0.1356	0.0235	0.0081	0.0041	1	0.13
78	1.53E-02	1.58E-05	3.61E-04	1.12E-06	2.50E-05	2.12E-07	9.00E-06	0.1261	0.0194	0.0051	0.0030	1	0.12
79	1.52E-02	1.59E-05	4.00E-04	9.60E-07	2.50E-05	1.09E-07	1.00E-06	0.1255	0.0204	0.0051	0.0011	1	0.12

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Step	Inc	Pressure (psi)	ux1	uy1	ux2	uy2	ux3	uy3	ux4	uy4	ux5	uy5	(ux1-ux2)^2
80	14	78	22.6	5.27E-03	2.34E-02	3.02E-02	0.149	3.41E-02	0.168	3.49E-02	0.172	3.52E-02	0.173	6.20E-04
81	14	79	22.7	5.19E-03	2.31E-02	3.07E-02	0.152	3.56E-02	0.175	3.68E-02	0.181	3.73E-02	0.183	6.48E-04
82	14	80	22.8	-1.99E-02	3.02E-02	5.23E-02	0.24	7.40E-02	0.327	8.04E-02	0.362	8.31E-02	0.373	5.21E-03
83	14	81	22.9	-3.40E-02	3.17E-02	0.111	0.376	0.139	0.477	0.149	0.512	0.153	0.524	2.10E-02
84	14	82	23.0	7.44E-03	3.69E-02	2.50E-02	0.12	3.10E-02	0.151	3.44E-02	0.165	3.64E-02	0.172	3.09E-04
85	14	83	23.1	5.26E-03	2.39E-02	2.36E-02	0.118	3.18E-02	0.148	3.55E-02	0.161	3.74E-02	0.169	3.36E-04
86	14	84	23.2	5.54E-03	2.50E-02	2.50E-02	0.127	3.23E-02	0.158	3.62E-02	0.172	3.81E-02	0.179	3.77E-04
87	14	85	23.3	5.26E-03	2.35E-02	2.61E-02	0.132	3.18E-02	0.16	3.41E-02	0.171	3.55E-02	0.176	4.35E-04
88	14	86	23.4	5.33E-03	2.39E-02	2.74E-02	0.139	3.34E-02	0.168	3.58E-02	0.179	3.69E-02	0.184	4.85E-04
89	14	87	23.5	-0.124	6.05E-02	-0.171	0.345	0.215	0.534	0.256	0.679	0.276	0.759	2.21E-03
90	14	88	23.6	5.29E-03	2.43E-02	3.20E-02	0.148	4.50E-02	0.202	5.16E-02	0.229	5.49E-02	0.242	7.15E-04
91	14	89	23.7	5.06E-03	2.22E-02	2.42E-02	0.127	3.34E-02	0.169	3.80E-02	0.188	4.02E-02	0.197	3.67E-04
92	14	90	23.8	5.16E-03	2.28E-02	2.68E-02	0.147	3.43E-02	0.184	3.78E-02	0.201	3.98E-02	0.21	4.66E-04
93	14	91	23.9	5.28E-03	2.30E-02	2.88E-02	0.158	3.65E-02	0.196	4.00E-02	0.211	4.17E-02	0.219	5.54E-04
94	14	92	24.0	5.28E-03	2.33E-02	3.13E-02	0.168	3.92E-02	0.207	4.26E-02	0.222	4.44E-02	0.23	6.76E-04
95	14	93	24.1	5.08E-03	2.22E-02	3.25E-02	0.174	4.08E-02	0.215	4.42E-02	0.231	4.59E-02	0.239	7.54E-04
96	14	94	24.2	5.06E-03	2.20E-02	3.35E-02	0.181	4.19E-02	0.223	4.52E-02	0.239	4.71E-02	0.247	8.10E-04
97	14	95	24.3	5.05E-03	2.20E-02	3.47E-02	0.187	4.32E-02	0.23	4.66E-02	0.246	4.84E-02	0.254	8.80E-04
98	14	96	24.4	5.05E-03	2.19E-02	3.89E-02	0.205	4.84E-02	0.251	5.18E-02	0.267	5.35E-02	0.275	1.15E-03
99	14	97	24.5	5.05E-03	2.19E-02	4.15E-02	0.216	5.29E-02	0.272	5.76E-02	0.294	6.01E-02	0.306	1.33E-03
100	14	98	24.6	5.01E-03	2.16E-02	4.37E-02	0.227	5.59E-02	0.288	6.12E-02	0.313	6.43E-02	0.328	1.50E-03
101	14	99	24.7	5.18E-03	2.17E-02	4.45E-02	0.232	5.72E-02	0.295	6.29E-02	0.322	6.63E-02	0.339	1.54E-03
102	14	100	24.9	5.52E-03	2.30E-02	4.57E-02	0.24	5.98E-02	0.312	6.64E-02	0.345	7.04E-02	0.364	1.62E-03
103	14	101	25.0	5.82E-03	2.34E-02	4.68E-02	0.248	6.12E-02	0.32	6.83E-02	0.355	7.25E-02	0.376	1.68E-03
104	14	102	25.1	6.38E-03	2.37E-02	4.74E-02	0.252	6.21E-02	0.325	6.88E-02	0.358	7.29E-02	0.378	1.68E-03
105	14	103	25.2	5.24E-03	2.16E-02	4.72E-02	0.25	6.24E-02	0.328	6.95E-02	0.363	7.38E-02	0.384	1.76E-03
106	14	104	25.3	5.41E-03	2.50E-02	4.80E-02	0.255	6.33E-02	0.333	7.04E-02	0.368	7.51E-02	0.392	1.82E-03
107	14	105	25.4	5.08E-03	2.18E-02	4.75E-02	0.253	6.29E-02	0.33	7.01E-02	0.366	7.50E-02	0.39	1.80E-03
108	14	106	25.5	5.12E-03	2.19E-02	4.87E-02	0.258	6.44E-02	0.338	7.19E-02	0.376	7.73E-02	[illegible]403	1.90E-03
109	14	107	25.6	5.35E-03	2.32E-02	4.98E-02	0.264	6.5[illegible]E-02	0.346	7.39E-02	0.387	7.90E-02	0.412	1.97E-03
110	14	108	25.7	5.12E-03	2.18E-02	4.95E-02	0.263	6.56E-02	0.345	7.40E-02	0.387	7.91E-02	0.412	1.97E-03
111	14	109	25.8	5.09E-03	2.16E-02	4.99E-02	0.267	6.72E-02	0.356	7.65E-02	0.403	8.40E-02	0.434	2.01E-03
112	14	110	25.9	5.05E-03	2.14E-02	5.15E-02	0.276	7.00E-02	0.373	8.05E-02	0.427	9.13E-02	0.461	2.16E-03
113	14	111	26.0	5.10E-03	2.18E-02	5.20E-02	0.281	7.18E-02	0.383	8.30E-02	0.438	9.66E-02	0.476	2.20E-03
114	14	112	26.1	5.24E-03	2.24E-02	5.22E-02	0.284	7.31E-02	0.391	8.64E-02	0.452	0.101	0.495	2.21E-03
115	14	113	26.2	-7.51E-03	2.57E-02	5.48E-02	0.297	7.66E-02	0.41	8.90E-02	0.472	0.105	0.518	3.89E-03
116	14	114	26.3	5.77E-03	2.49E-02	5.52E-02	0.299	7.74E-02	0.414	9.21E-02	0.481	0.108	0.527	2.44E-03
117	14	115	26.4	8.05E-03	2.77E-02	5.22E-02	0.286	7.75E-02	0.418	9.37E-02	0.493	0.111	0.546	1.95E-03
118	14	116	26.5	1.11E-02	3.00E-02	5.97E-02	0.329	8.48E-02	0.461	0.106	0.54	0.124	0.597	2.36E-03

	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
I	(uy1-uy2)^2	(ux2-ux3)^2	(uy2-uy3)^2	(ux3-ux4)^2	(uy3-uy4)^2	(ux4-ux5)^2	(uy4-uy5)^2	SQR(N+O)	SQR(P+Q)	SQR(R+S)	SQR(T+U)	Criteria	Criteria
80	1.58E-02	1.55E-05	3.61E-04	6.89E-07	1.60E-05	5.29E-08	1.00E-06	0.1280	0.0194	0.0041	0.0010	1	0.13
81	1.66E-02	2.40E-05	5.29E-04	1.64E-06	3.60E-05	2.21E-07	4.00E-06	0.1314	0.0235	0.0061	0.0021	1	0.13
82	4.40E-02	4.73E-04	7.57E-03	4.08E-05	1.23E-03	6.92E-06	1.21E-04	0.2218	0.0897	0.0356	0.0113	1	0.21
83	1.19E-01	7.84E-04	1.02E-02	1.00E-04	1.23E-03	1.60E-05	1.44E-04	0.3736	0.1048	0.0364	0.0126	1	0.36
84	6.91E-03	3.55E-05	9.61E-04	1.19E-05	1.96E-04	3.96E-06	4.90E-05	0.0849	0.0316	0.0144	0.0073	1	0.08
85	8.86E-03	6.69E-05	9.00E-04	1.42E-05	1.69E-04	3.50E-06	6.40E-05	0.0959	0.0311	0.0135	0.0082	1	0.09
86	1.04E-02	5.46E-05	9.61E-04	1.47E-05	1.96E-04	3.61E-06	4.90E-05	0.1038	0.0319	0.0145	0.0073	1	0.10
87	1.18E-02	3.26E-05	7.84E-04	5.02E-06	1.21E-04	2.10E-06	2.50E-05	0.1105	0.0286	0.0112	0.0052	1	0.11
88	1.32E-02	3.67E-05	8.41E-04	5.86E-06	1.21E-04	1.04E-06	2.50E-05	0.1172	0.0296	0.0113	0.0051	1	0.11
89	8.10E-02	1.49E-01	3.57E-02	1.68E-03	2.10E-02	4.00E-04	6.40E-03	0.2884	0.4298	0.1507	0.0825	1	0.21
90	1.53E-02	1.70E-04	2.92E-03	4.36E-05	7.29E-04	1.08E-05	1.69E-04	0.1265	0.0555	0.0278	0.0134	1	0.11
91	1.10E-02	8.46E-05	1.76E-03	2.06E-05	3.61E-04	4.93E-06	8.10E-05	0.1065	0.0430	0.0195	0.0093	1	0.10
92	1.54E-02	5.66E-05	1.37E-03	1.27E-05	2.89E-04	3.80E-06	8.10E-05	0.1261	0.0378	0.0174	0.0092	1	0.12
93	1.82E-02	5.98E-05	1.44E-03	1.17E-05	2.25E-04	2.89E-06	6.40E-05	0.1370	0.0388	0.0154	0.0082	1	0.13
94	2.10E-02	6.32E-05	1.52E-03	1.15E-05	2.25E-04	3.03E-06	6.40E-05	0.1471	0.0398	0.0154	0.0082	1	0.14
95	2.30E-02	6.86E-05	1.68E-03	1.15E-05	2.56E-04	2.92E-06	6.40E-05	0.1543	0.0418	0.0164	0.0082	1	0.15
96	2.53E-02	6.97E-05	1.76E-03	1.13E-05	2.56E-04	3.46E-06	6.40E-05	0.1615	0.0428	0.0163	0.0082	1	0.15
97	2.72E-02	7.19E-05	1.85E-03	1.15E-05	2.56E-04	3.13E-06	6.40E-05	0.1677	0.0438	0.0164	0.0082	1	0.16
98	3.35E-02	8.99E-05	2.12E-03	1.17E-05	2.56E-04	2.76E-06	6.40E-05	0.1862	0.0470	0.0164	0.0082	1	0.18
99	3.77E-02	1.31E-04	3.14E-03	2.14E-05	4.84E-04	6.55E-06	1.44E-04	0.1975	0.0572	0.0225	0.0123	1	0.19
100	4.22E-02	1.48E-04	3.72E-03	2.83E-05	6.25E-04	9.36E-06	2.25E-04	0.2090	0.0622	0.0256	0.0153	1	0.19
101	4.42E-02	1.63E-04	3.97E-03	3.20E-05	7.29E-04	1.14E-05	2.89E-04	0.2139	0.0643	0.0276	0.0173	1	0.20
102	4.71E-02	1.97E-04	5.18E-03	4.41E-05	1.09E-03	1.60E-05	3.61E-04	0.2207	0.0734	0.0337	0.0194	1	0.20
103	5.04E-02	2.07E-04	5.18E-03	4.96E-05	1.23E-03	1.60E-05	4.41E-04	0.2283	0.0734	0.0357	0.0214	1	0.21
104	5.21E-02	2.16E-04	5.33E-03	4.49E-05	1.09E-03	1.74E-05	4.00E-04	0.2320	0.0745	0.0337	0.0204	1	0.21
105	5.22E-02	2.34E-04	6.08E-03	5.01E-05	1.23E-03	1.86E-05	4.41E-04	0.2322	0.0795	0.0357	0.0214	1	0.21
106	5.29E-02	2.34E-04	6.08E-03	5.06E-05	1.23E-03	2.19E-05	5.76E-04	0.2339	0.0795	0.0357	0.0245	1	0.21
107	5.35E-02	2.36E-04	5.93E-03	5.14E-05	1.30E-03	2.38E-05	5.76E-04	0.2351	0.0785	0.0367	0.0245	1	0.21
108	5.58E-02	2.47E-04	6.40E-03	5.69E-05	1.44E-03	2.87E-05	7.29E-04	0.2401	0.0815	0.0387	0.0275	1	0.21
109	5.80E-02	2.60E-04	6.72E-03	6.45E-05	1.68E-03	2.54E-05	6.25E-04	0.2449	0.0836	0.0418	0.0255	1	0.22
110	5.82E-02	2.62E-04	6.72E-03	6.94E-05	1.76E-03	2.62E-05	6.25E-04	0.2452	0.0836	0.0428	0.0255	1	0.22
111	6.02E-02	2.97E-04	7.92E-03	8.76E-05	2.21E-03	5.64E-05	9.61E-04	0.2495	0.0907	0.0479	0.0319	1	0.22
112	6.48E-02	3.43E-04	9.41E-03	1.09E-04	2.92E-03	1.16E-04	1.16E-03	0.2588	0.0988	0.0550	0.0357	1	0.22
113	6.72E-02	3.92E-04	1.04E-02	1.25E-04	3.03E-03	1.85E-04	1.44E-03	0.2634	0.1039	0.0561	0.0404	1	0.22
114	6.84E-02	4.36E-04	1.14E-02	1.77E-04	3.72E-03	2.14E-04	1.85E-03	0.2658	0.1090	0.0624	0.0454	1	0.22
115	7.36E-02	4.75E-04	1.28E-02	1.53E-04	3.84E-03	2.57E-04	2.12E-03	0.2784	0.1151	0.0632	0.0487	1	0.23
116	7.51E-02	4.92E-04	1.32E-02	2.17E-04	4.49E-03	2.52E-04	2.12E-03	0.2785	0.1171	0.0686	0.0487	1	0.23
117	6.67E-02	6.41E-04	1.74E-02	2.63E-04	5.63E-03	2.99E-04	2.81E-03	0.2621	0.1344	0.0767	0.0557	1	0.21
118	8.94E-02	6.32E-04	1.74E-02	4.49E-04	6.24E-03	3.24E-04	3.25E-03	0.3029	0.1344	0.0818	0.0598	1	0.24

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
I	Step	Inc	Pressure (psi)	ux1	uy1	ux2	uy2	ux3	uy3	ux4	uy4	ux5	uy5	(ux1-ux2)^2
119	14	117	26.6	1.11E-02	3.16E-02	6.09E-02	0.336	8.76E-02	0.475	0.111	0.558	0.132	0.62	2.48E-03
120	14	118	26.7	7.21E-03	2.95E-02	6.23E-02	0.343	9.37E-02	0.491	0.123	0.588	0.148	0.662	3.03E-03
121	14	119	26.8	6.13E-03	2.67E-02	6.34E-02	0.348	0.104	0.513	0.138	0.621	0.167	0.704	3.28E-03
122	14	120	26.9	5.89E-03	2.83E-02	6.38E-02	0.334	0.112	0.527	0.15	0.656	0.182	0.759	3.36E-03
123	14	121	27.0	5.61E-03	2.45E-02	6.84E-02	0.351	0.119	0.543	0.161	0.681	0.197	0.795	3.94E-03
124	14	122	27.1	5.80E-03	2.67E-02	7.17E-02	0.36	0.127	0.57	0.172	0.719	0.211	0.843	4.34E-03
125	14	123	27.2	5.83E-03	2.81E-02	7.55E-02	0.369	0.135	0.593	0.184	0.756	0.225	0.901	4.85E-03
126	14	124	27.3	6.50E-03	2.66E-02	8.29E-02	0.385	0.144	0.616	0.196	0.794	0.241	0.944	5.84E-03
127	14	125	27.4	1.08E-02	4.33E-02	6.89E-02	0.332	0.14	0.609	0.196	0.805	0.246	0.975	3.37E-03
128	14	126	27.5	6.08E-03	3.66E-02	7.53E-02	0.365	0.147	0.639	0.208	0.848	0.262	1.03	4.79E-03
129	14	127	27.6	6.00E-03	2.99E-02	9.62E-02	0.416	0.171	0.694	0.237	0.916	0.295	1.12	8.13E-03
130	14	128	27.7	6.59E-03	3.40E-02	0.102	0.422	0.182	0.717	0.252	0.963	0.314	1.19	9.10E-03
131	14	129	27.8	7.31E-03	2.97E-02	0.11	0.431	0.196	0.747	0.272	1.02	0.342	1.27	1.05E-02
132	14	130	27.9	7.57E-03	3.17E-02	0.114	0.439	0.208	0.784	0.29	1.08	0.366	1.35	1.13E-02
133	14	131	28.0	8.21E-03	3.15E-02	0.115	0.442	0.224	0.826	0.317	1.15	0.402	1.46	1.14E-02
134	14	132	28.1	0.127	6.75E-02	0.288	0.453	0.464	1.02	0.61	1.5	0.743	1.93	2.59E-02
135	14	133	28.2	-3.62E-02	4.52E-02	0.14	0.463	0.284	1	0.453	1.52	0.6	1.99	3.10E-02
136	14	134	28.3	2.18E-02	4.72E-02	0.184	0.661	0.372	1.26	0.542	1.8	0.703	2.32	2.63E-02
137	14	135	28.4	2.59E-02	4.70E-02	0.167	0.559	0.364	1.21	0.557	1.81	0.741	2.39	1.99E-02
138	14	136	28.5	3.03E-02	4.28E-02	0.189	0.573	0.384	1.27	0.622	1.96	0.839	2.63	2.52E-02
139	14	137	28.6	3.31E-02	4.62E-02	0.259	0.834	0.507	1.59	0.75	2.32	1.02	3.1	5.11E-02
140	14	138	28.7	5.82E-02	6.31E-02	0.287	0.839	0.575	1.71	0.865	2.55	1.15	3.38	5.24E-02
141	14	139	28.8	5.12E-02	4.82E-02	0.291	0.801	0.645	1.9	1.06	2.04	2.06	5.62	5.75E-02
142	14	140	28.9	0.244	0.335	0.64	1.44	1.05	2.59	1.5	3.9	1.93	5.16	1.57E-01
143	14	141	29.0	0.1	0.127	0.581	1.36	1.07	2.76	1.56	4.07	2.03	5.41	2.31E-01
144	14	142	29.1	8.00E-02	9.01E-02	0.479	1.01	0.976	2.55	1.55	4.02	2.14	5.49	1.59E-01
145	14	143	29.2	0.123	7.43E-02	0.617	1.29	1.24	3.15	1.98	4.88	2.74	6.68	2.44E-01
146	14	144	29.3	0.159	9.70E-02	0.875	2.03	1.81	4.16	2.79	6.31	3.8	8.52	5.13E-01
147	14	145	29.4	0.233	0.137	1.09	1.76	2.22	4.57	3.47	7.16	4.78	9.87	7.34E-01
148	14	146	29.5	0.329	0.189	1.58	2.58	3.42	6.78	11.8	5.89	11	26.5	1.57E+00

	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	(uy1-uy2)^2	(ux2-ux3)^2	(uy2-uy3)^2	(ux3-ux4)^2	(uy3-uy4)^2	(ux4-ux5)^2	(uy4-uy5)^2	SQR(N+O)	SQR(P+Q)	SQR(R+S)	SQR(T+U)	Criteria	Criteria
119	9.26E-02	7.14E-04	1.93E-02	5.49E-04	6.89E-03	4.41E-04	3.84E-03	0.3084	0.1415	0.0862	0.0655	1	0.24
120	9.83E-02	9.87E-04	2.19E-02	8.58E-04	9.41E-03	6.25E-04	5.48E-03	0.3183	0.1513	0.1013	0.0781	1	0.24
121	1.03E-01	1.65E-03	2.72E-02	1.16E-03	1.17E-02	8.41E-04	6.89E-03	0.3263	0.1699	0.1132	0.0879	1	0.24
122	9.34E-02	2.32E-03	3.72E-02	1.44E-03	1.66E-02	1.02E-03	1.06E-02	0.3111	0.1989	0.1345	0.1079	1	0.20
123	1.07E-01	2.56E-03	3.69E-02	1.76E-03	1.90E-02	1.30E-03	1.30E-02	0.3325	0.1986	0.1442	0.1195	1	0.21
124	1.11E-01	3.06E-03	4.41E-02	2.03E-03	2.22E-02	1.52E-03	1.54E-02	0.3397	0.2172	0.1556	0.1300	1	0.21
125	1.16E-01	3.54E-03	5.02E-02	2.40E-03	2.66E-02	1.68E-03	2.10E-02	0.3479	0.2318	0.1702	0.1507	1	0.20
126	1.28E-01	3.73E-03	5.34E-02	2.70E-03	3.17E-02	2.03E-03	2.25E-02	0.3665	0.2389	0.1854	0.1566	1	0.21
127	8.34E-02	5.06E-03	7.67E-02	3.14E-03	3.84E-02	2.50E-03	2.89E-02	0.2945	0.2860	0.2038	0.1772	1	0.12
128	1.08E-01	5.14E-03	7.51E-02	3.72E-03	4.37E-02	2.92E-03	3.31E-02	0.3356	0.2832	0.2177	0.1898	1	0.15
129	1.49E-01	5.60E-03	7.73E-02	4.36E-03	4.93E-02	3.36E-03	4.16E-02	0.3965	0.2879	0.2316	0.2121	1	0.18
130	1.51E-01	6.40E-03	8.70E-02	4.90E-03	6.05E-02	3.84E-03	5.15E-02	0.3996	0.3057	0.2558	0.2353	1	0.16
131	1.61E-01	7.40E-03	9.99E-02	5.78E-03	7.45E-02	4.90E-03	6.25E-02	0.4142	0.3275	0.2834	0.2596	1	0.15
132	1.66E-01	8.84E-03	1.19E-01	6.72E-03	8.76E-02	5.78E-03	7.29E-02	0.4210	0.3576	0.3071	0.2805	1	0.14
133	1.69E-01	1.19E-02	1.47E-01	8.65E-03	1.05E-01	7.23E-03	9.61E-02	0.4242	0.3992	0.3371	0.3214	1	0.10
134	1.49E-01	3.10E-02	3.21E-01	2.13E-02	2.30E-01	1.77E-02	1.85E-01	0.4178	0.5937	0.5017	0.4501	-1	-0.03
135	1.75E-01	2.07E-02	2.88E-01	2.86E-02	2.70E-01	2.16E-02	2.21E-01	0.4534	0.5560	0.5468	0.4925	-1	-0.04
136	3.77E-01	3.53E-02	3.59E-01	2.89E-02	2.92E-01	2.59E-02	2.70E-01	0.6349	0.6278	0.5661	0.5444	1	0.09
137	2.62E-01	3.88E-02	4.24E-01	3.72E-02	3.60E-01	3.39E-02	3.36E-01	0.5311	0.6802	0.6303	0.6085	-1	-0.08
138	2.81E-01	3.80E-02	4.86E-01	5.66E-02	4.76E-01	4.71E-02	4.49E-01	0.5534	0.7238	0.7299	0.7043	-1	-0.15
139	6.21E-01	6.15E-02	5.72E-01	5.90E-02	5.33E-01	7.29E-02	6.08E-01	0.8195	0.7956	0.7694	0.8254	-1	-0.01
140	6.02E-01	8.29E-02	7.59E-01	8.41E-02	7.06E-01	8.12E-02	6.89E-01	0.8089	0.9174	0.8887	0.8776	-1	-0.07
141	5.67E-01	1.25E-01	1.21E+00	1.72E-01	1.96E-02	1.00E+00	1.28E+01	0.7901	1.1546	0.4380	3.7170	-1	-2.93
142	1.22E+00	1.68E-01	1.32E+00	2.03E-01	1.72E+00	1.85E-01	1.59E+00	1.1738	1.2209	1.3851	1.3314	-1	-0.16
143	1.52E+00	2.39E-01	1.96E+00	2.40E-01	1.72E+00	2.21E-01	1.80E+00	1.3235	1.4829	1.3986	1.4200	-1	-0.10
144	8.46E-01	2.47E-01	2.37E+00	3.29E-01	2.16E+00	3.48E-01	2.16E+00	1.0027	1.6182	1.5781	1.5840	-1	-0.58
145	1.48E+00	3.88E-01	3.46E+00	5.48E-01	2.99E+00	5.78E-01	3.24E+00	1.3123	1.9616	1.8816	1.9539	-1	-0.64
146	3.74E+00	8.74E-01	4.54E+00	9.60E-01	4.62E+00	1.02E+00	4.88E+00	2.0613	2.3262	2.3628	2.4299	-1	-0.37
147	2.63E+00	1.28E+00	7.90E+00	1.56E+00	6.71E+00	1.72E+00	7.34E+00	1.8354	3.0287	2.8759	3.0100	-1	-1.17
148	5.72E+00	3.39E+00	1.76E+01	7.02E+01	7.92E-01	6.40E-01	4.25E+02	2.6985	4.5854	8.4271	20.6255	-1	-17.93

ATTACHMENT 4

SPREADSHEET FOR DETERMINATION OF RELATIVE DOME DISPLACEMENTS FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 6/8/94
Date

Checked by: Phillip R Kirk _____ 5/27/94
Date

Time	Pressure (psi)	U2 at 1619 (in)	U2 at 1143	Relative Deflec. (in)
12.24	3.528	-0.711	-0.626	-0.085
12.48	7.056	-0.602	-0.595	-0.006
12.71	10.437	-0.493	-0.565	0.072
12.95	13.965	-0.385	-0.535	0.150
13.00	14.700	0.377	-0.529	0.906
13.05	15.715	1.826	-0.519	2.345
13.10	16.730	2.447	-0.508	2.955
13.15	17.745	3.251	-0.497	3.748
13.20	18.760	4.271	-0.479	4.750
13.25	19.775	5.511	-0.466	5.977
13.30	20.790	7.008	-0.406	7.414
13.35	21.805	8.625	-0.381	9.006
13.40	22.820	10.610	-0.336	10.946
13.45	23.835	13.420	-0.294	13.714
13.50	24.850	16.220	-0.254	16.474
13.55	25.865	20.260	-0.200	20.460
13.60	26.880	26.160	-0.060	26.220
13.65	27.895	36.540	0.043	36.497
13.70	28.910	66.410	0.354	66.056

ATTACHMENT 5

SPREADSHEET FOR DETERMINATION OF RELATIVE DOME DISPLACEMENTS - REFINED ANALYSIS, FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 6/8/94
Date

Checked by: Phillip R. Kirch 5/27/94
Date

Time	Pressure (psi)	U2 at 1619 (in)	U2 at 1143 (in)	Rel. Dome Defl. (in)
12.24	3.12	-0.723	-0.629	-0.094
12.48	6.24	-0.627	-0.602	-0.025
12.71	9.23	-0.531	-0.576	0.045
12.95	12.35	-0.435	-0.549	0.114
13.00	13.00	-0.416	-0.543	0.128
13.05	13.15	-0.411	-0.542	0.131
13.10	13.30	-0.407	-0.541	0.134
13.15	13.45	-0.402	-0.539	0.138
13.20	13.60	-0.397	-0.538	0.141
13.25	13.75	-0.393	-0.537	0.144
13.30	13.90	-0.388	-0.536	0.148
13.35	14.05	-0.383	-0.534	0.151
13.40	14.20	-0.379	-0.533	0.154
13.45	14.35	-0.374	-0.532	0.158
13.50	14.50	1.323	-0.529	1.852
13.55	14.65	1.384	-0.528	1.912
13.60	14.80	1.425	-0.527	1.952
13.65	14.95	1.476	-0.526	2.002
13.70	15.10	1.534	-0.525	2.059
13.75	15.25	1.597	-0.523	2.120
13.80	15.40	1.714	-0.522	2.236
13.85	15.55	1.791	-0.519	2.310
13.90	15.70	1.864	-0.518	2.382
13.95	15.85	1.941	-0.516	2.457
14.00	16.00	2.022	-0.515	2.537

ATTACHMENT 6

SPREADSHEET SUMMARY OF DOME REBAR STRESS FOR HALF-MILLION-GALLON TANK

Prepared by: _____ 6/8/94
Date

Checked by: Phillip R. Kirk 5/27/94
Date

Time	Pressure (psi)	S11 in 277	E11 in 277	S11 in 261	E11 in 261	S11 in 226	E11 in 226	S11 in 260	E11 in 260
0.238	3.499	-1.195E+03	-4.224E-05	-1.169E+03	-4.130E-05	-1.213E+03	-4.288E-05	-1.195E+03	-4.222E-05
0.476	6.997	-1.394E+02	-4.925E-06	-5.822E+01	-2.057E-06	-3.385E+02	-1.196E-05	-1.012E+02	-3.574E-06
0.714	10.496	8.897E+02	3.141E-05	1.050E+03	3.711E-05	5.352E+02	1.891E-05	1.014E+03	3.583E-05
0.952	13.994	1.917E+03	6.775E-05	2.157E+03	7.623E-05	1.407E+03	4.971E-05	2.127E+03	7.517E-05
1.000	14.700	2.842E+04	1.004E-03	4.445E+04	2.472E-03	7.041E+03	2.488E-04	1.380E+03	4.876E-05
13.050	15.840	4.151E+04	1.839E-03	4.918E+04	7.151E-03	4.060E+04	1.642E-03	3.400E+04	1.201E-03
13.100	16.980	4.383E+04	2.338E-03	5.069E+04	1.073E-02	4.233E+04	2.015E-03	3.645E+04	1.288E-03
13.150	18.120	4.538E+04	2.985E-03	5.294E+04	1.481E-02	4.359E+04	2.286E-03	3.878E+04	1.409E-03
13.200	19.260	4.610E+04	3.733E-03	5.603E+04	1.801E-02	4.474E+04	2.533E-03	4.045E+04	1.610E-03
13.250	20.400	4.703E+04	4.692E-03	5.909E+04	2.118E-02	4.532E+04	2.921E-03	4.214E+04	1.975E-03
13.300	21.540	4.808E+04	5.782E-03	6.155E+04	2.683E-02	4.590E+04	3.520E-03	4.396E+04	2.367E-03
13.350	22.680	4.910E+04	6.965E-03	6.362E+04	3.309E-02	4.673E+04	4.379E-03	4.526E+04	2.862E-03
13.400	23.820	4.983E+04	8.687E-03	6.695E+04	4.322E-02	5.136E+04	1.232E-02	4.643E+04	4.071E-03
13.450	24.960	5.187E+04	1.352E-02	6.104E+04	5.126E-02	6.734E+04	4.439E-02	5.889E+04	2.097E-02
13.500	26.100	5.539E+04	1.735E-02	6.649E+04	5.145E-02	7.058E+04	6.406E-02	6.425E+04	3.502E-02
13.550	27.240	6.038E+04	2.328E-02	6.899E+04	5.154E-02	7.269E+04	1.064E-01	7.026E+04	5.776E-02
13.600	28.380	6.361E+04	3.308E-02	7.012E+04	5.496E-02	7.500E+04	1.779E-01	7.217E+04	9.590E-02
13.650	29.520	7.006E+04	5.373E-02	6.972E+04	5.917E-02	7.500E+04	3.169E-01	7.500E+04	1.760E-01
13.700	30.660	7.326E+04	1.179E-01	7.263E+04	1.029E-01	7.500E+04	6.572E-01	7.500E+04	4.103E-01

DATE
FILMED
10/12/94

END