Piping Benchmark Problems for the Westinghouse AP600 Standardized Plant

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U.S. Nuclear Regulatory Commission

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ABSTRACT

To satisfy the need for verification of the computer programs and modeling techniques that will be used to perform the final piping analyses for the Westinghouse AP600 Standardized Plant, three benchmark problems were developed. The problems are representative piping systems subjected to representative dynamic loads with solutions developed using the methods being proposed for analysis for the AP600 standard design. It will be required that the combined license licensees demonstrate that their solutions to these problems are in agreement with the benchmark problem set.

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EXECUTIVE SUMMARY

The NRC staff has identified piping and pipe support design as one technical area where engineering information in sufficient detail can not be provided for the Westinghouse AP600 standard design to allow the staff to make a final safety decision under the rules of 10 CFR, Part 52. For this and similar areas the staff will use design acceptance criteria (DAC) verified by inspections, tests, analyses, and acceptance criteria (ITAAC) to enable the final safety determination. One element of the piping DAC requires the combined license (COL) licensee to verify the sufficiency of the computer codes and modeling techniques to be used to complete its piping stress analyses. To provide the basis for this verification, the staff developed an AP600 specific piping benchmark program. The COL licensee will be required to develop solutions to the benchmark problems and to demonstrate that those solutions meet the acceptance criteria specified in this benchmark program report.

The benchmark program consists of three piping problems involving two piping systems representative of the AP600. One system represents the Pressurizer Surge Line while the other represents the Main Steam Line Loop 2. The problems provide analytical benchmarks for three analysis methods, the uniform support motion response spectrum method, the independent support motion response spectrum method, and the modal superposition time history analysis method. Response of the pressurizer piping is developed using the response spectrum methods while the time history method is applied to the main steam line. In all analyses the excitation functions are representative for the AP600. This report presents the benchmark problems and includes all the information needed by the COL licensee to perform the analyses and evaluate the results. Acceptable analysis methods will estimate natural frequencies to within 2%, maximum pipe moments to within 5%, and support reactions and maximum displacements to within 10% of the benchmark results. A COL licensee having demonstrated this level of accuracy may use the benchmarked analysis method without further review. In instances where some deviations from the acceptance criteria occur, the results and justification for such deviations shall be documented and submitted to the staff for review and approval before initiating piping qualification analyses.

1.0 INTRODUCTION

1.1 Purpose

This report describes the NRC benchmark program for the verification of computer programs that will be used by combined license (COL) licensees to complete the design and analysis of piping systems in the Westinghouse AP600 Standardized Plant. It provides detailed descriptions of the benchmark problems including geometries, material properties, analytical methods, input loads and solutions. The report also provides the acceptance criteria which must be met to demonstrate that the COL licensee's solutions to the benchmark problems are acceptable to NRC.

1.2 Background

In reviewing the design certification application for the Westinghouse AP600 under the rules of 10 CFR Part 52, Reference 1, the NRC staff identified a number of technical areas in which the applicant did not provide design and engineering information in sufficient detail to make a final safety decision. One of these areas was piping and pipe support design where Westinghouse did not have the as-built or as-procured information to complete the final design. To resolve this issue, the staff developed an alternate approach using design acceptance criteria (DAC). The DAC are a set of prescribed limits, parameters, procedures, and attributes upon which the NRC relies in making a final safety determination to support a design certification. The DAC are objective (measurable, testable, or subject to analysis using pre-approved methods), and must be verified as a part of the inspections, tests, analyses, and acceptance criteria (ITAAC) used to demonstrate that the as-built facility conforms to the certified design. The combined license (COL) licensee will use the DAC to demonstrate conformance with the AP600 standard design during construction. This will enable the NRC staff to make a final safety determination through the review of the COL licensee's satisfactory implementation and verification of the ITAAC.

The NRC staff's evaluation of Westinghouse's proposed DAC approach for the AP600 piping design was documented in their final safety evaluation report. In that document the staff provided their evaluation of the Westinghouse certified design commitments and corresponding ITAAC for the AP600 piping design. One of these commitments was to verify the piping analysis modeling and the computer code to be used by the COL

licensee to complete its piping stress analysis. The COL licensee will verify the sufficiency of the computer code and modeling techniques in conjunction with the DAC. The NRC found this commitment acceptable provided that the computer program and the modeling techniques will be evaluated using the NRC benchmark program. The staff concluded that once the COL licensee successfully completes the DAC verifying that the piping benchmark results are within the acceptable range of values specified in the benchmark program, there is reasonable assurance that the computer code and analytical modeling techniques to be used to complete the AP600 piping design and analyses are adequate.

1.3 Benchmark Program Overview

The benchmark program requires the COL licensee to construct mathematical models and perform dynamic analyses of specified representative AP600 piping systems using his own computer program. When the analyses are completed, the COL licensee will compare his results to those of the benchmark problems given in this report to ensure that the results meet the range of acceptable values. Any deviations from these values, as well as, the justification for such deviations, shall be documented and submitted to the NRC staff for review and approval before initiating final certified piping analyses. This benchmarking will provide assurance that the computer program used to complete the AP600 piping design and analyses will produce results that are consistent with results considered acceptable to the NRC staff.

This report presents the benchmark problems and gives all information needed by the COL licensee to perform the analyses and evaluate the results. The Brookhaven National Laboratory (BNL), under contract with the NRC staff, developed these problems based on representative piping system design information provided by Westinghouse during the NRC technical review and evaluation of the AP600. The benchmark problems represent loop 2 of the main steam line and the pressurizer surge line. Although the piping benchmark problems are considered representative AP600 piping configurations they are not intended to be final designs. BNL constructed mathematical models of these two piping systems using the PSAFE2 piping analysis program.

This report provides a complete description of the input parameters for each problem including piping dimensions, material properties, weights, support stiffnesses and locations, load definitions and damping

Introduction

analysis method. The BNL solutions to each problem are presented in this report. Specific guidelines for comparing COL licensee results to these published results and acceptance criteria to be satisfied in order to demonstrate acceptability are also given.

2.0 PROJECT BACKGROUND

The PSAFE2 program is a full feature, elastic piping analysis code based on the finite element method. The program, a modified version of the general purpose computer program SAP IV, Reference 2, was developed by BNL to analyze piping systems subjected to both static and dynamic loading. Dynamic analysis capabilities include both response spectrum and time history analysis for systems subjected to either uniform or independent support motions.

The PSAFE2 program and its precursor EPIPE, Reference 3, have been extensively tested and verified against other piping programs and against physical test results. The programs have been applied to develop earlier NRC benchmark problem solutions to confirm the adequacy of programs used by nuclear power plant license applicants (References 4 and 5).

This report presents the solutions to piping benchmark problems with configurations that are representative of Westinghouse AP600 piping systems. The solution methods that were applied were not in their entirety included in earlier NRC benchmark studies. They include the uniform response spectrum method with high frequency mode responses, the independent support motion response spectrum method with high frequency mode responses, and the modal superposition time history analysis method. The following section provides a brief description of the analytical methods.

2.1 Mathematical Background

Since elastic piping analysis is a well established procedure, only a brief outline of the theoretical considerations used in obtaining the dynamic solutions will be presented. A more detailed description of the analysis methods and solution schemes is given in Reference 2.

The analysis of a piping system is carried out by use of the stiffness matrix method, in which the piping is represented by a network of basic elements, straight and curved beams, and one-dimensional elements interconnected at the nodes. The dynamic response of the network is described mathematically by the equation of motion:

$$M\ddot{u} + C\dot{u} + Ku = R(t)$$

where M is the mass matrix, C is the damping matrix, and K is the stiffness matrix of the element assemblage. The vectors u , $\dot{u}$, and $\ddot{u}$ are the nodal displacements, velocities, and accelerations, respectively. $R(t)$ can be a vector of time varying loads or of effective loads which result from ground motion. The PSAFE2 program can carry out time history or response spectrum analysis for the solution of this equation. A brief description of the methods used in these benchmark problem solutions is provided below.

2.1.1 Uniform Support Motion Response Spectrum Analysis

In the case of ground motion, if it is assumed that the piping system is uniformly subjected to the ground acceleration, $\ddot{u}_g$, the equations of motion can be expressed as follows:

$$M\ddot{u}_r + C\dot{u}_r + Ku_r = -M\ddot{u}_g$$

where u_r is the relative displacement of the system with respect to the ground, $u_r = u - u_g$.

The equations are then expanded in terms of the system modal matrix and generalized coordinates:

$$[M][\phi]\{\ddot{q}\} + [C][\phi]\{\dot{q}\} + [K][\phi]\{q\} = -[M]\{\ddot{u}_g\}$$

where:

$$[\phi] = \text{normalized modal matrix } [\phi]^T[M][\phi] = I$$

$$q = \text{generalized coordinates vector.}$$

Multiplication by the transpose of the modal matrix yields:

$$\{\ddot{q}\} + [\Delta]\{\dot{q}\} + [\omega^2]\{q\} = -[\phi]^T[M]\{\ddot{u}_g\}$$

where:

$[\omega^2] =$	diagonal matrix of eigen-values
$[\Delta] =$	diagonal matrix of modal damping coefficients, where the damping is assumed to satisfy the modal orthogonality condition. This results in n uncoupled equations for the generalized coordinates.

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The equation set can be solved for the maximum modal response for each system degree of freedom corresponding to excitation in each spatial direction as follows:

$$u_{m,n,i} = \frac{S_{n,i}}{\omega_n^2} \phi_{m,n} L_{n,i}$$

where:

$u_{m,n,i}$ = maximum displacement of m th degree of freedom in the n th mode due to excitation in the i th spatial direction

$S_{n,i}$ = value of spectral acceleration corresponding to frequency ω_n , and the i th spatial direction input response spectrum

$L_{n,i}$ = modal participation factor for n th mode and i th spatial direction

ω_n = n th system natural frequency

$\phi_{m,n}$ = modal deflection of degree of freedom m in n th mode

m = degree of freedom index

n = modal index

i = spatial index

For the final solution, the maximum modal responses are combined over the first n modes up to the cutoff frequency (the lower frequency nodes) at which the spectral acceleration roughly returns to the zero period acceleration (ZPA). For the benchmark problems given in this report, the modal combinations were performed in accordance with the grouping method as described in Section 1.2.1 of Regulatory Guide 1.92, Reference 6.

In some piping systems the responses of modes above the cutoff frequency (the high frequency modes) may have a significant effect on the total response, especially on support reactions. In order to ensure that these high frequency mode effects are accounted for, an additional calculational procedure based on the methodology described in Appendix A to Section 3.7.2 of the Standard Review Plan, Reference 7, was implemented. This procedure is as follows:

For each degree of freedom (DOF) included in the dynamic analysis, the fraction of DOF mass, d_i , included in the summation of all of the modes up to the cutoff frequency was calculated for each DOF as follows:

$$d_i = \sum_{n=1}^N L_n \times \phi_{n,i}$$

where:

n is order of the mode under consideration,
 N is the number of modes included in Step 1,
 $\phi_{n,i}$ is the n th natural mode of the system, and
 L_n is the participation factor given by:

$$L_n = \frac{\{\phi_n\}^T \{1\}}{\{\phi_n\}^T [M] \{\phi_n\}}$$

The fraction of DOF mass not included in the summation of these modes, e_i , was then calculated as:

$$e_i = d_i - \delta_{ij}$$

where δ_{ij} is the Kronecker delta, which is one if DOF i is in the direction of the earthquake motion and zero if DOF i is a rotation or not in the direction of the earthquake input motion.

Since higher modes can be assumed to respond in phase with the ZPA and thus, with each other, these modes should be combined algebraically. This is equivalent to pseudostatic response to the inertial forces from these higher modes excited at the ZPA. These pseudostatic inertial forces for all higher modes for each DOF i are given by:

$$P_i = \text{ZPA} \times M_i \times e_i$$

where:

P_i is the force or moment to be applied to DOF i .

M_i is the mass or mass moment of inertia associated with DOF i .

In order to determine the maximum responses associated with the high frequency modes, a static analysis is performed by applying this set of pseudostatic inertial forces to all of the degrees of freedom in the

model. The total high frequency mode responses are then combined by the square-root-of-sum-of-squares method

with the total combined response from the lower-frequency modes to determine the overall piping system peak responses.

2.1.2 Independent Support Motion Response Spectrum Analysis

For a piping system that is supported at multiple locations that are subjected to different seismic motions, the independent support motion (ISM) response spectrum method of analysis may provide more realistic results. The governing equations of motion for this type of analysis may be expressed as follows:

$$\begin{bmatrix} M_P & 0 \\ 0 & 0 \end{bmatrix} \begin{Bmatrix} \ddot{X} \\ \ddot{Z} \end{Bmatrix} + \begin{bmatrix} C_P & C_{PB} \\ C_{BP} & C_B \end{bmatrix} \begin{Bmatrix} \dot{X} \\ \dot{Z} \end{Bmatrix} + \begin{bmatrix} K_P & K_{PB} \\ K_{BP} & K_B \end{bmatrix} \begin{Bmatrix} X \\ Z \end{Bmatrix} = \begin{Bmatrix} 0 \\ F_B \end{Bmatrix}$$

where:

- M_P = Pipe mass matrix
- C_P = Pipe damping matrix
- K_P = Pipe stiffness matrix
- C_B = Support damping matrix
- K_B = Support stiffness matrix
- C_{PB} or C_{BP} = Pipe support coupling damping matrix
- K_{PB} or K_{BP} = Pipe support coupling stiffness matrix
- F_B = Support force vector
- X = Pipe response vector
- Z = Support response vector

The above equation assumes that no masses are being placed at the ends of the supports where they connect to the ground and that all the external forces on the piping system are being transmitted through the supports.

The piping system response can be separated into two components, one due to the inertia or dynamic effects of pipe masses (X_D) and the other, termed the pseudo-static response, due to the differential motions of the support points (X_S). Hence,

$$X = X_D + X_S$$

After substituting these response components into the above equation of motion and neglecting the

support damping effects, the governing equations for the two response components can be written as follows:

For inertia or dynamic response:

$$M_P \ddot{X}_D + C_P \dot{X}_D + K_P X_D = M_P K_P^{-1} K_{PB} \ddot{Z}$$

$$K_{BP} X_D = F_{BD}$$

For pseudostatic response:

$$K_P X_S + K_{PB} Z = 0$$

$$K_{PB} X_S + K_B Z = F_{BS}$$

In each case, the upper equation governs the motion and the lower equation defines the support reaction forces. The equation for inertia response is identical to the conventional structural dynamic equation except that the modal participation factors derived from it differ from those derived for uniform support motion.

The inertia component of response is obtained by using the modal solution approach:

$$\text{Let } X_D = \phi q$$

where ϕ = modal matrix
 q = modal response vector

The modal equation for dynamic response reduces to:

$$\ddot{q} + 2\xi\omega \dot{q} + \omega^2 q = \phi^T M_P K_P^{-1} K_{PB} \ddot{Z}$$

In component form it can be rewritten as:

$$\ddot{q}_{ij}^k + 2\xi_i \omega_i \dot{q}_{ij}^k + \omega_i^2 q_{ij}^k = L_{ij}^k \ddot{Z}_j^k$$

where:

- ξ_i = modal damping coefficient
- ω_i = modal frequency
- i = 1, 2, ...NF
- j = 1, 2, 3, (corresponding to the three spatial directions)
- k = 1, 2, ...NG

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Here NF and NG correspond to the number of frequencies and number of support points, or support groups, in the piping system. Thus, there exists one individual set of modal equations for each support group.

The modified modal participation factors are given as:

$$L = \Phi^T M_p K_p^{-1} K_{PB}$$

To determine the modified modal participation factors it is necessary to invert the stiffness matrix K_p . One approach to obtain this from the available modal solutions is to use the properties of the stiffness matrix with the modal frequencies and their mode shapes. That is using the relations,

$$\Phi^T K_p \Phi = \omega^2$$

and taking the inverse on both sides one derives

$$K_p^{-1} = \Phi (\omega^2)^{-1} \Phi^T$$

Using this relation the equation for the modal participation factors can be expressed as:

$$L_{ij}^k = \sum_{s=1}^n \frac{\Phi_{is} (K_{PB})_{sj}^k}{\omega_i^2}$$

where n = number of equations representing the piping model. This equation can be used to evaluate the participation factors, without any loss of generality, from the modal solutions, even if the actual modal solution has been truncated to a finite number of modes.

The response spectra values $S_j^k(\omega_i)$ at frequency ω_i , for the k th group, in the j th direction of excitation, are obtained by solving the equation for a single degree of freedom system subjected to an acceleration of $Z_j(k)$, using the Duhamel integral, and is given by:

$$S_j^k(\omega_i) = \left| \frac{1}{\omega_i \sqrt{1 - \xi_i^2}} \int_0^t \ddot{Z}_j^k(\tau) e^{-\xi_i \omega_i (t-\tau)} d\tau \right|_{\max}$$

where:

$$A = \sin \sqrt{1 - \xi_i^2} \omega_i (t - \tau) d\tau$$

This represents the peak possible modal response obtained by multiplying response spectra value by the corresponding modal participation factor L_{ij}^k providing:

$$(q_{ij}^k)_{\max} = L_{ij}^k S_j^k(\omega_i)$$

It should be noted that during the solution process the phasing between the individual support excitations is lost and only the peak responses due to each support excitation is obtained from the above equation. Thus, a set of modal solution vectors is obtained for each support excitation in each spatial direction. Other parameters, such as pipe displacements, accelerations, pipe forces or moments and the support forces, are obtained from these modal responses. Again, as with the uniform response spectrum method, the maximum modal responses are only obtained for the first m modes up to the cutoff frequency.

To obtain the final inertial response it is necessary to combine the group modal responses, make corrections to account for modes above the cutoff frequency, combine between group responses and combine overall directional inputs. Although various methods and sequences for performing these combinations are possible, the following specific and acceptable methodology was followed in the benchmark solutions. The combination over directions is performed first using the SRSS method. This is followed by the combination of group modal responses performed in accordance with the grouping method as described in Regulatory Guide 1.92. The resulting group responses are next combined using the SRSS method to provide the combined modal response for all flexible modes. In separate calculations, the contribution of high frequency modes for each group are computed in accordance with the method described in the section above. These group rigid mode contributions are then combined by the SRSS method to provide the combined rigid mode response. Next, the flexible mode response is combined with the rigid mode response by the SRSS method to provide the total inertial response. Finally, in the general case a further combination would be made between the inertial response and the seismic anchor movement response to provide an estimate of total response.

2.1.3 Modal Superposition Time History Analysis

The time history response of a piping system subjected to a known forcing function can be obtained by the modal superposition method. This procedure requires the solution of the generalized eigenvalue problem to determine the frequencies and mode shapes of the system. It uses the same modal transformation procedures described above for the response spectrum method. The general equations of motion in matrix form are expressed as follows:

$$[M]\{\ddot{u}\} + [C]\{\dot{u}\} + [K]\{u\} = \{R(t)\}$$

Applying the transformation:

$$\{u\} = [\phi]\{q\}$$

The equations can be expressed in terms of the generalized modal coordinates:

$$[M][\phi]\{\ddot{q}\} + [C][\phi]\{\dot{q}\} + [K][\phi]\{q\} = \{R(t)\}$$

Multiplication by the transpose of the modal matrix and application of the modal orthogonality assumptions yields the following set of equations:

$$\{\ddot{q}\} + [\Delta]\{\dot{q}\} + [\omega^2]\{q\} = [\phi]^T\{R(t)\}$$

This set of decoupled differential equations is solved numerically for a sufficient number of modes needed to adequately characterize the dynamic response of the piping system. In selecting the integration time step and the number of modes, the dynamic characteristics of the system as well as the forcing function must be considered. The PSAFE2 program uses the Wilson Θ numerical integration method which is an unconditionally stable step-by-step integration scheme. Finally, the modal responses are converted back to geometric coordinates u and combined algebraically at each time step to provide the total response of the piping system as a function of time.

2.2 Input-Output Format

To facilitate proper use of the enclosed data a brief summary of the PSAFE2 input-output data lists will be presented. For a basic description of element properties, coordinates, etc., reference can be made to the earlier benchmark reports, References 4, 5, and 8.

The first page of each problem shows a table listing the significant parameters for the problem and the analysis options activated for the analysis. The number of element types is the number of boundary-spring element and pipe element groups used to define the model. The number of frequencies is the number of frequencies solved for in the eigen value routine and used in the subsequent response spectrum analyses. The interpretation of the various option flags is obvious, although not all of the options are used in the benchmark problems.

The next pages show the nodal point list. The column labeled old node is the label assigned the nodal point in the finite element model. The column labeled new mode is the sequential label assigned to the node within the program and used in all program algorithms. The boundary condition codes define the constraints imposed at the node, a "1" signifying that the degree of freedom is completely restrained while "0" or ("-0") signifies complete freedom. As indicated, each mode potentially has six degrees of freedom, "X" signifying displacement in the X global direction and "XX" signifying rotation about the X global axis. The following nodal coordinates define the location of the node in the global coordinate system and are in inches. The last column designated "T" is the nodal temperature.

The next blocks of input information are the input element data lists. Since the system may be subdivided into groups of elements this data is entered group by group. The possible element types are spring elements, anchor movement elements, snubber elements, and pipe (either tangent or bend) elements. A single group is comprised of all pipe elements or all spring elements as intermixing element types within a group is not allowed.

For a typical pipe element group, the first page lists control information for the group, i.e., type of element, number of elements, etc. This is followed by a material properties table where on each line of this table are specified, the material identification number, the temperature for which the data applies and the corresponding modulus of elasticity, Poisson's ratio and coefficient of thermal expansion. For cases where the variation of material properties with temperature are considered, the element temperature is the average of its bounding nodal temperatures and a linear variation of the input material properties data with temperature is assumed. Following this is the section properties table where all data entries are clearly labeled. Next, if appropriate, is a branch point list specifying the nodes where pipe runs intersect, followed on the same page by entries entitled, "Load Case Multipliers." These only

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apply to static analysis runs and may be ignored herein. The last and largest list in the group data is the element definition and connectivity table. Again, the columns in this table are clearly labeled. For the bend elements, two lines are shown. The pressure indicated on the first line is the value of pressure used in computation of the bend flexibility. The entries on the second lines are the bend radius, third point declarer and the X, Y, Z coordinates of the third point. If the third point declarer is "TI" the coordinates of the bend tangent intercept are listed, if "CC," the coordinates of the bend center of curvature are listed. The columns entitled direction cosines, wall fraction and input tag may be ignored.

The group data list for boundary or spring elements is somewhat simpler. There is the element control information followed by element load case multipliers which again may be ignored. The element definition and connectivity list follows and is clearly labeled. The interpretation of the pertinent information in this table is as follows: support group number NG designates the excitation group to which the spring belongs; code KD and KR are spring type declarers where KD=1 signifies a linear spring while KR=1 signifies a rotational spring. The direction cosines listed define the line direction along or about which the spring acts in relation to the global axis. The specified displacement - rotation columns relate to imposed displacements and can be ignored. The last column lists the element spring rate in lb. per inch or inch lb. per radian.

The next table of input is labeled nodal loads. For the dynamic cases the table is a listing of all the concentrated masses, and the nodes at which they are located, acting on the system. A complete absence of this table indicates that there are no concentrated loads. The total mass used in each analysis is the sum of these quantities plus any distributed mass developed in the pipe elements. Distributed mass is developed in the pipe elements only if quantities appear in the columns entitled weight/unit length - mass/unit length in the pipe element section property tables.

The remaining input data describes the input response spectra or the time history forcing function, if appropriate. For the response spectrum cases the input spectra appear immediately after the output list of frequencies and modal participation factors. If the case is independent support motion, the output participation factors and the listed spectra are for the specific support group. This data includes the direction weighting factors, a descriptive title and a

table of the spectrum values given in "g's". If only one spectrum is provided it applies to all three directions as modified by the weighting factors. If two spectra are provided, the first applied only to the X direction while the second applies to the Y and Z directions. Intermediate values between data points are obtained by linear interpolation.

For a modal superposition time history case, the definition of the time history forcing functions follows after the output list of frequencies. This data is input by support groups and includes first a summary of control information specifying forcing function number, type and size, analysis time step, phasing (controlled by arrival times), duration and modal damping information (applies to all modes), and output print interval. This is followed by forcing function type, direction and arrival time declarers followed by the detailed definition of the forcing functions. The forcing function record is digitized and includes a listing of the time and corresponding function value for each point of the function definition and is preceded by scale factor, function number and heading information. The function value for intermediate times is derived by linear interpolation. Regarding arrival times, an arrival time of 0.0 connotes forcing function application at time equal to 0.0. This information is provided sequentially for each support group in the system and acts simultaneously on all supports within a group.

The output provides listings of all the pertinent results. For the response spectrum solutions these include the system natural frequencies, modal participation factors, global displacements/rotations of all nodal points and element forces/moments for all elements based on the sign convention shown in Figure 1. The displacement and force results are provided first for the lower frequency modes (amplified response), then for the higher frequency modes (rigid response), and lastly for the final results corresponding to SRSS combination of the response due to the lower frequency modes with the response due to the higher frequency modes. For the rigid response, the contribution to response for excitation in each of the coordinate directions is, in fact, provided. These are labeled load cases 1, 2 and 3 corresponding to excitation in the X, Y, and Z directions respectively. These results are developed by static analyses and are combined by SRSS before combination with the amplified response. In effect, the rigid response is treated as an additional mode and summed with the other, lower frequency modes.

The time history output is simpler. It consists of three tables of maxima listed with their corresponding

Straight Pipe Element

Where V_y, V_z = Shear Forces
 N_x = Normal Force
 M_y, M_z = Bending Moment
 M_t = Torsion Moment

Bend Pipe Element

FIGURE 1 - SIGN CONVENTION FOR FORCES AND MOMENTS

Project Background

time at maxima. The first table is for nodal displacements with six displacement components for each node. The displacement component declarers have the following interpretation: 1, 2, and 3 are the translations of the node in the X, Y, and Z directions respectively while 4, 5, and 6 are the rotations of the node about the X, Y, and Z axis respectively. The next table provides the spring/boundary element force (labeled stress) maxima. A component declarer equal to one in this table indicates a force while the declarer equal to two indicates a moment. The last table provides the maxima for pipe element force components (labeled stress). For each element twelve components of force are listed; the first six corresponding to the i and the remaining six to the j end. The component declarers in this table have the following interpretations: 1, 2, and 3 / 7, 8, and 9 are the i end / j end forces in the element X, Y, and Z axes respectively while 4, 5, and 6 / 10, 11, and 12 are the i end / j end moments about the element X, Y, and Z axis respectively.

3.0 DESCRIPTION OF PIPING BENCHMARK PROBLEMS

For the AP600 Standardized Plant three piping benchmark problems involving two representative piping systems were developed. The first piping system represents the pressurizer surge line while the second represents loop 2 of the main steam line. Both these systems are segments of piping extracted from the very extensive piping model used by Westinghouse to analyze the AP600 piping. The systems were selected as sample analyses to demonstrate the analysis methodology proposed for design analysis of piping in the AP600. The solutions represent analytical benchmarks for three analysis methods, the uniform support motion response spectrum method, the independent support motion response spectrum method and the modal superposition time history analysis method. Each of these methods is proposed for use in the design of piping in the AP600 and were demonstrated in the sample analyses. The COL licensee having demonstrated that the results he develops for these problems are in agreement with the benchmark results will be entitled to use these methods in design analysis.

The computational options used in the benchmarks are considered acceptable. For the response spectrum method clustering between closely spaced modes in accordance with the grouping method as described in Section 1.2.1 of Regulatory Guide 1.92 and additions to account for high frequency modes per SRP 3.7.2 Appendix A, must be made. Interspatial and, for the independent support motion response spectrum method, intergroup combinations may be made using the SRSS method. Any sequence in performing the combinations is acceptable.

For the response spectrum benchmarks the interspatial combination was performed first using the SRSS combination method. Next the combination over modes was performed using the grouping method with the contribution for high frequency modes being considered an additional mode. Lastly, the combination between groups was performed, if appropriate, again using the SRSS combination method.

No definition of acceptable combination procedures are required for the time history method. Instead, good practice would require that the time step used be sufficiently small to provide good estimates of system response. One tenth the smallest period of interest is a recognized rule for time step size. In any

case, having selected a time step, its adequacy should be demonstrated by showing that a reduction of time step size by a factor of two does not change the predicted response by more than 10%. This sensitivity to time step check was made in the time history benchmark. For the modal superposition method a check to assure that a sufficient number of modes has been used to ensure participation of all significant modes must be made. The criterion for this check is specified in SRP 3.7.2 and requires that the inclusion of additional modes do not result in more than a 10% increase in response.

The listing of the output results for each problem is relatively complete. The greatest omission is the deletion of the predicted mode shape information. The inclusion of this data would have resulted in a five fold increase in the size of this report. Further omissions are the calculations for high frequency effects. These are simple static analyses which can be performed various ways. A full description of the format of the output is provided in the preceding section.

3.1 Benchmark Problem 1

The first AP600 piping benchmark is a uniform support motion response spectrum solution for the pressurizer surge line subjected to safe shutdown seismic loads. The piping system, shown in Figure 2, extends in a spiral fashion from a nozzle on the hot leg, at steam generator 1, to the pressurizer nozzle. It consists of 18 inch (46 cm) diameter schedule 160, ASME SA 376, 316 LN stainless steel piping. It is restrained by the two nozzle connections, a rigid and snubber support in the horizontal directions and one snubber in the vertical direction. It is supported against dead weight in the vertical direction by several spring hangers. There are no valves or pipe mounted equipment on the line. The nominal temperature and pressure for the line are 653°F (345°C) and 2485 psig (17134 k Pa).

The finite element model for the system is shown in Figure 3 (numbering corresponds to new node numbers). It consists of 69 pipe elements and 70 nodes. Anchors exist at node 7090 (new node number 1), the hot leg connection, and node 3250(70), the pressurizer nozzle. Snubbers exist at node 3035(15) and node 3083(32), with that at 3035 acting in the vertical direction and that at 3083 acting in a horizontal direction. Spring restraints exist at nodes 3047, 3116 and 3210 (20, 45 and 57), with the restraints at node 3210 acting in both the vertical and a horizontal

FIGURE 2 - PRESSURIZER SURGE LINE

AP600 PRESSURIZER SURGE LINE BENCHMARK ANALYSIS - SAP PLOT

UNDEFORMED SHAPE

IAxis= 3 ALPHA= 30.00 BETA= 240.00

FIGURE 3 - PRESSURIZER SURGE LINE ISOMETRIC

Description of Piping Benchmark Problems

directions while those at 3047 and 3116 act only in the vertical direction. In the analyses the anchors are modeled as stiff springs ($K = 1E + 11 \text{ lb/in.}$ in translation and $K = 1E + 13 \text{ in.-lb./rad}$ in rotation) in the six degree of freedom directions. The snubbers and restraints are modeled as linear springs with stiffnesses consistent with their properties. All parameters relating to the model were taken consistent with the Westinghouse data and are specified in the included computer input listing.

In the analysis a cutoff frequency of 60 Hz was used. A listing of the first 10 natural frequencies for this problem are presented in Table 1. Computer generated isometrics of the first four modes are shown in Figure 4. The loading was the envelope SSE spectra in the three coordinate directions based on ASME Code Case N411 damping. A digitization of the spectra is included in the input listing. Clustering between closely spaced modes by the grouping method and additions to account for the contribution of high frequency modes, were made. In the calculation, SRSS interspatial combination was performed first, followed by combination with clustering between the low frequency or amplified modes, followed by SRSS combination with the contribution from high frequency modes to provide the total response. Listings of the low frequency, high frequency and total responses are presented in the output listings.

3.2 Benchmark Problem 2

The second AP600 piping benchmark is an independent support motion response spectrum solution for the pressurizer surge line subjected to safe shutdown seismic loads. The piping and finite element model are identical to those used in the preceding benchmark, and Figures 2, 3, and 4 should be referred to. This apparent second seismic evaluation of the surge line is provided to benchmark the independent support motion methodology. The seismic design analysis for the pressurizer surge line will be based on the envelope response spectrum method as per the preceding benchmark. However, since the independent support motion response spectrum method is an analysis option for the design of piping in the AP600 plant, a sample analysis of the surge line, based on the method, was developed and adopted as a benchmark.

In the analysis, the supports were segregated into three support groups. The first group includes all the interim supports on the line, the second group is the nozzle on the hot leg, and the last group is the nozzle on the pressurizer. The cut-off frequency was again 60

Hz. For this evaluation, however, the input spectra corresponds to 5% uniform damping. In the analysis, the modal and interspatial combinations were identical to those used in the preceding benchmark. Further, the summation between group responses is made last using SRSS combination to provide total response.

Results for this problem are provided at both the group level and the combined level. The group level results include the support group modal participation factors and group response components. These data are provided for information. The actual benchmark comparisons should be made to the combined results provided in the benchmark solutions.

3.3 Benchmark Problem 3

The third AP600 benchmark is a time history solution for the main steam loop 2 piping subjected to the transient loading induced by a pipe line break. The line, shown in Figure 5, extends from the steam generator nozzle, through a containment penetration, to an anchor at the auxiliary building. It consists of a 32 inch (81.5 cm) diameter by 1.44 inch (3.7 cm) wall, main line of ASME SA-333 Grade 6 carbon steel and three 8 inch sch 160 relief valve branch lines of ASME SA-508 Class 3 carbon steel. The line is restrained and supported in the horizontal and vertical directions with seven restraints and two snubbers. It is anchored at the auxiliary building and the steam generator nozzle is also considered an anchor. As noted, the line passes through a containment penetration and includes one inline valve. The design temperature and pressure for the line are 520°F (271°C) and 798 psig (5498 k Pa), respectively.

The finite element model for the system is shown in Figure 6. It consists of 95 pipe elements and 96 nodes. Anchors exist at node 101 (1), the steam generator nozzle, and node 340 (50), a true anchor at the auxiliary building. A snubber acting in the horizontal directions exists at node 6020 (11) while the second snubber, acting in the vertical direction, exists at node 6050 (18). Restraints exist at nodes 6020 (11), 6040 (14), 6070 (23), 6090 (29), 239 (36) and 261 (40) with the first four acting in the horizontal directions and the last three acting in the vertical direction. In the analyses the anchors are again modeled as stiff springs in the six degree of freedom directions. The restraints and snubbers are likewise modeled as linear springs with stiffnesses consistent with their properties. The in line valve body is modeled with triple wall thickness

TABLE 1
PRESSURIZER SURGE LINE MODAL ANALYSIS RESULTS

MODE NO.	FREQUENCY (CPS)	MODE DOMINANT DIRECTION
1	3.899	X
2	4.566	Z
3	8.332	Y, Z
4	10.391	Y, Z
5	14.962	X, Y
6	18.561	Z
7	23.825	X
8	34.503	X, Y
9	37.913	Y
10	41.934	Y

MODE 1

MODE 2

MODE 3

MODE 4

FIGURE 4 - PRESSURIZER SURGE LINE MODE SHAPES

FIGURE 5 - MAIN STEAM LINE

AP600 MAIN STEAM LINE BENCHMARK ANALYSIS - SAP PLOT

UNDEFORMED SHAPE

IAxis= 3 ALPHA= 45.00 BETA= -45.00

FIGURE 6 - MAIN STEAM LINE ISOMETRIC

pipe while the relief valves are modeled with pipe segments of various sizes to simulate relief line properties. All parameters relating to the model were taken consistent with the Westinghouse data and are specified in the included computer input listing.

The solution was developed using the modal superposition time history method. The loading function was a set of time varying faces acting on nodes 101, 130, 6040, 6070 and 310 (1, 5, 14, 23 and 46). The forcing functions are of 3 second duration and act in each of the three coordinate directions. A full digitized record of the forcing functions is provided in the input list. In the analysis a cut off frequency of 110 Hz was used resulting in a 41 mode, modal approximation. A listing of the first ten natural frequencies is presented in Table 2. Computer generated isometrics of the first four modes are shown in Figure 7. A listing of modal participation factors corresponding to uniform support excitations, developed in a separate analysis of the system, is provided in the computer list to facilitate to model verification. Damping was taken as a uniform 3% of critical for all modes. The solution time step was 0.0001 seconds for a total duration of three seconds.

The output consists of the maxima and their time of occurrence for each response component. The maxima are based on a sampling at every tenth time step or providing results for a time step of 0.001 sec. If a finer sampling rate is used the times of maxima occurrence and, in fact, the magnitude of the maxima will change. For the benchmarking purpose the predication of comparable results for the same sampling frequency will be adequate. Although a more comprehensive tabulation of results would be desirable, the results provided are adequate for the benchmarking purpose. The tabulated outputs are well labeled and should be readily understood.

TABLE 2
MAIN STEAM LINE MODAL ANALYSIS RESULTS

MODE NO.	FREQUENCY (CPS)	MODE DOMINANT DIRECTION
1	8.425	X, Y, Z
2	9.005	Y
3	9.130	X, Y
4	11.944	Z
5	16.051	Y
6	16.403	X
7	16.492	Y
8	17.062	Y
9	17.265	X, Z
10	17.462	X

MODE 1

MODE 2

MODE 3

MODE 4

FIGURE 7 - MAIN STEAM LINE MODE SHAPES

4.0 BENCHMARK ACCEPTANCE CRITERIA

Earlier NRC benchmark reports provided comprehensive descriptions of the benchmark problem inputs and results but did not provide any definition of the acceptance criteria used to judge adequacy. Instead, the results of a benchmarking effort were submitted to the staff for evaluation on a case-by-case basis. This procedure was followed for most of the "work horse" computer codes then used by industry to qualify piping, including PISYS, ADLPIPE, WECAN, PISTAR, NUPIPE, SUPERPIPE, and PIPSYS.

For the AP600 standard design benchmarks it was considered to be more appropriate to specify the acceptance criteria to be met. This will allow the COL licensee to assess the adequacy of his methods as the benchmark solutions are developed; precluding the striving for "perfect" results and flagging early on, analysis methods that are deficient. When successful, the COL licensee will simply have to retain an auditable record of the benchmarking effort to verify the adequacy of the methods to be used to qualify piping.

For the acceptance criteria, maximum allowed differences, expressed as a percent, rather than specific values, are specified and a summary of the criteria as presented in Table 3. As can be seen, the criteria is different for each response parameter, ranging from 2% for every natural frequency, to 10% for maximum displacements. Comparisons are required to be made for all natural frequencies and support reaction forces, but for only the maximum displacements and pipe moments in the designated pipe segments given in Table 4. The percentage differences are given by $100 (PE - BE)/BE$ where, PE is the predicted value, and BE is the benchmark value, for a specific response.

Comparisons are required to be made for every natural frequency and every component of support reaction. Regarding natural frequencies, these are fundamental characteristics of a system, and if they are not predicted accurately there is little possibility that correct estimates of system response can be developed. Consequently, the requirement to compare all frequencies to a tight tolerance was specified. Support reactions on the other hand are not fundamental characteristics of a system, but unlike pipe moments and forces, every component of reaction is used explicitly in the design process. That is, supports and anchors are typically designed individually for the specific loads they will carry with only a small level of

conservatism. Consequently, it is important to provide reasonably accurate estimates of all reactions and the benchmarking requirement was set accordingly.

For pipe displacements and moments, only comparisons of maximum values are required. This is again consistent with the design/qualification process where only the maximum values impact on design. These comparisons are required to be made in each unique section of pipe for each problem. This was specified to assure that reasonably accurate estimates of all system responses was being made rather than good estimates for only a local region. The accuracy tolerances specified denote the relative importance assigned these parameters.

Again, reflecting design practice, some relaxation of criteria is allowed for pipe moments. Specifically, for these, if the estimates of the maximum components of moment do not meet criteria, comparisons can be made to the resultant moment at each location of maxima, and if these meet criteria, the benchmarking is acceptable. This reflects design practice in that it is only the resultant moments that enter into the qualification evaluations.

Finally, it is recognized that the benchmarking effort may not be clean cut in every application. Candidate analysis methodologies may not meet criteria for every parameter for all comparisons. In these instances, the COL licensee must interact with the staff providing additional justifications for acceptance. These applications will be assessed on a case-by-case basis.

TABLE 3
ACCEPTANCE CRITERIA

PARAMETER	CRITERIA	COMMENTS
Natural Frequencies	2%	All natural frequencies up to cutoff frequency.
Maximum Displacements	10%	Comparison to be made for maximum nodal translation* in each global coordinate direction for each segment** of piping.
Maximum Pipe Moments	5%	Comparison to be made for maximum element moment* about each local coordinate axis for each pipe segment**. Failure to meet criteria is acceptable if SRSS of three components at each point of maxima meet the criteria.
Support Reaction	10%	Comparison to be made for each component of force and moment for each support and anchor.

* Maxima for each direction not necessarily at same point.

** Pipe segments defined in Table 4.

TABLE 4
PIPING SEGMENTS

A. PRESSURIZER SURGE LINE	
SEGMENT	NODE NUMBERS
1	7090 - 3035
2	3035 - 3083
3	3083 - 3210
4	3210 - 3250
B. MAIN STEAM LINE PIPING	
SEGMENT	NODE NUMBERS
1	101 - 6020
2	6020 - 6050
3	6050 - 6070
4	6070 - 6090
5	6090 - 239
6	239 - 261
7	261 - 340

5.0 CONCLUSION

Three benchmark problems have been developed for the purpose of assessing the adequacy of the analysis techniques that will be used by COL licensees to qualify piping for the AP600 Standardized Plant. If a COL licensee can demonstrate that a candidate analysis methodology provides solutions to the benchmark problems that meet all acceptance criteria, the COL licensee may use that methodology for piping design without further approval. In that instance the COL licensee must submit documentation to the staff of the benchmarking effort in sufficient detail to support the conclusion.

In the event that the benchmarking is essentially, but not wholly successful, the COL licensee may petition for staff approval on a case-by-case basis. In these instances, the documentation of the benchmarking must be augmented with additional justifications of adequacy and the use of the methodology must await staff approval.

6.0 REFERENCES

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3. Subudhi, M., Bezler, P., "EPIPE, Piping Analysis Program User's Manual -Version 1981," BNL NUREG/30784, December 1981.
4. Bezler, P., Hartzman, M., Reich, M., "Piping Benchmark Problems," NUREG/CR-1677, August 1980.
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6. Regulatory Guide 1.92, "Combining Modal Responses and Spatial Components in Seismic Response Analysis," Revision 1, February 1976.
7. U.S. Nuclear Regulatory Commission, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Section 3.7.2, 1989.
8. Bezler, P., Gardner, D., Hartzman, M., "A Dynamic Benchmark Solution for a Hypothetical Reactor System," BNL-NUREG-23645, December 1977.

APPENDIX A

UNITS OF MEASURE

The attached computer input and output data is presented in the following units of measure:

Length	-	inches (in)
Angular rotation	-	radians (rad)
Force	-	pounds (lb)
Moment	-	in-lbs.
Time	-	seconds (sec)
Pressure	-	lbs./in ² (psi)
Acceleration	-	g's (in/sec ² /gravitational constant)
Frequency	-	Hertz (Hz) or cycles per second, cps
Temperature	-	degrees Fahrenheit (°F)

BENCHMARK PROBLEM 1

UNIFORM SUPPORT MOTION
RESPONSE SPECTRUM ANALYSIS

AP600 PRESSURIZER SURGE LINE BENCHMARK ANALYSIS - ENVELOPE SPECTRUM

C O N T R O L I N F O R M A T I O N

NUMBER OF NODAL POINTS	=	70
NUMBER OF ELEMENT TYPES	=	3
NUMBER OF STATIC LOAD CASES	=	0
NUMBER OF DYNAMIC LOAD CASES	=	1
NUMBER OF ANCHOR MVMT CASES	=	0
NUMBER OF FREQUENCIES	=	20
SOLUTION MODE (MODEX)	=	0
EQ.0, EXECUTION		
EQ.1, DATA CHECK		
STRESS CALCULATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ASME CODE EVALUATION FLAG	=	0
EQ.1 CLASS 1 PIPING		
EQ.2 CLASS2 OR CLASS 3 PIPING		
ACCELERATION DUE TO GRAVITY	=	386.4
BANDWIDTH MINIMIZATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ARBITRARY NODE NUMBERING FLAG	=	1
EQ.0 NO		
EQ.1 YES		
NUMBER OF SUPPORT GROUPS	=	0
FLAG FOR NODAL COORD. INPUT UNITS	=	0
EQ.0 CONSISTENT UNIT		
EQ.1 FEET TO INCHES		

LIST OF ANALYSIS TO BE PERFORMED

LOAD CASE	DISK FILE	ANALYSIS TYPE
1	0	UNIFORM RESPONSE SPECTRUM ANAL.

NODAL POINT INPUT DATA

NEW NODE	OLD NODE	BOUNDARY CONDITION CODES			NODAL POINT COORDINATES			T			
		X	Y	Z	XX	YY	ZZ	X	Y	Z	
1	7090	0	0	0	0	0	0	11910.000	12283.416	1251.372	653.000
2	3001	0	0	0	0	0	0	11923.164	12272.496	1259.028	653.000
3	3005	0	0	0	0	0	0	11926.320	12269.880	1260.864	653.000
4	3010	0	0	0	0	0	0	11929.476	12267.264	1262.700	653.000
5	3011	0	0	0	0	0	0	11933.088	12264.288	1264.764	653.000
6	3012	0	0	0	0	0	0	11939.124	12259.296	1268.232	653.000
7	3019	0	0	0	0	0	0	11953.932	12251.028	1275.132	653.000
8	3021	0	0	0	0	0	0	11968.632	12248.256	1279.728	653.000
9	3023	0	0	0	0	0	0	11971.320	12248.195	1280.388	653.000
10	3024	0	0	0	0	0	0	11983.812	12248.195	1283.268	653.000
11	3026	0	0	0	0	0	0	11999.028	12248.195	1286.760	653.000
12	3028	0	0	0	0	0	0	12014.244	12248.195	1290.252	653.000
13	3030	0	0	0	0	0	0	12040.236	12248.195	1296.240	653.000
14	3032	0	0	0	0	0	0	12066.204	12248.195	1302.240	653.000
15	3035	0	0	0	0	0	0	12092.172	12248.195	1308.228	653.000
16	3037	0	0	0	0	0	0	12118.152	12248.195	1314.216	653.000
17	3038	0	0	0	0	0	0	12144.120	12248.195	1320.216	653.000
18	3040	0	0	0	0	0	0	12170.088	12248.195	1326.204	653.000
19	3044	0	0	0	0	0	0	12180.360	12248.195	1328.580	653.000
20	3047	0	0	0	0	0	0	12185.376	12248.195	1329.708	653.000
21	3050	0	0	0	0	0	0	12189.996	12248.195	1330.776	653.000
22	3053	0	0	0	0	0	0	12194.028	12248.352	1331.712	653.000
23	3056	0	0	0	0	0	0	12200.557	12249.288	1333.248	653.000
24	3059	0	0	0	0	0	0	12201.744	12249.553	1333.524	653.000
25	3062	0	0	0	0	0	0	12206.364	12250.884	1334.664	653.000
26	3065	0	0	0	0	0	0	12214.801	12254.628	1336.728	653.000
27	3068	0	0	0	0	0	0	12218.928	12257.195	1337.796	653.000
28	3071	0	0	0	0	0	0	12226.979	12263.939	1339.944	653.000
29	3074	0	0	0	0	0	0	12228.288	12265.322	1340.292	653.000
30	3077	0	0	0	0	0	0	12229.668	12266.893	1340.676	653.000
31	3080	0	0	0	0	0	0	12240.660	12288.636	1344.168	653.000
32	3083	0	0	0	0	0	0	12242.292	12301.824	1345.116	653.000
33	3086	0	0	0	0	0	0	12242.292	12305.520	1345.296	653.000
34	3089	0	0	0	0	0	0	12242.292	12315.324	1345.668	653.000
35	3092	0	0	0	0	0	0	12242.292	12333.756	1346.484	653.000
36	3095	0	0	0	0	0	0	12242.292	12345.695	1346.988	653.000
37	3098	0	0	0	0	0	0	12242.292	12347.508	1347.072	653.000
38	3100	0	0	0	0	0	0	12242.292	12368.076	1347.972	653.000
39	3101	0	0	0	0	0	0	12242.292	12388.632	1348.884	653.000
40	3104	0	0	0	0	0	0	12242.292	12389.388	1348.944	653.000
41	3107	0	0	0	0	0	0	12242.292	12400.309	1349.448	653.000
42	3110	0	0	0	0	0	0	12239.855	12416.316	1350.264	653.000
43	3113	0	0	0	0	0	0	12233.340	12430.033	1351.152	653.000
44	3115	0	0	0	0	0	0	12215.976	12446.592	1352.640	653.000
45	3116	0	0	0	0	0	0	12188.364	12454.176	1354.188	653.000
46	3119	0	0	0	0	0	0	12174.120	12454.176	1354.812	653.000
47	3120	0	0	0	0	0	0	12156.061	12454.176	1355.592	653.000
48	3122	0	0	0	0	0	0	12137.988	12454.176	1356.372	653.000
49	3123	0	0	0	0	0	0	12114.792	12448.520	1357.656	653.000
50	3125	0	0	0	0	0	0	12097.092	12435.324	1359.120	653.000
51	3128	0	0	0	0	0	0	12085.932	12413.688	1360.752	653.000
52	3198	0	0	0	0	0	0	12084.947	12392.041	1361.904	653.000
53	3199	0	0	0	0	0	0	12088.080	12372.215	1362.768	653.000
54	3200	0	0	0	0	0	0	12091.212	12352.380	1363.644	653.000
55	3205	0	0	0	0	0	0	12094.476	12331.920	1364.556	653.000
56	3208	0	0	0	0	0	0	12097.632	12312.037	1365.432	653.000

57 3210	0	0	0	0	0	0	12100.788	12292.140	1366.308	653.000
58 3212	0	0	0	0	0	0	12109.512	12272.472	1367.448	653.000
59 3215	0	0	0	0	0	0	12125.772	12260.160	1368.708	653.000
60 3220	0	0	0	0	0	0	12148.860	12257.352	1369.956	653.000
61 3222	0	0	0	0	0	0	12176.184	12274.104	1371.768	653.000
62 3225	0	0	0	0	0	0	12184.176	12298.668	1373.268	653.000
63 3230	0	0	0	0	0	0	12183.648	12305.256	1373.580	653.000
64 3235	0	0	0	0	0	0	12180.216	12327.000	1374.552	653.000
65 3237	0	0	0	0	0	0	12176.772	12348.756	1375.512	653.000
66 3238	0	0	0	0	0	0	12174.348	12364.068	1379.220	653.000
67 3240	0	0	0	0	0	0	12172.320	12376.908	1388.424	653.000
68 3243	0	0	0	0	0	0	12170.976	12385.451	1401.828	653.000
69 3245	0	0	0	0	0	0	12170.508	12388.439	1417.464	653.000
70 3250	0	0	0	0	0	0	12170.508	12388.439	1426.440	653.000

S P R I N G E L E M E N T S

ELEMENT TYPE = 1
NUMBER OF ELEMENTS = 16

ELEMENT LOAD CASE MULTIPLIERS

		CASE (A) 1.0000	CASE (B) 1.0000	CASE (C) 1.0000	CASE (D) 1.0000	DIRECTION COSINES WRT GLOBAL AXES			SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
ELEMENT NUMBER	NODE (N)	SUPPORT GROUP	CODE KD	CODE KR	X-	Y-	Z-				
1	7090	1	1	0	1.000	.000	.000	.000	.000	1.0000E+11	
2	7090	1	1	0	.000	1.000	.000	.000	.000	1.0000E+11	
3	7090	1	1	0	.000	.000	1.000	.000	.000	1.0000E+11	
4	7090	1	0	1	1.000	.000	.000	.000	.000	1.0000E+13	
5	7090	1	0	1	.000	1.000	.000	.000	.000	1.0000E+13	
6	7090	1	0	1	.000	.000	1.000	.000	.000	1.0000E+13	
7	3047	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02	
8	3116	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02	
9	3210	1	1	0	1.000	.000	.000	.000	.000	5.0000E+06	
10	3210	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02	
11	3250	1	1	0	1.000	.000	.000	.000	.000	1.0000E+11	
12	3250	1	1	0	.000	1.000	.000	.000	.000	1.0000E+11	
13	3250	1	1	0	.000	.000	1.000	.000	.000	1.0000E+11	
14	3250	1	0	1	1.000	.000	.000	.000	.000	1.0000E+13	
15	3250	1	0	1	.000	1.000	.000	.000	.000	1.0000E+13	
16	3250	1	0	1	.000	.000	1.000	.000	.000	1.0000E+13	

S N U B B E R E L E M E N T S

ELEMENT TYPE = 4
NUMBER OF ELEMENTS = 2

ELEMENT LOAD CASE MULTIPLIERS

					CASE (A)	CASE (B)	CASE (C)	CASE (D)			
					1.0000	1.0000	1.0000	1.0000			
ELEMENT NUMBER	NODE (N)	SUPPORT GROUP	CODE KD	CODE KR	DIRECTION COSINES WRT GLOBAL AXES				SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
					X-	Y-	Z-				
1	3035	1	1	0	.000	1.000	.000		.000	.000	5.5150E+05
2	3083	1	1	0	.000	.000	1.000		.000	.000	5.5150E+05

PIPE ELEMENT INPUT DATA

CONTROL INFORMATION

NUMBER OF PIPE ELEMENTS	=	69
NUMBER OF MATERIAL SETS	=	2
MAXIMUM NUMBER OF MATERIAL TEMPERATURE INPUT POINTS	=	3
NUMBER OF SECTION PROPERTY SETS	=	4
NUMBER OF BRANCH POINT NODES	=	0
MAXIMUM NUMBER OF TANGENTS COMMON TO A BRANCH POINT	=	3
FLAG FOR NEGLECTING AXIAL DEFORMATIONS IN BEND ELEMENTS (EQ.1, NEGLECT)	=	0

MATERIAL PROPERTY TABLES

MATERIAL NUMBER = (1)
 NUMBER OF
 TEMPERATURE POINTS = (3)
 IDENTIFICATION = (SA376 316LN)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.813E+07	.300	8.540E-06
2	650.00	2.505E+07	.300	9.690E-06
3	700.00	2.480E+07	.300	9.760E-06

MATERIAL NUMBER = (2)
 NUMBER OF
 TEMPERATURE POINTS = (2)
 IDENTIFICATION = (FICTICIOUS MAT)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.530E+07	.300	0.000E+00
2	700.00	2.530E+07	.300	0.000E+00

SECTION PROPERTY TABLE

SECTION NUMBER	OUTSIDE DIAMETER	WALL THICKNESS	SHAPE FACTOR FOR SHEAR	WEIGHT/ UNIT LENGTH	MASS/ UNIT LENGTH	D E S C R I P T I O N
1	18.000	1.7810	.0000	3.4033E+01	8.8077E-02	18 IN SCH 160
2	21.100	3.3400	.0000	5.8824E+01	1.5224E-01	
3	24.300	4.9000	.0000	9.0696E+01	2.3472E-01	
4	37.500	3.2500	.0000	0.0000E+00	0.0000E+00	

ELEMENT LOAD CASE MULTIPLIERS

	CASE A	CASE B	CASE C	CASE D
X-DIRECTION GRAVITY	.000	.000	.000	.000
Y-DIRECTION GRAVITY	.000	.000	.000	.000
Z-DIRECTION GRAVITY	-1.000	.000	.000	.000
THERMAL DISTORTION	.000	.000	.000	.000
PRESSURE DISTORTION	.000	.000	.000	.000

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
1	TANGENT	7090	3001	2	4	70.00	2485.00	.00	.00	0 0	1	II
2	TANGENT	3001	3005	1	3	70.00	2485.00	.00	.00	0 0	1	II
3	TANGENT	3005	3010	1	2	70.00	2485.00	.00	.00	0 0	1	II
4	TANGENT	3010	3011	1	1	70.00	2485.00	.00	.00	0 0	1	II
5	TANGENT	3011	3012	1	1	70.00	2485.00	.00	.00	0 0	1	II
6	BEND	3012	3019	1	1	70.00 (54.012)	2485.00 ()	.00 (11945.652)	.00 (12253.896)	0 0 (1272.012)	0 (19.4919)	
7	BEND	3019	3021	1	1	70.00 (53.676)	2485.00 ()	.00 (11961.012)	.00 (12248.628)	0 0 (1277.820)	0 (16.8378)	
8	BEND	3021	3023	1	1	70.00 (55.344)	2485.00 ()	.00 (11969.976)	.00 (12248.195)	0 0 (1280.076)	0 (2.8767)	
9	TANGENT	3023	3024	1	1	70.00	2485.00	.00	.00	0 0	1	II
10	TANGENT	3024	3026	1	1	70.00	2485.00	.00	.00	0 0	1	II
11	TANGENT	3026	3028	1	1	70.00	2485.00	.00	.00	0 0	1	II
12	TANGENT	3028	3030	1	1	70.00	2485.00	.00	.00	0 0	1	II
13	TANGENT	3030	3032	1	1	70.00	2485.00	.00	.00	0 0	1	II
14	TANGENT	3032	3035	1	1	70.00	2485.00	.00	.00	0 0	1	II
15	TANGENT	3035	3037	1	1	70.00	2485.00	.00	.00	0 0	1	II
16	TANGENT	3037	3038	1	1	70.00	2485.00	.00	.00	0 0	1	II
17	TANGENT	3038	3040	1	1	70.00	2485.00	.00	.00	0 0	1	II
18	TANGENT	3040	3044	1	1	70.00	2485.00	.00	.00	0 0	1	II
19	TANGENT	3044	3047	1	1	70.00	2485.00	.00	.00	0 0	1	II
20	TANGENT	3047	3050	1	1	70.00	2485.00	.00	.00	0 0	1	II
21	BEND	3050	3053	1	1	70.00 (54.972)	2485.00 ()	.00 (12192.012)	.00 (12248.195)	0 0 (1331.244)	0 (4.3122)	
22	BEND	3053	3056	1	1	70.00 (55.416)	2485.00 ()	.00 (12197.328)	.00 (12248.616)	0 0 (1332.480)	0 (7.0187)	
23	BEND	3056	3059	1	1	70.00 (51.084)	2485.00 ()	.00 (12201.145)	.00 (12249.408)	0 0 (1333.392)	0 (1.3843)	
24	BEND	3059	3062	1	1	70.00 (60.324)	2485.00 ()	.00 (12204.120)	.00 (12250.128)	0 0 (1334.100)	0 (4.7682)	
25	BEND	3062	3065	1	1	70.00 (55.128)	2485.00 ()	.00 (12210.744)	.00 (12252.384)	0 0 (1335.732)	0 (9.8520)	
26	BEND	3065	3068	1	1	70.00 (53.100)	2485.00 ()	.00 (12216.936)	.00 (12255.816)	0 0 (1337.292)	0 (5.4073)	
27	BEND	3068	3071	1	1	70.00 (54.132)	2485.00 ()	.00 (12223.296)	.00 (12260.160)	0 0 (1338.924)	0 (11.3902)	
28	BEND	3071	3074	1	1	70.00 (51.396)	2485.00 ()	.00 (12227.676)	.00 (12264.660)	0 0 (1340.124)	0 (2.2713)	

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PIPE ELEMENT INPUT DATA												
ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
29	BEND	3074	3077	1	1	70.00 (53.088)	2485.00 ()	.00 (12228.972)	.00 (12266.076)	0 0 (1340.484)	(2.2202)	I
30	BEND	3077	3080	1	1	70.00 (53.760)	2485.00 ()	.00 (12237.660)	.00 (12276.396)	0 0 (1342.920)	(26.4177)	I
31	BEND	3080	3083	1	1	70.00 (53.700)	2485.00 ()	.00 (12242.292)	.00 (12295.140)	0 0 (1344.792)	(14.2965)	I
32	TANGENT	3083	3086	1	1	70.00	2485.00	.00	.00	0 0	1	II
33	TANGENT	3086	3089	1	1	70.00	2485.00	.00	.00	0 0	1	II
34	TANGENT	3089	3092	1	1	70.00	2485.00	.00	.00	0 0	1	II
35	TANGENT	3092	3095	1	1	70.00	2485.00	.00	.00	0 0	1	II
36	TANGENT	3095	3098	1	1	70.00	2485.00	.00	.00	0 0	1	II
37	TANGENT	3098	3100	1	1	70.00	2485.00	.00	.00	0 0	1	II
38	TANGENT	3100	3101	1	1	70.00	2485.00	.00	.00	0 0	1	II
39	TANGENT	3101	3104	1	1	70.00	2485.00	.00	.00	0 0	1	II
40	TANGENT	3104	3107	1	1	70.00	2485.00	.00	.00	0 0	1	II
41	BEND	3107	3110	1	1	70.00 (53.832)	2485.00 ()	.00 (12242.292)	.00 (12408.504)	0 0 (1349.820)	(17.3293)	I
42	BEND	3110	3113	1	1	70.00 (53.940)	2485.00 ()	.00 (12237.576)	.00 (12423.636)	0 0 (1350.684)	(16.2026)	I
43	BEND	3113	3115	1	1	70.00 (53.916)	2485.00 ()	.00 (12226.536)	.00 (12440.305)	0 0 (1351.908)	(25.7916)	I
44	BEND	3115	3116	1	1	70.00 (54.084)	2485.00 ()	.00 (12203.231)	.00 (12454.176)	0 0 (1353.528)	(30.7215)	I
45	TANGENT	3116	3119	1	1	70.00	2485.00	.00	.00	0 0	1	II
46	TANGENT	3119	3120	1	1	70.00	2485.00	.00	.00	0 0	1	II
47	TANGENT	3120	3122	1	1	70.00	2485.00	.00	.00	0 0	1	II
48	BEND	3122	3123	1	1	70.00 (53.844)	2485.00 ()	.00 (12125.796)	.00 (12454.176)	0 0 (1356.900)	(25.5401)	I
49	BEND	3123	3125	1	1	70.00 (54.000)	2485.00 ()	.00 (12104.496)	.00 (12443.988)	0 0 (1358.352)	(23.9177)	I
50	BEND	3125	3128	1	1	70.00 (53.712)	2485.00 ()	.00 (12088.992)	.00 (12425.868)	0 0 (1360.008)	(26.1664)	I
51	BEND	3128	3198	1	1	70.00 (54.192)	2485.00 ()	.00 (12083.231)	.00 (12402.959)	0 0 (1361.424)	(23.1191)	I
52	TANGENT	3198	3199	1	1	70.00	2485.00	.00	.00	0 0	1	II
53	TANGENT	3199	3200	1	1	70.00	2485.00	.00	.00	0 0	1	II
54	TANGENT	3200	3205	1	1	70.00	2485.00	.00	.00	0 0	1	II
55	TANGENT	3205	3208	1	1	70.00	2485.00	.00	.00	0 0	1	II
56	TANGENT	3208	3210	1	1	70.00	2485.00	.00	.00	0 0	1	II

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
57	BEND	3210	3212	1	1	70.00 (42.012)	2485.00 ()	.00 (12102.540)	.00 (12281.148)	0 0 (1366.788)	(29.7046)	I
58	BEND	3212	3215	1	1	70.00 (41.904)	2485.00 ()	.00 (12116.088)	.00 (12264.276)	0 0 (1368.072)	(28.2025)	I
59	BEND	3215	3220	1	1	70.00 (42.192)	2485.00 ()	.00 (12136.860)	.00 (12255.443)	0 0 (1369.428)	(31.9317)	I
60	BEND	3220	3222	1	1	70.00 (42.120)	2485.00 ()	.00 (12165.996)	.00 (12260.100)	0 0 (1370.712)	(44.8251)	I
61	BEND	3222	3225	1	1	70.00 (41.892)	2485.00 ()	.00 (12184.176)	.00 (12285.107)	0 0 (1372.584)	(36.0300)	I
62	BEND	3225	3230	1	1	70.00 (41.496)	2485.00 ()	.00 (12184.176)	.00 (12301.980)	0 0 (1373.424)	(9.1369)	I
63	TANGENT	3230	3235	1	1	70.00	2485.00	.00	.00	0 0	1	II
64	TANGENT	3235	3237	1	1	70.00	2485.00	.00	.00	0 0	1	II
65	BEND	3237	3238	1	1	70.00 (42.120)	2485.00 ()	.00 (12175.512)	.00 (12356.771)	0 0 (1375.872)	(21.8273)	I
66	BEND	3238	3240	1	1	70.00 (42.000)	2485.00 ()	.00 (12173.195)	.00 (12371.364)	0 0 (1382.556)	(21.8448)	I
67	BEND	3240	3243	1	1	70.00 (41.892)	2485.00 ()	.00 (12171.443)	.00 (12382.463)	0 0 (1394.292)	(21.9599)	I
68	BEND	3243	3245	1	1	70.00 (42.012)	2485.00 ()	.00 (12170.508)	.00 (12388.439)	0 0 (1409.352)	(21.8497)	I
69	TANGENT	3245	3250	1	1	70.00	2485.00	.00	.00	0 0	1	II

BENCHMARK PROBLEM 1
LOWER FREQUENCY AMPLIFIED RESPONSE

PRINT OF FREQUENCIES

MODE NUMBER	CIRCULAR FREQUENCY (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)
1	2.4496E+01	3.8987E+00	2.5650E-01
2	2.8689E+01	4.5660E+00	2.1901E-01
3	5.2353E+01	8.3322E+00	1.2002E-01
4	6.5286E+01	1.0391E+01	9.6241E-02
5	9.4011E+01	1.4962E+01	6.6834E-02
6	1.1662E+02	1.8561E+01	5.3876E-02
7	1.4970E+02	2.3825E+01	4.1972E-02
8	2.1679E+02	3.4503E+01	2.8983E-02
9	2.3822E+02	3.7913E+01	2.6376E-02
10	2.6348E+02	4.1934E+01	2.3847E-02
11	3.3147E+02	5.2755E+01	1.8956E-02
12	3.5374E+02	5.6300E+01	1.7762E-02
13	3.6850E+02	5.8649E+01	1.7051E-02

R E S P O N S E S P E C T R U M A N A L Y S I S

LOAD CASE 3 - ENVEL RESP SPECTRUM ANAL.

R E S P O N S E C O M B I N A T I O N M E T H O D S

U = RESPONSE (FORCE, MOMENT, TRANSLATION, ETC.
 UIXX = RESPONSE IN I(TH) MODE, X EARTHQUAKE DIRECTION, X SPECTRUM INPUT
 UIXY = " " " " " " " " Y " "
 :
 :
 UIZZ = " " " " , Z " " Z " "

WITH ALL OPTIONS COMBINATION IS MADE OVER EXCITATION DIRECTIONS
 FIRST, FOLLOWED BY SRSS COMBINATION OVER MODES. THE OPTIONS BELOW
 CONTROL COMBINATION OVER DIRECTIONS ONLY

KIND=1, ORIGINAL SAP PROCEDURE
 UIX = ABS(UIXX)+ABS(UIXY)+ABS(UIXZ)

KIND=2, SRSS COMBINATION WITH CLUSTERING (REG GUIDE 1.92)

UIX = SRSS ((UIXX)**2+(UIXY)**2+(UIXZ)**2)

KIND=3, SAP PROCEDURE WITH CLUSTERING

KIND=4, ALGEBRAIC COMBINATION WITH CLUSTERING
 UIX = UIXX+UIXY+UIXZ

KIND=5, MIXED PROCEDURE WITH CLUSTERING
 UIX = ABS (UIXY)+SRSS ((UIXX)**2+(UIXZ)**2)

NOTE, WITH OPTIONS 2-5 THE CLUSTER FACTOR IS 0.1 IF NOT SPECIFIED
 AND IF KIND IS PREFIXED WITH A MINUS SIGN, MODAL EFFECTS ARE PRINTED

CASE 1

DIRECTION FACTORS

X = 1.0000 Y = 1.0000 Z = 1.0000

INDICATOR FOR DISPLACEMENT OR ACCELERATION SPECTRUM = 2

EQ.0 DISPLACEMENT
EQ.1 ACCELERATION IN IN./SEC.**2
EQ.2 ACCELERATION IN G**S

3 SPECTRA ARE ENTERED FOR CASE 1. KIND= 2

CLUSTER FACTOR, CF = .10000

MODAL PARTICIPATION FACTORS

MODE	FREQ(CPS)	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	3.899	4.5819E+00	-9.2024E-01	-2.3807E-01
2	4.566	2.4678E-01	1.9716E-01	5.0100E+00
3	8.332	1.6138E-01	3.8985E+00	-3.4331E+00
4	10.391	4.3202E-01	6.2393E+00	1.3444E+00
5	14.962	-1.5642E+00	-1.7522E+00	5.5736E-01
6	18.561	-6.2692E-01	1.1475E-01	5.8506E+00
7	23.825	-3.1703E+00	9.0336E-01	9.9369E-01
8	34.503	1.0498E+00	1.2522E+00	3.9810E-01
9	37.913	-1.0854E-01	-2.2140E+00	4.6331E-02
10	41.934	6.0115E-01	2.5824E+00	6.7930E-01
11	52.755	1.9449E+00	5.9261E-01	-5.0099E-01
12	56.300	2.2255E+00	2.1295E+00	-5.1571E-01
13	58.649	2.8798E+00	2.8922E-01	1.2367E+00

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SPECTRUM TABLE (SSE ENVELOPED RESPONSE SPECTRUM X-DIRECTION)

NUMBER OF POINTS = 44
SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	1.6670E-02	9.9279E-01
2	2.8760E-02	9.9279E-01
3	3.1370E-02	1.2087E+00
4	3.1980E-02	1.2251E+00
5	3.2130E-02	1.2291E+00
6	3.2380E-02	1.2358E+00
7	3.3420E-02	1.2619E+00
8	3.3540E-02	1.2648E+00
9	3.4510E-02	1.2887E+00
10	3.5340E-02	1.3644E+00
11	3.9220E-02	1.6776E+00
12	3.9510E-02	1.6798E+00
13	4.2290E-02	1.6995E+00
14	4.3690E-02	1.7086E+00
15	4.6970E-02	2.2424E+00
16	4.9970E-02	2.5978E+00
17	5.0710E-02	2.6784E+00
18	5.4710E-02	3.0793E+00
19	5.5810E-02	3.1460E+00
20	5.8130E-02	3.2780E+00
21	5.8200E-02	3.2747E+00

22	6.3580E-02	3.0970E+00
23	7.0680E-02	2.9384E+00
24	7.4100E-02	2.8729E+00
25	7.4420E-02	2.8670E+00
26	7.8020E-02	2.8229E+00
27	7.9570E-02	2.7729E+00
28	8.1020E-02	2.7279E+00
29	8.2410E-02	2.6186E+00
30	8.3230E-02	2.5556E+00
31	8.4390E-02	2.4710E+00
32	9.1460E-02	2.3104E+00
33	1.0527E-01	1.6280E+00
34	1.2040E-01	1.4959E+00
35	1.2484E-01	1.4632E+00
36	1.3687E-01	1.3854E+00
37	1.4531E-01	1.3854E+00
38	1.5184E-01	1.3570E+00
39	1.6649E-01	1.2810E+00
40	1.7496E-01	1.3040E+00
41	1.8293E-01	1.3237E+00
42	1.9379E-01	1.3480E+00
43	2.5134E-01	1.6512E+00
44	2.6759E+00	1.6484E+00

SPECTRUM TABLE (SSE ENVELOPED RESPONSE SPECTRUM Y-DIRECTION

NUMBER OF POINTS = 41
SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	1.6670E-02	7.6940E-01
2	2.8760E-02	7.6940E-01
3	3.1370E-02	8.4714E-01
4	3.1470E-02	8.5387E-01
5	3.1980E-02	8.8939E-01
6	3.2380E-02	9.1673E-01
7	3.3540E-02	9.9137E-01
8	3.3720E-02	1.0030E+00
9	3.4510E-02	1.0525E+00
10	3.7810E-02	1.0805E+00
11	3.9220E-02	1.0911E+00
12	4.3690E-02	1.3065E+00
13	4.5540E-02	1.5280E+00
14	4.6970E-02	1.6884E+00
15	5.2150E-02	2.4052E+00
16	5.4710E-02	2.7084E+00
17	5.5810E-02	2.8766E+00
18	5.8130E-02	3.2089E+00
19	5.8200E-02	3.2352E+00
20	6.0620E-02	3.5552E+00
21	6.3580E-02	3.9131E+00
22	7.4100E-02	3.5417E+00
23	7.4420E-02	3.5307E+00
24	7.8020E-02	3.4536E+00
25	8.1020E-02	3.4005E+00
26	8.2630E-02	3.3702E+00
27	8.3230E-02	3.3593E+00
28	8.3420E-02	3.3539E+00

29	8.4390E-02	3.3265E+00
30	9.1460E-02	2.4538E+00
31	1.0527E-01	2.0918E+00
32	1.1357E-01	1.9161E+00
33	1.3687E-01	1.5370E+00
34	1.4531E-01	1.4808E+00
35	1.5184E-01	1.4160E+00
36	1.7742E-01	1.1882E+00
37	1.9379E-01	1.0740E+00
38	1.9533E-01	1.0858E+00
39	1.9868E-01	1.1625E+00
40	2.5134E-01	2.1002E+00
41	2.6759E+00	2.1006E+00

SPECTRUM TABLE (SSE ENVELOPED RESPONSE SPECTRUM Z-DIRECTION)

NUMBER OF POINTS = 35
SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	1.6670E-02	4.9573E-01
2	2.8760E-02	4.9573E-01
3	3.1370E-02	6.1060E-01
4	3.1980E-02	6.4481E-01
5	3.2170E-02	6.5540E-01
6	3.2380E-02	6.6695E-01
7	3.3540E-02	7.2740E-01
8	3.4510E-02	7.7690E-01
9	3.9220E-02	1.1935E+00
10	4.2100E-02	1.3731E+00
11	4.3690E-02	1.4625E+00
12	4.6970E-02	1.8340E+00
13	4.8080E-02	1.8851E+00
14	5.4710E-02	2.1468E+00
15	5.7010E-02	2.0653E+00
16	5.8130E-02	2.0280E+00
17	5.8200E-02	2.0258E+00
18	5.9690E-02	1.9862E+00
19	6.3580E-02	1.8919E+00
20	7.4100E-02	1.4623E+00
21	7.4420E-02	1.4585E+00
22	7.8020E-02	1.4035E+00
23	8.1020E-02	1.3160E+00
24	8.3230E-02	1.2231E+00
25	8.4390E-02	1.1896E+00
26	9.1460E-02	9.9374E-01
27	1.0527E-01	9.5498E-01
28	1.3687E-01	1.0833E+00
29	1.4531E-01	1.2296E+00
30	1.5184E-01	1.2296E+00
31	1.6595E-01	1.2476E+00
32	1.9379E-01	1.2755E+00
33	2.5134E-01	1.5055E+00
34	2.5450E-01	1.5018E+00
35	2.6759E+00	1.4604E+00

CLUSTERING. +1 MEANS MODE I CLOSE TO I+1. -1, NOT.
-1. -1. -1. -1. -1. -1. -1. 1. -1. -1. 1. -1. 0.

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
MODAL COMBINATION METHOD 2-GROUPING

N O D E N O D E N U M B E R	D I S P L A C E M E N T S / R O T A T I O N S						A C C E L E R A T I O N S I N G ' S		
	X- T R A N S L A T I O N	Y- T R A N S L A T I O N	Z- T R A N S L A T I O N	X- R O T A T I O N	Y- R O T A T I O N	Z- R O T A T I O N	X- D I R E C T I O N	Y- D I R E C T I O N	Z- D I R E C T I O N
7090	.10511E-06	.14336E-06	.11175E-06	.95664E-07	.12733E-06	.83884E-07	.000	.000	.000
3001	.19681E-03	.21892E-03	.27757E-03	.13306E-04	.17641E-04	.10361E-04	.007	.007	.009
3005	.28692E-03	.31184E-03	.41654E-03	.23559E-04	.31102E-04	.17360E-04	.010	.010	.013
3010	.44216E-03	.46833E-03	.66171E-03	.43128E-04	.56627E-04	.29910E-04	.015	.016	.020
3011	.80160E-03	.82561E-03	.12475E-02	.97633E-04	.12701E-03	.62266E-04	.026	.028	.037
3012	.18226E-02	.17553E-02	.30189E-02	.18496E-03	.23821E-03	.10796E-03	.057	.060	.083
3019	.50986E-02	.49948E-02	.10156E-01	.37621E-03	.45817E-03	.17749E-03	.151	.183	.263
3021	.78468E-02	.83632E-02	.19117E-01	.54074E-03	.60744E-03	.20215E-03	.227	.334	.497
3023	.82567E-02	.89270E-02	.20851E-01	.56997E-03	.62943E-03	.20429E-03	.238	.362	.543
3024	.10170E-01	.11291E-01	.29484E-01	.70490E-03	.71214E-03	.21385E-03	.288	.491	.770
3026	.12789E-01	.13373E-01	.41221E-01	.86832E-03	.78433E-03	.24760E-03	.353	.634	1.067
3028	.15622E-01	.14194E-01	.53818E-01	.10312E-02	.82730E-03	.33806E-03	.419	.746	1.367
3030	.20668E-01	.13789E-01	.76046E-01	.13093E-02	.84244E-03	.63888E-03	.527	.843	1.852
3032	.25568E-01	.23353E-01	.97519E-01	.15891E-02	.80228E-03	.10966E-02	.615	.830	2.257
3035	.29955E-01	.53220E-01	.11681E+00	.18732E-02	.73708E-03	.16951E-02	.677	.807	2.547
3037	.33634E-01	.10386E+00	.10386E+00	.21623E-02	.68600E-03	.23073E-02	.711	.950	2.706
3038	.36559E-01	.16981E+00	.14615E+00	.24530E-02	.68626E-03	.28139E-02	.713	1.229	2.729
3040	.38826E-01	.24778E+00	.15653E+00	.27443E-02	.74848E-03	.32286E-02	.686	1.538	2.625
3044	.39598E-01	.28133E+00	.16014E+00	.28599E-02	.78623E-03	.33710E-02	.668	1.653	2.554
3047	.39947E-01	.29820E+00	.16184E+00	.29163E-02	.80642E-03	.34367E-02	.658	1.705	2.514
3050	.40273E-01	.31400E+00	.16337E+00	.29686E-02	.82580E-03	.34953E-02	.649	1.751	2.474
3053	.40575E-01	.32799E+00	.16427E+00	.30142E-02	.84456E-03	.35481E-02	.640	1.789	2.434
3056	.41315E-01	.35110E+00	.16371E+00	.30886E-02	.87692E-03	.36312E-02	.623	1.846	2.354
3059	.41519E-01	.35531E+00	.16335E+00	.31023E-02	.88335E-03	.36472E-02	.620	1.856	2.338
3062	.42839E-01	.37226E+00	.16087E+00	.31561E-02	.90794E-03	.37031E-02	.606	1.893	2.265
3065	.48867E-01	.40334E+00	.15214E+00	.32574E-02	.95821E-03	.38102E-02	.580	1.951	2.105
3068	.54797E-01	.41895E+00	.14541E+00	.33105E-02	.98605E-03	.38666E-02	.567	1.976	2.011
3071	.74821E-01	.44981E+00	.12630E+00	.34215E-02	.10475E-02	.39807E-02	.548	2.018	1.800
3074	.79739E-01	.45510E+00	.12195E+00	.34427E-02	.10594E-02	.40027E-02	.546	2.024	1.759
3077	.84966E-01	.46032E+00	.11742E+00	.34636E-02	.10715E-02	.40241E-02	.545	2.030	1.719
3080	.16907E+00	.50427E+00	.50995E-01	.37038E-02	.12238E-02	.42631E-02	.633	2.068	1.322
3083	.22489E+00	.51117E+00	.34417E-01	.38295E-02	.13112E-02	.43821E-02	.748	2.075	1.246
3086	.24087E+00	.51124E+00	.41264E-01	.38607E-02	.13359E-02	.44113E-02	.784	2.076	1.252
3089	.28391E+00	.51140E+00	.71704E-01	.39382E-02	.14038E-02	.44864E-02	.878	2.079	1.303
3092	.36709E+00	.51175E+00	.14205E+00	.40627E-02	.15388E-02	.46184E-02	1.047	2.086	1.504
3095	.42235E+00	.51197E+00	.19031E+00	.41284E-02	.16303E-02	.46970E-02	1.141	2.090	1.677
3098	.43083E+00	.51201E+00	.19775E+00	.41374E-02	.16445E-02	.47085E-02	1.154	2.090	1.705
3100	.52850E+00	.51240E+00	.28341E+00	.42217E-02	.18086E-02	.48304E-02	1.277	2.097	2.040
3101	.62856E+00	.51280E+00	.37067E+00	.42758E-02	.19781E-02	.49390E-02	1.364	2.103	2.392
3104	.63227E+00	.51283E+00	.37390E+00	.42773E-02	.19844E-02	.49428E-02	1.367	2.103	2.405
3107	.68637E+00	.51305E+00	.42066E+00	.42948E-02	.20762E-02	.49962E-02	1.406	2.106	2.593
3110	.76674E+00	.50221E+00	.49068E+00	.43116E-02	.22118E-02	.50806E-02	1.462	2.112	2.815
3113	.83657E+00	.47239E+00	.55317E+00	.43180E-02	.23328E-02	.51607E-02	1.518	2.111	2.905
3115	.92234E+00	.39197E+00	.63530E+00	.43194E-02	.25052E-02	.52988E-02	1.598	2.087	2.783
3116	.96229E+00	.27015E+00	.68978E+00	.43193E-02	.26724E-02	.54800E-02	1.634	2.020	2.289
3119	.96206E+00	.21730E+00	.70356E+00	.43213E-02	.27339E-02	.55641E-02	1.636	1.978	2.010
3120	.96177E+00	.17778E+00	.72356E+00	.43267E-02	.27960E-02	.56684E-02	1.637	1.927	1.770
3122	.96145E+00	.19052E+00	.74643E+00	.43352E-02	.28403E-02	.57691E-02	1.640	1.887	1.733
3123	.93041E+00	.27234E+00	.75866E+00	.43495E-02	.28791E-02	.59037E-02	1.623	1.865	1.982
3125	.84922E+00	.35903E+00	.73408E+00	.43568E-02	.28987E-02	.60040E-02	1.575	1.877	2.336
3128	.71913E+00	.41920E+00	.67289E+00	.43415E-02	.29113E-02	.60688E-02	1.483	1.900	2.580
3198	.58729E+00	.42400E+00	.59609E+00	.42935E-02	.29199E-02	.60769E-02	1.347	1.903	2.526

3199	.46676E+00	.40559E+00	.52150E+00	.42202E-02	.29267E-02	.60406E-02	1.172	1.890	2.352
3200	.34715E+00	.38723E+00	.45286E+00	.41151E-02	.29322E-02	.59598E-02	.947	1.873	2.207
3205	.22577E+00	.36831E+00	.39128E+00	.39714E-02	.29352E-02	.58279E-02	.670	1.849	2.119
3208	.11081E+00	.35035E+00	.34433E+00	.37962E-02	.29339E-02	.56523E-02	.380	1.816	2.129
3210	.28965E-02	.33285E+00	.31418E+00	.35865E-02	.29275E-02	.54305E-02	.271	1.774	2.251
3212	.10451E+00	.28775E+00	.29111E+00	.32321E-02	.28886E-02	.50162E-02	.661	1.617	2.406
3215	.16439E+00	.21094E+00	.26846E+00	.28906E-02	.27995E-02	.45200E-02	.945	1.301	2.503
3220	.17765E+00	.11725E+00	.23776E+00	.25395E-02	.26119E-02	.38286E-02	1.007	.919	2.535
3222	.12611E+00	.42471E-01	.17929E+00	.21571E-02	.21890E-02	.27089E-02	.863	.672	2.308
3225	.72774E-01	.35721E-01	.12662E+00	.19146E-02	.17633E-02	.18398E-02	.839	.652	1.829
3230	.61852E-01	.35131E-01	.11442E+00	.18548E-02	.16526E-02	.16432E-02	.832	.645	1.677
3235	.32645E-01	.33539E-01	.76795E-01	.16914E-02	.13034E-02	.12400E-02	.769	.611	1.165
3237	.13506E-01	.32399E-01	.42864E-01	.14835E-02	.97180E-03	.91952E-03	.646	.573	.681
3238	.88835E-02	.27786E-01	.22270E-01	.12320E-02	.74583E-03	.66106E-03	.500	.495	.373
3240	.68077E-02	.18019E-01	.82729E-02	.93583E-03	.53297E-03	.45000E-03	.307	.339	.149
3243	.34703E-02	.76374E-02	.15031E-02	.58628E-03	.32111E-03	.26792E-03	.128	.158	.029
3245	.59677E-03	.11757E-02	.62878E-04	.18117E-03	.96841E-04	.96411E-04	.022	.030	.001
3250	.12978E-06	.24132E-06	.15874E-06	.15869E-06	.83893E-07	.62426E-07	.000	.000	.000

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	11938.231	13120.166	11232.978	403003.86	1462293.55	969424.09
		END-J	11938.231	13120.166	11232.978	403003.86	1274269.64	727694.84
2	TANGENT	END-I	11936.773	13121.066	11231.199	402870.73	1274294.85	727724.60
		END-J	11936.773	13121.066	11231.199	402870.73	1230313.17	670228.34
3	TANGENT	END-I	11936.626	13120.216	11227.079	402870.73	1230313.17	670228.34
		END-J	11936.626	13120.216	11227.079	402870.73	1186860.74	613009.44
4	TANGENT	END-I	11925.193	13127.893	11225.322	404049.77	1187541.06	610909.05
		END-J	11925.193	13127.893	11225.322	404049.77	1138679.07	546037.56
5	TANGENT	END-I	11931.938	13120.522	11216.295	403875.56	1138413.89	546719.64
		END-J	11931.938	13120.522	11216.295	403875.56	1058630.21	439748.19
6	BEND	END-I	11931.612	13252.938	11006.451	403318.00	1023791.42	515664.65
		CENTER	11283.085	13809.350	11006.451	429993.54	930793.82	410720.71
		END-J	10764.932	14216.932	11006.451	497327.84	814731.79	315353.16
7	BEND	END-I	10745.779	14169.868	10902.695	500281.80	807455.47	329094.49
		CENTER	10471.533	14373.887	10902.695	567603.23	693908.00	270692.04
		END-J	10391.678	14433.580	10902.695	629643.26	572688.48	253022.64
8	BEND	END-I	10382.970	14238.221	10988.378	627490.85	551210.69	301437.86
		CENTER	10386.888	14235.624	10988.378	636502.02	531808.92	299801.90
		END-J	10396.379	14228.886	10988.378	645117.52	512656.44	299477.56
9	TANGENT	END-I	10388.408	14288.533	10765.676	645205.98	564865.18	182545.09
		END-J	10388.408	14288.533	10765.676	645205.98	446674.62	359567.97
10	TANGENT	END-I	10373.072	14262.163	10409.549	645139.00	446674.62	359687.95
		END-J	10373.072	14262.163	10409.549	645139.00	326942.69	580156.42
11	TANGENT	END-I	10355.929	14234.091	9871.689	645139.00	326942.69	580156.42
		END-J	10355.929	14234.091	9871.689	645139.00	258531.49	801476.43
12	TANGENT	END-I	10332.992	14212.431	8947.143	645248.95	258531.49	801388.13
		END-J	10332.992	14212.431	8947.143	645248.95	309179.24	1179622.13
13	TANGENT	END-I	10303.508	14246.632	7395.103	645368.14	309179.24	1179556.98
		END-J	10303.508	14246.632	7395.103	645368.14	446845.76	1558152.85
14	TANGENT	END-I	10273.021	14380.724	5602.954	645262.85	446845.76	1558196.39
		END-J	10273.021	14380.724	5602.954	645262.85	566102.26	1939590.16
15	TANGENT	END-I	10242.221	16730.440	3898.011	645233.27	566102.26	1939600.02
		END-J	10242.221	16730.440	3898.011	645233.27	639334.42	1634105.69
16	TANGENT	END-I	10211.676	16088.730	3123.569	645358.56	639334.42	1634056.29
		END-J	10211.676	16088.730	3123.569	645358.56	660681.68	1408313.58
17	TANGENT	END-I	10179.626	15172.408	4067.774	645284.35	660681.68	1408347.51

		END-J	10179.626	15172.408	4067.774	645284.35	635915.21	1287508.64
18	TANGENT	END-I	10158.077	14342.266	5272.567	645354.47	635915.21	1287473.50
		END-J	10158.077	14342.266	5272.567	645354.47	617172.92	1270855.10
19	TANGENT	END-I	10140.112	13965.155	5846.670	644922.16	617172.92	1271075.14
		END-J	10140.112	13965.155	5846.670	644922.16	607069.45	1268987.14
20	TANGENT	END-I	10144.840	13719.835	6158.752	645263.53	607069.45	1268812.99
		END-J	10144.840	13719.835	6158.752	645263.53	597638.39	1270225.22
21	BEND	END-I	10140.796	13493.203	6477.133	645310.53	597638.39	1270201.31
		CENTER	10415.669	13282.127	6477.133	641473.10	597507.64	1271446.61
		END-J	10692.470	13060.344	6477.133	637520.93	597745.64	1272705.24
22	BEND	END-I	10684.805	12768.458	6868.863	637271.06	593690.23	1274741.52
		CENTER	11120.657	12391.035	6868.863	630648.98	593115.92	1276659.93
		END-J	11549.763	11992.458	6868.863	623720.44	593664.68	1278330.69
23	BEND	END-I	11482.027	10740.953	8681.324	624252.79	900490.48	1083942.56
		CENTER	11542.602	10675.894	8681.324	623060.33	901460.88	1083419.22
		END-J	11602.710	10610.663	8681.324	621983.78	902368.00	1082884.38
24	BEND	END-I	11671.610	11408.042	7416.775	620092.78	592552.32	1279943.51
		CENTER	11936.184	11130.518	7416.775	615112.93	592274.13	1280491.83
		END-J	12192.329	10849.245	7416.775	609995.77	592698.31	1280778.46
25	BEND	END-I	12097.264	10516.657	7864.706	609346.27	601350.43	1277027.69
		CENTER	12551.391	9970.324	7864.706	598810.81	603824.08	1275116.52
		END-J	12956.494	9437.823	7864.706	588202.93	608426.28	1271473.53
26	BEND	END-I	12770.013	9230.171	8245.324	586432.64	637366.28	1258012.35
		CENTER	12944.273	8984.276	8245.324	581104.08	639246.48	1255032.87
		END-J	13101.385	8753.553	8245.324	576061.32	641430.01	1251444.16
27	BEND	END-I	12826.355	8421.852	8870.788	576204.41	608588.01	1267712.66
		CENTER	13074.561	8031.161	8870.788	563519.16	617595.09	1256652.16
		END-J	13239.146	7756.827	8870.788	551496.01	629436.95	1242287.47
28	BEND	END-I	12961.950	7506.519	9374.540	553727.83	702687.34	1201336.88
		CENTER	12980.842	7473.757	9374.540	550218.28	706232.01	1197756.13
		END-J	12996.351	7446.910	9374.540	546795.74	709827.06	1194034.84
29	BEND	END-I	12898.101	7808.791	9174.459	548097.98	652417.90	1225759.93
		CENTER	12905.894	7795.957	9174.459	546647.36	653712.50	1222634.83
		END-J	12910.556	7788.181	9174.459	545287.40	655056.81	1219391.11
30	BEND	END-I	12298.467	7497.217	10094.084	544044.95	639324.53	1228274.64
		CENTER	12007.066	7955.159	10094.084	526294.34	676289.03	1171799.09
		END-J	11342.308	8877.338	10094.084	527148.20	718711.21	1099702.98
31	BEND	END-I	10240.034	8904.675	10939.973	528469.27	726632.66	1093847.64
		CENTER	9745.561	9443.753	10939.973	538607.54	752757.02	1048509.60
		END-J	9213.844	9962.551	10939.973	558152.54	776785.27	1001171.42
32	TANGENT	END-I	8725.955	10049.315	9723.951	558057.65	949242.46	839606.15
		END-J	8725.955	10049.315	9723.951	558057.65	921303.80	808257.52
33	TANGENT	END-I	8352.027	9851.402	9692.599	559449.89	920459.12	808257.52
		END-J	8352.027	9851.402	9692.599	559449.89	849690.47	728713.75

34	TANGENT	END-I END-J	7647.503 7647.503	9350.753 9350.753	9602.230 9602.230	558766.54 558766.54	850139.88 733401.18	728713.75 598351.07
35	TANGENT	END-I END-J	6954.301 6954.301	8689.224 8689.224	9448.183 9448.183	558891.40 558891.40	733306.11 673396.06	598351.07 529484.96
36	TANGENT	END-I END-J	6685.013 6685.013	8340.904 8340.904	9364.530 9364.530	558767.56 558767.56	673498.77 665711.20	529484.96 520265.78
37	TANGENT	END-I END-J	6279.478 6279.478	7789.660 7789.660	9237.516 9237.516	558832.45 558832.45	665656.78 606211.72	520265.78 438964.59
38	TANGENT	END-I END-J	5761.160 5761.160	6561.749 6561.749	8939.865 8939.865	558850.01 558850.01	606195.47 606075.25	438964.59 398396.42
39	TANGENT	END-I END-J	5722.846 5722.846	5737.465 5737.465	8761.078 8761.078	561883.53 561883.53	603262.63 604331.34	398396.42 397581.80
40	TANGENT	END-I END-J	5591.911 5591.911	5451.238 5451.238	8672.487 8672.487	558931.91 558931.91	607063.53 631377.51	397581.80 387965.35
41	BEND	END-I CENTER END-J	5625.870 5942.360 6361.751	8469.680 8251.339 7933.876	4545.818 4545.818 4545.818	558842.15 523384.12 480124.08	391119.04 430408.57 475863.81	629522.65 656123.91 684000.52
42	BEND	END-I CENTER END-J	6773.598 7222.248 7637.656	7477.456 7045.833 6593.492	3681.883 3681.883 3681.883	480493.04 435523.11 388924.32	474881.49 509387.11 540533.46	684423.26 708643.04 730269.50
43	BEND	END-I CENTER END-J	8269.535 8650.467 8760.519	5993.223 5426.763 5243.927	3231.610 3231.610 3231.610	388995.02 321258.87 278077.22	541269.22 560720.96 561846.39	729687.13 747955.58 751864.25
44	BEND	END-I CENTER END-J	9313.525 8698.996 7719.737	5375.430 6322.899 7490.103	4001.150 4001.150 4001.150	278313.52 276409.56 313079.10	560625.30 508513.62 435599.27	752687.88 718210.43 662450.90
45	TANGENT	END-I END-J	7751.513 7751.513	8531.523 8531.523	4750.831 4750.831	313215.86 313215.86	426000.91 366349.89	668585.05 594130.72
46	TANGENT	END-I END-J	7894.889 7894.889	9310.113 9310.113	5295.843 5295.843	313332.98 313332.98	366349.89 284433.35	594068.91 513553.22
47	TANGENT	END-I END-J	8169.305 8169.305	10166.036 10166.036	5716.807 5716.807	313337.83 313337.83	284433.35 208099.04	513550.29 473879.21
48	BEND	END-I CENTER END-J	8626.193 7346.827 6538.689	11308.661 12177.320 12629.501	5674.394 5674.394 5674.394	313325.00 300664.31 269397.72	203895.88 196799.19 245881.63	475707.38 478595.26 508112.70
49	BEND	END-I CENTER END-J	7464.958 7619.802 8419.035	13505.888 13420.953 12936.343	5625.604 5625.604 5625.604	269256.21 225242.76 174661.95	246064.92 310242.80 375561.29	508099.16 558472.45 625623.04
50	BEND	END-I CENTER END-J	9729.213 10976.512 12250.485	13522.324 12529.369 11285.876	5642.808 5642.808 5642.808	175552.17 136065.18 157190.50	378423.32 430773.11 466602.97	623645.79 700351.97 772250.56
51	BEND	END-I	13524.902	11723.734	5884.247	157784.85	462261.63	774736.78

		CENTER	14363.097	10680.310	5884.247	222293.83	465701.90	821207.80
		END-J	14908.699	9908.457	5884.247	302652.69	454164.78	851342.18
52	TANGENT	END-I	15845.174	10194.145	7008.832	302669.35	336713.39	904095.63
		END-J	15845.174	10194.145	7008.832	302669.35	390047.83	963989.25
53	TANGENT	END-I	16780.292	10700.257	7773.075	302359.85	389435.22	964331.59
		END-J	16780.292	10700.257	7773.075	302359.85	479940.51	1052636.27
54	TANGENT	END-I	17759.802	11162.269	8564.502	303054.35	479551.60	1052613.94
		END-J	17759.802	11162.269	8564.502	303054.35	607633.81	1172177.90
55	TANGENT	END-I	18765.690	11534.696	9327.254	302768.47	607961.13	1172081.96
		END-J	18765.690	11534.696	9327.254	302768.47	760023.60	1313264.24
56	TANGENT	END-I	19779.006	11794.499	10055.880	302704.66	760049.08	1313264.24
		END-J	19779.006	11794.499	10055.880	302704.66	934607.36	1474956.38
57	BEND	END-I	18841.320	17691.979	10360.910	303385.31	951579.63	1463945.12
		CENTER	14911.000	21110.495	10360.910	515433.93	955444.35	1467588.66
		END-J	10909.875	23429.743	10360.910	736693.29	907527.43	1483297.58
58	BEND	END-I	11599.146	23822.285	11203.787	736022.45	908014.06	1483332.68
		CENTER	8704.193	25025.596	11203.787	931994.30	823386.59	1518897.38
		END-J	9074.892	24893.861	11203.787	1100887.89	708264.20	1578412.37
59	BEND	END-I	8721.143	25452.741	12077.793	1100534.55	709063.91	1578299.64
		CENTER	12342.769	23910.951	12077.793	1247601.11	571124.20	1669334.85
		END-J	17089.586	20780.794	12077.793	1338991.74	468030.05	1766868.30
60	BEND	END-I	16562.057	21609.581	12864.685	1339713.92	443464.60	1772648.69
		CENTER	22517.077	15305.378	12864.685	1361295.59	464014.42	1889150.19
		END-J	25701.837	8991.142	12864.685	1272168.33	648973.54	1920923.80
61	BEND	END-I	25603.405	9114.724	13869.784	1272182.02	648662.95	1921019.30
		CENTER	25800.438	8541.126	13869.784	1139664.52	805503.77	1867304.30
		END-J	23715.154	13274.015	13869.784	982861.26	917151.05	1735888.10
62	BEND	END-I	23785.202	12980.789	14496.826	984076.71	913856.86	1736933.79
		CENTER	22932.956	14433.230	14496.826	944613.83	932863.45	1693360.73
		END-J	21956.155	15879.598	14496.826	906793.29	947342.92	1645819.64
63	TANGENT	END-I	22053.197	14582.756	16078.055	908553.44	1006593.00	1609260.93
		END-J	22053.197	14582.756	16078.055	908553.44	870108.83	1310181.33
64	TANGENT	END-I	22145.685	14651.483	16452.785	908474.93	869200.06	1310839.01
		END-J	22145.685	14651.483	16452.785	908474.93	877200.08	1025592.78
65	BEND	END-I	22249.871	15605.997	15794.888	908448.47	1019739.98	884024.14
		CENTER	22308.385	15520.144	15794.888	935899.88	885255.87	926193.89
		END-J	21951.289	16021.172	15794.888	963103.86	742280.50	974938.57
66	BEND	END-I	22004.058	16159.404	15820.203	962640.06	743122.50	974755.12
		CENTER	21266.955	17118.838	15820.203	975799.48	614159.54	1030499.09
		END-J	20224.291	18341.632	15820.203	965438.97	533360.74	1092071.51
67	BEND	END-I	20225.610	18435.183	15857.352	965299.74	534033.21	1091865.88
		CENTER	18978.623	19717.183	15857.352	925145.75	537842.11	1160781.98
		END-J	17700.047	20870.915	15857.352	853112.29	624049.10	1236610.88

68	BEND	END-I	17708.448	20932.007	15833.681	853761.95	621592.80	1237399.37
		CENTER	16601.193	21819.952	15833.681	751892.32	752656.83	1320155.48
		END-J	15876.503	22353.184	15833.681	624872.17	895484.86	1408225.42
69	TANGENT	END-I	15874.630	24131.519	12978.275	624260.38	794589.90	1467781.63
		END-J	15874.630	24131.519	12978.275	624260.38	838933.24	1586921.03

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	10511.
7090	FY	14336.
7090	FZ	11175.
7090	MX	956639.
7090	MY	1273324.
7090	MZ	838834.
3047	FZ	97.
3116	FZ	414.
3210	FX	14482.
3210	FZ	189.
3250	FX	12978.
3250	FY	24132.
3250	FZ	15875.
3250	MX	1586921.
3250	MY	838933.
3250	MZ	624260.
3035	FY	29351.
3083	FZ	18981.

BENCHMARK PROBLEM 1
HIGHER FREQUENCY RESPONSE
(RIGID RESPONSE)

STATIC ANALYSIS

STRUCTURE LOAD CASE	ELEMENT LOAD MULTIPLIERS			
	A	B	C	D
1	.000	.000	.000	.000
2	.000	.000	.000	.000
3	.000	.000	.000	.000

STATIC ANALYSIS

LOAD CASE 1

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-1.15313E-07	1.68475E-08	-2.37923E-08	2.04735E-09	-1.42435E-08	-1.98358E-08
3001	-8.38856E-05	-4.98673E-05	2.07385E-05	2.50804E-07	-1.68646E-06	-2.08820E-06
3005	-1.11968E-04	-6.74239E-05	2.94241E-05	3.61970E-07	-2.66690E-06	-3.05399E-06
3010	-1.55328E-04	-9.40418E-05	4.32327E-05	5.06489E-07	-4.28682E-06	-4.38803E-06
3011	-2.46975E-04	-1.48095E-04	7.23870E-05	6.97197E-07	-8.04500E-06	-6.54148E-06
3012	-4.18602E-04	-2.44407E-04	1.45137E-04	4.68942E-07	-1.23063E-05	-6.26350E-06
3019	-6.77214E-04	-3.12569E-04	3.79908E-04	-2.55656E-06	-1.38085E-05	8.72766E-06
3021	-7.63762E-04	-9.35939E-06	5.67409E-04	-6.12414E-06	-1.00197E-05	2.81811E-05
3023	-7.79460E-04	8.41121E-05	5.90590E-04	-6.68039E-06	-9.25243E-06	3.13286E-05
3024	-8.51209E-04	6.19473E-04	6.67686E-04	-8.63041E-06	-6.20601E-06	4.30612E-05
3026	-9.24552E-04	1.44104E-03	7.14404E-04	-1.00238E-05	-3.33655E-06	5.30656E-05
3028	-9.86196E-04	2.37941E-03	7.24925E-04	-1.04175E-05	-1.55083E-06	5.87139E-05
3030	-1.07640E-03	4.06740E-03	7.11167E-04	-9.12048E-06	-1.21305E-06	5.98073E-05
3032	-1.16573E-03	5.63106E-03	7.36684E-04	-5.87387E-06	-4.09304E-06	5.24394E-05
3035	-1.27225E-03	6.88275E-03	8.79668E-04	-1.42198E-06	-9.45277E-06	3.98576E-05
3037	-1.40810E-03	7.72616E-03	1.19264E-03	3.46691E-06	-1.61306E-05	2.53855E-05
3038	-1.57733E-03	8.15432E-03	1.69207E-03	8.02911E-06	-2.27365E-05	1.23138E-05
3040	-1.77469E-03	8.25099E-03	2.35722E-03	1.15531E-05	-2.80110E-05	3.74809E-06
3044	-1.85839E-03	8.23148E-03	2.65559E-03	1.25346E-05	-2.95471E-05	2.14486E-06
3047	-1.89895E-03	8.21632E-03	2.80664E-03	1.29117E-05	-3.01682E-05	1.81055E-06
3050	-1.93753E-03	8.20037E-03	2.94860E-03	1.31953E-05	-3.06655E-05	1.78234E-06
3053	-1.97152E-03	8.18700E-03	3.07630E-03	1.33853E-05	-3.10609E-05	1.98699E-06
3056	-2.02871E-03	8.16999E-03	3.29641E-03	1.35804E-05	-3.15667E-05	2.70601E-06
3059	-2.03937E-03	8.16768E-03	3.33747E-03	1.35999E-05	-3.16475E-05	2.89112E-06
3062	-2.08493E-03	8.16098E-03	3.50707E-03	1.36494E-05	-3.18738E-05	3.64507E-06
3065	-2.17594E-03	8.16266E-03	3.83205E-03	1.35578E-05	-3.20983E-05	5.44405E-06
3068	-2.23002E-03	8.16992E-03	4.00217E-03	1.34253E-05	-3.21040E-05	6.49057E-06
3071	-2.35965E-03	8.19793E-03	4.35302E-03	1.29922E-05	-3.18846E-05	8.66926E-06
3074	-2.38614E-03	8.20467E-03	4.41588E-03	1.28828E-05	-3.18093E-05	9.07196E-06
3077	-2.41379E-03	8.21167E-03	4.47831E-03	1.27717E-05	-3.17258E-05	9.45420E-06
3080	-2.79590E-03	8.28481E-03	5.08162E-03	1.11679E-05	-3.03164E-05	1.31849E-05
3083	-3.01487E-03	8.29098E-03	5.26988E-03	1.03149E-05	-2.93318E-05	1.39351E-05
3086	-3.07407E-03	8.28741E-03	5.30671E-03	1.01301E-05	-2.90469E-05	1.39824E-05
3089	-3.22508E-03	8.27921E-03	5.40113E-03	9.74170E-06	-2.82846E-05	1.39449E-05
3092	-3.49977E-03	8.26327E-03	5.57139E-03	9.43958E-06	-2.68543E-05	1.39065E-05
3095	-3.67317E-03	8.25342E-03	5.68058E-03	9.55760E-06	-2.59452E-05	1.42808E-05
3098	-3.69990E-03	8.25187E-03	5.69735E-03	9.59819E-06	-2.58090E-05	1.43857E-05
3100	-4.01907E-03	8.23460E-03	5.89561E-03	1.04860E-05	-2.43245E-05	1.69169E-05
3101	-4.41251E-03	8.21652E-03	6.12044E-03	1.21259E-05	-2.29617E-05	2.22029E-05
3104	-4.42985E-03	8.21551E-03	6.12948E-03	1.21999E-05	-2.29115E-05	2.24557E-05
3107	-4.69476E-03	8.20511E-03	6.26614E-03	1.33513E-05	-2.22456E-05	2.65413E-05
3110	-5.18548E-03	8.11141E-03	6.44072E-03	1.54675E-05	-2.13939E-05	3.46473E-05
3113	-5.73032E-03	7.83678E-03	6.52923E-03	1.76058E-05	-2.07103E-05	4.29755E-05
3115	-6.57412E-03	6.92391E-03	6.49651E-03	2.10400E-05	-1.98163E-05	5.51525E-05
3116	-7.05665E-03	5.18112E-03	6.13472E-03	2.48923E-05	-1.91448E-05	6.40961E-05
3119	-7.06841E-03	4.21912E-03	5.86537E-03	2.66535E-05	-1.90536E-05	6.54392E-05
3120	-7.08394E-03	2.99360E-03	5.52311E-03	2.87813E-05	-1.92161E-05	6.47270E-05
3122	-7.10065E-03	1.80426E-03	5.17416E-03	3.08067E-05	-1.96109E-05	6.16023E-05

3123	-6.82867E-03	3.98381E-04	4.54117E-03	3.32821E-05	-2.01129E-05	5.40655E-05
3125	-6.18924E-03	-5.41530E-04	3.71143E-03	3.51470E-05	-2.00015E-05	4.60554E-05
3128	-5.33393E-03	-1.07436E-03	2.71189E-03	3.61206E-05	-1.89442E-05	3.94521E-05
3198	-4.55890E-03	-1.15547E-03	1.90375E-03	3.56406E-05	-1.74150E-05	3.72739E-05
3199	-3.84822E-03	-1.07214E-03	1.25462E-03	3.41385E-05	-1.59237E-05	3.83007E-05
3200	-3.08457E-03	-9.79393E-04	6.40721E-04	3.17774E-05	-1.44941E-05	4.10138E-05
3205	-2.21852E-03	-8.67806E-04	6.20447E-05	2.86952E-05	-1.31246E-05	4.37272E-05
3208	-1.32079E-03	-7.48123E-04	-4.37625E-04	2.53965E-05	-1.19483E-05	4.39757E-05
3210	-4.39374E-04	-6.28303E-04	-8.72585E-04	2.21398E-05	-1.09824E-05	3.92698E-05
3212	2.00203E-04	-3.67162E-04	-1.16958E-03	1.79318E-05	-1.02299E-05	2.96144E-05
3215	5.08340E-04	3.18212E-05	-1.21106E-03	1.47098E-05	-8.84480E-06	2.27090E-05
3220	5.57838E-04	4.50430E-04	-1.07250E-03	1.13965E-05	-6.27221E-06	1.56419E-05
3222	3.65674E-04	7.49580E-04	-8.12764E-04	6.48713E-06	-2.38926E-06	9.67097E-06
3225	1.49656E-04	8.03037E-04	-6.95087E-04	3.53818E-06	-2.78200E-07	9.03015E-06
3230	8.88621E-05	7.94601E-04	-6.77321E-04	3.21987E-06	1.62023E-07	9.08241E-06
3235	-1.11518E-04	7.50031E-04	-6.19541E-04	3.75935E-06	1.88904E-06	8.51010E-06
3237	-2.83977E-04	7.05910E-04	-5.20489E-04	6.54207E-06	4.02451E-06	6.74623E-06
3238	-3.49414E-04	6.47483E-04	-3.79669E-04	1.09739E-05	6.07215E-06	4.18604E-06
3240	-3.14067E-04	5.01996E-04	-1.90794E-04	1.41564E-05	7.86097E-06	1.78886E-06
3243	-1.90378E-04	2.71784E-04	-4.21811E-05	1.31224E-05	7.87748E-06	3.69120E-07
3245	-5.07187E-05	6.04550E-05	1.41706E-06	5.49212E-06	3.67404E-06	4.91888E-08
3250	-1.76623E-08	1.68874E-08	3.57761E-09	5.37939E-09	3.81605E-09	3.18499E-11

STATIC ANALYSIS

LOAD CASE 2

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	1.39477E-08	-1.91132E-08	2.75068E-09	2.48637E-09	2.74745E-09	-1.46703E-09
3001	2.09387E-06	-1.18521E-05	-9.01512E-06	2.61495E-07	3.56903E-07	-1.48369E-07
3005	3.13225E-06	-1.53278E-05	-1.26447E-05	3.93868E-07	6.01346E-07	-2.00568E-07
3010	5.41304E-06	-1.98412E-05	-1.83706E-05	6.00376E-07	1.04174E-06	-2.67837E-07
3011	1.15392E-05	-2.81252E-05	-3.06112E-05	1.05860E-06	2.18381E-06	-3.99518E-07
3012	2.70494E-05	-4.21980E-05	-6.14396E-05	1.56469E-06	3.81217E-06	-5.75833E-07
3019	7.03809E-05	-7.80271E-05	-1.62616E-04	2.06815E-06	6.27541E-06	-9.61994E-07
3021	1.08914E-04	-1.10819E-04	-2.73078E-04	2.00278E-06	7.49146E-06	-6.61254E-07
3023	1.15486E-04	-1.15647E-04	-2.93605E-04	1.96130E-06	7.66050E-06	-5.04018E-07
3024	1.45727E-04	-1.27717E-04	-3.92997E-04	1.71212E-06	8.34919E-06	4.73793E-07
3026	1.84480E-04	-1.15923E-04	-5.24814E-04	1.33000E-06	9.10939E-06	2.00411E-06
3028	2.25244E-04	-7.53166E-05	-6.67423E-04	9.57199E-07	9.81985E-06	3.49380E-06
3030	2.99576E-04	4.49057E-05	-9.35183E-04	5.17678E-07	1.10513E-05	5.18407E-06
3032	3.80256E-04	1.92934E-04	-1.23569E-03	3.66748E-07	1.24602E-05	5.62444E-06
3035	4.68667E-04	3.36321E-04	-1.57645E-03	4.24033E-07	1.41889E-05	5.16312E-06
3037	5.67211E-04	4.57835E-04	-1.96748E-03	5.81122E-07	1.62585E-05	4.26894E-06
3038	6.78020E-04	5.51164E-04	-2.41685E-03	7.40053E-07	1.85321E-05	3.36585E-06
3040	8.01303E-04	6.22265E-04	-2.92747E-03	8.14242E-07	2.07397E-05	2.83055E-06
3044	8.53515E-04	6.47478E-04	-3.14546E-03	8.08821E-07	2.15295E-05	2.76933E-06
3047	8.78913E-04	6.59720E-04	-3.25488E-03	7.98564E-07	2.18851E-05	2.77273E-06
3050	9.03275E-04	6.71061E-04	-3.35732E-03	7.84813E-07	2.21925E-05	2.79483E-06
3053	9.24421E-04	6.81011E-04	-3.44769E-03	7.71120E-07	2.24592E-05	2.83233E-06
3056	9.57833E-04	6.97359E-04	-3.59624E-03	7.52225E-07	2.28517E-05	2.93844E-06
3059	9.63731E-04	7.00361E-04	-3.62316E-03	7.47551E-07	2.29227E-05	2.96685E-06
3062	9.87369E-04	7.12598E-04	-3.73117E-03	7.43063E-07	2.31591E-05	3.09364E-06
3065	1.02551E-03	7.36538E-04	-3.92743E-03	7.38426E-07	2.35473E-05	3.46423E-06
3068	1.04289E-03	7.49700E-04	-4.02477E-03	7.42795E-07	2.37125E-05	3.73622E-06
3071	1.06908E-03	7.79216E-04	-4.21414E-03	7.99944E-07	2.39615E-05	4.45427E-06
3074	1.07166E-03	7.84873E-04	-4.24607E-03	8.17242E-07	2.39930E-05	4.61981E-06
3077	1.07392E-03	7.90662E-04	-4.27743E-03	8.38951E-07	2.40207E-05	4.78809E-06
3080	1.03242E-03	8.49225E-04	-4.52354E-03	1.43959E-06	2.40678E-05	7.02422E-06
3083	9.52921E-04	8.60095E-04	-4.54234E-03	2.05621E-06	2.39367E-05	8.31740E-06
3086	9.25464E-04	8.59771E-04	-4.53501E-03	2.24590E-06	2.38946E-05	8.63143E-06
3089	8.44187E-04	8.58999E-04	-4.51174E-03	2.80781E-06	2.37827E-05	9.40432E-06
3092	6.74442E-04	8.56586E-04	-4.45065E-03	4.03256E-06	2.35894E-05	1.05159E-05
3095	5.54283E-04	8.54591E-04	-4.39753E-03	4.88934E-06	2.34764E-05	1.09451E-05
3098	5.35797E-04	8.54215E-04	-4.38850E-03	5.01995E-06	2.34603E-05	1.09879E-05
3100	3.22179E-04	8.49531E-04	-4.26892E-03	6.38703E-06	2.32963E-05	1.10318E-05
3101	1.16679E-04	8.43712E-04	-4.12227E-03	7.39363E-06	2.31666E-05	1.02973E-05
3104	1.10098E-04	8.43283E-04	-4.11649E-03	7.42119E-06	2.31620E-05	1.02560E-05
3107	1.06550E-05	8.39749E-04	-4.03071E-03	7.72011E-06	2.31066E-05	9.57057E-06
3110	-1.15675E-04	8.12394E-04	-3.84452E-03	7.80642E-06	2.30109E-05	8.17731E-06
3113	-1.98274E-04	7.57931E-04	-3.58553E-03	7.45016E-06	2.28024E-05	6.74175E-06
3115	-2.58174E-04	6.53336E-04	-3.07386E-03	6.15560E-06	2.20085E-05	4.71853E-06
3116	-2.54977E-04	5.44724E-04	-2.44428E-03	3.94314E-06	2.02334E-05	3.39521E-06
3119	-2.42525E-04	4.98820E-04	-2.16309E-03	2.78141E-06	1.92159E-05	3.26678E-06
3120	-2.27804E-04	4.40339E-04	-1.82873E-03	1.32354E-06	1.79833E-05	3.44854E-06
3122	-2.13907E-04	3.75583E-04	-1.51603E-03	-1.24021E-07	1.69558E-05	3.89525E-06

3123	-1.69130E-04	2.77438E-04	-1.13264E-03	-2.11249E-06	1.59177E-05	4.62336E-06
3125	-7.75351E-05	1.93338E-04	-8.16091E-04	-4.15634E-06	1.53016E-05	4.90297E-06
3128	5.34481E-05	1.45455E-04	-5.32521E-04	-6.49421E-06	1.48249E-05	4.27871E-06
3198	1.53890E-04	1.48247E-04	-3.53711E-04	-8.38122E-06	1.44811E-05	2.90053E-06
3199	2.11106E-04	1.61999E-04	-2.15044E-04	-9.54786E-06	1.42832E-05	1.35088E-06
3200	2.34173E-04	1.71105E-04	-5.71924E-05	-1.00291E-05	1.41875E-05	-3.43704E-07
3205	2.21072E-04	1.74612E-04	1.07313E-04	-9.64380E-06	1.42333E-05	-1.99710E-06
3208	1.76673E-04	1.71996E-04	2.49978E-04	-8.40841E-06	1.44313E-05	-3.23198E-06
3210	1.11571E-04	1.64406E-04	3.57917E-04	-6.49938E-06	1.47653E-05	-3.80510E-06
3212	5.62858E-05	1.31464E-04	3.23044E-04	-3.17869E-06	1.53424E-05	-5.31432E-06
3215	3.91478E-07	2.26849E-05	8.92574E-05	-3.47478E-07	1.55978E-05	-7.72709E-06
3220	-4.95266E-07	-1.90674E-04	-2.70052E-04	2.33914E-06	1.46915E-05	-9.23536E-06
3222	1.78951E-04	-4.51609E-04	-5.61121E-04	6.43893E-06	1.13007E-05	-7.31981E-06
3225	3.30274E-04	-5.08976E-04	-4.34161E-04	9.55781E-06	8.32909E-06	-3.39766E-06
3230	3.51985E-04	-5.09068E-04	-3.61240E-04	1.00321E-05	7.63133E-06	-2.22750E-06
3235	3.74977E-04	-5.08988E-04	-9.96051E-05	9.69822E-06	5.08557E-06	5.20565E-07
3237	3.31523E-04	-5.13727E-04	1.22527E-04	6.22462E-06	2.06724E-06	2.69158E-06
3238	2.70850E-04	-5.22694E-04	1.88150E-04	-4.84576E-07	-7.10616E-07	3.77093E-06
3240	1.89033E-04	-4.72849E-04	1.31952E-04	-7.43622E-06	-2.98890E-06	3.64835E-06
3243	9.59394E-05	-3.03072E-04	3.33094E-05	-1.06808E-05	-3.63826E-06	2.53304E-06
3245	2.17377E-05	-8.33669E-05	-3.53093E-06	-5.64563E-06	-1.71743E-06	9.31590E-07
3250	6.61772E-09	-2.85489E-08	-8.91443E-09	-5.97881E-09	-1.74213E-09	6.03207E-10

STATIC ANALYSIS

LOAD CASE 3

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-1.33043E-08	1.93146E-09	-1.71338E-08	3.97229E-09	3.84140E-09	-2.25196E-09
3001	-3.30512E-06	-1.05416E-05	-1.84533E-05	4.38184E-07	4.74437E-07	-2.45300E-07
3005	-4.06262E-06	-1.43396E-05	-2.50708E-05	6.75692E-07	7.78895E-07	-3.59928E-07
3010	-5.27091E-06	-2.01491E-05	-3.51302E-05	1.05627E-06	1.32074E-06	-5.17459E-07
3011	-7.93477E-06	-3.20562E-05	-5.65163E-05	1.91155E-06	2.73109E-06	-7.60979E-07
3012	-7.35913E-06	-5.54657E-05	-1.05601E-04	2.83090E-06	4.81656E-06	-6.75415E-07
3019	2.65947E-05	-8.83115E-05	-2.56716E-04	3.36344E-06	8.52934E-06	1.55855E-06
3021	7.05382E-05	-5.86979E-05	-4.21866E-04	3.00589E-06	1.04025E-05	4.49480E-06
3023	7.65967E-05	-4.68473E-05	-4.52697E-04	2.93646E-06	1.05952E-05	4.98461E-06
3024	1.02018E-04	2.50157E-05	-5.97297E-04	2.69575E-06	1.10987E-05	6.88250E-06
3026	1.33175E-04	1.41376E-04	-7.73119E-04	2.52236E-06	1.12287E-05	8.67026E-06
3028	1.63972E-04	2.80742E-04	-9.45251E-04	2.47540E-06	1.12157E-05	9.90713E-06
3030	2.17614E-04	5.47719E-04	-1.23776E-03	2.66105E-06	1.18002E-05	1.08663E-05
3032	2.79519E-04	8.18494E-04	-1.55895E-03	3.13083E-06	1.37001E-05	1.05925E-05
3035	3.58635E-04	1.06386E-03	-1.94921E-03	3.79983E-06	1.69240E-05	9.45622E-06
3037	4.62209E-04	1.26586E-03	-2.43955E-03	4.56238E-06	2.09358E-05	7.91518E-06
3038	5.93080E-04	1.41984E-03	-3.04058E-03	5.29502E-06	2.49405E-05	6.50153E-06
3040	7.48058E-04	1.53723E-03	-3.74111E-03	5.86902E-06	2.81592E-05	5.77606E-06
3044	8.14841E-04	1.57890E-03	-4.03932E-03	6.02860E-06	2.90971E-05	5.78135E-06
3047	8.47346E-04	1.59944E-03	-4.18825E-03	6.08910E-06	2.94733E-05	5.85923E-06
3050	8.78554E-04	1.61850E-03	-4.32700E-03	6.13420E-06	2.97710E-05	5.97870E-06
3053	9.05247E-04	1.63566E-03	-4.44801E-03	6.16523E-06	3.00071E-05	6.12979E-06
3056	9.45451E-04	1.66520E-03	-4.64207E-03	6.21531E-06	3.03125E-05	6.44842E-06
3059	9.52267E-04	1.67076E-03	-4.67661E-03	6.22312E-06	3.03611E-05	6.51958E-06
3062	9.78416E-04	1.69360E-03	-4.81279E-03	6.27301E-06	3.05091E-05	6.79679E-06
3065	1.01479E-03	1.73887E-03	-5.05070E-03	6.38734E-06	3.06780E-05	7.42553E-06
3068	1.02810E-03	1.76298E-03	-5.16327E-03	6.46995E-06	3.07067E-05	7.79698E-06
3071	1.03819E-03	1.81398E-03	-5.36920E-03	6.71421E-06	3.06598E-05	8.61464E-06
3074	1.03654E-03	1.82324E-03	-5.40157E-03	6.77293E-06	3.06327E-05	8.77823E-06
3077	1.03442E-03	1.83246E-03	-5.43276E-03	6.83522E-06	3.06037E-05	8.93818E-06
3080	9.22649E-04	1.91297E-03	-5.61210E-03	7.75682E-06	3.00962E-05	1.07599E-05
3083	8.01058E-04	1.92247E-03	-5.55432E-03	8.37250E-06	2.97414E-05	1.15382E-05
3086	7.62784E-04	1.92066E-03	-5.52290E-03	8.52741E-06	2.96413E-05	1.17016E-05
3089	6.55618E-04	1.91667E-03	-5.43646E-03	8.90468E-06	2.93769E-05	1.20725E-05
3092	4.49803E-04	1.90780E-03	-5.26413E-03	9.38587E-06	2.88890E-05	1.25750E-05
3095	3.11817E-04	1.90220E-03	-5.14875E-03	9.49562E-06	2.85774E-05	1.27945E-05
3098	2.90869E-04	1.90127E-03	-5.13115E-03	9.49691E-06	2.85304E-05	1.28221E-05
3100	4.88375E-05	1.89149E-03	-4.93337E-03	9.22397E-06	2.79996E-05	1.30669E-05
3101	-1.96675E-04	1.88228E-03	-4.74734E-03	8.48544E-06	2.74733E-05	1.32183E-05
3104	-2.05035E-04	1.88173E-03	-4.74084E-03	8.45057E-06	2.74540E-05	1.32225E-05
3107	-3.36142E-04	1.87711E-03	-4.65035E-03	7.90925E-06	2.71754E-05	1.32802E-05
3110	-5.27835E-04	1.83781E-03	-4.46484E-03	6.93665E-06	2.67866E-05	1.33495E-05
3113	-6.87961E-04	1.74435E-03	-4.20299E-03	5.97879E-06	2.64737E-05	1.33435E-05
3115	-8.69427E-04	1.50434E-03	-3.65989E-03	4.44255E-06	2.61184E-05	1.31330E-05
3116	-9.27885E-04	1.14222E-03	-2.91549E-03	2.57788E-06	2.58946E-05	1.25467E-05
3119	-9.11698E-04	9.64024E-04	-2.54720E-03	1.64901E-06	2.58301E-05	1.21718E-05
3120	-8.91487E-04	7.47474E-04	-2.08091E-03	4.67655E-07	2.57122E-05	1.16131E-05
3122	-8.71366E-04	5.42567E-04	-1.61643E-03	-7.18398E-07	2.54593E-05	1.09664E-05

3123	-7.84803E-04	3.01224E-04	-1.02158E-03	-2.27112E-06	2.46166E-05	9.85969E-06
3125	-6.23387E-04	1.39912E-04	-5.52389E-04	-3.48221E-06	2.32081E-05	8.60190E-06
3128	-4.18499E-04	5.67312E-05	-2.13350E-04	-4.25488E-06	2.11544E-05	6.95614E-06
3198	-2.61334E-04	5.42285E-05	-9.52729E-05	-4.42025E-06	1.91462E-05	5.34238E-06
3199	-1.53586E-04	7.21124E-05	-6.47880E-05	-4.29370E-06	1.73242E-05	3.97086E-06
3200	-7.43251E-05	8.55426E-05	-3.27199E-05	-4.09576E-06	1.55161E-05	2.67165E-06
3205	-2.03867E-05	9.51122E-05	1.19845E-06	-3.88523E-06	1.36586E-05	1.48709E-06
3208	8.55854E-06	1.00695E-04	3.63316E-05	-3.68145E-06	1.18639E-05	5.72482E-07
3210	2.01176E-05	1.03576E-04	7.34268E-05	-3.42059E-06	1.00909E-05	-2.72218E-08
3212	2.36445E-05	1.02554E-04	6.04138E-05	-2.92760E-06	8.22818E-06	-7.41081E-07
3215	2.00437E-05	8.70044E-05	-2.42488E-05	-2.19121E-06	6.67996E-06	-1.26465E-06
3220	2.38899E-05	5.44997E-05	-1.52716E-04	-1.14477E-06	5.40809E-06	-1.40898E-06
3222	5.46925E-05	1.93140E-05	-2.87365E-04	3.06946E-07	4.20214E-06	-1.00023E-06
3225	7.90621E-05	1.33334E-05	-2.97206E-04	1.64420E-06	3.28983E-06	-4.67380E-07
3230	8.29909E-05	1.36445E-05	-2.83766E-04	2.05342E-06	3.05787E-06	-2.91043E-07
3235	8.73787E-05	1.43019E-05	-2.18737E-04	3.07693E-06	2.24161E-06	2.32197E-07
3237	7.63228E-05	1.26767E-05	-1.30702E-04	3.68080E-06	1.35729E-06	7.73168E-07
3238	6.20734E-05	-7.99884E-07	-6.52053E-05	3.21321E-06	5.84107E-07	1.12326E-06
3240	4.48026E-05	-2.50285E-05	-2.37743E-05	1.83712E-06	-1.82728E-07	1.14395E-06
3243	2.47070E-05	-3.39952E-05	-1.01035E-05	1.85940E-07	-6.34441E-07	8.26587E-07
3245	6.51447E-06	-1.46955E-05	-5.11687E-06	-4.77345E-07	-3.98712E-07	3.08005E-07
3250	2.22907E-09	-5.92306E-09	-1.36737E-08	-6.67332E-10	-4.35508E-10	1.99434E-10

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	1	END-I END-J	-10054.460 -10054.460	-5136.716 -5136.716	3740.598 3740.598	16344.35 16344.35	-163550.87 -93455.67	-181760.95 -85503.82
1	TANGENT	2	END-I END-J	2205.998 2205.998	-770.057 -770.057	-463.434 -463.434	-4537.69 -4537.69	30554.36 21870.04	-25181.66 -10751.52
1	TANGENT	3	END-I END-J	-1747.189 -1747.189	-1015.201 -1015.201	-812.239 -812.239	-3681.03 -3681.03	44630.02 29409.43	-39437.14 -20413.24
2	TANGENT	1	END-I END-J	-9914.033 -9914.033	-5031.318 -5031.318	3640.550 3640.550	16298.72 16298.72	-93468.22 -77116.24	-85498.80 -62900.01
2	TANGENT	2	END-I END-J	2114.371 2114.371	-645.219 -645.219	-463.237 -463.237	-4530.06 -4530.06	21871.08 19790.40	-10752.62 -7854.54
2	TANGENT	3	END-I END-J	-1706.395 -1706.395	-985.002 -985.002	-725.238 -725.238	-3671.35 -3671.35	29409.44 26151.94	-20414.97 -15990.71
3	TANGENT	1	END-I END-J	-9679.761 -9679.761	-4865.079 -4865.079	3473.577 3473.577	16298.72 16298.72	-77116.24 -61514.24	-62900.01 -41047.91
3	TANGENT	2	END-I END-J	1963.901 1963.901	-439.086 -439.086	-462.408 -462.408	-4530.06 -4530.06	19790.40 17713.43	-7854.54 -5882.33
3	TANGENT	3	END-I END-J	-1638.344 -1638.344	-936.282 -936.282	-582.586 -582.586	-3671.35 -3671.35	26151.94 23535.19	-15990.71 -11785.28
4	TANGENT	1	END-I END-J	-9551.309 -9551.309	-4765.079 -4765.079	3283.313 3283.313	16512.52 16512.52	-61340.86 -44546.71	-41221.55 -16848.17
4	TANGENT	2	END-I END-J	1868.352 1868.352	-305.166 -305.166	-451.219 -451.219	-4480.11 -4480.11	17743.16 15435.17	-5830.77 -4269.85
4	TANGENT	3	END-I END-J	-1591.468 -1591.468	-901.097 -901.097	-504.017 -504.017	-3580.03 -3580.03	23590.81 21012.76	-11701.87 -7092.76
5	TANGENT	1	END-I END-J	-9376.624 -9376.624	-4657.752 -4657.752	3194.282 3194.282	16531.56 16531.56	-44550.77 -17187.79	-16818.76 23080.65
5	TANGENT	2	END-I END-J	1763.456 1763.456	-165.273 -165.273	-452.877 -452.877	-4506.03 -4506.03	15424.15 11544.70	-4282.39 -2866.62
5	TANGENT	3	END-I END-J	-1544.655 -1544.655	-870.199 -870.199	-402.032 -402.032	-3617.77 -3617.77	20998.89 17554.99	-7114.65 339.68
6	BEND	1	END-I CENTER END-J	-9051.246 -9820.984 -10307.250	-5318.800 -3709.846 -1993.812	595.594 595.594 595.594	16580.62 12415.45 8820.45	-25934.26 -22921.14 -19246.44	12406.70 53981.78 80245.98
6	BEND	2	END-I CENTER END-J	1556.764 1583.195 1563.928	288.857 21.160 -247.148	-357.683 -357.683 -357.683	-4504.38 -2762.59 -1498.69	11552.47 8877.90 5947.07	2837.76 1410.19 2450.82

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
6	BEND	3	END-I	-1453.845	-613.364	-560.458	-3602.40	15385.60	8466.83
			CENTER	-1536.694	-358.406	-560.458	-1382.82	10649.02	12941.64
			END-J	-1575.187	-93.102	-560.458	2.92	5605.07	15020.74
7	BEND	1	END-I	-9812.462	-1767.789	487.016	9098.90	-20922.92	79794.01
			CENTER	-9965.545	-312.101	487.016	6219.23	-18202.31	88010.88
			END-J	-9903.851	1150.314	487.016	3768.91	-15089.41	84699.41
7	BEND	2	END-I	1401.515	37.659	-226.537	-1454.30	5903.94	2578.51
			CENTER	1391.926	-167.942	-226.537	-705.27	4272.97	3093.21
			END-J	1352.339	-369.924	-226.537	-203.10	2549.90	5218.12
7	BEND	3	END-I	-1477.430	-141.736	-334.030	105.58	5298.10	15131.37
			CENTER	-1482.261	76.101	-334.030	686.93	2600.51	15390.67
			END-J	-1455.146	292.298	-334.030	867.06	-153.12	13935.26
8	BEND	1	END-I	-9623.826	985.950	622.181	4655.21	-24397.22	82455.99
			CENTER	-9596.044	1227.213	622.181	4052.18	-23642.03	80918.46
			END-J	-9562.216	1467.702	622.181	3468.30	-22871.95	79046.24
8	BEND	2	END-I	1309.300	-201.053	-197.808	-182.93	1949.86	5471.43
			CENTER	1303.841	-233.855	-197.808	-137.37	1679.04	5773.57
			END-J	1297.560	-266.510	-197.808	-98.63	1407.15	6121.19
8	BEND	3	END-I	-1416.811	256.196	-192.099	989.78	-1696.49	13824.22
			CENTER	-1409.933	291.679	-192.099	943.53	-1987.66	13443.60
			END-J	-1402.167	326.979	-192.099	889.99	-2277.59	13013.81
9	TANGENT	1	END-I	-9320.709	1548.588	-249.512	3337.08	19565.71	79934.41
			END-J	-9320.709	1548.588	-249.512	3337.08	16367.04	60082.00
9	TANGENT	2	END-I	1265.212	-209.698	-32.632	-104.98	4270.72	4605.29
			END-J	1265.212	-209.698	-32.632	-104.98	3852.39	7293.56
9	TANGENT	3	END-I	-1367.034	186.166	-240.529	870.17	4511.06	12419.01
			END-J	-1367.034	186.166	-240.529	870.17	1427.55	10032.42
10	TANGENT	1	END-I	-8882.132	1454.518	-316.513	3277.03	16367.04	60085.31
			END-J	-8882.132	1454.518	-316.513	3277.03	11425.79	37378.02
10	TANGENT	2	END-I	1205.809	-44.048	-21.883	-112.27	3852.39	7293.45
			END-J	1205.809	-44.048	-21.883	-112.27	3510.77	7981.11
10	TANGENT	3	END-I	-1303.972	180.246	-102.238	860.15	1427.55	10033.28
			END-J	-1303.972	180.246	-102.238	860.15	-168.54	7219.36
11	TANGENT	1	END-I	-8401.012	1318.328	-355.857	3277.03	11425.79	37378.02
			END-J	-8401.012	1318.328	-355.857	3277.03	5870.31	16796.88
11	TANGENT	2	END-I	1139.822	69.912	-8.986	-112.27	3510.77	7981.11
			END-J	1139.822	69.912	-8.986	-112.27	3370.49	6889.68

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
11	TANGENT	3	END-I END-J	-1234.847 -1234.847	170.416 170.416	13.523 13.523	860.15 860.15	-168.54 42.58	7219.36 4558.90
12	TANGENT	1	END-I END-J	-7750.068 -7750.068	1094.698 1094.698	-368.380 -368.380	3291.13 3291.13	5870.31 -3955.43	16794.12 -12404.57
12	TANGENT	2	END-I END-J	1049.573 1049.573	145.562 145.562	9.000 9.000	-106.49 -106.49	3370.49 3610.55	6889.78 3007.24
12	TANGENT	3	END-I END-J	-1140.976 -1140.976	151.986 151.986	121.036 121.036	863.97 863.97	42.58 3270.95	4558.18 504.28
13	TANGENT	1	END-I END-J	-6929.628 -6929.628	752.718 752.718	-316.245 -316.245	3283.17 3283.17	-3955.43 -12384.03	-12406.68 -32468.21
13	TANGENT	2	END-I END-J	934.061 934.061	127.102 127.102	28.973 28.973	-104.56 -104.56	3610.55 4382.75	3007.30 -380.23
13	TANGENT	3	END-I END-J	-1022.172 -1022.172	117.096 117.096	158.985 158.985	864.29 864.29	3270.95 7508.23	503.72 -2617.14
14	TANGENT	1	END-I END-J	-6109.797 -6109.797	386.738 386.738	-211.756 -211.756	3297.42 3297.42	-12384.03 -18027.20	-32466.77 -42773.11
14	TANGENT	2	END-I END-J	817.103 817.103	69.912 69.912	39.150 39.150	-104.39 -104.39	4382.75 5426.07	-380.27 -2243.38
14	TANGENT	3	END-I END-J	-903.252 -903.252	71.366 71.366	122.919 122.919	865.44 865.44	7508.23 10783.96	-2616.76 -4518.63
15	TANGENT	1	END-I END-J	-5290.492 -5290.492	24.888 24.888	-68.240 -68.240	3301.74 3301.74	-18027.20 -19846.55	-42772.78 -43436.31
15	TANGENT	2	END-I END-J	698.917 698.917	24.572 24.572	33.212 33.212	-104.17 -104.17	5426.07 6311.54	-2243.39 -2898.50
15	TANGENT	3	END-I END-J	-783.979 -783.979	16.916 16.916	44.454 44.454	865.90 865.90	10783.96 11969.16	-4518.54 -4969.54
16	TANGENT	1	END-I END-J	-4471.605 -4471.605	-329.852 -329.852	83.121 83.121	3278.29 3278.29	-19846.55 -17631.20	-43438.09 -34646.81
16	TANGENT	2	END-I END-J	579.777 579.777	-22.578 -22.578	10.363 10.363	-105.73 -105.73	6311.54 6587.73	-2898.44 -2296.68
16	TANGENT	3	END-I END-J	-664.476 -664.476	-44.644 -44.644	-45.685 -45.685	863.22 863.22	11969.16 10751.56	-4970.01 -3780.16
17	TANGENT	1	END-I END-J	-3653.393 -3653.393	-654.372 -654.372	200.186 200.186	3293.49 3293.49	-17631.20 -12296.35	-34645.37 -17206.70

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
17	TANGENT	2	END-I	459.959	-57.758	-24.366	-104.72	6587.73	-2296.72
			END-J	459.959	-57.758	-24.366	-104.72	5938.40	-757.49
17	TANGENT	3	END-I	-544.764	-105.694	-121.584	864.87	10751.56	-3779.78
			END-J	-544.764	-105.694	-121.584	864.87	7511.42	-963.09
18	TANGENT	1	END-I	-3082.555	-838.812	243.008	3281.78	-12296.35	-17208.94
			END-J	-3082.555	-838.812	243.008	3281.78	-9734.27	-8365.16
18	TANGENT	2	END-I	376.003	-64.198	-52.190	-105.24	5938.40	-757.42
			END-J	376.003	-64.198	-52.190	-105.24	5388.15	-80.56
18	TANGENT	3	END-I	-461.226	-140.894	-149.126	864.22	7511.42	-963.68
			END-J	-461.226	-140.894	-149.126	864.22	5939.16	521.79
19	TANGENT	1	END-I	-2843.412	-907.052	233.689	3332.83	-9734.27	-8344.95
			END-J	-2843.412	-907.052	233.689	3332.83	-8532.81	-3681.55
19	TANGENT	2	END-I	340.958	-63.468	-61.446	-104.75	5388.15	-81.21
			END-J	340.958	-63.468	-61.446	-104.75	5072.24	245.10
19	TANGENT	3	END-I	-424.989	-153.704	-158.110	861.01	5939.16	527.06
			END-J	-424.989	-153.704	-158.110	861.01	5126.27	1317.30
20	TANGENT	1	END-I	-2689.993	-946.792	254.485	3310.77	-8532.81	-3701.41
			END-J	-2689.993	-946.792	254.485	3310.77	-7326.08	788.13
20	TANGENT	2	END-I	317.814	-61.968	-72.345	-103.28	5072.24	245.72
			END-J	317.814	-61.968	-72.345	-103.28	4729.19	539.57
20	TANGENT	3	END-I	-404.247	-161.054	-160.263	868.87	5126.27	1312.13
			END-J	-404.247	-161.054	-160.263	868.87	4366.33	2075.82
21	BEND	1	END-I	-2553.576	-979.632	256.279	3311.49	-7326.08	785.07
			CENTER	-2588.624	-882.869	256.279	3043.50	-6915.45	2711.71
			END-J	-2620.006	-784.855	256.279	2791.15	-6495.04	4436.87
21	BEND	2	END-I	297.674	-59.788	-78.666	-102.78	4729.19	539.66
			CENTER	295.214	-70.945	-78.666	72.15	4567.02	674.90
			END-J	292.336	-82.001	-78.666	240.86	4398.38	833.11
21	BEND	3	END-I	-384.406	-167.024	-160.413	870.79	4366.33	2075.01
			CENTER	-390.417	-152.444	-160.413	1028.20	3998.72	2405.48
			END-J	-395.876	-137.648	-160.413	1171.67	3625.45	2705.56
22	BEND	1	END-I	-2457.777	-817.838	286.146	2777.36	-6324.18	4685.38
			CENTER	-2503.229	-665.860	286.146	2414.78	-5511.69	7204.16
			END-J	-2539.293	-511.386	286.146	2102.61	-4678.54	9202.69
22	BEND	2	END-I	267.702	-80.592	-82.848	252.31	4426.89	660.93
			CENTER	262.267	-96.827	-82.848	514.20	4122.12	962.13
			END-J	255.848	-112.699	-82.848	756.95	3801.88	1317.82

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
22	BEND	3	END-I	-372.316	-151.261	-153.400	1182.22	3725.19	2561.66
			CENTER	-380.877	-128.187	-153.400	1392.09	3125.49	3036.07
			END-J	-388.009	-104.633	-153.400	1564.85	2514.07	3431.31
23	BEND	1	END-I	-2419.698	-637.819	-73.241	2183.85	-9024.08	4979.57
			CENTER	-2427.227	-608.542	-73.241	2074.40	-9095.00	5364.15
			END-J	-2434.401	-579.176	-73.241	1964.11	-9164.59	5730.64
23	BEND	2	END-I	238.447	-36.582	-132.738	749.74	2410.88	3223.27
			CENTER	237.988	-39.460	-132.738	778.31	2319.73	3246.74
			END-J	237.494	-42.332	-132.738	805.79	2228.25	3271.98
23	BEND	3	END-I	-371.739	-10.836	-186.160	1577.19	164.26	4246.02
			CENTER	-371.843	-6.345	-186.160	1578.36	30.32	4251.32
			END-J	-371.893	-1.852	-186.160	1577.92	-103.63	4253.85
24	BEND	1	END-I	-2350.618	-506.449	311.662	1994.86	-3862.37	10089.12
			CENTER	-2369.650	-408.230	311.662	1848.74	-3159.94	11237.24
			END-J	-2384.581	-309.304	311.662	1731.97	-2452.03	12137.91
24	BEND	2	END-I	221.659	-112.024	-86.169	875.92	3740.38	1250.02
			CENTER	216.807	-121.148	-86.169	1026.25	3484.48	1542.70
			END-J	211.580	-130.061	-86.169	1165.81	3222.54	1858.02
24	BEND	3	END-I	-362.037	-114.045	-140.873	1647.89	2465.32	3435.48
			CENTER	-366.468	-98.887	-140.873	1741.66	2041.14	3702.75
			END-J	-370.264	-83.557	-140.873	1817.70	1613.42	3931.76
25	BEND	1	END-I	-2191.859	-419.795	250.504	1628.11	-3497.12	11893.71
			CENTER	-2219.811	-230.032	250.504	1372.81	-2438.18	13434.62
			END-J	-2231.364	-38.570	250.504	1209.39	-1361.23	14071.55
25	BEND	2	END-I	181.956	-106.089	-102.534	1174.00	3042.62	2135.49
			CENTER	172.174	-121.322	-102.534	1410.05	2445.21	2674.74
			END-J	161.120	-135.658	-102.534	1593.93	1829.72	3284.11
25	BEND	3	END-I	-341.158	-83.788	-141.861	1800.14	1256.77	4067.67
			CENTER	-347.092	-54.184	-141.861	1872.53	426.02	4394.83
			END-J	-350.463	-24.179	-141.861	1873.31	-407.89	4580.65
26	BEND	1	END-I	-2050.353	-186.047	238.404	1425.49	-2840.54	13828.35
			CENTER	-2056.846	-89.125	238.404	1304.01	-2307.48	14173.16
			END-J	-2058.761	7.996	238.404	1207.80	-1769.29	14274.82
26	BEND	2	END-I	133.637	-99.874	-120.258	1645.56	1473.75	3434.25
			CENTER	128.778	-106.067	-120.258	1706.14	1093.27	3692.31
			END-J	123.631	-112.023	-120.258	1748.70	710.36	3965.59
26	BEND	3	END-I	-326.633	-28.041	-127.679	1943.50	-888.15	4482.41
			CENTER	-327.592	-12.603	-127.679	1891.90	-1298.64	4533.34
			END-J	-327.822	2.864	-127.679	1820.99	-1706.23	4545.55

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
27	BEND	1	END-I	-1877.416	-111.535	216.305	1264.50	455.95	14371.94
			CENTER	-1879.217	75.321	216.305	1361.30	1490.16	14469.45
			END-J	-1862.467	261.433	216.305	1560.25	2509.66	13562.73
27	BEND	2	END-I	98.336	-100.073	-106.332	1756.69	1322.48	3801.78
			CENTER	87.920	-109.337	-106.332	1850.84	570.44	4365.62
			END-J	76.636	-117.522	-106.332	1869.91	-187.24	4976.45
27	BEND	3	END-I	-301.725	-37.762	-108.104	1846.35	-975.59	4746.41
			CENTER	-303.983	-7.633	-108.104	1711.54	-1734.71	4868.64
			END-J	-303.240	22.570	-108.104	1502.06	-2476.70	4828.42
28	BEND	1	END-I	-1742.145	182.911	117.688	1400.79	6360.79	12258.00
			CENTER	-1738.177	217.403	117.688	1527.77	6451.66	12054.09
			END-J	-1733.527	251.811	117.688	1656.53	6539.99	11815.08
28	BEND	2	END-I	61.716	-118.061	-74.496	1805.13	1272.14	4839.40
			CENTER	59.364	-119.261	-74.496	1829.23	1160.23	4960.29
			END-J	56.989	-120.414	-74.496	1851.12	1047.86	5082.37
28	BEND	3	END-I	-283.663	-20.203	-92.349	1426.51	-960.07	5361.65
			CENTER	-284.007	-14.577	-92.349	1406.27	-1082.22	5379.36
			END-J	-284.240	-8.945	-92.349	1383.61	-1203.95	5391.34
29	BEND	1	END-I	-1698.333	109.846	198.523	1634.61	771.46	13484.98
			CENTER	-1695.886	142.729	198.523	1651.23	943.83	13355.08
			END-J	-1692.803	175.558	198.523	1671.18	1115.85	13191.38
29	BEND	2	END-I	53.404	-66.630	-117.957	1865.57	-1240.70	5033.43
			CENTER	52.103	-67.652	-117.957	1840.01	-1397.93	5102.50
			END-J	50.783	-68.649	-117.957	1811.41	-1554.64	5172.60
29	BEND	3	END-I	-278.889	21.858	-82.361	1430.50	-3409.24	4331.42
			CENTER	-278.413	27.257	-82.361	1363.36	-3521.03	4306.16
			END-J	-277.833	32.646	-82.361	1294.07	-3631.49	4275.35
30	BEND	1	END-I	-1455.674	-67.769	110.918	1722.81	3015.41	12883.70
			CENTER	-1432.648	266.646	110.918	2524.01	3904.51	11645.80
			END-J	-1333.816	586.953	110.918	3507.18	4587.02	6332.63
30	BEND	2	END-I	21.120	-27.704	-104.159	1820.77	-795.32	5339.11
			CENTER	14.230	-31.797	-104.159	1442.72	-2469.84	5709.48
			END-J	6.588	-34.208	-104.159	692.05	-4013.68	6120.32
30	BEND	3	END-I	-242.059	-13.328	-46.619	1289.03	-2977.62	4755.33
			CENTER	-238.701	42.335	-46.619	508.23	-3766.07	4574.78
			END-J	-222.712	95.758	-46.619	-432.07	-4355.25	3715.23
31	BEND	1	END-I	-1189.343	173.800	-10.524	3445.23	4813.25	6197.28
			CENTER	-1158.472	320.447	-10.524	4013.00	4276.80	4539.49
			END-J	-1109.593	462.113	-10.524	4509.61	3673.87	1914.66

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
31	BEND	2	END-I	4.035	39.601	-78.500	665.67	-3801.42	6257.24
			CENTER	8.932	38.791	-78.500	154.70	-4379.27	5994.30
			END-J	13.689	37.378	-78.500	-424.21	-4889.04	5738.81
31	BEND	3	END-I	-195.044	46.129	12.887	-440.47	-4228.85	3857.53
			CENTER	-187.788	70.041	12.887	-957.89	-4055.06	3467.88
			END-J	-177.613	92.864	12.887	-1449.66	-3818.23	2921.47
32	TANGENT	1	END-I	-1087.850	103.193	278.764	4508.67	-1197.97	3966.94
			END-J	-1087.850	103.193	278.764	4508.67	-166.44	3585.08
32	TANGENT	2	END-I	20.004	74.036	52.108	-421.11	-6546.87	-3738.69
			END-J	20.004	74.036	52.108	-421.11	-6354.05	-4012.65
32	TANGENT	3	END-I	-170.238	-24.206	79.334	-1447.59	-3580.00	-3209.91
			END-J	-170.238	-24.206	79.334	-1447.59	-3286.43	-3120.34
33	TANGENT	1	END-I	-1069.286	120.642	147.994	4506.62	-214.84	3585.08
			END-J	-1069.286	120.642	147.994	4506.62	1237.13	2401.46
33	TANGENT	2	END-I	25.726	64.717	74.358	-489.31	-6349.16	-4012.65
			END-J	25.726	64.717	74.358	-489.31	-5619.63	-4647.59
33	TANGENT	3	END-I	-164.855	-43.438	68.734	-1482.79	-3270.70	-3120.34
			END-J	-164.855	-43.438	68.734	-1482.79	-2596.34	-2694.16
34	TANGENT	1	END-I	-1033.652	126.116	-92.046	4498.71	1265.57	2401.46
			END-J	-1033.652	126.116	-92.046	4498.71	-432.69	74.62
34	TANGENT	2	END-I	35.797	40.238	112.398	-453.80	-5622.61	-4647.59
			END-J	35.797	40.238	112.398	-453.80	-3548.86	-5389.98
34	TANGENT	3	END-I	-152.550	-78.300	49.894	-1466.36	-2605.66	-2694.16
			END-J	-152.550	-78.300	49.894	-1466.36	-1685.10	-1249.52
35	TANGENT	1	END-I	-994.055	137.464	-281.446	4497.82	-441.92	74.62
			END-J	-994.055	137.464	-281.446	4497.82	-3805.10	-1568.03
35	TANGENT	2	END-I	47.116	5.157	134.698	-461.09	-3547.92	-5389.98
			END-J	47.116	5.157	134.698	-461.09	-1938.33	-5451.60
35	TANGENT	3	END-I	-139.739	-92.913	35.334	-1469.82	-1682.09	-1249.52
			END-J	-139.739	-92.913	35.334	-1469.82	-1259.85	-139.24
36	TANGENT	1	END-I	-976.747	135.417	-347.036	4513.42	-3786.59	-1568.03
			END-J	-976.747	135.417	-347.036	4513.42	-4416.44	-1813.81
36	TANGENT	2	END-I	52.250	-11.729	139.348	-453.12	-1940.21	-5451.60
			END-J	52.250	-11.729	139.348	-453.12	-1687.30	-5430.31
36	TANGENT	3	END-I	-133.468	-94.405	30.064	-1464.63	-1265.88	-139.24
			END-J	-133.468	-94.405	30.064	-1464.63	-1211.32	32.10

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
37	TANGENT	1	END-I	-947.301	140.511	-448.846	4502.05	-4428.02	-1813.81
			END-J	-947.301	140.511	-448.846	4502.05	-13668.73	-4706.60
37	TANGENT	2	END-I	60.540	-39.826	145.608	-457.45	-1686.13	-5430.31
			END-J	60.540	-39.826	145.608	-457.45	1311.60	-4610.38
37	TANGENT	3	END-I	-124.122	-94.253	21.784	-1467.74	-1207.55	32.10
			END-J	-124.122	-94.253	21.784	-1467.74	-759.06	1972.54
38	TANGENT	1	END-I	-893.544	128.220	-536.116	4510.36	-13665.99	-4706.60
			END-J	-893.544	128.220	-536.116	4510.36	-24697.24	-7344.88
38	TANGENT	2	END-I	75.834	-88.621	132.558	-458.25	1311.33	-4610.38
			END-J	75.834	-88.621	132.558	-458.25	4038.87	-2786.90
38	TANGENT	3	END-I	-106.396	-72.033	11.524	-1467.27	-759.95	1972.54
			END-J	-106.396	-72.033	11.524	-1467.27	-522.82	3454.71
39	TANGENT	1	END-I	-868.799	81.949	-535.026	5368.43	-24525.02	-7344.88
			END-J	-868.799	81.949	-535.026	5368.43	-24930.78	-7407.03
39	TANGENT	2	END-I	87.379	-104.319	116.858	-598.74	4020.44	-2786.90
			END-J	87.379	-104.319	116.858	-598.74	4109.07	-2707.79
39	TANGENT	3	END-I	-95.264	-57.744	7.874	-1448.16	-573.64	3454.71
			END-J	-95.264	-57.744	7.874	-1448.16	-567.67	3498.50
40	TANGENT	1	END-I	-850.184	101.682	-533.576	4540.88	-25094.70	-7407.03
			END-J	-850.184	101.682	-533.576	4540.88	-30928.09	-8518.68
40	TANGENT	2	END-I	88.208	-117.193	108.128	-462.50	4126.62	-2707.79
			END-J	88.208	-117.193	108.128	-462.50	5308.75	-1426.56
40	TANGENT	3	END-I	-92.106	-44.820	5.904	-1466.14	-519.46	3498.50
			END-J	-92.106	-44.820	5.904	-1466.14	-454.91	3988.50
41	BEND	1	END-I	-814.046	-505.801	-56.408	4517.54	-7380.37	31222.69
			CENTER	-880.954	-377.392	-56.408	3319.47	-8434.17	34824.51
			END-J	-927.754	-240.369	-56.408	1976.32	-9295.45	37343.85
41	BEND	2	END-I	98.121	89.244	130.433	-458.50	-1620.00	-5253.30
			CENTER	110.446	73.443	130.433	-617.18	-474.66	-5916.76
			END-J	120.250	55.966	130.433	-601.51	681.52	-6444.52
41	BEND	3	END-I	-80.429	2.886	21.024	-1466.49	4002.45	307.46
			CENTER	-79.076	14.970	21.024	-833.86	4348.19	234.64
			END-J	-75.919	26.712	21.024	-156.37	4594.69	64.65
42	BEND	1	END-I	-870.702	-182.588	-15.851	2004.39	-8975.58	37420.52
			CENTER	-887.744	-58.063	-15.851	710.98	-9288.97	38339.76
			END-J	-887.067	67.621	-15.851	-613.69	-9416.96	38303.25

P I P E F O R C E S A N D M O M E N T S

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
42	BEND	2	END-I	122.835	26.282	134.560	-605.56	626.13	-6449.76
			CENTER	125.313	8.709	134.560	-438.85	1728.07	-6583.41
			END-J	125.290	-9.038	134.560	-118.51	2795.52	-6582.16
42	BEND	3	END-I	-64.403	18.609	-3.334	-160.30	4594.94	25.63
			CENTER	-61.138	27.499	-3.334	487.04	4546.33	-150.50
			END-J	-56.652	35.841	-3.334	1121.07	4406.97	-392.44
43	BEND	1	END-I	-793.128	146.637	36.385	-600.12	-9557.94	38268.53
			CENTER	-740.398	319.948	36.385	-2668.63	-8745.11	35425.49
			END-J	-650.318	477.119	36.385	-4503.56	-7491.15	30568.74
43	BEND	2	END-I	117.837	-44.124	119.281	-120.82	2819.74	-6571.78
			CENTER	105.017	-69.310	119.281	673.74	4210.89	-5880.59
			END-J	86.900	-90.999	119.281	1758.73	5389.61	-4903.78
43	BEND	3	END-I	-45.455	23.581	-23.978	1120.98	4408.38	-376.61
			CENTER	-39.045	33.131	-23.978	2043.95	3758.49	-722.18
			END-J	-30.666	41.010	-23.978	2798.61	2919.01	-1173.94
44	BEND	1	END-I	-484.322	534.441	90.993	-4478.93	-7379.83	30599.42
			CENTER	-325.450	643.644	90.993	-6098.01	-4626.14	22006.97
			END-J	-143.325	706.862	90.993	-6929.81	-1541.93	12156.96
44	BEND	2	END-I	61.595	-108.713	61.053	1746.43	5373.78	-4925.51
			CENTER	30.597	-121.146	61.053	3225.49	5593.87	-3249.01
			END-J	-2.587	-124.923	61.053	4710.01	5414.30	-1454.29
44	BEND	3	END-I	-23.435	23.740	-23.070	2792.41	2919.94	-1186.32
			CENTER	-16.309	29.100	-23.070	3421.56	1745.43	-1571.71
			END-J	-8.018	32.381	-23.070	3717.12	446.21	-2020.13
45	TANGENT	1	END-I	-7.482	-656.912	-75.883	-6937.04	1024.63	-12207.34
			END-J	-7.482	-656.912	-75.883	-6937.04	-57.28	-2841.30
45	TANGENT	2	END-I	-21.277	102.372	-6.746	4711.30	-5347.49	1679.81
			END-J	-21.277	102.372	-6.746	4711.30	-5443.68	220.23
45	TANGENT	3	END-I	-8.544	-23.374	2.511	3718.34	-359.93	2035.05
			END-J	-8.544	-23.374	2.511	3718.34	-324.13	2368.30
46	TANGENT	1	END-I	93.782	-600.732	-68.840	-6938.78	-57.28	-2837.04
			END-J	93.782	-600.732	-68.840	-6938.78	-1301.61	8021.71
46	TANGENT	2	END-I	-35.061	78.972	31.898	4711.44	-5443.68	217.33
			END-J	-35.061	78.972	31.898	4711.44	-4867.08	-1210.14
46	TANGENT	3	END-I	-8.906	-20.164	-18.719	3719.79	-324.13	2366.02
			END-J	-8.906	-20.164	-18.719	3719.79	-662.49	2730.50
47	TANGENT	1	END-I	206.828	-515.212	-38.540	-6938.52	-1301.61	8021.94
			END-J	206.828	-515.212	-38.540	-6938.52	-1998.80	17342.04

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
47	TANGENT	2	END-I	-50.339	43.572	63.320	4711.40	-4867.08	-1210.30
			END-J	-50.339	43.572	63.320	4711.40	-3721.64	-1998.50
47	TANGENT	3	END-I	-9.315	-20.304	-43.579	3719.88	-662.49	2730.37
			END-J	-9.315	-20.304	-43.579	3719.88	-1450.83	3097.67
48	BEND	1	END-I	337.930	396.429	-41.885	-6941.09	1076.17	-17422.62
			CENTER	417.197	311.928	-41.885	-6587.31	2085.30	-21690.69
			END-J	475.826	211.996	-41.885	-6019.23	2991.27	-24847.49
48	BEND	2	END-I	-67.963	-1.254	-80.884	4711.69	3822.37	1797.58
			CENTER	-66.559	13.800	-80.884	5332.31	1723.71	1721.99
			END-J	-61.863	28.171	-80.884	5473.70	-460.22	1469.11
48	BEND	3	END-I	-9.759	27.698	67.400	3719.42	1284.45	-3170.81
			CENTER	-3.395	29.170	67.400	4001.10	1232.71	-3513.46
			END-J	3.136	29.199	67.400	4264.37	1119.98	-3865.15
49	BEND	1	END-I	548.103	36.854	-118.835	-5990.91	3007.38	-24852.39
			CENTER	543.844	-77.518	-118.835	-5377.00	2853.80	-24622.39
			END-J	515.978	-188.525	-118.835	-4808.24	2576.34	-23117.64
49	BEND	2	END-I	-57.263	80.258	-65.945	5471.83	-464.71	1474.66
			CENTER	-39.390	90.381	-65.945	5179.49	-2326.32	509.53
			END-J	-19.807	96.582	-65.945	4507.76	-4086.94	-547.94
49	BEND	3	END-I	5.744	36.774	79.314	4269.23	1118.89	-3860.11
			CENTER	13.239	34.786	79.314	4501.37	1097.46	-4264.85
			END-J	20.160	31.287	79.314	4724.03	1028.38	-4638.55
50	BEND	1	END-I	520.185	-316.195	-192.643	-4905.12	2840.37	-23066.30
			CENTER	435.107	-425.739	-192.643	-4403.42	1534.73	-18496.58
			END-J	327.440	-513.181	-192.643	-4210.29	149.42	-12713.57
50	BEND	2	END-I	2.996	130.134	-14.398	4515.76	-4068.63	-614.32
			CENTER	32.376	126.078	-14.398	3457.47	-5160.29	-2192.38
			END-J	60.076	115.477	-14.398	2179.53	-5984.05	-3680.17
50	BEND	3	END-I	25.859	35.468	71.135	4703.26	1095.77	-4644.23
			CENTER	33.216	28.694	71.135	4928.40	867.57	-5039.42
			END-J	38.849	20.430	71.135	5096.04	594.33	-5341.98
51	BEND	1	END-I	296.836	-511.237	-216.505	-4228.33	50.00	-12708.36
			CENTER	188.371	-560.349	-216.505	-4370.52	-1454.81	-6830.40
			END-J	72.264	-586.730	-216.505	-4811.38	-2900.62	-538.33
51	BEND	2	END-I	90.677	113.675	53.174	2149.60	-6026.49	-3628.17
			CENTER	111.617	93.198	53.174	956.82	-5757.57	-4762.93
			END-J	128.029	68.942	53.174	-157.88	-5255.09	-5652.31
51	BEND	3	END-I	45.255	18.998	46.293	5090.57	524.33	-5354.51
			CENTER	48.144	9.544	46.293	5143.27	-3.67	-5511.07
			END-J	49.080	-.297	46.293	5089.10	-531.52	-5561.79

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
52	TANGENT	1	END-I	76.585	-480.922	-52.823	-4810.26	-2925.21	396.53
			END-J	76.585	-480.922	-52.823	-4810.26	-3986.45	10058.54
52	TANGENT	2	END-I	148.698	73.012	93.037	-154.26	-6761.53	-3721.21
			END-J	148.698	73.012	93.037	-154.26	-4892.36	-5188.07
52	TANGENT	3	END-I	52.625	-1.186	23.408	5091.16	-2245.28	-5114.07
			END-J	52.625	-1.186	23.408	5091.16	-1775.01	-5090.24
53	TANGENT	1	END-I	80.310	-213.413	-90.288	-4804.48	-3950.12	10075.62
			END-J	80.310	-213.413	-90.288	-4804.48	-5764.89	14365.19
53	TANGENT	2	END-I	168.233	47.821	143.115	-157.50	-4910.95	-5170.37
			END-J	168.233	47.821	143.115	-157.50	-2034.37	-6131.56
53	TANGENT	3	END-I	55.944	-17.907	10.113	5088.10	-1793.48	-5086.83
			END-J	55.944	-17.907	10.113	5088.10	-1590.21	-4726.91
54	TANGENT	1	END-I	84.473	174.800	-142.112	-4814.51	-5760.74	14363.50
			END-J	84.473	174.800	-142.112	-4814.51	-8707.96	10738.36
54	TANGENT	2	END-I	187.555	4.928	173.014	-160.56	-2032.53	-6132.09
			END-J	187.555	4.928	173.014	-160.56	1555.58	-6234.29
54	TANGENT	3	END-I	59.132	-34.859	7.093	5085.70	-1597.31	-4727.10
			END-J	59.132	-34.859	7.093	5085.70	-1450.20	-4004.16
55	TANGENT	1	END-I	88.666	646.516	-205.793	-4809.77	-8730.36	10722.29
			END-J	88.666	646.516	-205.793	-4809.77	-12877.29	-2305.63
55	TANGENT	2	END-I	206.259	-52.371	172.590	-160.21	1565.97	-6231.70
			END-J	206.259	-52.371	172.590	-160.21	5043.82	-5176.38
55	TANGENT	3	END-I	62.240	-49.047	16.454	5088.10	-1438.92	-4005.18
			END-J	62.240	-49.047	16.454	5088.10	-1107.35	-3016.84
56	TANGENT	1	END-I	93.132	1133.628	-277.677	-4808.32	-12877.84	-2305.63
			END-J	93.132	1133.628	-277.677	-4808.32	-18477.13	-25164.98
56	TANGENT	2	END-I	224.140	-118.176	138.639	-160.78	5043.81	-5176.38
			END-J	224.140	-118.176	138.639	-160.78	7839.43	-2793.38
56	TANGENT	3	END-I	65.115	-58.385	36.060	5088.22	-1106.78	-3016.84
			END-J	65.115	-58.385	36.060	5088.22	-379.63	-1839.51
57	BEND	1	END-I	-245.941	-544.363	117.395	-4806.26	-12442.08	-28633.81
			CENTER	-377.260	-463.134	117.395	-7670.16	-9530.19	-23116.84
			END-J	-483.370	-350.958	117.395	-9691.98	-5981.49	-18658.95
57	BEND	2	END-I	329.598	349.289	-3.371	-154.31	8263.50	-988.06
			CENTER	408.119	253.134	-3.371	1964.28	7990.67	-4286.87
			END-J	459.369	140.064	-3.371	3942.16	7183.90	-6439.99

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
57	BEND	3	END-I	83.648	25.431	42.090	5088.98	33.41	-1875.92
			CENTER	87.372	3.140	42.090	4986.60	-818.90	-2032.38
			END-J	85.258	-19.360	42.090	4669.17	-1616.49	-1943.56
58	BEND	1	END-I	-308.372	-171.626	119.223	-9689.13	-5993.71	-18656.51
			CENTER	-340.894	-91.324	119.223	-10706.90	-2235.30	-17293.70
			END-J	-352.872	-5.518	119.223	-10778.33	1657.82	-16791.80
58	BEND	2	END-I	446.974	93.024	-100.346	3935.92	7185.37	-6442.17
			CENTER	456.169	-18.678	-100.346	5441.22	4985.46	-6827.48
			END-J	437.872	-129.255	-100.346	6365.19	2485.09	-6060.78
58	BEND	3	END-I	84.815	-19.526	62.146	4670.24	-1613.32	-1943.61
			CENTER	77.502	-39.601	62.146	4214.92	-2068.08	-1637.17
			END-J	65.518	-57.290	62.146	3662.52	-2398.19	-1135.00
59	BEND	1	END-I	-164.771	-129.221	74.317	-10767.89	1659.62	-16798.31
			CENTER	-193.959	-78.913	74.317	-9775.07	5419.96	-15566.81
			END-J	-208.184	-22.518	74.317	-7786.22	8762.15	-14966.65
59	BEND	2	END-I	412.234	-114.842	-159.168	6367.61	2493.01	-6054.98
			CENTER	364.744	-223.802	-159.168	6548.68	-1201.88	-4051.27
			END-J	289.114	-315.497	-159.168	5706.42	-4804.05	-860.30
59	BEND	3	END-I	68.926	-37.443	60.980	3665.01	-2394.96	-1133.82
			CENTER	55.968	-54.958	60.980	2964.11	-2602.98	-587.09
			END-J	38.692	-68.233	60.980	2233.03	-2610.19	141.81
60	BEND	1	END-I	-145.045	-412.654	-25.126	-7758.98	7474.04	-15663.27
			CENTER	-291.422	-326.182	-25.126	-4403.18	9464.26	-9497.86
			END-J	-393.773	-190.431	-25.126	-542.05	10024.67	-5186.84
60	BEND	2	END-I	305.734	-149.489	-96.290	5690.02	-4879.35	-444.85
			CENTER	225.644	-254.765	-96.290	3093.49	-8226.57	2928.56
			END-J	111.464	-321.552	-96.290	-583.11	-10330.96	7737.80
60	BEND	3	END-I	67.461	-2.199	19.766	2224.23	-2595.97	365.19
			CENTER	61.527	-27.754	19.766	1129.33	-2930.50	615.13
			END-J	46.298	-49.116	19.766	-10.41	-2822.30	1256.59
61	BEND	1	END-I	-625.811	-438.741	-199.180	-533.94	10005.42	-5224.70
			CENTER	-730.819	-223.690	-199.180	2177.51	7099.52	-825.72
			END-J	-764.171	13.293	-199.180	3857.33	3497.51	571.46
61	BEND	2	END-I	364.504	52.212	118.417	-593.79	-10301.86	7775.69
			CENTER	362.782	-63.077	118.417	-3507.49	-8079.00	7847.84
			END-J	325.489	-172.181	118.417	-5590.90	-5064.01	9410.10
61	BEND	3	END-I	141.552	43.847	-40.370	-12.50	-2817.59	1267.09
			CENTER	148.172	-2.080	-40.370	-966.18	-3198.62	989.73
			END-J	140.265	-47.803	-40.370	-1990.95	-3266.03	1320.98

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
62	BEND	1	END-I	-928.812	15.091	-281.483	3850.30	3521.82	458.46
			CENTER	-924.659	89.023	-281.483	4081.47	2273.61	286.13
			END-J	-914.631	162.389	-281.483	4212.48	1010.96	-130.01
62	BEND	2	END-I	589.078	-6.821	273.443	-5614.78	-4732.62	9567.07
			CENTER	586.663	-53.719	273.443	-5937.85	-3366.61	9667.28
			END-J	580.521	-100.276	273.443	-6151.08	-1979.19	9922.17
62	BEND	3	END-I	222.074	-14.508	-26.480	-1990.56	-3219.78	1430.58
			CENTER	220.213	-32.150	-26.480	-2244.18	-3138.52	1507.81
			END-J	216.952	-49.588	-26.480	-2490.52	-3037.32	1643.10
63	TANGENT	1	END-I	-1054.093	-90.022	380.998	4209.70	-952.78	393.18
			END-J	-1054.093	-90.022	380.998	4209.70	7442.37	2376.78
63	TANGENT	2	END-I	828.875	-119.228	-386.100	-6173.35	-783.54	-10073.64
			END-J	828.875	-119.228	-386.100	-6173.35	-9291.11	-7446.50
63	TANGENT	3	END-I	292.194	25.305	-7.625	-2485.84	2482.25	-2405.58
			END-J	292.194	25.305	-7.625	-2485.84	2314.24	-2963.16
64	TANGENT	1	END-I	-1265.838	-77.998	401.536	4209.19	7433.79	2404.37
			END-J	-1265.838	-77.998	401.536	4209.19	16286.78	4124.06
64	TANGENT	2	END-I	1214.235	-318.157	-518.029	-6175.73	-9262.34	-7480.29
			END-J	1214.235	-318.157	-518.029	-6175.73	-20683.75	-465.62
64	TANGENT	3	END-I	407.691	-55.249	-121.607	-2488.48	2325.63	-2952.00
			END-J	407.691	-55.249	-121.607	-2488.48	-355.54	-1733.89
65	BEND	1	END-I	-1446.615	-339.912	-64.162	4218.28	-8380.31	14558.88
			CENTER	-1484.807	-59.878	-64.162	2506.47	-9539.05	16167.49
			END-J	-1469.289	222.322	-64.162	606.24	-10352.73	15513.88
65	BEND	2	END-I	1550.311	703.450	-263.705	-6192.23	6049.58	-19779.61
			CENTER	1655.455	397.208	-263.705	-5135.76	5009.61	-24208.27
			END-J	1700.717	76.599	-263.705	-4295.30	3788.43	-26114.71
65	BEND	3	END-I	507.736	327.880	-63.126	-2486.97	1767.36	129.54
			CENTER	560.630	225.821	-63.126	-2155.46	1702.85	-2098.37
			END-J	593.245	115.594	-63.126	-1842.17	1576.74	-3472.10
66	BEND	1	END-I	-1598.277	306.046	141.328	637.90	-10261.45	15573.14
			CENTER	-1511.335	603.341	141.328	-1210.45	-9071.73	11921.56
			END-J	-1369.636	878.777	141.328	-2799.90	-7553.33	5970.23
66	BEND	2	END-I	1995.113	28.253	-309.901	-4333.72	3631.47	-26130.65
			CENTER	1964.325	-350.291	-309.901	-3802.92	1920.61	-24837.53
			END-J	1862.368	-716.143	-309.901	-3605.89	140.17	-20555.34
66	BEND	3	END-I	741.599	285.030	-96.205	-1848.45	1554.48	-3478.80
			CENTER	782.172	139.349	-96.205	-1593.62	1110.95	-5182.86
			END-J	794.406	-11.380	-96.205	-1427.44	627.17	-5696.71

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
67	BEND	1	END-I	-1455.758	996.899	474.225	-2808.93	-7543.52	5978.38
			CENTER	-1239.234	1255.921	474.225	-3830.62	-3086.59	-3092.25
			END-J	-977.339	1468.961	474.225	-3984.71	1483.34	-14063.56
67	BEND	2	END-I	2109.035	-924.157	-309.377	-3605.08	121.94	-20555.60
			CENTER	1894.407	-1308.937	-309.377	-3753.11	-1662.16	-11564.40
			END-J	1610.420	-1645.795	-309.377	-4238.24	-3385.40	332.36
67	BEND	3	END-I	1003.749	129.581	-117.343	-1426.53	622.62	-5697.44
			CENTER	1010.055	-63.971	-117.343	-1371.82	-53.35	-5961.61
			END-J	979.380	-255.180	-117.343	-1446.85	-727.37	-4676.60
68	BEND	1	END-I	-1020.143	1579.319	928.372	-3984.98	1514.10	-14060.20
			CENTER	-702.340	1744.034	928.372	-2918.95	9633.74	-27411.71
			END-J	-359.081	1845.535	928.372	-333.40	17404.18	-41832.73
68	BEND	2	END-I	1756.364	-1979.187	-276.679	-4233.80	-3391.85	323.16
			CENTER	1349.436	-2276.186	-276.679	-5010.55	-4730.94	17419.04
			END-J	893.595	-2490.680	-276.679	-6027.02	-5898.56	36569.83
68	BEND	3	END-I	1233.441	-170.178	-127.261	-1445.33	-717.30	-4678.63
			CENTER	1178.835	-400.857	-127.261	-1651.97	-1443.65	-2384.50
			END-J	1081.500	-617.006	-127.261	-1992.53	-2117.67	1704.74
69	TANGENT	1	END-I	-357.761	-1688.742	-1614.586	-318.50	-23668.03	38635.70
			END-J	-357.761	-1688.742	-1614.586	-318.50	-38160.55	53793.85
69	TANGENT	2	END-I	891.443	2737.372	661.772	-6032.07	11481.23	-35217.41
			END-J	891.443	2737.372	661.772	-6032.07	17421.29	-59788.05
69	TANGENT	3	END-I	1291.651	592.306	222.907	-1994.34	2354.27	-1356.78
			END-J	1291.651	592.306	222.907	-1994.34	4355.08	-6673.32

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 1

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS			LOCAL COMPONENTS		
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	-11531.	0.	0.	0.	0.	0.	-11531.	0.
BDRY	7090	0.	1685.	0.	0.	0.	0.	1685.	0.
BDRY	7090	0.	0.	-2379.	0.	0.	0.	-2379.	0.
BDRY	7090	0.	0.	0.	20474.	0.	0.	0.	20474.
BDRY	7090	0.	0.	0.	0.	-142435.	0.	0.	-142435.
BDRY	7090	0.	0.	0.	0.	0.	-198358.	0.	-198358.
BDRY	3047	0.	0.	2.	0.	0.	0.	2.	0.
BDRY	3116	0.	0.	4.	0.	0.	0.	4.	0.
BDRY	3210	-2197.	0.	0.	0.	0.	0.	-2197.	0.
BDRY	3210	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3250	-1766.	0.	0.	0.	0.	0.	-1766.	0.
BDRY	3250	0.	1689.	0.	0.	0.	0.	1689.	0.
BDRY	3250	0.	0.	358.	0.	0.	0.	358.	0.
BDRY	3250	0.	0.	0.	53794.	0.	0.	0.	53794.
BDRY	3250	0.	0.	0.	0.	38161.	0.	0.	38161.
BDRY	3250	0.	0.	0.	0.	0.	318.	0.	318.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 2

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL FZ	COMPONENTS MX	MY	MZ	LOCAL FL	COMPONENTS ML
BDRY	7090	1395.	0.	0.	0.	0.	0.	1395.	0.
BDRY	7090	0.	-1911.	0.	0.	0.	0.	-1911.	0.
BDRY	7090	0.	0.	275.	0.	0.	0.	275.	0.
BDRY	7090	0.	0.	0.	24864.	0.	0.	0.	24864.
BDRY	7090	0.	0.	0.	0.	27475.	0.	0.	27475.
BDRY	7090	0.	0.	0.	0.	0.	-14670.	0.	-14670.
BDRY	3047	0.	0.	-2.	0.	0.	0.	-2.	0.
BDRY	3116	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3210	558.	0.	0.	0.	0.	0.	558.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	662.	0.	0.	0.	0.	0.	662.	0.
BDRY	3250	0.	-2855.	0.	0.	0.	0.	-2855.	0.
BDRY	3250	0.	0.	-891.	0.	0.	0.	-891.	0.
BDRY	3250	0.	0.	0.	-59788.	0.	0.	0.	-59788.
BDRY	3250	0.	0.	0.	0.	-17421.	0.	0.	-17421.
SNBR	3035	0.	0.	0.	0.	0.	6032.	0.	6032.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 3

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS				LOCAL COMPONENTS	
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	-1330.	0.	0.	0.	0.	0.	-1330.	0.
BDRY	7090	0.	193.	0.	0.	0.	0.	193.	0.
BDRY	7090	0.	0.	-1713.	0.	0.	0.	-1713.	0.
BDRY	7090	0.	0.	0.	39723.	0.	0.	0.	39723.
BDRY	7090	0.	0.	0.	0.	38414.	0.	0.	38414.
BDRY	7090	0.	0.	0.	0.	0.	-22520.	0.	-22520.
BDRY	3047	0.	0.	-3.	0.	0.	0.	-3.	0.
BDRY	3116	0.	0.	-2.	0.	0.	0.	-2.	0.
BDRY	3210	101.	0.	0.	0.	0.	0.	101.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	223.	0.	0.	0.	0.	0.	223.	0.
BDRY	3250	0.	-592.	0.	0.	0.	0.	-592.	0.
BDRY	3250	0.	0.	-1367.	0.	0.	0.	-1367.	0.
BDRY	3250	0.	0.	0.	-6673.	0.	0.	0.	-6673.
BDRY	3250	0.	0.	0.	0.	-4355.	0.	0.	-4355.
BDRY	3250	0.	0.	0.	0.	0.	1994.	0.	1994.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

STATIC SOLUTION TIME LOG

EQUATION SOLUTION = .00
 DISPLACEMENT OUTPUT = .00
 STRESS RECOVERY = .00

BENCHMARK PROBLEM 1

TOTAL RESPONSE

[illegible]

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

N O D E N O D E N U M B E R	D I S P L A C E M E N T S / R O T A T I O N S						A C C E L E R A T I O N S I N G ' S		
	X- T R A N S L A T I O N	Y- T R A N S L A T I O N	Z- T R A N S L A T I O N	X- R O T A T I O N	Y- R O T A T I O N	Z- R O T A T I O N	X- D I R E C T I O N	Y- D I R E C T I O N	Z- D I R E C T I O N
7090	.15721E-06	.14562E-06	.11556E-06	.95801E-07	.12821E-06	.86239E-07	.000	.000	.000
3001	.21398E-03	.22509E-03	.27910E-03	.13318E-04	.17731E-04	.10573E-04	.007	.007	.009
3005	.30804E-03	.31974E-03	.41852E-03	.23575E-04	.31232E-04	.17631E-04	.010	.010	.013
3010	.46871E-03	.47851E-03	.66430E-03	.43148E-04	.56814E-04	.30236E-04	.015	.016	.020
3011	.83890E-03	.83987E-03	.12513E-02	.97660E-04	.12731E-03	.62615E-04	.026	.028	.037
3012	.18703E-02	.17736E-02	.30249E-02	.18499E-03	.23861E-03	.10815E-03	.057	.060	.083
3019	.51439E-02	.50060E-02	.10168E-01	.37624E-03	.45850E-03	.17771E-03	.151	.183	.263
3021	.78850E-02	.83641E-02	.19132E-01	.54079E-03	.60766E-03	.20416E-03	.227	.334	.497
3023	.82946E-02	.89283E-02	.20866E-01	.57002E-03	.62963E-03	.20674E-03	.238	.362	.543
3024	.10207E-01	.11309E-01	.29500E-01	.70496E-03	.71230E-03	.21825E-03	.288	.491	.770
3026	.12824E-01	.13452E-01	.41238E-01	.86838E-03	.78447E-03	.25338E-03	.353	.634	1.067
3028	.15656E-01	.14395E-01	.53835E-01	.10313E-02	.82744E-03	.34328E-03	.419	.746	1.367
3030	.20699E-01	.14387E-01	.76065E-01	.13093E-02	.84260E-03	.64179E-03	.527	.843	1.852
3032	.25599E-01	.24037E-01	.97542E-01	.15891E-02	.80250E-03	.10979E-02	.615	.830	2.257
3035	.29988E-01	.53675E-01	.11684E+00	.18732E-02	.73747E-03	.16956E-02	.677	.807	2.547
3037	.33671E-01	.10416E+00	.13313E+00	.21623E-02	.68670E-03	.23075E-02	.711	.950	2.706
3038	.36604E-01	.17001E+00	.14621E+00	.24530E-02	.68734E-03	.28139E-02	.713	1.229	2.729
3040	.38882E-01	.24792E+00	.15662E+00	.27443E-02	.74982E-03	.32286E-02	.686	1.538	2.625
3044	.39659E-01	.28146E+00	.16024E+00	.28599E-02	.78762E-03	.33710E-02	.668	1.653	2.554
3047	.40011E-01	.29832E+00	.16195E+00	.29163E-02	.80782E-03	.34367E-02	.658	1.705	2.514
3050	.40339E-01	.31411E+00	.16349E+00	.29686E-02	.82720E-03	.34953E-02	.649	1.751	2.474
3053	.40643E-01	.32810E+00	.16440E+00	.30142E-02	.84596E-03	.35481E-02	.640	1.789	2.434
3056	.41387E-01	.35120E+00	.16385E+00	.30886E-02	.87831E-03	.36312E-02	.623	1.846	2.354
3059	.41591E-01	.35541E+00	.16349E+00	.31023E-02	.88473E-03	.36472E-02	.620	1.856	2.338
3062	.42912E-01	.37235E+00	.16102E+00	.31561E-02	.90931E-03	.37031E-02	.606	1.893	2.265
3065	.48937E-01	.40343E+00	.15232E+00	.32574E-02	.95953E-03	.38102E-02	.580	1.951	2.105
3068	.54862E-01	.41903E+00	.14561E+00	.33105E-02	.98734E-03	.38666E-02	.567	1.976	2.011
3071	.74873E-01	.44989E+00	.12656E+00	.34215E-02	.10487E-02	.39807E-02	.548	2.018	1.800
3074	.79789E-01	.45518E+00	.12222E+00	.34427E-02	.10606E-02	.40027E-02	.546	2.024	1.759
3077	.85013E-01	.46040E+00	.11771E+00	.34636E-02	.10727E-02	.40241E-02	.545	2.030	1.719
3080	.16910E+00	.50434E+00	.51752E-01	.37038E-02	.12248E-02	.42631E-02	.633	2.068	1.322
3083	.22491E+00	.51124E+00	.35550E-01	.38295E-02	.13121E-02	.43821E-02	.748	2.075	1.246
3086	.24089E+00	.51131E+00	.42213E-01	.38607E-02	.13368E-02	.44113E-02	.784	2.076	1.252
3089	.28393E+00	.51147E+00	.72253E-01	.39382E-02	.14046E-02	.44864E-02	.878	2.079	1.303
3092	.36711E+00	.51182E+00	.14233E+00	.40627E-02	.15395E-02	.46185E-02	1.047	2.086	1.504
3095	.42237E+00	.51204E+00	.19052E+00	.41284E-02	.16309E-02	.46971E-02	1.141	2.090	1.677
3098	.43085E+00	.51208E+00	.19795E+00	.41374E-02	.16451E-02	.47086E-02	1.154	2.090	1.705
3100	.52852E+00	.51247E+00	.28355E+00	.42217E-02	.18091E-02	.48305E-02	1.277	2.097	2.040
3101	.62858E+00	.51287E+00	.37077E+00	.42758E-02	.19786E-02	.49391E-02	1.364	2.103	2.392
3104	.63229E+00	.51290E+00	.37400E+00	.42773E-02	.19849E-02	.49429E-02	1.367	2.103	2.405
3107	.68639E+00	.51312E+00	.42075E+00	.42948E-02	.20766E-02	.49963E-02	1.406	2.106	2.593
3110	.76676E+00	.50228E+00	.49076E+00	.43116E-02	.22122E-02	.50807E-02	1.462	2.112	2.815
3113	.83659E+00	.47246E+00	.55324E+00	.43180E-02	.23332E-02	.51609E-02	1.518	2.111	2.905
3115	.92236E+00	.39203E+00	.63535E+00	.43195E-02	.25055E-02	.52991E-02	1.597	2.087	2.783
3116	.96232E+00	.27020E+00	.68982E+00	.43194E-02	.26727E-02	.54804E-02	1.635	2.020	2.289
3119	.96209E+00	.21734E+00	.70359E+00	.43214E-02	.27342E-02	.55645E-02	1.636	1.978	2.010
3120	.96180E+00	.17781E+00	.72359E+00	.43268E-02	.27962E-02	.56688E-02	1.637	1.927	1.770
3122	.96148E+00	.19053E+00	.74645E+00	.43353E-02	.28405E-02	.57694E-02	1.640	1.887	1.733
3123	.93044E+00	.27234E+00	.75868E+00	.43496E-02	.28793E-02	.59040E-02	1.623	1.865	1.982
3125	.84924E+00	.35903E+00	.73409E+00	.43569E-02	.28989E-02	.60042E-02	1.575	1.877	2.336
3128	.71915E+00	.41920E+00	.67290E+00	.43417E-02	.29115E-02	.60689E-02	1.483	1.900	2.580
3198	.58731E+00	.42400E+00	.59609E+00	.42937E-02	.29201E-02	.60770E-02	1.347	1.903	2.526

3199	.46678E+00	.40559E+00	.52150E+00	.42204E-02	.29268E-02	.60407E-02	1.172	1.891	2.352
3200	.34716E+00	.38723E+00	.45286E+00	.41152E-02	.29323E-02	.59599E-02	.947	1.873	2.207
3205	.22578E+00	.36831E+00	.39128E+00	.39715E-02	.29353E-02	.58281E-02	.670	1.849	2.119
3208	.11082E+00	.35035E+00	.34433E+00	.37963E-02	.29340E-02	.56525E-02	.380	1.816	2.129
3210	.29318E-02	.33285E+00	.31418E+00	.35866E-02	.29276E-02	.54306E-02	.271	1.774	2.251
3212	.10451E+00	.28775E+00	.29111E+00	.32322E-02	.28887E-02	.50163E-02	.661	1.617	2.406
3215	.16439E+00	.21094E+00	.26846E+00	.28906E-02	.27996E-02	.45201E-02	.945	1.301	2.503
3220	.17765E+00	.11725E+00	.23776E+00	.25395E-02	.26120E-02	.38286E-02	1.007	.919	2.535
3222	.12611E+00	.42480E-01	.17929E+00	.21571E-02	.21890E-02	.27089E-02	.863	.672	2.308
3225	.72775E-01	.35734E-01	.12662E+00	.19146E-02	.17633E-02	.18398E-02	.839	.652	1.829
3230	.61853E-01	.35144E-01	.11442E+00	.18548E-02	.16526E-02	.16432E-02	.832	.645	1.677
3235	.32647E-01	.33551E-01	.76798E-01	.16914E-02	.13034E-02	.12400E-02	.769	.611	1.165
3237	.13513E-01	.32411E-01	.42868E-01	.14835E-02	.97181E-03	.91955E-03	.646	.573	.681
3238	.88947E-02	.27798E-01	.22274E-01	.12321E-02	.74586E-03	.66108E-03	.500	.495	.373
3240	.68177E-02	.18032E-01	.82762E-02	.93597E-03	.53304E-03	.45002E-03	.307	.339	.149
3243	.34769E-02	.76483E-02	.15041E-02	.58652E-03	.32123E-03	.26793E-03	.128	.158	.029
3245	.59935E-03	.11803E-02	.63200E-04	.18134E-03	.96927E-04	.96416E-04	.022	.030	.001
3250	.13116E-06	.24366E-06	.15962E-06	.15890E-06	.83999E-07	.62429E-07	.000	.000	.000

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	15859.757	14147.408	11876.316	403377.52	1472405.13	987425.71
		END-J	15859.757	14147.408	11876.316	403377.52	1278217.58	733064.06
2	TANGENT	END-I	15753.017	14101.914	11837.822	403242.42	1278243.64	733093.12
		END-J	15753.017	14101.914	11837.822	403242.42	1233163.84	673409.07
3	TANGENT	END-I	15579.513	14031.325	11775.685	403242.42	1233163.84	673409.07
		END-J	15579.513	14031.325	11775.685	403242.42	1188818.74	614523.35
4	TANGENT	END-I	15474.541	13998.316	11715.166	404427.73	1189490.61	612437.81
		END-J	15474.541	13998.316	11715.166	404427.73	1139848.36	546360.19
5	TANGENT	END-I	15355.358	13950.868	11677.994	404255.10	1139583.19	547041.27
		END-J	15355.358	13950.868	11677.994	404255.10	1058978.18	440362.95
6	BEND	END-I	15126.975	14296.456	11042.636	403699.88	1024300.54	515891.12
		CENTER	15120.446	14303.546	11042.636	430183.80	931179.20	414457.48
		END-J	15068.164	14358.457	11042.636	497408.27	815000.07	325758.63
7	BEND	END-I	14693.660	14280.499	10921.033	500366.66	807765.49	338977.70
		CENTER	14597.906	14378.470	10921.033	567638.12	694164.72	285072.82
		END-J	14492.065	14487.039	10921.033	629655.21	572892.95	267237.43
8	BEND	END-I	14287.981	14276.011	11009.454	627508.87	551756.41	312865.54
		CENTER	14270.935	14293.289	11009.454	636515.61	532340.51	310874.64
		END-J	14253.804	14310.614	11009.454	645127.44	513173.34	310067.68
9	TANGENT	END-I	14080.626	14374.909	10771.326	645215.23	565238.09	199718.96
		END-J	14080.626	14374.909	10771.326	645215.23	446993.24	364764.09
10	TANGENT	END-I	13771.265	14337.378	10414.836	645147.91	446993.24	364882.94
		END-J	13771.265	14337.378	10414.836	645147.91	327161.17	581458.84
11	TANGENT	END-I	13440.449	14296.207	9878.125	645147.91	327161.17	581458.84
		END-J	13440.449	14296.207	9878.125	645147.91	258620.11	801694.96
12	TANGENT	END-I	13009.147	14256.050	8955.503	645257.98	258620.11	801606.62
		END-J	13009.147	14256.050	8955.503	645257.98	309242.88	1179691.26
13	TANGENT	END-I	12493.966	14267.518	7403.622	645377.04	309242.88	1179626.19
		END-J	12493.966	14267.518	7403.622	645377.04	447101.91	1558493.39
14	TANGENT	END-I	12014.479	14386.246	5608.484	645271.91	447101.91	1558536.85
		END-J	12014.479	14386.246	5608.484	645271.91	566517.90	1940068.33
15	TANGENT	END-I	11575.623	16730.445	3898.992	645242.34	566517.90	1940078.12
		END-J	11575.623	16730.445	3898.992	645242.34	639785.48	1634693.01
16	TANGENT	END-I	11182.656	16092.159	3125.057	645367.51	639785.48	1634643.68
		END-J	11182.656	16092.159	3125.057	645367.51	661037.19	1408746.66
17	TANGENT	END-I	10838.812	15186.982	4074.610	645293.29	661037.19	1408780.52

		END-J	10838.812	15186.982	4074.610	645293.29	636106.15	1287624.16
18	TANGENT	END-I	10632.181	14367.642	5280.561	645363.43	636106.15	1287589.09
		END-J	10632.181	14367.642	5280.561	645363.43	617301.75	1270882.74
19	TANGENT	END-I	10545.306	13995.614	5853.827	644931.39	617301.75	1271102.60
		END-J	10545.306	13995.614	5853.827	644931.39	607172.29	1268993.15
20	TANGENT	END-I	10507.970	13753.512	6166.563	645272.59	607172.29	1268819.10
		END-J	10507.970	13753.512	6166.563	645272.59	597717.96	1270227.26
21	BEND	END-I	10468.666	13529.878	6484.630	645319.59	597717.96	1270203.35
		CENTER	10743.711	13312.472	6484.630	641481.15	597578.45	1271451.95
		END-J	11019.809	13084.843	6484.630	637528.13	597808.06	1272716.08
22	BEND	END-I	10973.419	12795.813	6877.068	637278.30	593752.07	1274752.86
		CENTER	11408.330	12409.918	6877.068	630655.37	593164.07	1276684.20
		END-J	11834.774	12004.384	6877.068	623726.37	593700.63	1278369.11
23	BEND	END-I	11742.501	10759.988	8684.619	624259.06	900538.96	1083967.15
		CENTER	11803.303	10693.304	8684.619	623066.24	901509.76	1083445.68
		END-J	11863.543	10626.580	8684.619	621989.42	902417.29	1082912.86
24	BEND	END-I	11913.516	11420.355	7425.182	620098.82	592581.82	1279988.48
		CENTER	12176.593	11139.082	7425.182	615119.00	592296.30	1280547.39
		END-J	12430.618	10854.709	7425.182	610002.08	592714.33	1280843.40
25	BEND	END-I	12300.342	10525.943	7870.635	609352.26	601369.58	1277091.35
		CENTER	12752.071	9973.838	7870.635	598816.96	603834.12	1275197.65
		END-J	13152.895	9438.885	7870.635	588209.29	608430.71	1271563.86
26	BEND	END-I	12938.369	9232.658	8250.610	586439.86	637374.95	1258100.97
		CENTER	13111.424	8985.377	8250.610	581111.15	639252.92	1255126.54
		END-J	13266.798	8754.321	8250.610	576068.10	641435.10	1251540.15
27	BEND	END-I	12966.956	8423.318	8874.732	576211.42	608590.39	1267808.75
		CENTER	13212.750	8032.301	8874.732	563526.48	617599.60	1256752.51
		END-J	13373.122	7762.127	8874.732	551503.42	629446.90	1242380.88
28	BEND	END-I	13081.673	7509.683	9375.990	553734.35	702717.90	1201421.15
		CENTER	13099.871	7477.926	9375.990	550225.26	706263.25	1197839.10
		END-J	13114.709	7452.134	9375.990	546803.09	709859.02	1194116.24
29	BEND	END-I	13012.530	7809.887	9177.775	548105.48	652428.44	1225852.06
		CENTER	13019.928	7797.648	9177.775	546654.69	653724.16	1222725.97
		END-J	13024.167	7790.549	9177.775	545294.51	655069.66	1219480.91
30	BEND	END-I	12386.731	7497.569	10095.354	544052.20	639339.04	1228362.98
		CENTER	12094.632	7959.844	10095.354	526302.58	676315.27	1171879.81
		END-J	11422.631	8897.264	10095.354	527160.50	718750.24	1099744.54
31	BEND	END-I	10310.683	8906.603	10940.294	528481.13	726670.89	1093889.85
		CENTER	9816.013	9449.574	10940.294	538623.32	752792.81	1048542.30
		END-J	9282.081	9973.814	10940.294	558172.76	776818.76	1001193.94
32	TANGENT	END-I	8795.219	10050.132	9728.458	558077.85	949272.58	839629.93
		END-J	8795.219	10050.132	9728.458	558077.85	921331.59	808281.43
33	TANGENT	END-I	8421.824	9852.447	9694.259	559470.23	920486.83	808281.43
		END-J	8421.824	9852.447	9694.259	559470.23	849713.95	728737.46

34	TANGENT	END-I END-J	7718.630 7718.630	9352.065 9352.065	9603.429 9603.429	558786.72 558786.72	850163.43 733411.85	728737.46 598376.69
35	TANGENT	END-I END-J	7026.533 7026.533	8690.785 8690.785	9453.417 9453.417	558911.62 558911.62	733316.75 673410.82	598376.69 529515.40
36	TANGENT	END-I END-J	6757.500 6757.500	8342.542 8342.542	9372.013 9372.013	558787.93 558787.93	673513.43 665729.09	529515.40 520297.30
37	TANGENT	END-I END-J	6352.052 6352.052	7791.639 7791.639	9249.570 9249.570	558852.75 558852.75	665674.76 606367.67	520297.30 439018.47
38	TANGENT	END-I END-J	5831.544 5831.544	6563.946 6563.946	8956.949 8956.949	558870.31 558870.31	606351.42 606591.96	439018.47 398488.82
39	TANGENT	END-I END-J	5789.815 5789.815	5739.324 5739.324	8778.203 8778.203	561911.33 561911.33	603774.57 604859.55	398488.82 397675.40
40	TANGENT	END-I END-J	5657.598 5657.598	5453.592 5453.592	8689.574 8689.574	558952.46 558952.46	607596.19 632157.01	397675.40 388082.03
41	BEND	END-I CENTER END-J	5685.906 6008.880 6430.664	8485.259 8260.266 7937.783	4548.069 4548.069 4548.069	558862.57 523395.65 480128.57	391212.46 430513.45 475977.24	630318.47 657074.11 685049.47
42	BEND	END-I CENTER END-J	6830.740 7277.891 7690.271	7479.798 7046.098 6593.950	3684.394 3684.394 3684.394	480497.59 435524.17 388926.42	474988.95 509495.00 540640.71	685475.86 709709.94 731303.06
43	BEND	END-I CENTER END-J	8308.408 8682.851 8785.088	5995.202 5436.766 5266.507	3234.094 3234.094 3234.094	388997.10 321277.19 278133.31	541378.87 560817.59 561929.77	730719.56 748817.50 752502.26
44	BEND	END-I CENTER END-J	9326.317 8705.155 7721.035	5403.048 6356.796 7524.487	4002.667 4002.667 4002.667	278369.02 276516.84 313213.26	560707.23 508568.40 435635.90	753326.67 718556.55 662567.12
45	TANGENT	END-I END-J	7751.538 7751.538	8557.397 8557.397	4751.411 4751.411	313350.20 313350.20	426035.85 366390.49	668701.74 594142.25
46	TANGENT	END-I END-J	7895.540 7895.540	9329.817 9329.817	5296.377 5296.377	313467.30 313467.30	366390.49 284478.69	594080.43 513624.53
47	TANGENT	END-I END-J	8172.078 8172.078	10179.160 10179.160	5717.447 5717.447	313472.10 313472.10	284478.69 208146.93	513621.63 474210.75
48	BEND	END-I CENTER END-J	8633.090 7358.938 6556.283	11315.680 12181.337 12631.344	5675.531 5675.531 5675.531	313459.36 300810.33 269554.26	203938.61 196821.66 245902.78	476040.30 479102.55 508736.68
49	BEND	END-I CENTER END-J	7485.316 7639.296 8434.844	13506.239 13421.573 12938.072	5627.800 5627.800 5627.800	269412.25 225411.45 174850.14	246086.26 310266.59 375593.78	508723.42 559031.52 626067.39
50	BEND	END-I CENTER END-J	9743.131 10985.218 12255.084	13526.669 12537.298 11298.170	5646.554 5646.554 5646.554	175741.71 136269.48 157344.53	378457.42 430807.61 466641.77	624089.80 700617.76 772382.49
51	BEND	END-I	13528.537	11735.408	5888.604	157938.24	462301.18	774868.02

		CENTER	14364.850	10695.400	5888.604	222398.30	465739.76	821268.51
		END-J	14909.506	9926.096	5888.604	302733.76	454204.78	851379.30
52	TANGENT	END-I	15846.170	10205.699	7009.656	302750.37	336801.47	904117.81
		END-J	15846.170	10205.699	7009.656	302750.37	390102.89	964069.07
53	TANGENT	END-I	16781.429	10702.550	7774.948	302440.91	389490.32	964411.51
		END-J	16781.429	10702.550	7774.948	302440.91	479982.07	1052762.78
54	TANGENT	END-I	17761.090	11163.724	8567.429	303135.25	479593.17	1052740.37
		END-J	17761.090	11163.724	8567.429	303135.25	607699.91	1172250.50
55	TANGENT	END-I	18767.146	11553.027	9331.181	302849.49	608027.50	1172154.45
		END-J	18767.146	11553.027	9331.181	302849.49	760150.22	1313279.89
56	TANGENT	END-I	19780.596	11849.587	10060.753	302785.69	760175.73	1313279.89
		END-J	19780.596	11849.587	10060.753	302785.69	934822.98	1475174.85
57	BEND	END-I	18845.973	17703.837	10361.651	303466.08	951696.81	1464226.64
		CENTER	14921.610	21117.097	10361.651	515518.83	955525.59	1467778.42
		END-J	10930.593	23432.755	10361.651	736782.39	907576.98	1483430.21
58	BEND	END-I	11612.114	23823.108	11205.056	736111.51	908063.74	1483465.28
		CENTER	8723.153	25025.805	11205.056	932081.21	823407.32	1519012.07
		END-J	9092.544	24894.302	11205.056	1100965.15	708274.56	1578513.76
59	BEND	END-I	8732.664	25453.315	12079.231	1100611.80	709074.27	1578401.01
		CENTER	12349.838	23912.241	12079.231	1247660.10	571157.11	1669412.50
		END-J	17093.357	20783.319	12079.231	1339028.36	468143.94	1766931.90
60	BEND	END-I	16565.694	21614.057	12865.100	1339750.30	443562.01	1772717.99
		CENTER	22520.200	15311.020	12865.100	1361306.70	464193.06	1889176.45
		END-J	25705.100	8998.997	12865.100	1272168.55	649139.27	1920946.80
61	BEND	END-I	25614.032	9125.508	13871.794	1272182.25	648828.07	1921042.56
		CENTER	25813.723	8544.262	13871.794	1139672.39	805581.95	1867321.24
		END-J	23730.156	13275.209	13871.794	982886.79	917177.46	1735914.20
62	BEND	END-I	23811.652	12980.819	14502.135	984102.26	913881.61	1736960.80
		CENTER	22960.186	14433.610	14502.135	944643.95	932877.53	1693388.99
		END-J	21983.979	15880.824	14502.135	906827.37	947350.38	1645850.33
63	TANGENT	END-I	22095.862	14583.587	16087.249	908587.53	1006596.82	1609294.28
		END-J	22095.862	14583.587	16087.249	908587.53	870193.31	1310207.97
64	TANGENT	END-I	22218.798	14655.266	16466.299	908509.05	869284.35	1310865.87
		END-J	22218.798	14655.266	16466.299	908509.05	877595.13	1025602.66
65	BEND	END-I	22356.476	15628.983	15797.358	908482.80	1019793.91	884365.21
		CENTER	22425.972	15526.940	15797.358	935919.83	885323.10	926653.64
		END-J	22074.029	16023.342	15797.358	963115.43	742364.03	975417.85
66	BEND	END-I	22164.507	16164.836	15824.159	962651.84	743203.84	975235.84
		CENTER	21425.213	17133.577	15824.159	975808.96	614230.50	1030880.34
		END-J	20371.493	18376.603	15824.159	965450.85	533414.57	1092296.10
67	BEND	END-I	20411.998	18485.705	15867.940	965311.57	534086.85	1092090.60
		CENTER	19139.800	19800.574	15867.940	925162.36	537853.53	1160859.03
		END-J	17826.885	20988.712	15867.940	853133.36	624060.47	1236699.75

68	BEND	END-I	17867.129	21085.280	15863.816	853783.02	621604.31	1237488.16
		CENTER	16712.383	22011.265	15863.816	751916.48	752734.70	1320557.10
		END-J	15942.407	22575.556	15863.816	624904.53	895675.94	1409322.18
69	TANGENT	END-I	15956.000	24352.108	13096.977	624292.81	795028.71	1468712.92
		END-J	15956.000	24352.108	13096.977	624292.81	839992.62	1588971.74

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	15722.
7090	FY	14562.
7090	FZ	11557.
7090	MX	958005.
7090	MY	1282136.
7090	MZ	862387.
3047	FZ	97.
3116	FZ	414.
3210	FX	14659.
3210	FZ	189.
3250	FX	13117.
3250	FY	24366.
3250	FZ	15962.
3250	MX	1588972.
3250	MY	839993.
3250	MZ	624293.
3035	FY	29351.
3083	FZ	18981.

BENCHMARK PROBLEM 2

INDEPENDENT SUPPORT MOTION RESPONSE
SPECTRUM METHOD

AP600 PRESSURIZER SURGE LINE BENCHMARK ANALYSIS - MULTIPLE SUPPORT EXCIT

C O N T R O L I N F O R M A T I O N

NUMBER OF NODAL POINTS	=	70
NUMBER OF ELEMENT TYPES	=	3
NUMBER OF STATIC LOAD CASES	=	0
NUMBER OF DYNAMIC LOAD CASES	=	1
NUMBER OF ANCHOR MVMT CASES	=	0
NUMBER OF FREQUENCIES	=	20
SOLUTION MODE (MODEX)	=	0
EQ.0, EXECUTION		
EQ.1, DATA CHECK		
STRESS CALCULATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ASME CODE EVALUATION FLAG	=	0
EQ.1 CLASS 1 PIPING		
EQ.2 CLASS2 OR CLASS 3 PIPING		
ACCELERATION DUE TO GRAVITY	=	386.4
BANDWIDTH MINIMIZATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ARBITRARY NODE NUMBERING FLAG	=	1
EQ.0 NO		
EQ.1 YES		
NUMBER OF SUPPORT GROUPS	=	3
FLAG FOR NODAL COORD. INPUT UNITS	=	0
EQ.0 CONSISTENT UNIT		
EQ.1 FEET TO INCHES		

LIST OF ANALYSIS TO BE PERFORMED

LOAD CASE	DISK FILE	ANALYSIS TYPE
1	0	INDEPENDENT RESPONSE SPECT.ANAL

NODAL POINT INPUT DATA

NEW NODE	OLD NODE	BOUNDARY X	CONDITION Y	CODES Z	COORDINATES X	COORDINATES Y	COORDINATES Z	T
1	7090	0	0	0	11910.000	12283.416	1251.372	653.000
2	3001	0	0	0	11923.164	12272.496	1259.028	653.000
3	3005	0	0	0	11936.320	12269.880	1260.864	653.000
4	3010	0	0	0	11929.476	12267.264	1262.700	653.000
5	3011	0	0	0	11933.088	12264.288	1264.764	653.000
6	3012	0	0	0	11939.124	12259.296	1268.232	653.000
7	3019	0	0	0	11953.932	12251.028	1275.132	653.000
8	3021	0	0	0	11968.632	12248.256	1279.728	653.000
9	3023	0	0	0	11971.320	12248.195	1280.388	653.000
10	3024	0	0	0	11983.812	12248.195	1283.368	653.000
11	3026	0	0	0	11999.028	12248.195	1286.760	653.000
12	3028	0	0	0	12014.244	12248.195	1290.252	653.000
13	3030	0	0	0	12040.236	12248.195	1296.240	653.000
14	3032	0	0	0	12066.204	12248.195	1302.240	653.000
15	3035	0	0	0	12092.172	12248.195	1308.228	653.000
16	3037	0	0	0	12118.152	12248.195	1314.216	653.000
17	3038	0	0	0	12144.120	12248.195	1320.216	653.000
18	3040	0	0	0	12170.088	12248.195	1326.204	653.000
19	3044	0	0	0	12180.360	12248.195	1328.580	653.000
20	3047	0	0	0	12185.376	12248.195	1329.708	653.000
21	3050	0	0	0	12189.996	12248.195	1330.776	653.000
22	3053	0	0	0	12194.028	12248.195	1331.712	653.000
23	3056	0	0	0	12200.557	12249.288	1333.248	653.000
24	3059	0	0	0	12201.744	12249.553	1333.524	653.000
25	3062	0	0	0	12206.364	12250.884	1334.664	653.000
26	3065	0	0	0	12214.801	12254.628	1336.728	653.000
27	3068	0	0	0	12218.928	12257.195	1337.796	653.000
28	3071	0	0	0	12236.979	12263.933	1339.944	653.000
29	3074	0	0	0	12238.288	12265.332	1340.292	653.000
30	3077	0	0	0	12239.668	12266.893	1340.676	653.000
31	3080	0	0	0	12240.660	12268.636	1344.168	653.000
32	3083	0	0	0	12242.292	12301.824	1345.116	653.000
33	3086	0	0	0	12242.292	12305.520	1345.296	653.000
34	3089	0	0	0	12242.292	12315.324	1345.668	653.000
35	3092	0	0	0	12242.292	12333.756	1346.484	653.000
36	3095	0	0	0	12242.292	12345.695	1346.988	653.000
37	3098	0	0	0	12242.292	12347.508	1347.072	653.000
38	3100	0	0	0	12242.292	12368.076	1347.972	653.000
39	3101	0	0	0	12242.292	12388.632	1348.884	653.000
40	3104	0	0	0	12242.292	12389.388	1348.944	653.000
41	3107	0	0	0	12242.292	12400.309	1349.448	653.000
42	3110	0	0	0	12242.292	12416.316	1350.264	653.000
43	3113	0	0	0	12242.292	12430.033	1351.152	653.000
44	3115	0	0	0	12242.292	12446.592	1352.640	653.000
45	3116	0	0	0	12242.292	12454.176	1354.188	653.000
46	3119	0	0	0	12174.120	12454.176	1354.812	653.000
47	3120	0	0	0	12156.061	12454.176	1355.592	653.000
48	3122	0	0	0	12137.988	12454.176	1356.772	653.000
49	3123	0	0	0	12114.792	12448.920	1357.656	653.000
50	3125	0	0	0	12097.092	12435.324	1359.120	653.000
51	3128	0	0	0	12085.932	12413.688	1360.752	653.000
52	3198	0	0	0	12084.947	12392.041	1361.904	653.000
53	3199	0	0	0	12088.080	12372.215	1362.768	653.000
54	3200	0	0	0	12081.212	12352.380	1363.644	653.000
55	3205	0	0	0	12094.476	12331.920	1364.556	653.000
56	3208	0	0	0	12097.632	12312.037	1365.432	653.000

57	3210	0	0	0	0	0	0	12100.788	12292.140	1366.308	653.000
58	3212	0	0	0	0	0	0	12109.512	12272.472	1367.448	653.000
59	3215	0	0	0	0	0	0	12125.772	12260.160	1368.708	653.000
60	3220	0	0	0	0	0	0	12148.860	12257.352	1369.956	653.000
61	3222	0	0	0	0	0	0	12176.184	12274.104	1371.768	653.000
62	3225	0	0	0	0	0	0	12184.176	12298.668	1373.268	653.000
63	3230	0	0	0	0	0	0	12183.648	12305.256	1373.580	653.000
64	3235	0	0	0	0	0	0	12180.216	12327.000	1374.552	653.000
65	3237	0	0	0	0	0	0	12176.772	12348.756	1375.512	653.000
66	3238	0	0	0	0	0	0	12174.348	12364.068	1379.220	653.000
67	3240	0	0	0	0	0	0	12172.320	12376.908	1388.424	653.000
68	3243	0	0	0	0	0	0	12170.976	12385.451	1401.828	653.000
69	3245	0	0	0	0	0	0	12170.508	12388.439	1417.464	653.000
70	3250	0	0	0	0	0	0	12170.508	12388.439	1426.440	653.000

S P R I N G E L E M E N T S

ELEMENT TYPE = 1
NUMBER OF ELEMENTS = 16

ELEMENT LOAD CASE MULTIPLIERS

CASE (A)		CASE (B)		CASE (C)		CASE (D)				
1.0000		1.0000		1.0000		1.0000				
ELEMENT NUMBER	NODE (N)	SUPPORT GROUP	CODE KD	CODE KR	DIRECTION COSINES WRT GLOBAL AXES			SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
					X-	Y-	Z-			
1	7090	2	1	0	1.000	.000	.000	.000	.000	1.0000E+11
2	7090	2	1	0	.000	1.000	.000	.000	.000	1.0000E+11
3	7090	2	1	0	.000	.000	1.000	.000	.000	1.0000E+11
4	7090	2	0	1	1.000	.000	.000	.000	.000	1.0000E+13
5	7090	2	0	1	.000	1.000	.000	.000	.000	1.0000E+13
6	7090	2	0	1	.000	.000	1.000	.000	.000	1.0000E+13
7	3047	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02
8	3116	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02
9	3210	1	1	0	1.000	.000	.000	.000	.000	5.0000E+06
10	3210	1	1	0	.000	.000	1.000	.000	.000	6.0000E+02
11	3250	3	1	0	1.000	.000	.000	.000	.000	1.0000E+11
12	3250	3	1	0	.000	1.000	.000	.000	.000	1.0000E+11
13	3250	3	1	0	.000	.000	1.000	.000	.000	1.0000E+11
14	3250	3	0	1	1.000	.000	.000	.000	.000	1.0000E+13
15	3250	3	0	1	.000	1.000	.000	.000	.000	1.0000E+13
16	3250	3	0	1	.000	.000	1.000	.000	.000	1.0000E+13

S N U B B E R E L E M E N T S

ELEMENT TYPE = 4
 NUMBER OF ELEMENTS = 2

ELEMENT LOAD CASE MULTIPLIERS

		CASE (A)	CASE (B)	CASE (C)	CASE (D)						
		1.0000	1.0000	1.0000	1.0000						
ELEMENT	NODE					DIRECTION COSINES WRT GLOBAL AXES			SPECIFIED	SPECIFIED	SPRING
NUMBER	(N)					X-	Y-	Z-	DISPLACEMENT	ROTATION	RATE
1	3035		1	1	0	.000	1.000	.000	.000	.000	5.5150E+05
2	3083		1	1	0	.000	.000	1.000	.000	.000	5.5150E+05

PIPE ELEMENT INPUT DATA

CONTROL INFORMATION

NUMBER OF PIPE ELEMENTS	=	69
NUMBER OF MATERIAL SETS	=	2
MAXIMUM NUMBER OF MATERIAL TEMPERATURE INPUT POINTS	=	3
NUMBER OF SECTION PROPERTY SETS	=	4
NUMBER OF BRANCH POINT NODES	=	0
MAXIMUM NUMBER OF TANGENTS COMMON TO A BRANCH POINT	=	3
FLAG FOR NEGLECTING AXIAL DEFORMATIONS IN BEND ELEMENTS (EQ.1, NEGLECT)	=	0

MATERIAL PROPERTY TABLES

MATERIAL NUMBER = (1)
NUMBER OF
TEMPERATURE POINTS = (3)
IDENTIFICATION = (SA376 316LN)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.813E+07	.300	8.540E-06
2	650.00	2.505E+07	.300	9.690E-06
3	700.00	2.480E+07	.300	9.760E-06

MATERIAL NUMBER = (2)
NUMBER OF
TEMPERATURE POINTS = (2)
IDENTIFICATION = (FICTICIOUS MAT)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.530E+07	.300	0.000E+00
2	700.00	2.530E+07	.300	0.000E+00

SECTION PROPERTY TABLE

SECTION NUMBER	OUTSIDE DIAMETER	WALL THICKNESS	SHAPE FACTOR FOR SHEAR	WEIGHT/ UNIT LENGTH	MASS/ UNIT LENGTH	DESCRIPTION
1	18.000	1.7810	.0000	3.4033E+01	8.8077E-02	18 IN SCH 160
2	21.100	3.3400	.0000	5.8824E+01	1.5224E-01	
3	24.300	4.9000	.0000	9.0696E+01	2.3472E-01	
4	37.500	3.2500	.0000	0.0000E+00	0.0000E+00	

ELEMENT LOAD CASE MULTIPLIERS

	CASE A	CASE B	CASE C	CASE D
X-DIRECTION GRAVITY	.000	.000	.000	.000
Y-DIRECTION GRAVITY	.000	.000	.000	.000
Z-DIRECTION GRAVITY	-1.000	.000	.000	.000
THERMAL DISTORTION	.000	.000	.000	.000
PRESSURE DISTORTION	.000	.000	.000	.000

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
1	TANGENT	7090	3001	2	4	70.00	2485.00	.00	.00	0 0	1	II
2	TANGENT	3001	3005	1	3	70.00	2485.00	.00	.00	0 0	1	II
3	TANGENT	3005	3010	1	2	70.00	2485.00	.00	.00	0 0	1	II
4	TANGENT	3010	3011	1	1	70.00	2485.00	.00	.00	0 0	1	II
5	TANGENT	3011	3012	1	1	70.00	2485.00	.00	.00	0 0	1	II
6	BEND	3012	3019	1	1	70.00	2485.00	.00	.00	0 0		
						(54.012)	()	(11945.652)	(12253.896)	(1272.012)	(19.4919)	I
7	BEND	3019	3021	1	1	70.00	2485.00	.00	.00	0 0		
						(53.676)	()	(11961.012)	(12248.628)	(1277.820)	(16.8378)	I
8	BEND	3021	3023	1	1	70.00	2485.00	.00	.00	0 0		
						(55.344)	()	(11969.976)	(12248.195)	(1280.076)	(2.8767)	I
9	TANGENT	3023	3024	1	1	70.00	2485.00	.00	.00	0 0	1	II
10	TANGENT	3024	3026	1	1	70.00	2485.00	.00	.00	0 0	1	II
11	TANGENT	3026	3028	1	1	70.00	2485.00	.00	.00	0 0	1	II
12	TANGENT	3028	3030	1	1	70.00	2485.00	.00	.00	0 0	1	II
13	TANGENT	3030	3032	1	1	70.00	2485.00	.00	.00	0 0	1	II
14	TANGENT	3032	3035	1	1	70.00	2485.00	.00	.00	0 0	1	II
15	TANGENT	3035	3037	1	1	70.00	2485.00	.00	.00	0 0	1	II
16	TANGENT	3037	3038	1	1	70.00	2485.00	.00	.00	0 0	1	II
17	TANGENT	3038	3040	1	1	70.00	2485.00	.00	.00	0 0	1	II
18	TANGENT	3040	3044	1	1	70.00	2485.00	.00	.00	0 0	1	II
19	TANGENT	3044	3047	1	1	70.00	2485.00	.00	.00	0 0	1	II
20	TANGENT	3047	3050	1	1	70.00	2485.00	.00	.00	0 0	1	II
21	BEND	3050	3053	1	1	70.00	2485.00	.00	.00	0 0		
						(54.972)	()	(12192.012)	(12248.195)	(1331.244)	(4.3122)	I
22	BEND	3053	3056	1	1	70.00	2485.00	.00	.00	0 0		
						(55.416)	()	(12197.328)	(12248.616)	(1332.480)	(7.0187)	I
23	BEND	3056	3059	1	1	70.00	2485.00	.00	.00	0 0		
						(51.084)	()	(12201.145)	(12249.408)	(1333.392)	(1.3843)	I
24	BEND	3059	3062	1	1	70.00	2485.00	.00	.00	0 0		
						(60.324)	()	(12204.120)	(12250.128)	(1334.100)	(4.7682)	I
25	BEND	3062	3065	1	1	70.00	2485.00	.00	.00	0 0		
						(55.128)	()	(12210.744)	(12252.384)	(1335.732)	(9.8520)	I
26	BEND	3065	3068	1	1	70.00	2485.00	.00	.00	0 0		
						(53.100)	()	(12216.936)	(12255.816)	(1337.292)	(5.4073)	I
27	BEND	3068	3071	1	1	70.00	2485.00	.00	.00	0 0		
						(54.132)	()	(12223.296)	(12260.160)	(1338.924)	(11.3902)	I
28	BEND	3071	3074	1	1	70.00	2485.00	.00	.00	0 0		
						(51.396)	()	(12227.676)	(12264.660)	(1340.124)	(2.2713)	I

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
29	BEND	3074	3077	1	1	70.00 (53.088)	2485.00 ()	.00 (12228.972)	.00 (12266.076)	0 0 (1340.484)	(2.2202)	I
30	BEND	3077	3080	1	1	70.00 (53.760)	2485.00 ()	.00 (12237.660)	.00 (12276.396)	0 0 (1342.920)	(26.4177)	I
31	BEND	3080	3083	1	1	70.00 (53.700)	2485.00 ()	.00 (12242.292)	.00 (12295.140)	0 0 (1344.792)	(14.2965)	I
32	TANGENT	3083	3086	1	1	70.00	2485.00	.00	.00	0 0	1	II
33	TANGENT	3086	3089	1	1	70.00	2485.00	.00	.00	0 0	1	II
34	TANGENT	3089	3092	1	1	70.00	2485.00	.00	.00	0 0	1	II
35	TANGENT	3092	3095	1	1	70.00	2485.00	.00	.00	0 0	1	II
36	TANGENT	3095	3098	1	1	70.00	2485.00	.00	.00	0 0	1	II
37	TANGENT	3098	3100	1	1	70.00	2485.00	.00	.00	0 0	1	II
38	TANGENT	3100	3101	1	1	70.00	2485.00	.00	.00	0 0	1	II
39	TANGENT	3101	3104	1	1	70.00	2485.00	.00	.00	0 0	1	II
40	TANGENT	3104	3107	1	1	70.00	2485.00	.00	.00	0 0	1	II
41	BEND	3107	3110	1	1	70.00 (53.832)	2485.00 ()	.00 (12242.292)	.00 (12408.504)	0 0 (1349.820)	(17.3293)	I
42	BEND	3110	3113	1	1	70.00 (53.940)	2485.00 ()	.00 (12237.576)	.00 (12423.636)	0 0 (1350.684)	(16.2026)	I
43	BEND	3113	3115	1	1	70.00 (53.916)	2485.00 ()	.00 (12226.536)	.00 (12440.305)	0 0 (1351.908)	(25.7916)	I
44	BEND	3115	3116	1	1	70.00 (54.084)	2485.00 ()	.00 (12203.231)	.00 (12454.176)	0 0 (1353.528)	(30.7215)	I
45	TANGENT	3116	3119	1	1	70.00	2485.00	.00	.00	0 0	1	II
46	TANGENT	3119	3120	1	1	70.00	2485.00	.00	.00	0 0	1	II
47	TANGENT	3120	3122	1	1	70.00	2485.00	.00	.00	0 0	1	II
48	BEND	3122	3123	1	1	70.00 (53.844)	2485.00 ()	.00 (12125.796)	.00 (12454.176)	0 0 (1356.900)	(25.5401)	I
49	BEND	3123	3125	1	1	70.00 (54.000)	2485.00 ()	.00 (12104.496)	.00 (12443.988)	0 0 (1358.352)	(23.9177)	I
50	BEND	3125	3128	1	1	70.00 (53.712)	2485.00 ()	.00 (12088.992)	.00 (12425.868)	0 0 (1360.008)	(26.1664)	I
51	BEND	3128	3198	1	1	70.00 (54.192)	2485.00 ()	.00 (12083.231)	.00 (12402.959)	0 0 (1361.424)	(23.1191)	I
52	TANGENT	3198	3199	1	1	70.00	2485.00	.00	.00	0 0	1	II
53	TANGENT	3199	3200	1	1	70.00	2485.00	.00	.00	0 0	1	II
54	TANGENT	3200	3205	1	1	70.00	2485.00	.00	.00	0 0	1	II
55	TANGENT	3205	3208	1	1	70.00	2485.00	.00	.00	0 0	1	II
56	TANGENT	3208	3210	1	1	70.00	2485.00	.00	.00	0 0	1	II

P I P E E L E M E N T I N P U T D A T A

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
57	BEND	3210	3212	1	1	(70.00 42.012)	2485.00 ()	(12102.540) ()	(12281.148) ()	(0 1366.788)	(29.7046)	I
58	BEND	3212	3215	1	1	(70.00 41.904)	2485.00 ()	(12116.088) ()	(12264.276) ()	(0 1368.072)	(28.2025)	I
59	BEND	3215	3220	1	1	(70.00 42.192)	2485.00 ()	(12136.860) ()	(12255.443) ()	(0 1369.428)	(31.9317)	I
60	BEND	3220	3222	1	1	(70.00 42.120)	2485.00 ()	(12165.996) ()	(12260.100) ()	(0 1370.712)	(44.8251)	I
61	BEND	3222	3225	1	1	(70.00 41.892)	2485.00 ()	(12184.176) ()	(12285.107) ()	(0 1372.584)	(36.0300)	I
62	BEND	3225	3230	1	1	(70.00 41.496)	2485.00 ()	(12184.176) ()	(12301.980) ()	(0 1373.424)	(9.1369)	I
63	TANGENT	3230	3235	1	1	(70.00 42.120)	2485.00 ()	(12175.512) ()	(12356.771) ()	(0 1375.872)	(21.8273)	II
64	TANGENT	3235	3237	1	1	(70.00 42.120)	2485.00 ()	(12175.512) ()	(12356.771) ()	(0 1375.872)	(21.8273)	II
65	BEND	3237	3238	1	1	(70.00 42.120)	2485.00 ()	(12175.512) ()	(12356.771) ()	(0 1375.872)	(21.8273)	I
66	BEND	3238	3240	1	1	(70.00 42.000)	2485.00 ()	(12173.195) ()	(12371.364) ()	(0 1382.556)	(21.8448)	I
67	BEND	3240	3243	1	1	(70.00 41.892)	2485.00 ()	(12171.443) ()	(12382.463) ()	(0 1394.292)	(21.9599)	I
68	BEND	3243	3245	1	1	(70.00 42.012)	2485.00 ()	(12170.508) ()	(12388.439) ()	(0 1409.352)	(21.8497)	I
69	TANGENT	3245	3250	1	1	(70.00 42.012)	2485.00 ()	(12170.508) ()	(12388.439) ()	(0 1409.352)	(21.8497)	II

BENCHMARK PROBLEM 2
LOWER FREQUENCY AMPLIFIED GROUP RESPONSE

SUPPORT GROUP 1

DIRECTION FACTORS

X = 1.0000 Y = 1.0000 Z = 1.0000

INDICATOR FOR DISPLACEMENT OR ACCELERATION SPECTRUM = 2

EQ.0 DISPLACEMENT
EQ.1 ACCELERATION IN IN./SEC.**2
EQ.2 ACCELERATION IN G**S

3 SPECTRA ARE ENTERED FOR CASE 1. KIND= 2

CLUSTER FACTOR, CF = .10000

MODAL PARTICIPATION FACTORS

MODE	FREQ(CPS)	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	3.899	3.2850E-01	-6.6142E+00	-1.3908E-01
2	4.566	-3.5258E-01	1.8322E+00	2.0788E+00
3	8.332	-6.4851E-01	2.9242E+00	3.6542E-01
4	10.391	-2.2408E+00	3.1681E+00	-8.5966E-01
5	14.962	2.5526E-01	-1.5331E+00	9.1139E-01
6	18.561	1.2623E-01	3.8302E-01	3.5474E+00
7	23.825	-2.3597E+00	-1.3986E+00	9.2713E-01
8	34.503	4.6808E-01	5.0947E-01	1.7236E+00
9	37.913	3.4092E-01	-8.5699E-01	1.2175E+00
10	41.934	-8.0787E-01	1.4506E+00	4.7909E-01
11	52.755	8.6498E-01	-3.9998E-01	-2.1638E-01
12	56.300	2.0927E+00	3.7401E-01	-1.8559E-01
13	58.649	2.3508E+00	1.3651E-02	3.1277E-01

SPECTRUM TABLE (GROUP 1 SSE X DIRECTION)

NUMBER OF POINTS = 16
SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	2.5000E-02	3.6940E-01
2	2.5600E-02	3.9130E-01
3	4.8300E-02	6.3570E-01
4	6.4400E-02	8.4180E-01
5	8.2800E-02	9.3660E-01
6	1.1220E-01	9.8920E-01
7	1.5330E-01	9.5440E-01
8	1.9320E-01	9.7130E-01
9	2.1740E-01	1.0488E+00
10	2.4150E-01	1.1005E+00
11	3.3330E-01	1.1338E+00
12	4.4230E-01	1.1338E+00
13	4.5770E-01	1.1205E+00
14	5.0000E-01	1.0764E+00
15	5.4765E-01	1.0585E+00
16	5.7470E+00	1.0730E-01

SPECTRUM TABLE (GROUP 1 SSE Y DIRECTION)

NUMBER OF POINTS = 19

SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	2.5000E-02	3.2270E-01
2	2.5580E-02	3.4640E-01
3	4.3480E-02	4.9610E-01
4	5.1150E-02	5.9680E-01
5	5.5000E-02	5.9680E-01
6	7.2500E-02	8.5280E-01
7	8.3330E-02	8.4660E-01
8	1.1510E-01	9.7700E-01
9	1.5230E-01	9.7700E-01
10	1.8120E-01	8.9780E-01
11	1.9760E-01	9.0910E-01
12	2.1740E-01	9.0910E-01
13	2.6350E-01	1.1246E+00
14	3.4840E-01	1.1246E+00
15	3.5930E-01	1.0574E+00
16	4.2590E-01	1.0574E+00
17	4.7920E-01	1.0227E+00
18	5.4765E-01	1.0227E+00
19	5.7470E+00	1.0310E-01

SPECTRUM TABLE (GROUP 1 SSE Z DIRECTION)

NUMBER OF POINTS = 21
SCALE FACTOR = 1.00000E+00

INPUT POINT	PERIOD	SPECTRUM VALUE
1	2.5000E-02	4.0390E-01
2	2.5580E-02	4.0820E-01
3	4.8300E-02	6.0870E-01
4	5.9970E-02	7.5350E-01
5	7.2460E-02	8.3060E-01
6	9.5800E-02	8.3060E-01
7	1.0450E-01	8.2420E-01
8	1.4490E-01	1.0506E+00
9	1.6430E-01	1.0507E+00
10	1.7390E-01	1.1719E+00
11	1.9760E-01	1.1979E+00
12	2.0000E-01	1.2004E+00
13	2.1060E-01	1.2796E+00
14	2.7850E-01	1.2796E+00
15	2.8750E-01	1.2552E+00
16	3.3330E-01	1.2552E+00
17	3.8330E-01	1.0347E+00
18	4.7920E-01	1.0347E+00
19	5.4765E-01	6.9860E-01
20	6.0530E-01	6.9860E-01
21	5.7470E+00	6.5000E-02

CLUSTERING. +1 MEANS MODE I CLOSE TO I+1. -1, NOT.
-1. -1. -1. -1. -1. -1. -1. 1. -1. -1. 1. -1. 0.

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
 MODAL COMBINATION METHOD 2-GROUPING

N O D E N O D E N U M B E R	D I S P L A C E M E N T S / R O T A T I O N S						A C C E L E R A T I O N S I N G ' S		
	X- T R A N S L A T I O N	Y- T R A N S L A T I O N	Z- T R A N S L A T I O N	X- R O T A T I O N	Y- R O T A T I O N	Z- R O T A T I O N	X- D I R E C T I O N	Y- D I R E C T I O N	Z- D I R E C T I O N
7090	.42869E-07	.12268E-06	.25192E-07	.54246E-07	.32696E-07	.72785E-07	.000	.000	.000
3001	.12879E-03	.19711E-03	.82028E-04	.75866E-05	.44686E-05	.89446E-05	.002	.002	.002
3005	.18467E-03	.28019E-03	.12428E-03	.13270E-04	.78941E-05	.14915E-04	.003	.003	.003
3010	.27905E-03	.41977E-03	.19941E-03	.23981E-04	.14404E-04	.25536E-04	.004	.004	.005
3011	.49408E-03	.73796E-03	.37971E-03	.53399E-04	.32415E-04	.52590E-04	.007	.008	.009
3012	.10653E-02	.15570E-02	.93930E-03	.99478E-04	.60995E-04	.89842E-04	.015	.016	.019
3019	.26243E-02	.44305E-02	.30251E-02	.19375E-03	.11923E-03	.13961E-03	.038	.050	.060
3021	.35492E-02	.74831E-02	.53551E-02	.26819E-03	.16120E-03	.14128E-03	.055	.090	.112
3023	.36473E-02	.79973E-02	.57858E-02	.28090E-03	.16771E-03	.13815E-03	.057	.097	.122
3024	.40852E-02	.10126E-01	.79876E-02	.33834E-03	.19359E-03	.11680E-03	.068	.131	.172
3026	.47187E-02	.11865E-01	.11135E-01	.40547E-03	.21954E-03	.10617E-03	.081	.169	.235
3028	.54478E-02	.12118E-01	.14662E-01	.47010E-03	.23988E-03	.17945E-03	.095	.199	.297
3030	.68594E-02	.77847E-02	.21268E-01	.57689E-03	.26375E-03	.45516E-03	.115	.225	.393
3032	.83937E-02	.94442E-02	.28266E-01	.68246E-03	.27761E-03	.85826E-03	.130	.224	.467
3035	.99681E-02	.35325E-01	.35385E-01	.79123E-03	.28660E-03	.13767E-02	.140	.225	.516
3037	.11539E-01	.77852E-01	.42469E-01	.90891E-03	.29590E-03	.19211E-02	.143	.279	.541
3038	.13091E-01	.13418E+00	.49475E-01	.10342E-02	.30964E-03	.24036E-02	.143	.378	.546
3040	.14628E-01	.20258E+00	.56479E-01	.11637E-02	.32993E-03	.28268E-02	.139	.497	.537
3044	.15242E-01	.23261E+00	.59282E-01	.12156E-02	.33984E-03	.29784E-02	.136	.547	.530
3047	.15535E-01	.24783E+00	.60662E-01	.12411E-02	.34504E-03	.30494E-02	.135	.571	.526
3050	.15813E-01	.26218E+00	.61944E-01	.12647E-02	.35005E-03	.31130E-02	.134	.593	.523
3053	.16212E-01	.27492E+00	.62874E-01	.12856E-02	.35499E-03	.31706E-02	.133	.613	.519
3056	.17818E-01	.29612E+00	.63517E-01	.13196E-02	.36392E-03	.32615E-02	.131	.644	.509
3059	.18287E-01	.30000E+00	.63523E-01	.13260E-02	.36571E-03	.32791E-02	.131	.650	.507
3062	.21145E-01	.31568E+00	.63090E-01	.13508E-02	.37307E-03	.33401E-02	.131	.673	.497
3065	.31293E-01	.34467E+00	.60467E-01	.13980E-02	.38867E-03	.34565E-02	.133	.713	.471
3068	.39338E-01	.35925E+00	.58112E-01	.14229E-02	.39756E-03	.35172E-02	.137	.734	.456
3071	.62269E-01	.38840E+00	.50873E-01	.14752E-02	.41825E-03	.36381E-02	.155	.773	.418
3074	.67462E-01	.39342E+00	.49148E-01	.14853E-02	.42227E-03	.36610E-02	.161	.780	.411
3077	.72879E-01	.39840E+00	.47334E-01	.14952E-02	.42644E-03	.36831E-02	.166	.786	.403
3080	.15462E+00	.44051E+00	.17992E-01	.16098E-02	.48029E-03	.39221E-02	.282	.841	.325
3083	.20709E+00	.44713E+00	.80083E-02	.16696E-02	.51047E-03	.40356E-02	.367	.850	.308
3086	.22203E+00	.44716E+00	.12604E-01	.16843E-02	.51884E-03	.40628E-02	.391	.850	.309
3089	.26215E+00	.44725E+00	.28282E-01	.17212E-02	.54163E-03	.41326E-02	.455	.851	.323
3092	.33938E+00	.44744E+00	.60296E-01	.17813E-02	.58650E-03	.42543E-02	.577	.852	.376
3095	.39056E+00	.44755E+00	.81751E-01	.18141E-02	.61678E-03	.43267E-02	.656	.853	.423
3098	.39841E+00	.44757E+00	.85046E-01	.18186E-02	.62145E-03	.43373E-02	.668	.853	.431
3100	.48872E+00	.44779E+00	.12298E+00	.18629E-02	.67563E-03	.44508E-02	.802	.854	.523
3101	.58114E+00	.44799E+00	.16168E+00	.18944E-02	.73163E-03	.45536E-02	.936	.855	.627
3104	.58457E+00	.44800E+00	.16311E+00	.18953E-02	.73373E-03	.45573E-02	.941	.855	.631
3107	.63452E+00	.44813E+00	.18390E+00	.19070E-02	.76415E-03	.46084E-02	1.013	.856	.688
3110	.70874E+00	.43703E+00	.21560E+00	.19204E-02	.80918E-03	.46890E-02	1.122	.844	.762
3113	.77324E+00	.40673E+00	.24477E+00	.19279E-02	.84922E-03	.47645E-02	1.217	.809	.810
3115	.85252E+00	.32397E+00	.28462E+00	.19345E-02	.90565E-03	.48901E-02	1.336	.717	.837
3116	.88941E+00	.19018E+00	.31298E+00	.19399E-02	.96004E-03	.50498E-02	1.391	.589	.796
3119	.88914E+00	.12184E+00	.32066E+00	.19430E-02	.98064E-03	.51235E-02	1.391	.540	.765
3120	.88881E+00	.52301E-01	.33098E+00	.19473E-02	.10034E-02	.52165E-02	1.391	.506	.746
3122	.88845E+00	.90599E-01	.34195E+00	.19523E-02	.10228E-02	.53088E-02	1.390	.513	.755
3123	.85949E+00	.20629E+00	.34726E+00	.19592E-02	.10475E-02	.54377E-02	1.348	.581	.784
3125	.78388E+00	.30121E+00	.33491E+00	.19623E-02	.10701E-02	.55390E-02	1.237	.670	.810
3128	.66275E+00	.36258E+00	.30533E+00	.19543E-02	.10970E-02	.56071E-02	1.058	.737	.817
3198	.54016E+00	.36765E+00	.26913E+00	.19309E-02	.11225E-02	.56144E-02	.874	.743	.785

3199	.42837E+00	.34992E+00	.23424E+00	.18953E-02	.11452E-02	.55730E-02	.703	.721	.741
3200	.31777E+00	.33239E+00	.20180E+00	.18443E-02	.11659E-02	.54825E-02	.529	.700	.712
3205	.20607E+00	.31450E+00	.17212E+00	.17745E-02	.11846E-02	.53354E-02	.349	.677	.702
3208	.10093E+00	.29773E+00	.14865E+00	.16897E-02	.11997E-02	.51382E-02	.179	.654	.714
3210	.77281E-03	.28164E+00	.13240E+00	.15880E-02	.12113E-02	.48867E-02	.076	.630	.748
3212	.92782E-01	.24106E+00	.11938E+00	.14149E-02	.12058E-02	.44236E-02	.223	.560	.770
3215	.14543E+00	.17318E+00	.10736E+00	.12447E-02	.11780E-02	.39096E-02	.328	.434	.750
3220	.15716E+00	.90696E-01	.92359E-01	.10626E-02	.11117E-02	.32622E-02	.352	.282	.696
3222	.11326E+00	.17822E-01	.66674E-01	.85295E-03	.95605E-03	.23179E-02	.285	.178	.592
3225	.66566E-01	.13284E-01	.45738E-01	.72517E-03	.79587E-03	.16157E-02	.248	.170	.470
3230	.56769E-01	.12850E-01	.41194E-01	.69686E-03	.75383E-03	.14537E-02	.242	.169	.432
3235	.30006E-01	.11516E-01	.27520E-01	.62736E-03	.61814E-03	.11105E-02	.217	.160	.305
3237	.10489E-01	.11312E-01	.15340E-01	.54816E-03	.48910E-03	.82503E-03	.183	.151	.181
3238	.36936E-02	.99745E-02	.79734E-02	.45757E-03	.40278E-03	.58723E-03	.143	.131	.100
3240	.36701E-02	.66044E-02	.29626E-02	.35037E-03	.31398E-03	.39203E-03	.089	.089	.040
3243	.23691E-02	.28322E-02	.53870E-03	.22088E-03	.20622E-03	.22902E-03	.037	.041	.008
3245	.46448E-03	.42504E-03	.23129E-04	.68301E-04	.66947E-04	.81859E-04	.006	.008	.000
3250	.86721E-07	.73249E-07	.58394E-07	.59686E-07	.59602E-07	.53004E-07	.000	.000	.000

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	5262.540	11820.371	2795.342	165156.72	413228.79	856110.34
		END-J	5262.540	11820.371	2795.342	165156.72	374310.49	635475.32
2	TANGENT	END-I	5258.763	11821.918	2795.139	165165.80	374290.55	635484.73
		END-J	5258.763	11821.918	2795.139	165165.80	365461.08	582691.30
3	TANGENT	END-I	5258.758	11821.660	2794.383	165165.80	365461.08	582691.30
		END-J	5258.758	11821.660	2794.383	165165.80	356857.18	529960.12
4	TANGENT	END-I	5243.548	11831.041	2781.698	167330.51	356895.30	529255.43
		END-J	5243.548	11831.041	2781.698	167330.51	347423.44	469229.95
5	TANGENT	END-I	5257.146	11823.677	2783.826	166607.04	347453.15	469465.23
		END-J	5257.146	11823.677	2783.826	166607.04	332354.70	369380.24
6	BEND	END-I	5252.407	11174.593	4756.573	166062.89	360684.40	341942.04
		CENTER	3763.276	11759.979	4756.573	207400.78	309728.51	240557.62
		END-J	2802.103	12025.305	4756.573	244899.91	256161.57	141877.34
7	BEND	END-I	2784.825	11937.560	4951.737	245992.02	253769.57	144266.33
		CENTER	2975.982	11891.317	4951.737	271957.20	210104.71	86608.21
		END-J	3954.743	11602.999	4951.737	290696.20	177481.37	108354.49
8	BEND	END-I	3900.656	11084.381	6036.055	290492.67	173642.80	114920.71
		CENTER	4096.310	11013.612	6036.055	292704.08	171546.82	123340.81
		END-J	4298.396	10936.411	6036.055	294675.47	170405.57	132934.05
9	TANGENT	END-I	4300.253	12252.141	2382.593	294613.62	170968.39	132351.86
		END-J	4300.253	12252.141	2382.593	294613.62	148501.37	288392.34
10	TANGENT	END-I	4296.536	12243.105	2310.222	294489.07	148501.37	288519.52
		END-J	4296.536	12243.105	2310.222	294489.07	126133.36	479314.20
11	TANGENT	END-I	4292.212	12231.805	2202.996	294489.07	126133.36	479314.20
		END-J	4292.212	12231.805	2202.996	294489.07	111225.78	670132.36
12	TANGENT	END-I	4286.178	12217.738	2022.759	294719.95	111225.78	670030.88
		END-J	4286.178	12217.738	2022.759	294719.95	106251.27	995789.77
13	TANGENT	END-I	4278.481	12211.337	1729.981	294979.42	106251.27	995712.91
		END-J	4278.481	12211.337	1729.981	294979.42	120281.64	1321053.99
14	TANGENT	END-I	4270.968	12231.399	1406.780	294745.35	120281.64	1321106.23
		END-J	4270.968	12231.399	1406.780	294745.35	139417.87	1646897.97
15	TANGENT	END-I	4263.207	7722.167	1112.157	294678.51	139417.87	1646909.87
		END-J	4263.207	7722.167	1112.157	294678.51	155256.04	1466988.68
16	TANGENT	END-I	4255.381	7544.261	943.247	294980.14	155256.04	1466928.13
		END-J	4255.381	7544.261	943.247	294980.14	164827.41	1297614.08
17	TANGENT	END-I	4247.597	7267.042	990.505	294779.67	164827.41	1297659.62

		END-J	4247.597	7267.042	990.505	294779.67	168419.94	1143026.47
18	TANGENT	END-I	4241.847	6995.539	1133.980	295022.56	168419.94	1142963.82
		END-J	4241.847	6995.539	1133.980	295022.56	168724.69	1087002.35
19	TANGENT	END-I	4240.655	6867.837	1209.820	293136.08	168724.69	1087512.58
		END-J	4240.655	6867.837	1209.820	293136.08	168727.06	1061401.40
20	TANGENT	END-I	4237.252	6783.352	1266.384	294867.53	168727.06	1060921.72
		END-J	4237.252	6783.352	1266.384	294867.53	168734.44	1037586.89
21	BEND	END-I	4235.753	6703.918	1316.630	295129.59	168734.44	1037512.37
		CENTER	4124.590	6772.885	1316.630	296621.80	166076.25	1027440.19
		END-J	4020.531	6835.176	1316.630	297829.30	163908.34	1017177.83
22	BEND	END-I	4012.731	6745.133	1351.115	298053.52	177416.54	1014843.08
		CENTER	3861.370	6832.967	1351.115	300050.96	173726.03	997813.20
		END-J	3735.912	6902.429	1351.115	301292.85	171388.69	980371.94
23	BEND	END-I	3740.028	5677.829	4034.004	303146.55	510962.59	853412.02
		CENTER	3722.284	5689.499	4034.004	301354.08	510273.57	850810.94
		END-J	3705.124	5700.683	4034.004	299650.93	509526.68	848195.95
24	BEND	END-I	3675.929	6791.066	1471.749	302471.63	196173.99	968946.72
		CENTER	3615.358	6823.482	1471.749	303290.23	194385.83	955913.96
		END-J	3569.916	6847.394	1471.749	303778.47	193199.59	942744.43
25	BEND	END-I	3548.261	6717.541	1549.014	301767.72	162637.56	949137.31
		CENTER	3500.625	6742.487	1549.014	299328.48	166651.70	924274.41
		END-J	3522.506	6731.022	1549.014	295414.53	173245.01	899060.65
26	BEND	END-I	3479.822	6536.516	1869.124	299540.41	188632.57	894587.96
		CENTER	3512.572	6518.878	1869.124	295464.80	193499.04	881637.68
		END-J	3563.965	6490.990	1869.124	291035.50	198667.74	868645.01
27	BEND	END-I	3493.174	6423.672	1707.362	292443.68	189079.84	870311.39
		CENTER	3632.020	6346.205	1707.362	285909.65	198764.52	842263.96
		END-J	3835.909	6225.184	1707.362	277751.69	210332.58	814278.09
28	BEND	END-I	3763.120	5871.381	2461.008	274131.20	339332.40	770804.16
		CENTER	3805.174	5844.277	2461.008	273730.18	338882.40	765655.54
		END-J	3848.706	5815.629	2461.008	273362.73	338441.48	760515.19
29	BEND	END-I	3786.038	5983.907	2000.846	275122.67	224572.63	800953.93
		CENTER	3829.770	5956.031	2000.846	272560.43	227099.20	795920.76
		END-J	3875.024	5926.658	2000.846	269956.35	229620.43	790899.91
30	BEND	END-I	3689.346	5773.313	1950.575	269995.49	218617.49	793999.21
		CENTER	4247.843	5375.632	1950.575	243834.79	248758.00	734694.02
		END-J	4859.186	4829.996	1950.575	215631.47	276437.88	679266.92
31	BEND	END-I	4400.733	4630.652	2121.401	214434.06	278185.18	678932.52
		CENTER	4681.404	4346.700	2121.401	201549.70	290237.18	652371.98
		END-J	4936.656	4054.360	2121.401	191584.39	299938.78	627758.78
32	TANGENT	END-I	4764.679	3120.408	3912.430	191667.70	614579.95	326071.04
		END-J	4764.679	3120.408	3912.430	191667.70	601778.69	315555.94
33	TANGENT	END-I	4587.508	3095.186	3849.025	188866.25	602663.78	315555.94
		END-J	4587.508	3095.186	3849.025	188866.25	569799.58	288035.13

34	TANGENT	END-I END-J	4244.351 4244.351	2993.234 2993.234	3693.505 3693.505	190410.24 190410.24	569285.52 512492.84	288035.13 239310.22
35	TANGENT	END-I END-J	3881.474 3881.474	2851.998 2851.998	3478.088 3478.088	189950.43 189950.43	512663.43 480328.51	239310.22 210228.94
36	TANGENT	END-I END-J	3727.628 3727.628	2769.660 2769.660	3368.205 3368.205	190820.15 190820.15	479983.69 475425.09	210228.94 206032.93
37	TANGENT	END-I END-J	3477.025 3477.025	2647.393 2647.393	3192.720 3192.720	190279.46 190279.46	475641.74 430848.27	206032.93 162548.77
38	TANGENT	END-I END-J	3058.969 3058.969	2351.576 2351.576	2823.373 2823.373	190395.88 190395.88	430796.89 401120.66	162548.77 128588.82
39	TANGENT	END-I END-J	2907.974 2907.974	2113.186 2113.186	2621.947 2621.947	196920.04 196920.04	397958.23 397193.42	128588.82 127587.17
40	TANGENT	END-I END-J	2772.074 2772.074	2069.573 2069.573	2523.540 2523.540	190725.96 190725.96	400204.80 391787.00	127587.17 114167.25
41	BEND	END-I CENTER END-J	2575.452 2637.711 2683.050	2321.065 2250.585 2197.328	1830.402 1830.402 1830.402	190593.17 184407.52 175671.36	118436.06 119284.40 125101.54	390585.90 389067.24 388776.23
42	BEND	END-I CENTER END-J	2479.586 2489.616 2484.435	2090.132 2078.713 2085.050	1561.089 1561.089 1561.089	175837.18 165775.40 153955.81	124876.10 132131.25 140995.75	388773.61 391934.21 395420.51
43	BEND	END-I CENTER END-J	2424.349 2409.445 2366.451	2101.279 2117.242 2163.555	1281.293 1281.293 1281.293	154031.82 132647.41 110625.60	141470.19 153396.50 163124.79	395221.52 403630.40 410278.12
44	BEND	END-I CENTER END-J	2878.515 2849.842 2746.405	2236.411 2273.466 2399.157	1148.351 1148.351 1148.351	110873.13 89049.02 78599.04	162101.57 162976.12 157309.76	410616.50 414618.35 411713.73
45	TANGENT	END-I END-J	3477.893 3477.893	2567.322 2567.322	1234.284 1234.284	78606.72 78606.72	146579.52 133491.07	415646.02 406527.42
46	TANGENT	END-I END-J	4106.384 4106.384	2717.807 2717.807	1325.368 1325.368	78612.31 78612.31	133491.07 116254.76	406526.33 396800.60
47	TANGENT	END-I END-J	4855.579 4855.579	2889.300 2889.300	1482.462 1482.462	78612.16 78612.16	116254.76 100656.14	396800.58 391958.43
48	BEND	END-I CENTER END-J	5764.626 5530.007 5115.814	3150.968 3545.635 4120.650	1614.024 1614.024 1614.024	78614.83 71889.80 65276.42	86910.72 85381.31 88266.25	395232.79 389063.37 372735.54
49	BEND	END-I CENTER END-J	6137.103 5562.024 4879.911	4427.808 5132.202 5785.184	1904.358 1904.358 1904.358	65334.34 60493.98 59468.38	88384.79 95193.24 103691.68	372697.20 346419.11 314330.77
50	BEND	END-I CENTER END-J	5799.679 4889.489 4090.516	6253.451 6987.971 7483.479	2266.991 2266.991 2266.991	58863.65 65145.91 79718.73	105906.83 116084.76 124796.16	313705.70 271709.99 237569.55
51	BEND	END-I	4676.811	8144.489	2605.217	79814.69	123025.85	238459.25

		CENTER	4096.634	8451.151	2605.217	97643.34	129330.40	223055.54
		END-J	4010.007	8492.929	2605.217	118669.90	133073.07	235958.65
52	TANGENT	END-I	4236.358	8807.869	3816.058	118675.82	82442.16	258029.67
		END-J	4236.358	8807.869	3816.058	118675.82	139895.68	354332.70
53	TANGENT	END-I	4485.439	9282.772	4162.885	118622.19	139793.40	354391.27
		END-J	4485.439	9282.772	4162.885	118622.19	215785.29	503886.61
54	TANGENT	END-I	4762.418	9662.408	4464.316	118946.98	215584.17	503896.04
		END-J	4762.418	9662.408	4464.316	118946.98	303586.16	683813.03
55	TANGENT	END-I	5062.867	9929.482	4726.838	118702.00	303320.95	683973.22
		END-J	5062.867	9929.482	4726.838	118702.00	395114.71	871804.44
56	TANGENT	END-I	5377.152	10080.321	4970.076	118662.40	395126.52	871804.44
		END-J	5377.152	10080.321	4970.076	118662.40	492018.79	1066654.18
57	BEND	END-I	5298.539	10183.425	4321.270	118867.74	437430.86	1090162.74
		CENTER	4249.184	10663.931	4321.270	226443.05	439028.00	1185489.53
		END-J	4539.472	10543.476	4321.270	334257.84	412849.29	1279909.09
58	BEND	END-I	4488.161	10671.192	4594.096	333955.76	413106.82	1279904.88
		CENTER	5651.017	10103.715	4594.096	427796.97	365806.23	1364343.02
		END-J	7214.863	9053.525	4594.096	507270.01	299559.26	1438490.38
59	BEND	END-I	6977.403	9245.303	4863.431	506975.78	299910.72	1438520.86
		CENTER	8653.480	7699.782	4863.431	573955.89	213325.36	1506409.52
		END-J	9935.691	5953.288	4863.431	612011.21	136528.15	1549953.61
60	BEND	END-I	9700.147	6076.314	5281.892	612304.84	173925.21	1546087.75
		CENTER	10562.322	4410.495	5281.892	618672.35	180552.04	1560672.42
		END-J	10112.368	5363.073	5281.892	569486.20	279938.94	1515611.82
61	BEND	END-I	10032.622	5259.997	5524.952	569072.90	281113.45	1515549.53
		CENTER	8852.588	7067.770	5524.952	498157.50	361233.69	1441357.14
		END-J	7116.611	8813.327	5524.952	412659.20	416598.30	1338105.96
62	BEND	END-I	7145.873	8747.834	5620.300	411380.76	415961.38	1338696.89
		CENTER	6666.184	9118.644	5620.300	390975.78	423928.23	1309433.18
		END-J	6189.033	9448.996	5620.300	371340.96	429683.26	1279115.47
63	TANGENT	END-I	6231.700	9202.052	6012.267	370516.33	539493.44	1237059.35
		END-J	6231.700	9202.052	6012.267	370516.33	464091.30	1037294.22
64	TANGENT	END-I	6263.195	9189.184	6086.081	370185.50	461636.30	1038507.16
		END-J	6263.195	9189.184	6086.081	370185.50	418286.19	840568.45
65	BEND	END-I	6298.168	5866.890	9356.595	370525.32	875577.55	338571.92
		CENTER	6037.384	6134.646	9356.595	462528.35	755625.28	341085.67
		END-J	5772.124	6384.816	9356.595	555877.86	612797.94	349829.82
66	BEND	END-I	5791.601	6406.697	9364.798	555284.94	612984.72	350443.67
		CENTER	5562.642	6606.968	9364.798	630402.03	456849.05	365898.24
		END-J	5410.175	6733.827	9364.798	677786.90	306332.48	387102.34
67	BEND	END-I	5411.338	6753.505	9373.345	677985.22	305912.27	387087.16
		CENTER	5362.327	6792.846	9373.345	692654.75	218489.32	413084.97
		END-J	5428.839	6738.786	9373.345	672347.35	279110.01	442120.41

68	BEND	END-I	5427.673	6762.927	9367.379	672630.21	277815.31	442505.63
		CENTER	5595.841	6623.330	9367.379	617942.04	421860.69	473057.58
		END-J	5838.210	6410.815	9367.379	530500.09	579139.89	503393.86
69	TANGENT	END-I	5839.423	7324.902	8672.147	530038.94	531602.79	553801.36
		END-J	5839.423	7324.902	8672.147	530038.94	596025.89	596862.89

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 1 *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	4287.
7090	FY	12268.
7090	FZ	2519.
7090	MX	542461.
7090	MY	326963.
7090	MZ	727848.
3047	FZ	36.
3116	FZ	188.
3210	FX	3864.
3210	FZ	79.
3250	FX	8672.
3250	FY	7325.
3250	FZ	5839.
3250	MX	596863.
3250	MY	596026.
3250	MZ	530039.
3035	FY	19482.
3083	FZ	4417.

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 2 *****
MODAL COMBINATION METHOD 2-GROUPING

NODE NUMBER	DISPLACEMENTS / ROTATIONS						ACCELERATIONS IN G'S		
	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION	X- DIRECTION	Y- DIRECTION	Z- DIRECTION
7090	.45053E-07	.10320E-06	.28643E-07	.41165E-07	.38198E-07	.61886E-07	.000	.000	.000
3001	.11618E-03	.16576E-03	.85224E-04	.54523E-05	.53068E-05	.75676E-05	.003	.003	.003
3005	.16671E-03	.23554E-03	.12637E-03	.93490E-05	.93092E-05	.12598E-04	.004	.004	.004
3010	.25207E-03	.35269E-03	.19802E-03	.16520E-04	.16858E-04	.21521E-04	.006	.006	.006
3011	.44656E-03	.61966E-03	.36687E-03	.35661E-04	.37559E-04	.44156E-04	.010	.011	.011
3012	.96299E-03	.13052E-02	.86029E-03	.64205E-04	.69950E-04	.75034E-04	.022	.024	.024
3019	.23907E-02	.37162E-02	.27575E-02	.11609E-03	.13219E-03	.11466E-03	.055	.072	.074
3021	.32974E-02	.62983E-02	.51486E-02	.14943E-03	.17271E-03	.11127E-03	.078	.130	.139
3023	.34051E-02	.67354E-02	.56230E-02	.15452E-03	.17850E-03	.10730E-03	.081	.140	.151
3024	.38936E-02	.85489E-02	.80055E-02	.17584E-03	.19983E-03	.79200E-04	.094	.190	.213
3026	.45737E-02	.10045E-01	.11241E-01	.19700E-03	.21723E-03	.48037E-04	.111	.246	.292
3028	.53183E-02	.10304E-01	.14684E-01	.21353E-03	.22563E-03	.11865E-03	.128	.292	.372
3030	.66468E-02	.68730E-02	.20638E-01	.23367E-03	.22102E-03	.36140E-03	.154	.337	.497
3032	.79101E-02	.83224E-02	.26150E-01	.24935E-03	.19590E-03	.70335E-03	.176	.342	.597
3035	.89767E-02	.29803E-01	.30715E-01	.27014E-03	.15592E-03	.11402E-02	.189	.332	.668
3037	.97568E-02	.65462E-01	.33960E-01	.30595E-03	.11004E-03	.15980E-02	.197	.362	.708
3038	.10195E-01	.11274E+00	.35653E-01	.35114E-03	.77974E-04	.20038E-02	.197	.430	.720
3040	.10271E-01	.17017E+00	.35725E-01	.39844E-03	.90450E-04	.23603E-02	.192	.519	.708
3044	.10203E-01	.19538E+00	.35320E-01	.41695E-03	.10585E-03	.24883E-02	.188	.557	.697
3047	.10153E-01	.20816E+00	.35037E-01	.42593E-03	.11432E-03	.25482E-02	.186	.575	.691
3050	.10094E-01	.22020E+00	.34730E-01	.43412E-03	.12245E-03	.26020E-02	.184	.592	.684
3053	.10245E-01	.23091E+00	.34361E-01	.44135E-03	.13016E-03	.26508E-02	.182	.607	.677
3056	.11693E-01	.24872E+00	.33395E-01	.45269E-03	.14282E-03	.27278E-02	.178	.630	.660
3059	.12158E-01	.25197E+00	.33174E-01	.45482E-03	.14533E-03	.27426E-02	.177	.634	.657
3062	.15006E-01	.26513E+00	.32111E-01	.46229E-03	.15419E-03	.27943E-02	.174	.651	.639
3065	.24557E-01	.28945E+00	.29461E-01	.47616E-03	.17193E-03	.28932E-02	.170	.679	.598
3068	.31745E-01	.30175E+00	.27744E-01	.48324E-03	.18159E-03	.29447E-02	.170	.693	.571
3071	.51620E-01	.32623E+00	.23424E-01	.49674E-03	.20199E-03	.30476E-02	.180	.720	.508
3074	.56062E-01	.33045E+00	.22517E-01	.49930E-03	.20598E-03	.30671E-02	.184	.724	.495
3077	.60684E-01	.33463E+00	.21585E-01	.50168E-03	.20993E-03	.30859E-02	.188	.729	.482
3080	.12978E+00	.37002E+00	.96404E-02	.52457E-03	.25827E-03	.32898E-02	.286	.763	.334
3083	.17393E+00	.37559E+00	.60272E-02	.53360E-03	.28560E-03	.33864E-02	.360	.768	.286
3086	.18649E+00	.37562E+00	.63721E-02	.53555E-03	.29337E-03	.34097E-02	.381	.768	.280
3089	.22021E+00	.37571E+00	.95642E-02	.53976E-03	.31435E-03	.34691E-02	.437	.768	.280
3092	.28510E+00	.37588E+00	.18571E-01	.54388E-03	.35528E-03	.35724E-02	.540	.767	.328
3095	.32808E+00	.37599E+00	.24885E-01	.54404E-03	.38258E-03	.36336E-02	.604	.767	.378
3098	.33467E+00	.37601E+00	.25854E-01	.54391E-03	.38677E-03	.36427E-02	.614	.767	.386
3100	.41052E+00	.37619E+00	.36899E-01	.53986E-03	.43499E-03	.37383E-02	.719	.767	.485
3101	.48815E+00	.37638E+00	.47871E-01	.53210E-03	.48422E-03	.38247E-02	.823	.767	.588
3104	.49103E+00	.37639E+00	.48271E-01	.53176E-03	.48606E-03	.38278E-02	.827	.767	.592
3107	.53298E+00	.37649E+00	.54018E-01	.52665E-03	.51258E-03	.38706E-02	.882	.767	.643
3110	.59532E+00	.36717E+00	.61404E-01	.51877E-03	.55156E-03	.39379E-02	.966	.757	.694
3113	.64949E+00	.34171E+00	.65887E-01	.51287E-03	.58656E-03	.40007E-02	1.040	.729	.696
3115	.71604E+00	.27220E+00	.67596E-01	.50692E-03	.63729E-03	.41054E-02	1.133	.652	.609
3116	.74700E+00	.15978E+00	.62570E-01	.50449E-03	.68799E-03	.42387E-02	1.176	.542	.410
3119	.74678E+00	.10228E+00	.59594E-01	.50514E-03	.70723E-03	.43005E-02	1.176	.498	.313
3120	.74649E+00	.43388E-01	.58037E-01	.50833E-03	.72717E-03	.43784E-02	1.175	.465	.260
3122	.74619E+00	.75526E-01	.59365E-01	.51417E-03	.74192E-03	.44560E-02	1.175	.466	.321
3123	.72186E+00	.17290E+00	.63924E-01	.52468E-03	.75567E-03	.45644E-02	1.141	.522	.481
3125	.65839E+00	.25273E+00	.69157E-01	.53541E-03	.76256E-03	.46500E-02	1.052	.596	.605
3128	.55667E+00	.30435E+00	.73501E-01	.54663E-03	.76497E-03	.47076E-02	.910	.651	.655
3198	.45373E+00	.30866E+00	.73872E-01	.55556E-03	.76378E-03	.47144E-02	.762	.656	.612

3199	.35985E+00	.29380E+00	.72949E-01	.56211E-03	.76105E-03	.46802E-02	.620	.640	.542
3200	.26695E+00	.27909E+00	.73448E-01	.56692E-03	.75760E-03	.46048E-02	.472	.625	.497
3205	.17312E+00	.26407E+00	.75514E-01	.56983E-03	.75292E-03	.44817E-02	.315	.608	.495
3208	.84792E-01	.24999E+00	.79043E-01	.57076E-03	.74699E-03	.43168E-02	.162	.591	.545
3210	.71517E-03	.23648E+00	.83949E-01	.57046E-03	.73950E-03	.41063E-02	.064	.573	.637
3212	.77976E-01	.20235E+00	.86790E-01	.56916E-03	.72429E-03	.37181E-02	.204	.514	.754
3215	.12222E+00	.14527E+00	.83758E-01	.57097E-03	.70061E-03	.32868E-02	.308	.403	.846
3220	.13206E+00	.75911E-01	.74509E-01	.57852E-03	.65844E-03	.27422E-02	.334	.279	.899
3222	.95137E-01	.14868E-01	.55128E-01	.58640E-03	.57250E-03	.19467E-02	.262	.222	.827
3225	.55911E-01	.11464E-01	.38839E-01	.57013E-03	.49073E-03	.13548E-02	.214	.221	.647
3230	.47685E-01	.11090E-01	.35189E-01	.56096E-03	.46983E-03	.12183E-02	.205	.218	.592
3235	.25187E-01	.98693E-02	.23807E-01	.52407E-03	.39761E-03	.92948E-03	.173	.205	.406
3237	.85083E-02	.95917E-02	.13322E-01	.46572E-03	.32798E-03	.68973E-03	.136	.192	.234
3238	.18739E-02	.83882E-02	.69013E-02	.38944E-03	.28254E-03	.49029E-03	.103	.165	.126
3240	.25718E-02	.54990E-02	.25442E-02	.29614E-03	.23055E-03	.32683E-03	.063	.111	.049
3243	.18638E-02	.23309E-02	.45771E-03	.18472E-03	.15727E-03	.19068E-03	.026	.051	.010
3245	.38326E-03	.34602E-03	.16176E-04	.56513E-04	.52526E-04	.68110E-04	.004	.009	.000
3250	.72966E-07	.62980E-07	.40839E-07	.49179E-07	.47241E-07	.44102E-07	.000	.000	.000

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 2 *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	4653.318	9968.147	3739.190	100826.57	415521.95	718026.27
		END-J	4653.318	9968.147	3739.190	100826.57	348483.19	531368.39
2	TANGENT	END-I	4650.383	9969.400	3738.936	100694.66	348514.98	531372.51
		END-J	4650.383	9969.400	3738.936	100694.66	332632.62	486642.19
3	TANGENT	END-I	4650.299	9969.044	3737.789	100694.66	332632.62	486642.19
		END-J	4650.299	9969.044	3737.789	100694.66	316849.09	441923.01
4	TANGENT	END-I	4643.028	9977.534	3722.578	102506.69	316734.98	441588.25
		END-J	4643.028	9977.534	3722.578	102506.69	298956.79	390632.75
5	TANGENT	END-I	4652.184	9970.983	3724.586	102196.50	298913.01	390747.49
		END-J	4652.184	9970.983	3724.586	102196.50	269519.43	305528.33
6	BEND	END-I	4646.409	9586.573	4614.942	101476.14	276102.21	299715.29
		CENTER	3603.483	10025.317	4614.942	100906.95	239541.20	212360.11
		END-J	3065.476	10202.661	4614.942	109834.33	202149.33	127451.90
7	BEND	END-I	3049.738	10130.065	4734.305	109827.88	200604.86	129874.10
		CENTER	3278.349	10058.373	4734.305	119299.94	171679.70	77760.71
		END-J	4008.863	9790.722	4734.305	126401.01	151721.55	89625.17
8	BEND	END-I	3953.816	9380.146	5504.947	126729.74	147424.38	96098.42
		CENTER	4102.959	9315.976	5504.947	127340.74	146759.58	102226.42
		END-J	4257.219	9246.492	5504.947	127808.18	146759.90	109533.39
9	TANGENT	END-I	4256.594	10301.088	3057.401	127695.82	146124.41	110515.21
		END-J	4256.594	10301.088	3057.401	127695.82	108820.87	241832.27
10	TANGENT	END-I	4248.272	10290.495	2959.164	127522.59	108820.87	241923.66
		END-J	4248.272	10290.495	2959.164	127522.59	67298.41	402355.17
11	TANGENT	END-I	4237.647	10277.761	2814.413	127522.59	67298.41	402355.17
		END-J	4237.647	10277.761	2814.413	127522.59	38266.38	562728.91
12	TANGENT	END-I	4222.416	10263.028	2568.534	127861.10	38266.38	562652.06
		END-J	4222.416	10263.028	2568.534	127861.10	64737.18	836308.68
13	TANGENT	END-I	4203.785	10259.152	2156.682	128246.59	64737.18	836249.70
		END-J	4203.785	10259.152	2156.682	128246.59	115603.11	1109479.61
14	TANGENT	END-I	4185.996	10284.819	1674.309	127896.44	115603.11	1109520.05
		END-J	4185.996	10284.819	1674.309	127896.44	156329.25	1383198.26
15	TANGENT	END-I	4167.876	6542.091	1183.363	127796.03	156329.25	1383207.50
		END-J	4167.876	6542.091	1183.363	127796.03	182795.11	1232078.28
16	TANGENT	END-I	4149.608	6351.203	829.503	128274.52	182795.11	1232028.58
		END-J	4149.608	6351.203	829.503	128274.52	194003.29	1090087.25
17	TANGENT	END-I	4131.592	6070.610	883.684	127932.03	194003.29	1090127.52

		END-J	4131.592	6070.610	883.684	127932.03	190577.60	960280.80
18	TANGENT	END-I	4119.063	5804.780	1142.212	128393.71	190577.60	960219.22
		END-J	4119.063	5804.780	1142.212	128393.71	185711.74	912968.39
19	TANGENT	END-I	4112.177	5681.385	1284.311	124542.84	185711.74	913501.78
		END-J	4112.177	5681.385	1284.311	124542.84	182669.94	891375.78
20	TANGENT	END-I	4108.615	5600.148	1359.392	128196.45	182669.94	890857.61
		END-J	4108.615	5600.148	1359.392	128196.45	179684.86	871005.56
21	BEND	END-I	4105.939	5524.256	1440.749	128755.66	179684.86	870923.04
		CENTER	4045.530	5568.617	1440.749	126610.72	179777.09	862319.59
		END-J	3989.372	5608.947	1440.749	124656.77	179732.02	853527.80
22	BEND	END-I	3980.349	5531.867	1492.169	124887.55	191439.65	850945.71
		CENTER	3898.373	5590.021	1492.169	123786.90	189557.62	836256.34
		END-J	3830.359	5636.892	1492.169	123374.57	187289.12	821132.44
23	BEND	END-I	3829.746	4565.332	3544.130	127974.23	428315.89	724381.60
		CENTER	3815.606	4577.176	3544.130	123318.15	428069.97	722077.41
		END-J	3801.730	4588.710	3544.130	118707.53	427765.89	719757.14
24	BEND	END-I	3785.328	5540.136	1613.864	125480.22	205383.68	810675.47
		CENTER	3750.953	5563.446	1613.864	127401.08	201941.57	799269.52
		END-J	3724.013	5581.501	1613.864	129617.30	198313.33	787696.21
25	BEND	END-I	3687.209	5455.790	1791.727	124969.31	174955.04	793955.75
		CENTER	3642.796	5485.521	1791.727	125069.90	170486.57	771859.75
		END-J	3632.099	5492.624	1791.727	126046.28	165603.01	749247.73
26	BEND	END-I	3591.045	5333.286	2027.717	136455.58	177150.18	744767.11
		CENTER	3588.126	5335.306	2027.717	133922.44	176350.28	732897.68
		END-J	3594.822	5330.716	2027.717	131632.21	175422.77	720925.71
27	BEND	END-I	3523.086	5262.340	2036.977	133972.57	163794.96	723231.21
		CENTER	3559.863	5237.484	2036.977	139303.37	154112.36	697522.35
		END-J	3636.426	5184.609	2036.977	144551.23	144685.33	671614.22
28	BEND	END-I	3540.759	4852.339	2665.178	137642.46	247651.46	642351.76
		CENTER	3562.154	4836.682	2665.178	141858.34	243516.97	637751.78
		END-J	3584.559	4820.145	2665.178	146023.15	239320.23	633152.77
29	BEND	END-I	3542.376	5048.879	2188.414	146105.17	169011.33	655413.46
		CENTER	3556.927	5038.612	2188.414	145421.62	168636.67	650572.47
		END-J	3572.810	5027.402	2188.414	144757.29	168268.79	645734.38
30	BEND	END-I	3373.644	4873.136	2366.627	146425.95	137880.03	652528.24
		CENTER	3614.885	4696.788	2366.627	154589.15	122136.44	596044.00
		END-J	3961.550	4408.317	2366.627	157828.92	120486.81	542779.43
31	BEND	END-I	3516.493	4226.443	2592.326	155367.60	112848.97	545126.12
		CENTER	3702.693	4064.413	2592.326	156539.42	117703.46	519760.65
		END-J	3890.835	3884.483	2592.326	156152.58	127382.82	496521.73
32	TANGENT	END-I	3680.530	1830.193	3592.820	156217.99	500099.89	112525.40
		END-J	3680.530	1830.193	3592.820	156217.99	488485.51	109435.54
33	TANGENT	END-I	3524.112	1793.208	3532.766	153365.94	489388.42	109435.54
		END-J	3524.112	1793.208	3532.766	153365.94	459638.72	103233.65

34	TANGENT	END-I END-J	3197.965 3197.965	1705.160 1705.160	3388.491 3388.491	154947.39 154947.39	459108.00 407980.33	103233.65 99971.67
35	TANGENT	END-I END-J	2860.088 2860.088	1560.593 1560.593	3194.145 3194.145	154476.08 154476.08	408158.98 379336.96	99971.67 102591.53
36	TANGENT	END-I END-J	2711.673 2711.673	1483.522 1483.522	3096.205 3096.205	155368.92 155368.92	378972.15 374935.65	102591.53 103228.45
37	TANGENT	END-I END-J	2480.104 2480.104	1354.095 1354.095	2940.859 2940.859	154814.36 154814.36	375165.00 336168.23	103228.45 113094.44
38	TANGENT	END-I END-J	2093.284 2093.284	1047.094 1047.094	2618.223 2618.223	154934.37 154934.37	336112.98 311943.80	113094.44 123306.63
39	TANGENT	END-I END-J	1918.601 1918.601	865.870 865.870	2443.607 2443.607	161536.36 161536.36	308576.45 308006.50	123306.63 123627.03
40	TANGENT	END-I END-J	1837.924 1837.924	763.398 763.398	2357.965 2357.965	155275.22 155275.22	311210.15 305518.45	123627.03 127412.87
41	BEND	END-I CENTER END-J	1681.992 1800.534 1925.080	2175.291 2078.769 1965.082	552.906 552.906 552.906	155138.13 146854.63 137385.34	128989.50 139517.14 150462.42	304930.61 305120.20 307170.28
42	BEND	END-I CENTER END-J	1794.526 1891.251 1978.064	1852.363 1754.054 1655.803	431.822 431.822 431.822	137555.12 128661.76 120355.72	150275.07 157167.95 162957.05	307185.71 312334.54 318036.41
43	BEND	END-I CENTER END-J	1993.283 2092.302 2140.010	1662.742 1534.719 1465.120	641.256 641.256 641.256	120437.57 110336.76 106294.94	163212.13 164191.57 161242.07	317874.74 328940.54 338148.90
44	BEND	END-I CENTER END-J	2558.761 2542.725 2422.460	1646.814 1672.406 1844.513	1088.835 1088.835 1088.835	106362.12 109088.87 115325.64	160650.87 145610.92 129410.37	338408.88 344342.99 343619.76
45	TANGENT	END-I END-J	2998.001 2998.001	2085.662 2085.662	1303.120 1303.120	115307.80 115307.80	119822.61 107631.68	347077.33 340256.27
46	TANGENT	END-I END-J	3506.380 3506.380	2267.804 2267.804	1414.316 1414.316	115291.87 115291.87	107631.68 93213.26	340261.66 332821.05
47	TANGENT	END-I END-J	4120.885 4120.885	2455.295 2455.295	1443.148 1443.148	115291.24 115291.24	93213.26 82507.77	332821.29 329414.64
48	BEND	END-I CENTER END-J	4873.404 4657.327 4290.720	2672.238 3032.075 3531.783	1346.913 1346.913 1346.913	115292.92 106761.34 92301.83	70028.37 80365.98 100230.23	332290.29 327484.79 314350.76
49	BEND	END-I CENTER END-J	5154.090 4663.036 4086.508	3785.081 4376.736 4919.946	1130.314 1130.314 1130.314	92304.20 74563.18 55387.24	100331.96 117377.62 132704.16	314317.61 292970.96 267136.33
50	BEND	END-I CENTER END-J	4871.774 4113.251 3457.357	5305.131 5912.245 6317.893	928.516 928.516 928.516	55160.08 39675.58 43119.37	133086.32 140278.31 142352.58	266993.47 233351.91 206726.79
51	BEND	END-I	3961.666	6868.117	818.696	43269.38	142186.34	206810.11

		CENTER	3488.798	7120.067	818.696	60209.02	134402.57	194697.65
		END-J	3426.691	7150.819	818.696	80332.27	122673.10	205363.28
52	TANGENT	END-I	3626.185	7399.193	2308.663	80293.76	125122.16	203843.86
		END-J	3626.185	7399.193	2308.663	80293.76	123829.45	283349.46
53	TANGENT	END-I	3847.882	7792.898	2530.976	80329.11	124233.03	283162.35
		END-J	3847.882	7792.898	2530.976	80329.11	138192.57	408878.52
54	TANGENT	END-I	4096.673	8107.975	2707.645	80515.69	138010.22	408903.40
		END-J	4096.673	8107.975	2707.645	80515.69	168621.47	560092.73
55	TANGENT	END-I	4368.475	8328.390	2841.420	80350.98	167874.59	560340.67
		END-J	4368.475	8328.390	2841.420	80350.98	209421.56	717874.13
56	TANGENT	END-I	4653.384	8450.614	2960.461	80336.51	209427.01	717874.13
		END-J	4653.384	8450.614	2960.461	80336.51	259141.35	881065.08
57	BEND	END-I	4524.403	8640.405	1731.583	80231.00	92919.51	913689.08
		CENTER	3454.536	9120.963	1731.583	93280.17	90801.80	992252.50
		END-J	3572.209	9075.375	1731.583	104364.74	93083.65	1070807.66
58	BEND	END-I	3537.713	9185.399	1955.845	104391.02	93222.65	1070793.07
		CENTER	4529.214	8739.164	1955.845	113718.28	98805.49	1141719.66
		END-J	5928.315	7857.711	1955.845	122654.22	105386.76	1204656.31
59	BEND	END-I	5719.395	8017.724	2265.273	122147.59	105316.43	1204714.01
		CENTER	7238.254	6679.950	2265.273	132772.58	111224.90	1263047.81
		END-J	8419.685	5109.208	2265.273	144542.21	114565.68	1301240.76
60	BEND	END-I	8211.122	5327.290	2680.245	144791.20	148978.53	1297723.64
		CENTER	9056.488	3712.514	2680.245	182772.99	128257.23	1312159.51
		END-J	8763.147	4361.659	2680.245	213302.34	100539.76	1275968.91
61	BEND	END-I	8682.819	4276.542	3198.949	212617.30	102402.01	1275934.95
		CENTER	7715.593	5843.853	3198.949	227830.10	86866.91	1214195.00
		END-J	6229.991	7407.221	3198.949	232500.84	92898.17	1127281.45
62	BEND	END-I	6241.084	7358.665	3426.166	230453.58	92917.04	1127699.44
		CENTER	5823.695	7693.165	3426.166	231789.12	94755.15	1102957.89
		END-J	5403.778	7993.787	3426.166	232480.49	98003.71	1077295.84
63	TANGENT	END-I	5427.552	7735.180	4069.336	230787.37	311819.14	1036203.30
		END-J	5427.552	7735.180	4069.336	230787.37	297425.37	868712.70
64	TANGENT	END-I	5441.355	7728.137	4246.229	230524.26	294375.26	869820.89
		END-J	5441.355	7728.137	4246.229	230524.26	311113.94	704170.46
65	BEND	END-I	5463.515	3982.659	7917.208	230749.12	735392.52	227468.56
		CENTER	5510.628	3916.446	7917.208	324531.04	635658.71	256790.93
		END-J	5459.589	3987.398	7917.208	416651.60	514341.16	284863.19
66	BEND	END-I	5468.760	4037.212	7924.997	416037.49	514576.92	285334.61
		CENTER	5328.012	4222.172	7924.997	489995.27	377633.39	312357.62
		END-J	5110.907	4484.639	7924.997	538891.51	234742.65	337797.64
67	BEND	END-I	5108.165	4515.419	7932.842	539109.98	234259.34	337784.39
		CENTER	4835.664	4806.589	7932.842	559398.56	121681.24	362064.10
		END-J	4542.850	5082.927	7932.842	549383.72	168136.46	385000.92

68	BEND	END-I	4544.065	5106.274	7927.397	549573.63	166975.82	385234.87
		CENTER	4277.305	5330.629	7927.397	509751.85	303752.61	407087.78
		END-J	4084.295	5479.957	7927.397	441384.75	445658.14	427705.27
69	TANGENT	END-I	4083.845	6297.971	7296.605	441017.48	412007.19	460561.79
		END-J	4083.845	6297.971	7296.605	441017.48	472406.99	491794.93

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 2 *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	4505.
7090	FY	10320.
7090	FZ	2864.
7090	MX	411654.
7090	MY	381979.
7090	MZ	618854.
3047	FZ	21.
3116	FZ	38.
3210	FX	3576.
3210	FZ	50.
3250	FX	7297.
3250	FY	6298.
3250	FZ	4084.
3250	MX	491795.
3250	MY	472407.
3250	MZ	441017.
3035	FY	16437.
3083	FZ	3324.

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 3 *****
MODAL COMBINATION METHOD 2-GROUPING

NODE NUMBER	DISPLACEMENTS / ROTATIONS			ACCELERATIONS IN G'S		
	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	.53481E-07	.77934E-07	.48356E-07	.51717E-07	.48588E-07	.42557E-07
3001	.81652E-04	.11449E-03	.11041E-03	.74775E-05	.66725E-05	.53216E-05
3005	.11928E-03	.16322E-03	.16992E-03	.13354E-04	.11906E-04	.89432E-05
3010	.18446E-03	.24539E-03	.27688E-03	.24651E-04	.21945E-04	.15465E-04
3011	.33634E-03	.43309E-03	.53656E-03	.56351E-04	.49998E-04	.32381E-04
3012	.77735E-03	.92376E-03	.13595E-02	.10768E-03	.95231E-04	.56556E-04
3019	.22104E-02	.26264E-02	.46622E-02	.22166E-03	.19050E-03	.94581E-04
3021	.33850E-02	.43716E-02	.86289E-02	.32113E-03	.26107E-03	.11024E-03
3023	.35537E-02	.46611E-02	.93741E-02	.33887E-03	.27209E-03	.11196E-03
3024	.43502E-02	.58733E-02	.13120E-01	.42093E-03	.31555E-03	.12015E-03
3026	.54851E-02	.69520E-02	.18368E-01	.52076E-03	.35826E-03	.14217E-03
3028	.67634E-02	.74355E-02	.24191E-01	.62067E-03	.39030E-03	.19325E-03
3030	.91706E-02	.79182E-02	.34980E-01	.79220E-03	.42271E-03	.35701E-03
3032	.11698E-01	.14403E-01	.46185E-01	.96564E-03	.43169E-03	.60567E-03
3035	.14185E-01	.31331E-01	.57196E-01	.11424E-02	.42511E-03	.93148E-03
3037	.16529E-01	.59511E-01	.67562E-01	.13208E-02	.41375E-03	.12610E-02
3038	.18672E-01	.95801E-01	.77013E-01	.14974E-02	.41087E-03	.15253E-02
3040	.20595E-01	.13816E+00	.85527E-01	.16721E-02	.42880E-03	.17337E-02
3044	.21308E-01	.15621E+00	.88675E-01	.17407E-02	.44321E-03	.18035E-02
3047	.21639E-01	.16524E+00	.90179E-01	.17742E-02	.45179E-03	.18354E-02
3050	.21948E-01	.17369E+00	.91547E-01	.18050E-02	.46057E-03	.18637E-02
3053	.22230E-01	.18114E+00	.92451E-01	.18319E-02	.46962E-03	.18890E-02
3056	.22819E-01	.19342E+00	.92630E-01	.18757E-02	.48641E-03	.19290E-02
3059	.22960E-01	.19565E+00	.92500E-01	.18838E-02	.48990E-03	.19367E-02
3062	.23773E-01	.20463E+00	.91317E-01	.19156E-02	.50380E-03	.19635E-02
3065	.27004E-01	.22101E+00	.86516E-01	.19751E-02	.53413E-03	.20152E-02
3068	.30062E-01	.22920E+00	.82623E-01	.20065E-02	.55188E-03	.20425E-02
3071	.40316E-01	.24534E+00	.71265E-01	.20721E-02	.59300E-03	.20984E-02
3074	.42839E-01	.24810E+00	.68634E-01	.20847E-02	.60123E-03	.21093E-02
3077	.45525E-01	.25082E+00	.65882E-01	.20971E-02	.60965E-03	.21199E-02
3080	.89105E-01	.27363E+00	.22562E-01	.22417E-02	.71847E-03	.22413E-02
3083	.11821E+00	.27724E+00	.89530E-02	.23184E-02	.78067E-03	.23036E-02
3086	.12655E+00	.27729E+00	.16862E-01	.23374E-02	.79795E-03	.23189E-02
3089	.14906E+00	.27742E+00	.39675E-01	.23842E-02	.84460E-03	.23588E-02
3092	.19263E+00	.27770E+00	.84324E-01	.24585E-02	.93427E-03	.24290E-02
3095	.22163E+00	.27788E+00	.11397E+00	.24972E-02	.99344E-03	.24707E-02
3098	.22608E+00	.27791E+00	.11851E+00	.25025E-02	.10025E-02	.24768E-02
3100	.27737E+00	.27823E+00	.17062E+00	.25517E-02	.11059E-02	.25410E-02
3101	.32996E+00	.27854E+00	.22349E+00	.25829E-02	.12103E-02	.25974E-02
3104	.33192E+00	.27856E+00	.22543E+00	.25838E-02	.12141E-02	.25994E-02
3107	.36035E+00	.27873E+00	.25373E+00	.25936E-02	.12699E-02	.26269E-02
3110	.40262E+00	.27343E+00	.29600E+00	.26026E-02	.13514E-02	.26699E-02
3113	.43933E+00	.25869E+00	.33361E+00	.26055E-02	.14231E-02	.27111E-02
3115	.48442E+00	.21907E+00	.38285E+00	.26044E-02	.15240E-02	.27830E-02
3116	.50543E+00	.16033E+00	.41527E+00	.26015E-02	.16200E-02	.28797E-02
3119	.50534E+00	.13578E+00	.42340E+00	.26009E-02	.16550E-02	.29249E-02
3120	.50521E+00	.11764E+00	.43526E+00	.26017E-02	.16902E-02	.29808E-02
3122	.50508E+00	.12157E+00	.44889E+00	.26041E-02	.17152E-02	.30341E-02
3123	.48889E+00	.15735E+00	.45614E+00	.26086E-02	.17374E-02	.31039E-02
3125	.44648E+00	.19887E+00	.44143E+00	.26088E-02	.17486E-02	.31546E-02
3128	.37850E+00	.22880E+00	.40491E+00	.25944E-02	.17556E-02	.31868E-02
3198	.30953E+00	.23119E+00	.35900E+00	.25602E-02	.17604E-02	.31921E-02

3199	.24637E+00	.22175E+00	.31427E+00	.25109E-02	.17640E-02	.31768E-02	.642	1.188	1.293
3200	.18356E+00	.21229E+00	.27292E+00	.24421E-02	.17672E-02	.31411E-02	.521	1.176	1.274
3205	.11961E+00	.20245E+00	.23542E+00	.23497E-02	.17686E-02	.30823E-02	.367	1.157	1.269
3208	.58777E-01	.19303E+00	.20615E+00	.22384E-02	.17678E-02	.30040E-02	.193	1.134	1.282
3210	.18496E-02	.18375E+00	.18622E+00	.21062E-02	.17636E-02	.29054E-02	.090	1.105	1.315
3212	.56335E-01	.15947E+00	.16942E+00	.18832E-02	.17398E-02	.27171E-02	.311	1.001	1.305
3215	.88758E-01	.11755E+00	.15249E+00	.16667E-02	.16862E-02	.24745E-02	.472	.789	1.205
3220	.95852E-01	.65783E-01	.13110E+00	.14399E-02	.15724E-02	.21107E-02	.503	.503	1.027
3222	.67357E-01	.23250E-01	.95325E-01	.11865E-02	.13131E-02	.14854E-02	.369	.261	.757
3225	.38418E-01	.18780E-01	.66069E-01	.10291E-02	.10502E-02	.98997E-03	.314	.231	.557
3230	.32585E-01	.18504E-01	.59599E-01	.99231E-03	.98179E-03	.87902E-03	.308	.229	.509
3235	.17141E-01	.17852E-01	.39940E-01	.89663E-03	.76688E-03	.65608E-03	.279	.223	.358
3237	.72588E-02	.17368E-01	.22355E-01	.78204E-03	.56341E-03	.48449E-03	.230	.212	.216
3238	.49642E-02	.15008E-01	.11697E-01	.64992E-03	.42571E-03	.34953E-03	.175	.187	.124
3240	.37573E-02	.98803E-02	.43972E-02	.49755E-03	.29863E-03	.24017E-03	.106	.134	.052
3243	.18862E-02	.43036E-02	.80757E-03	.31664E-03	.17681E-03	.14428E-03	.044	.066	.011
3245	.32577E-03	.70908E-03	.35138E-04	.10017E-03	.52637E-04	.52068E-04	.008	.014	.000
3250	.78649E-07	.16002E-06	.88712E-07	.88847E-07	.45429E-07	.33714E-07	.000	.000	.000

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 3 *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	7502.829	6847.489	3088.200	187919.75	622999.48	511146.66
		END-J	7502.829	6847.489	3088.200	187919.75	575264.49	385554.43
2	TANGENT	END-I	7502.348	6847.993	3087.559	187978.97	575231.91	385574.28
		END-J	7502.348	6847.993	3087.559	187978.97	564073.93	355759.30
3	TANGENT	END-I	7502.256	6847.728	3086.765	187978.97	564073.93	355759.30
		END-J	7502.256	6847.728	3086.765	187978.97	553041.00	326120.87
4	TANGENT	END-I	7492.249	6851.075	3102.214	189085.13	553481.72	324730.16
		END-J	7492.249	6851.075	3102.214	189085.13	540949.88	291167.64
5	TANGENT	END-I	7496.544	6847.973	3095.597	188582.08	540883.60	291616.82
		END-J	7496.544	6847.973	3095.597	188582.08	520384.19	236444.17
6	BEND	END-I	7498.717	6458.477	3825.040	188406.33	519117.93	239196.94
		CENTER	7132.339	6860.920	3825.040	238199.58	472141.01	190450.78
		END-J	6730.035	7256.076	3825.040	294168.00	413842.63	145031.84
7	BEND	END-I	6722.247	7227.971	3851.734	296331.14	409994.20	151417.38
		CENTER	6377.006	7534.294	3851.734	341078.39	353029.03	124358.87
		END-J	6069.142	7785.071	3851.734	379050.65	292817.19	120153.83
8	BEND	END-I	6102.934	7586.099	4145.245	377679.86	284616.59	142160.04
		CENTER	6051.546	7627.261	4145.245	383082.91	275217.03	142367.33
		END-J	6001.894	7666.492	4145.245	388226.52	265979.95	143300.63
9	TANGENT	END-I	5997.255	7782.430	3899.568	388295.62	283193.47	105020.43
		END-J	5997.255	7782.430	3899.568	388295.62	240203.34	201457.36
10	TANGENT	END-I	5994.433	7776.382	3829.472	388275.48	240203.34	201496.07
		END-J	5994.433	7776.382	3829.472	388275.48	193097.45	321626.58
11	TANGENT	END-I	5993.575	7770.728	3718.163	388275.48	193097.45	321626.58
		END-J	5993.575	7770.728	3718.163	388275.48	155615.85	442388.64
12	TANGENT	END-I	5994.088	7769.336	3522.764	388305.86	155615.85	442362.04
		END-J	5994.088	7769.336	3522.764	388305.86	130753.69	649130.26
13	TANGENT	END-I	5992.690	7794.779	3188.913	388337.93	130753.69	649111.09
		END-J	5992.690	7794.779	3188.913	388337.93	159681.41	856526.34
14	TANGENT	END-I	5988.498	7870.175	2780.934	388310.25	159681.41	856538.89
		END-J	5988.498	7870.175	2780.934	388310.25	210155.14	1065873.52
15	TANGENT	END-I	5984.161	10337.818	2308.369	388302.67	210155.14	1065876.24
		END-J	5984.161	10337.818	2308.369	388302.67	259650.43	873988.59
16	TANGENT	END-I	5979.900	9948.849	1793.592	388341.00	259650.43	873971.55
		END-J	5979.900	9948.849	1793.592	388341.00	299693.83	739002.64
17	TANGENT	END-I	5973.793	9384.906	1287.932	388312.85	299693.83	739017.40

		END-J	5973.793	9384.906	1287.932	388312.85	327250.56	682647.60
18	TANGENT	END-I	5969.651	8868.630	987.158	388349.15	327250.56	682626.87
		END-J	5969.651	8868.630	987.158	388349.15	334434.64	683364.44
19	TANGENT	END-I	5965.524	8632.506	911.006	388070.86	334434.64	683522.67
		END-J	5965.524	8632.506	911.006	388070.86	337292.42	688136.84
20	TANGENT	END-I	5971.008	8478.396	874.930	388324.68	337292.42	687993.50
		END-J	5971.008	8478.396	874.930	388324.68	339495.85	694499.82
21	BEND	END-I	5970.087	8335.617	844.889	388363.79	339495.85	694477.92
		CENTER	6178.564	8182.299	844.889	386012.27	342952.33	697741.39
		END-J	6386.599	8020.934	844.889	383520.13	346535.05	701044.51
22	BEND	END-I	6385.575	7835.052	812.151	383364.02	339030.73	704792.70
		CENTER	6709.412	7559.722	812.151	379066.10	344182.06	710199.21
		END-J	7024.679	7267.741	812.151	374447.07	349591.68	715456.88
23	BEND	END-I	6975.058	6041.530	3929.345	374777.90	557181.50	568669.20
		CENTER	7025.213	5983.221	3929.345	374001.03	558707.42	568840.13
		END-J	7074.637	5924.627	3929.345	373297.92	560184.03	569005.90
24	BEND	END-I	7121.709	6868.766	995.664	371978.32	342819.68	721834.37
		CENTER	7313.407	6664.160	995.664	368559.32	346026.46	725257.94
		END-J	7498.076	6455.728	995.664	365017.89	349330.43	728478.03
25	BEND	END-I	7447.984	6224.519	876.832	364676.99	367207.57	719800.44
		CENTER	7781.046	5802.727	876.832	357627.72	373744.45	723905.84
		END-J	8075.967	5384.796	876.832	350735.60	379891.40	726713.18
26	BEND	END-I	7947.034	5180.888	1070.105	349014.99	409142.62	711495.69
		CENTER	8079.762	4971.319	1070.105	345791.19	411338.32	712051.97
		END-J	8199.402	4771.510	1070.105	342912.01	413184.80	712145.93
27	BEND	END-I	8020.879	4651.371	1083.355	342791.14	375157.74	732956.79
		CENTER	8202.689	4322.793	1083.355	334917.08	380287.02	730841.66
		END-J	8323.234	4085.933	1083.355	327816.11	384629.87	726202.62
28	BEND	END-I	8158.657	3846.642	1619.691	330285.02	390235.48	722079.55
		CENTER	8167.850	3827.292	1619.691	327763.84	392328.06	720561.41
		END-J	8174.439	3813.239	1619.691	325265.15	394393.36	718934.00
29	BEND	END-I	8109.376	3943.070	1289.894	325851.17	414081.58	707506.60
		CENTER	8118.549	3924.332	1289.894	325337.60	413731.83	706217.96
		END-J	8125.319	3910.244	1289.894	324903.49	413319.31	704835.12
30	BEND	END-I	7733.514	3926.464	1306.789	323941.19	387663.02	719701.94
		CENTER	7538.284	4289.305	1306.789	314694.74	388762.19	690570.41
		END-J	7059.206	5038.953	1306.789	313305.47	384574.57	648742.56
31	BEND	END-I	6351.945	5176.638	1341.988	315139.03	387189.97	646294.25
		CENTER	5979.759	5602.522	1341.988	316275.76	384366.29	618246.49
		END-J	5570.549	6009.427	1341.988	319452.93	380261.70	588120.57
32	TANGENT	END-I	5241.980	4512.607	5971.598	319396.76	561420.39	418749.64
		END-J	5241.980	4512.607	5971.598	319396.76	543442.73	405450.93
33	TANGENT	END-I	5005.245	4478.647	5970.983	321440.16	542236.62	405450.93
		END-J	5005.245	4478.647	5970.983	321440.16	496373.76	371290.30

34	TANGENT	END-I END-J	4539.591 4539.591	4354.300 4354.300	5956.159 5956.159	320439.39 320439.39	497020.33 419868.27	371290.30 314491.58
35	TANGENT	END-I END-J	4081.182 4081.182	4129.651 4129.651	5908.271 5908.271	320633.50 320633.50	419720.12 379285.45	314491.58 283965.18
36	TANGENT	END-I END-J	3899.940 3899.940	3995.847 3995.847	5877.663 5877.663	320414.81 320414.81	379470.22 374161.05	283965.18 279845.96
37	TANGENT	END-I END-J	3627.288 3627.288	3786.871 3786.871	5830.100 5830.100	320535.11 320535.11	374057.99 333633.87	279845.96 242505.88
38	TANGENT	END-I END-J	3273.121 3273.121	3273.255 3273.255	5698.159 5698.159	320550.18 320550.18	333619.40 335645.37	242505.88 221683.18
39	TANGENT	END-I END-J	3251.087 3251.087	2875.069 2875.069	5610.163 5610.163	323909.34 323909.34	332404.44 333223.11	221683.18 221203.66
40	TANGENT	END-I END-J	3155.814 3155.814	2788.792 2788.792	5565.274 5565.274	320634.67 320634.67	336375.59 354982.65	221203.66 214966.78
41	BEND	END-I CENTER END-J	3178.464 3410.809 3731.878	5470.166 5328.493 5109.113	2365.211 2365.211 2365.211	320531.40 297458.24 269903.39	214494.79 239634.95 266351.17	355365.19 375436.06 396579.29
42	BEND	END-I CENTER END-J	4042.658 4394.377 4723.088	4801.042 4481.552 4133.749	2030.911 2030.911 2030.911	270177.90 241845.58 212362.93	264776.16 284547.07 301591.65	397445.84 415908.11 432585.08
43	BEND	END-I CENTER END-J	5171.350 5497.320 5628.586	3668.916 3158.985 2917.805	1904.240 1904.240 1904.240	212432.63 168445.70 138574.31	302558.13 313275.40 312436.82	431875.44 447024.78 452028.31
44	BEND	END-I CENTER END-J	5976.338 5596.508 4934.797	2931.671 3604.607 4468.680	2301.886 2301.886 2301.886	138738.25 135464.88 158881.29	311110.54 281196.88 237765.60	452891.88 431190.97 393978.68
45	TANGENT	END-I END-J	4868.531 4868.531	5245.073 5245.073	2571.169 2571.169	159043.07 159043.07	227807.15 194489.37	399750.51 347555.91
46	TANGENT	END-I END-J	4873.960 4873.960	5809.888 5809.888	2827.823 2827.823	159178.02 159178.02	194489.37 149193.85	347494.10 287090.88
47	TANGENT	END-I END-J	4934.971 4934.971	6438.611 6438.611	3060.291 3060.291	159183.03 159183.03	149193.85 106882.28	287088.12 252446.59
48	BEND	END-I CENTER END-J	5077.433 4086.575 3477.366	7306.822 7903.323 8189.609	2935.689 2935.689 2935.689	159173.25 154721.28 140785.75	104755.01 97572.94 121008.02	253341.79 254168.01 280144.97
49	BEND	END-I CENTER END-J	3949.891 4221.347 4999.302	8816.504 8690.275 8267.699	3059.064 3059.064 3059.064	140647.36 120125.89 96476.33	121124.33 155869.01 191663.83	280164.23 325547.50 382352.57
50	BEND	END-I CENTER END-J	5846.983 6944.835 7971.120	8636.490 7780.704 6725.115	3247.835 3247.835 3247.835	97402.88 79440.79 91230.01	195097.66 227030.38 249950.02	380375.87 443945.73 500472.05
51	BEND	END-I	8846.571	6891.426	3469.747	91465.74	245523.01	502616.03

		CENTER	9506.017	5948.643	3469.747	125171.27	252025.86	538672.72
		END-J	9902.259	5264.006	3469.747	168532.56	250129.61	560314.74
52	TANGENT	END-I	10556.584	5383.215	4062.635	168598.84	101246.05	605150.64
		END-J	10556.584	5383.215	4062.635	168598.84	165651.33	636768.67
53	TANGENT	END-I	11197.356	5636.965	4480.640	168330.56	164830.08	637052.21
		END-J	11197.356	5636.965	4480.640	168330.56	246124.47	676858.66
54	TANGENT	END-I	11858.480	5889.623	4924.578	168675.13	245940.67	676839.83
		END-J	11858.480	5889.623	4924.578	168675.13	341089.70	727641.80
55	TANGENT	END-I	12529.423	6109.019	5386.401	168575.26	341343.71	727545.81
		END-J	12529.423	6109.019	5386.401	168575.26	443006.88	787680.48
56	TANGENT	END-I	13198.166	6274.425	5867.530	168539.72	443020.45	787680.48
		END-J	13198.166	6274.425	5867.530	168539.72	553517.27	858344.42
57	BEND	END-I	12537.638	10993.797	6195.705	169017.66	569863.62	847491.49
		CENTER	9826.459	13471.987	6195.705	300099.92	574161.85	821864.68
		END-J	6861.990	15197.549	6195.705	435774.76	546212.55	804194.93
58	BEND	END-I	7373.182	15473.866	6787.662	435360.18	546506.62	804219.74
		CENTER	4933.561	16415.351	6787.662	555329.84	495986.46	805939.89
		END-J	4839.271	16443.442	6787.662	658816.55	426375.74	832252.16
59	BEND	END-I	4654.431	16816.505	7366.299	658612.19	426866.34	832162.37
		CENTER	7259.206	15867.707	7366.299	749042.18	344906.79	889198.02
		END-J	10670.060	13806.052	7366.299	805925.43	283843.63	960201.43
60	BEND	END-I	10371.488	14393.059	7668.905	806378.59	259274.52	966747.43
		CENTER	14607.702	10066.861	7668.905	820746.35	276030.52	1062598.11
		END-J	16930.797	5300.826	7668.905	768344.99	389998.52	1103791.92
61	BEND	END-I	16880.986	5449.723	8083.405	768443.05	389475.90	1103908.10
		CENTER	17121.957	4637.530	8083.405	690031.02	484631.44	1082344.04
		END-J	15792.072	8079.418	8083.405	597745.29	549336.76	1005948.21
62	BEND	END-I	15836.382	7887.964	8360.154	598893.58	547174.84	1006442.63
		CENTER	15274.701	8927.154	8360.154	575380.67	557821.20	979666.82
		END-J	14625.062	9955.747	8360.154	552831.68	565560.89	949980.43
63	TANGENT	END-I	14687.125	8947.036	9478.650	554256.29	598837.10	928511.29
		END-J	14687.125	8947.036	9478.650	554256.29	498832.69	742909.03
64	TANGENT	END-I	14743.595	8979.067	9572.534	554269.95	498409.34	743182.99
		END-J	14743.595	8979.067	9572.534	554269.95	479190.00	565260.22
65	BEND	END-I	14806.719	8689.850	9888.576	554181.29	558087.60	487625.59
		CENTER	14904.020	8521.300	9888.576	556793.39	488473.41	501953.86
		END-J	14639.084	8968.843	9888.576	559537.41	415783.93	519100.04
66	BEND	END-I	14677.635	9007.969	9894.517	559303.37	416289.37	518947.13
		CENTER	14072.847	9926.622	9894.517	555629.33	352718.92	540023.50
		END-J	13172.792	11093.956	9894.517	540814.59	314950.10	566369.09
67	BEND	END-I	13176.105	11134.645	9912.206	540689.08	315422.95	566225.77
		CENTER	12049.917	12344.716	9912.206	511377.78	319227.92	600512.53
		END-J	10830.537	13426.920	9912.206	466534.27	362688.71	644322.35

68	BEND	END-I	10840.237	13459.265	9891.688	466924.62	361252.48	644846.22
		CENTER	9703.608	14300.185	9891.688	407832.02	427275.01	698857.00
		END-J	8873.795	14829.517	9891.688	337468.49	499962.00	762015.11
69	TANGENT	END-I	8871.217	16002.125	7864.858	337136.97	434247.08	801425.07
		END-J	8871.217	16002.125	7864.858	337136.97	454291.31	888461.02

***** COMBINED MODAL RESPONSES FOR SUPPORT GROUP 3 *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	5348.
7090	FY	7793.
7090	FZ	4836.
7090	MX	517173.
7090	MY	485883.
7090	MZ	425575.
3047	FZ	54.
3116	FZ	249.
3210	FX	9248.
3210	FZ	112.
3250	FX	7865.
3250	FY	16002.
3250	FZ	8871.
3250	MX	888461.
3250	MY	454291.
3250	MZ	337137.
3035	FY	17279.
3083	FZ	4938.

***** SRSS COMBINATION OF SUPPORT GROUP RESPONSES *****
MODAL COMBINATION METHOD 2-GROUPING

NODE NUMBER	D I S P L A C E M E N T S / R O T A T I O N S						ACCELERATIONS IN G'S		
	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION	X- DIRECTION	Y- DIRECTION	Z- DIRECTION
7090	.82023E-07	.17825E-06	.61590E-07	.85509E-07	.69921E-07	.10459E-06	.000	.000	.000
3001	.19171E-03	.28185E-03	.16181E-03	.11966E-04	.96256E-05	.12868E-04	.004	.004	.004
3005	.27590E-03	.40078E-03	.24554E-03	.21020E-04	.17051E-04	.21474E-04	.005	.006	.006
3010	.41885E-03	.60068E-03	.39451E-03	.38153E-04	.31197E-04	.36802E-04	.008	.009	.010
3011	.74609E-03	.10565E-02	.75277E-03	.85432E-04	.70436E-04	.75921E-04	.014	.016	.017
3012	.16329E-02	.22318E-02	.18630E-02	.16004E-03	.13297E-03	.13000E-03	.029	.035	.038
3019	.41819E-02	.63512E-02	.62041E-02	.31646E-03	.26073E-03	.20392E-03	.074	.105	.118
3021	.59100E-02	.10713E-01	.11386E-01	.44427E-03	.35210E-03	.21094E-03	.107	.191	.217
3023	.61259E-02	.11448E-01	.12368E-01	.46649E-03	.36609E-03	.20769E-03	.111	.207	.237
3024	.71255E-02	.14495E-01	.17321E-01	.56796E-03	.42069E-03	.18534E-03	.131	.280	.331
3026	.85599E-02	.17030E-01	.24243E-01	.68877E-03	.47301E-03	.18383E-03	.157	.363	.452
3028	.10184E-01	.17559E-01	.31872E-01	.80735E-03	.51067E-03	.28918E-03	.183	.430	.572
3030	.13241E-01	.13059E-01	.45846E-01	.10075E-02	.54507E-03	.68208E-03	.223	.495	.759
3032	.16428E-01	.19129E-01	.60132E-01	.12085E-02	.54936E-03	.12642E-02	.255	.510	.911
3035	.19523E-01	.55836E-01	.73938E-01	.14157E-02	.53588E-03	.20157E-02	.276	.536	1.022
3037	.22395E-01	.11785E+00	.86727E-01	.16322E-02	.52044E-03	.27990E-02	.289	.677	1.092
3038	.24979E-01	.19973E+00	.98234E-01	.18534E-02	.52036E-03	.34812E-02	.295	.901	1.127
3040	.27270E-01	.29847E+00	.10854E+00	.20758E-02	.54855E-03	.40703E-02	.291	1.152	1.127
3044	.28115E-01	.34159E+00	.11236E+00	.21637E-02	.56845E-03	.42796E-02	.287	1.250	1.118
3047	.28507E-01	.36339E+00	.11419E+00	.22067E-02	.57986E-03	.43773E-02	.285	1.297	1.112
3050	.28873E-01	.38392E+00	.11586E+00	.22463E-02	.59132E-03	.44648E-02	.283	1.339	1.106
3053	.29359E-01	.40213E+00	.11697E+00	.22811E-02	.60291E-03	.45440E-02	.281	1.375	1.097
3056	.31224E-01	.43239E+00	.11717E+00	.23376E-02	.62404E-03	.46690E-02	.279	1.431	1.073
3059	.31771E-01	.43791E+00	.11701E+00	.23482E-02	.62838E-03	.46931E-02	.278	1.441	1.068
3062	.35177E-01	.46024E+00	.11554E+00	.23891E-02	.64558E-03	.47770E-02	.277	1.480	1.040
3065	.48078E-01	.50139E+00	.10959E+00	.24662E-02	.68258E-03	.49375E-02	.279	1.546	.971
3068	.58813E-01	.52216E+00	.10475E+00	.25068E-02	.70399E-03	.50213E-02	.284	1.577	.926
3071	.90374E-01	.56345E+00	.90639E-01	.25916E-02	.75325E-03	.51891E-02	.307	1.633	.817
3074	.97618E-01	.57055E+00	.87368E-01	.26079E-02	.76303E-03	.52210E-02	.314	1.643	.795
3077	.10520E+00	.57759E+00	.83946E-01	.26240E-02	.77304E-03	.52519E-02	.321	1.651	.773
3080	.22066E+00	.63705E+00	.30425E-01	.28092E-02	.90199E-03	.55883E-02	.485	1.721	.533
3083	.29515E+00	.64642E+00	.13439E-01	.29064E-02	.97550E-03	.57498E-02	.611	1.733	.490
3086	.31637E+00	.64648E+00	.21995E-01	.29304E-02	.99598E-03	.57888E-02	.647	1.734	.496
3089	.37341E+00	.64665E+00	.49653E-01	.29897E-02	.10514E-02	.58887E-02	.743	1.736	.544
3092	.48329E+00	.64700E+00	.10531E+00	.30843E-02	.11589E-02	.60631E-02	.923	1.742	.714
3095	.55614E+00	.64721E+00	.14245E+00	.31342E-02	.12303E-02	.61667E-02	1.035	1.745	.851
3098	.56732E+00	.64725E+00	.14814E+00	.31410E-02	.12413E-02	.61819E-02	1.052	1.746	.872
3100	.69592E+00	.64765E+00	.21353E+00	.32052E-02	.13670E-02	.63436E-02	1.237	1.752	1.123
3101	.82758E+00	.64803E+00	.27996E+00	.32470E-02	.14949E-02	.64892E-02	1.416	1.757	1.382
3104	.83247E+00	.64805E+00	.28241E+00	.32482E-02	.14996E-02	.64945E-02	1.422	1.757	1.391
3107	.90362E+00	.64827E+00	.31799E+00	.32620E-02	.15682E-02	.65665E-02	1.517	1.760	1.526
3110	.10094E+01	.63291E+00	.37131E+00	.32758E-02	.16689E-02	.66800E-02	1.659	1.756	1.689
3113	.11012E+01	.59086E+00	.41899E+00	.32815E-02	.17580E-02	.67865E-02	1.785	1.732	1.766
3115	.12142E+01	.47649E+00	.48182E+00	.32836E-02	.18839E-02	.69651E-02	1.943	1.659	1.732
3116	.12667E+01	.29564E+00	.52376E+00	.32841E-02	.20048E-02	.71944E-02	2.018	1.541	1.499
3119	.12663E+01	.20915E+00	.53445E+00	.32856E-02	.20496E-02	.73007E-02	2.019	1.488	1.371
3120	.12659E+01	.13586E+00	.54988E+00	.32893E-02	.20958E-02	.74342E-02	2.020	1.438	1.279
3122	.12654E+01	.16939E+00	.56741E+00	.32950E-02	.21304E-02	.75660E-02	2.022	1.414	1.285
3123	.12243E+01	.31178E+00	.57684E+00	.33043E-02	.21649E-02	.77483E-02	1.971	1.434	1.406
3125	.11168E+01	.44062E+00	.55840E+00	.33080E-02	.21873E-02	.78902E-02	1.835	1.491	1.561
3128	.94466E+00	.52578E+00	.51243E+00	.32938E-02	.22070E-02	.79848E-02	1.613	1.547	1.675
3198	.77036E+00	.53281E+00	.45472E+00	.32545E-02	.22231E-02	.79960E-02	1.374	1.553	1.656

3199	.61130E+00	.50787E+00	.39869E+00	.31957E-02	.22366E-02	.79407E-02	1.136	1.530	1.586
3200	.45380E+00	.48316E+00	.34728E+00	.31123E-02	.22486E-02	.78185E-02	.880	1.504	1.542
3205	.29452E+00	.45785E+00	.30125E+00	.29991E-02	.22579E-02	.76192E-02	.597	1.472	1.532
3208	.14433E+00	.43405E+00	.26616E+00	.28620E-02	.22633E-02	.73525E-02	.309	1.437	1.565
3210	.21283E-02	.41111E+00	.24342E+00	.26987E-02	.22637E-02	.70131E-02	.134	1.395	1.641
3212	.13365E+00	.35283E+00	.22469E+00	.24233E-02	.22373E-02	.63855E-02	.433	1.257	1.692
3215	.20968E+00	.25478E+00	.20444E+00	.21571E-02	.21730E-02	.56755E-02	.652	.986	1.652
3220	.22655E+00	.13534E+00	.17683E+00	.18807E-02	.20352E-02	.47557E-02	.699	.641	1.532
3222	.16253E+00	.32852E-01	.12873E+00	.15745E-02	.17222E-02	.33718E-02	.534	.386	1.268
3225	.95042E-01	.25702E-01	.89250E-01	.13820E-02	.14061E-02	.23294E-02	.454	.362	.974
3230	.80984E-01	.25110E-01	.80543E-01	.13360E-02	.13240E-02	.20905E-02	.442	.358	.892
3235	.42762E-01	.23425E-01	.54031E-01	.12133E-02	.10622E-02	.15898E-02	.394	.343	.621
3237	.15333E-01	.22839E-01	.30208E-01	.10625E-02	.81500E-03	.11795E-02	.324	.323	.366
3238	.64651E-02	.19877E-01	.15749E-01	.88512E-03	.65061E-03	.84107E-03	.248	.281	.203
3240	.58482E-02	.13095E-01	.58809E-02	.67677E-03	.49083E-03	.56408E-03	.152	.195	.082
3243	.35559E-02	.56547E-02	.10732E-02	.42798E-03	.31388E-03	.33110E-03	.063	.093	.016
3245	.68466E-03	.89620E-03	.45070E-04	.13376E-03	.10006E-03	.11854E-03	.011	.018	.001
3250	.13795E-06	.18692E-06	.11379E-06	.11779E-06	.88588E-07	.76753E-07	.000	.000	.000

***** SRSS COMBINATION OF SUPPORT GROUP RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	10278.089	16910.740	5597.526	269734.23	855304.01	1228721.92
		END-J	10278.089	16910.740	5597.526	269734.23	769726.01	913692.20
2	TANGENT	END-I	10274.517	16912.757	5596.895	269731.85	769706.32	913709.52
		END-J	10274.517	16912.757	5596.895	269731.85	749923.75	838399.94
3	TANGENT	END-I	10274.472	16912.260	5595.369	269731.85	749923.75	838399.94
		END-J	10274.472	16912.260	5595.369	269731.85	730475.71	763222.44
4	TANGENT	END-I	10255.964	16925.148	5587.419	272507.42	730778.56	761945.67
		END-J	10255.964	16925.148	5587.419	272507.42	709016.91	676423.81
5	TANGENT	END-I	10270.228	16914.959	5586.137	271597.54	708962.46	676846.76
		END-J	10270.228	16914.959	5586.137	271597.54	673721.06	534504.57
6	BEND	END-I	10266.803	16077.525	7652.004	270871.22	689789.14	513778.89
		CENTER	8832.743	16907.874	7652.004	331566.50	613374.97	373143.78
		END-J	7908.347	17359.548	7652.004	398213.95	527018.79	239598.37
7	BEND	END-I	7889.471	17244.396	7859.295	400482.65	522241.88	246185.45
		CENTER	7763.373	17301.448	7859.295	452247.34	445249.79	170331.57
		END-J	8279.185	17061.512	7859.295	494126.43	374514.36	184960.29
8	BEND	END-I	8251.872	16382.891	9160.847	493040.09	364544.08	206521.51
		CENTER	8380.629	16317.566	9160.847	498642.01	355965.00	214316.68
		END-J	8521.901	16244.317	9160.847	503873.40	348312.85	224062.72
9	TANGENT	END-I	8519.321	17798.662	5498.305	503861.95	361636.69	201890.86
		END-J	8519.321	17798.662	5498.305	503861.95	302642.16	426893.50
10	TANGENT	END-I	8511.216	17783.708	5362.738	503729.80	302642.16	427049.48
		END-J	8511.216	17783.708	5362.738	503729.80	240260.93	703616.00
11	TANGENT	END-I	8503.145	17766.088	5157.428	503729.80	240260.93	703616.00
		END-J	8503.145	17766.088	5157.428	503729.80	195068.64	980535.02
12	TANGENT	END-I	8492.903	17747.208	4806.145	503973.96	195068.64	980409.57
		END-J	8492.903	17747.208	4806.145	503973.96	180490.37	1453402.81
13	TANGENT	END-I	8478.794	17751.787	4220.585	504248.31	180490.37	1453307.59
		END-J	8478.794	17751.787	4220.585	504248.31	230932.65	1926075.27
14	TANGENT	END-I	8463.225	17813.599	3537.764	504001.16	230932.65	1926139.95
		END-J	8463.225	17813.599	3537.764	504001.16	296717.66	2400332.66
15	TANGENT	END-I	8447.302	14467.258	2822.434	503930.77	296717.66	2400347.32
		END-J	8447.302	14467.258	2822.434	503930.77	353464.01	2105689.64
16	TANGENT	END-I	8431.300	14008.313	2189.680	504258.21	353464.01	2105611.24
		END-J	8431.300	14008.313	2189.680	504258.21	393219.69	1848842.21
17	TANGENT	END-I	8414.185	13331.835	1849.514	504032.24	393219.69	1848903.76

		END-J	8414.185	13331.835	1849.514	504032.24	414461.14	1641540.90
18	TANGENT	END-I	8402.212	12699.795	1888.158	504319.72	414461.14	1641452.60
		END-J	8402.212	12699.795	1888.158	504319.72	418094.92	1575459.36
19	TANGENT	END-I	8395.291	12408.265	1985.690	502034.57	418094.92	1576189.23
		END-J	8395.291	12408.265	1985.690	502034.57	419050.46	1547467.61
20	TANGENT	END-I	8395.722	12217.156	2053.579	504159.95	419050.46	1546776.38
		END-J	8395.722	12217.156	2053.579	504159.95	419541.93	1522355.84
21	BEND	END-I	8393.004	12039.202	2126.713	504485.83	419541.93	1522247.81
		CENTER	8458.930	11992.978	2126.713	503011.19	421328.13	1511976.03
		END-J	8536.299	11937.946	2126.713	501327.51	423386.46	1501540.47
22	BEND	END-I	8527.628	11725.489	2170.668	501398.78	427863.94	1500249.26
		CENTER	8667.409	11622.696	2170.668	499043.99	429620.91	1483016.75
		END-J	8830.364	11499.445	2170.668	496194.86	432048.20	1465355.27
23	BEND	END-I	8792.396	9464.624	6653.811	498732.12	868900.75	1255557.81
		CENTER	8818.603	9440.331	6653.811	495881.46	869354.38	1252539.03
		END-J	8844.809	9415.680	6653.811	493187.04	869716.76	1249501.61
24	BEND	END-I	8863.371	11135.177	2400.415	495582.69	445187.66	1455024.87
		CENTER	8979.250	11041.881	2400.415	494016.14	445309.54	1441735.87
		END-J	9101.311	10941.485	2400.415	492260.18	445742.05	1428255.06
25	BEND	END-I	9036.514	10659.970	2525.543	489561.42	438065.82	1431551.62
		CENTER	9277.292	10450.997	2525.543	482843.25	443309.54	1405023.25
		END-J	9530.054	10221.110	2525.543	475576.34	449172.19	1377604.56
26	BEND	END-I	9389.308	9900.083	2958.076	479745.82	484109.61	1364255.05
		CENTER	9512.938	9781.376	2958.076	474137.33	487586.39	1349608.14
		END-J	9636.122	9660.055	2958.076	468633.48	490880.53	1334702.13
27	BEND	END-I	9431.305	9517.943	2870.251	470082.67	450913.82	1348232.54
		CENTER	9651.352	9294.744	2870.251	461864.98	455934.38	1315323.38
		END-J	9859.675	9073.465	2870.251	453325.99	461642.50	1281204.38
28	BEND	END-I	9657.255	8533.140	3972.813	450756.65	573377.27	1236185.16
		CENTER	9689.261	8496.925	3972.813	449979.01	572767.97	1229700.95
		END-J	9720.219	8461.387	3972.813	449274.19	572156.41	1223164.72
29	BEND	END-I	9625.215	8766.213	3233.595	450797.33	500461.03	1253658.48
		CENTER	9655.514	8732.786	3233.595	448643.70	501184.98	1247188.18
		END-J	9685.093	8700.011	3233.595	446534.84	501869.27	1240680.49
30	BEND	END-I	9208.645	8514.429	3333.671	446403.42	465926.07	1254670.72
		CENTER	9377.488	8327.971	3333.671	427066.69	477424.23	1171294.67
		END-J	9441.272	8255.515	3333.671	411785.43	488705.03	1084840.98
31	BEND	END-I	8489.910	8130.377	3608.507	411623.21	489936.73	1084346.81
		CENTER	8448.876	8173.197	3608.507	406395.43	495811.66	1038252.93
		END-J	8398.798	8224.378	3608.507	403903.91	500788.00	993227.44
32	TANGENT	END-I	7982.920	5783.605	7992.189	403924.36	971082.50	542526.95
		END-J	7982.920	5783.605	7992.189	403924.36	946618.01	525301.90
33	TANGENT	END-I	7649.605	5731.814	7933.998	403131.92	946955.75	525301.90
		END-J	7649.605	5731.814	7933.998	403131.92	884492.10	481121.50

34	TANGENT	END-I END-J	6989.285 6989.285	5552.196 5552.196	7784.613 7784.613	403665.89 403665.89	884248.45 778065.67	481121.50 407637.93
35	TANGENT	END-I END-J	6316.835 6316.835	5255.835 5255.835	7563.562 7563.562	403422.68 403422.68	778191.81 720048.22	407637.93 367909.56
36	TANGENT	END-I END-J	6038.008 6038.008	5083.151 5083.151	7448.395 7448.395	404001.84 404001.84	719723.45 711759.97	367909.56 362518.20
37	TANGENT	END-I END-J	5603.368 5603.368	4814.865 4814.865	7268.583 7268.583	403629.21 403629.21	711971.34 640274.08	362518.20 313083.96
38	TANGENT	END-I END-J	4944.954 4944.954	4164.245 4164.245	6877.212 6877.212	403742.12 403742.12	640202.95 608986.52	313083.96 284399.43
39	TANGENT	END-I END-J	4765.201 4765.201	3671.729 3671.729	6657.318 6657.318	412054.28 412054.28	603392.80 603049.12	284399.43 283713.25
40	TANGENT	END-I END-J	4584.920 4584.920	3555.760 3555.760	6549.869 6549.869	404095.79 404095.79	608411.17 610615.53	283713.25 274734.32
41	BEND	END-I CENTER END-J	4423.255 4672.560 4983.183	6327.916 6146.505 5898.529	3041.420 3041.420 3041.420	403898.47 379544.17 350118.56	276899.66 301858.70 330503.07	609774.09 620825.17 634646.10
42	BEND	END-I CENTER END-J	5070.707 5393.132 5691.467	5554.233 5242.385 4916.990	2597.699 2597.699 2597.699	350479.99 320194.68 288592.94	329063.95 350895.30 370664.71	635193.77 651264.01 666809.11
43	BEND	END-I CENTER END-J	6049.200 6356.354 6470.012	4543.221 4100.868 3916.789	2383.060 2383.060 2383.060	288718.93 241129.62 206735.26	371743.74 385526.71 387589.30	666153.68 686258.35 697855.56
44	BEND	END-I CENTER END-J	7109.809 6775.507 6145.199	4038.354 4578.085 5397.001	2793.394 2793.394 2793.394	207012.15 195399.21 211473.55	385843.73 356139.64 313090.89	698739.99 690221.85 665433.66
45	TANGENT	END-I END-J	6692.241 6692.241	6200.988 6200.988	3135.703 3135.703	211588.30 211588.30	296207.91 259288.61	673071.10 633903.76
46	TANGENT	END-I END-J	7274.149 7274.149	6803.256 6803.256	3428.321 3428.321	211683.14 211683.14	259288.61 210861.84	633872.07 592150.14
47	TANGENT	END-I END-J	8056.854 8056.854	7472.090 7472.090	3694.019 3694.019	211686.48 211686.48	210861.84 168413.22	592148.89 570854.32
48	BEND	END-I CENTER END-J	9097.287 8304.917 7528.202	8393.973 9177.530 9824.587	3610.744 3610.744 3610.744	211681.00 201258.04 180558.15	153072.06 152542.23 180221.95	575159.00 568522.64 562342.78
49	BEND	END-I CENTER END-J	8934.789 8396.356 8093.572	10567.075 11000.741 11226.256	3776.561 3776.561 3776.561	180472.51 153783.70 126142.42	180414.74 217104.56 255141.89	562308.40 558407.89 562458.15
50	BEND	END-I CENTER END-J	9568.614 9436.985 9603.345	11909.638 12013.557 11880.471	4068.121 4068.121 4068.121	126470.89 110131.66 128597.30	258826.83 291026.60 313549.61	560698.33 570409.69 591309.95
51	BEND	END-I	10762.428	12688.383	4415.445	128874.36	309247.21	593511.63

		CENTER	10923.273	12550.078	4415.445	169785.72	313540.21	614678.15
		END-J	11219.533	12287.107	4415.445	221221.75	308742.54	641718.91
52	TANGENT	END-I	11938.937	12700.634	6033.029	221261.37	180839.86	688722.67
		END-J	11938.937	12700.634	6033.029	221261.37	249689.57	781865.06
53	TANGENT	END-I	12661.237	13366.953	6619.024	221041.13	249288.98	782054.72
		END-J	12661.237	13366.953	6619.024	221041.13	355299.54	937667.87
54	TANGENT	END-I	13419.666	13920.813	7177.239	221545.61	354979.14	937670.14
		END-J	13419.666	13920.813	7177.239	221545.61	486764.80	1144887.17
55	TANGENT	END-I	14202.205	14327.494	7709.053	221278.29	486519.30	1145043.20
		END-J	14202.205	14327.494	7709.053	221278.29	629466.56	1376890.23
56	TANGENT	END-I	14992.028	14573.716	8239.782	221224.66	629485.26	1376890.23
		END-J	14992.028	14573.716	8239.782	221224.66	784613.39	1628122.23
57	BEND	END-I	14343.490	17298.028	7749.759	221660.84	724378.59	1655754.91
		CENTER	11249.417	19452.665	7749.759	387346.84	728458.87	1750831.79
		END-J	8969.655	20603.211	7749.759	559034.83	690982.79	1852437.82
58	BEND	END-I	9328.630	20920.986	8426.374	558536.00	691387.84	1852437.24
		CENTER	8762.868	21164.209	8426.374	710164.29	624162.89	1953073.17
		END-J	10517.526	20349.317	8426.374	840479.68	531637.46	2052582.56
59	BEND	END-I	10151.802	20797.927	9112.992	840068.17	532215.00	2052601.39
		CENTER	13415.366	18859.796	9112.992	952952.34	420522.78	2157598.76
		END-J	16836.286	15879.361	9112.992	1022235.74	335160.32	2239993.42
60	BEND	END-I	16403.723	16506.449	9689.890	1022804.04	345930.39	2238096.12
		CENTER	20173.430	11600.760	9689.890	1043928.24	353895.14	2299255.45
		END-J	21580.189	8711.243	9689.890	979880.83	490482.28	2267935.70
61	BEND	END-I	21471.196	8698.005	10300.483	979568.64	491123.60	2267931.55
		CENTER	20762.030	10276.739	10300.483	881027.94	610658.04	2173303.55
		END-J	18407.860	14064.764	10300.483	762655.68	695668.84	2018222.74
62	BEND	END-I	18460.953	13888.665	10640.468	762244.43	693583.24	2019094.36
		CENTER	17654.183	14900.641	10640.468	733247.03	707006.48	1972530.98
		END-J	16774.931	15883.967	10640.468	705382.31	717001.81	1923321.47
63	TANGENT	END-I	16852.413	14985.352	11939.464	705510.59	864228.07	1861764.34
		END-J	16852.413	14985.352	11939.464	705510.59	743422.27	1543552.65
64	TANGENT	END-I	16917.750	14992.970	12112.125	705261.57	740389.57	1545123.48
		END-J	16917.750	14992.970	12112.125	705261.57	708080.69	1233665.44
65	BEND	END-I	16992.808	11215.839	15748.410	705443.87	1272359.96	635729.20
		CENTER	16998.415	11206.429	15748.410	793266.47	1101652.32	658967.93
		END-J	16656.159	11709.159	15748.410	892009.47	901634.29	687744.68
66	BEND	END-I	16699.771	11768.129	15760.908	891206.38	902128.87	688137.13
		CENTER	16042.874	12649.775	15760.908	972741.48	689730.89	723238.65
		END-J	15129.912	13730.715	15760.908	1020920.94	498133.77	764675.99
67	BEND	END-I	15132.266	13783.248	15780.994	1021101.48	497947.21	764556.38
		CENTER	14047.717	14887.483	15780.994	1026744.65	405524.77	813845.74
		END-J	12938.649	15859.664	15780.994	985661.06	487560.63	871118.53

68	BEND	END-I	12946.764	15904.838	15761.903	986144.57	485351.04	871804.88
		CENTER	11990.335	16636.680	15761.903	898902.81	672901.19	936965.89
		END-J	11380.264	17059.977	15761.903	768202.97	885424.29	1008466.29
69	TANGENT	END-I	11378.673	18691.874	13795.011	767527.87	800576.05	1077541.35
		END-J	11378.673	18691.874	13795.011	767527.87	885887.03	1177909.37

***** SRSS COMBINATION OF SUPPORT GROUP RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	8202.
7090	FY	17825.
7090	FZ	6159.
7090	MX	855097.
7090	MY	699210.
7090	MZ	1045876.
3047	FZ	69.
3116	FZ	314.
3210	FX	10641.
3210	FZ	146.
3250	FX	13795.
3250	FY	18692.
3250	FZ	11379.
3250	MX	1177909.
3250	MY	885887.
3250	MZ	767528.
3035	FY	30794.
3083	FZ	7412.

BENCHMARK PROBLEM 2
HIGH FREQUENCY GROUP RESPONSE
(RIGID RESPONSE)

STATIC ANALYSIS

STRUCTURE LOAD CASE

				ELEMENT	LOAD	MULTIPLIERS	
				A	B	C	D
1	GROUP 1	X	EXCITATION	.000	.000	.000	.000
2	GROUP 1	Y	EXCITATION	.000	.000	.000	.000
3	GROUP 1	Z	EXCITATION	.000	.000	.000	.000
4	GROUP 2	X	EXCITATION	.000	.000	.000	.000
5	GROUP 2	Y	EXCITATION	.000	.000	.000	.000
6	GROUP 2	Z	EXCITATION	.000	.000	.000	.000
7	GROUP 3	X	EXCITATION	.000	.000	.000	.000
8	GROUP 3	Y	EXCITATION	.000	.000	.000	.000
9	GROUP 3	Z	EXCITATION	.000	.000	.000	.000

STATIC ANALYSIS

LOAD CASE 1 GROUP 1 X EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-1.46058E-09	8.30101E-10	3.85436E-10	-3.74114E-10	-8.50969E-10	6.19720E-11
3001	-1.14264E-06	4.77350E-07	1.94119E-06	-3.85731E-08	-1.17503E-07	1.70623E-08
3005	-1.57988E-06	7.12713E-07	2.82945E-06	-6.27511E-08	-2.03220E-07	3.50507E-08
3010	-2.29961E-06	1.13348E-06	4.34787E-06	-1.04300E-07	-3.62461E-07	7.32173E-08
3011	-3.89789E-06	2.15341E-06	7.85806E-06	-2.05451E-07	-7.91101E-07	1.90857E-07
3012	-7.63973E-06	5.26764E-06	1.75918E-05	-3.31872E-07	-1.44317E-06	4.08521E-07
3019	-1.86168E-05	1.95857E-05	5.50783E-05	-5.13398E-07	-2.59021E-06	9.18324E-07
3021	-3.05170E-05	4.04190E-05	1.02288E-04	-5.63623E-07	-3.25155E-06	1.23863E-06
3023	-3.28543E-05	4.46363E-05	1.11518E-04	-5.66410E-07	-3.34039E-06	1.27118E-06
3024	-4.39980E-05	6.46744E-05	1.56555E-04	-5.58243E-07	-3.66209E-06	1.32080E-06
3026	-5.84507E-05	8.80831E-05	2.15518E-04	-5.05183E-07	-3.93283E-06	1.19384E-06
3028	-7.35502E-05	1.07442E-04	2.77330E-04	-4.13366E-07	-4.11246E-06	8.97992E-07
3030	-1.00387E-04	1.24943E-04	3.87128E-04	-2.03884E-07	-4.36235E-06	1.62952E-07
3032	-1.28649E-04	1.18635E-04	5.02923E-04	2.01038E-08	-4.71494E-06	-6.36046E-07
3035	-1.59499E-04	9.08702E-05	6.30348E-04	1.99205E-07	-5.32472E-06	-1.24003E-06
3037	-1.94895E-04	5.03429E-05	7.77765E-04	2.94959E-07	-6.22872E-06	-1.48232E-06
3038	-2.36635E-04	8.70836E-06	9.52518E-04	2.99364E-07	-7.33272E-06	-1.32884E-06
3040	-2.85314E-04	-2.34854E-05	1.15799E-03	2.34862E-07	-8.44213E-06	-8.77122E-07
3044	-3.06480E-04	-3.20339E-05	1.24736E-03	1.98101E-07	-8.83740E-06	-6.49468E-07
3047	-3.16866E-04	-3.52292E-05	1.29249E-03	1.79319E-07	-9.01333E-06	-5.35689E-07
3050	-3.26878E-04	-3.76087E-05	1.33486E-03	1.62261E-07	-9.16371E-06	-4.31044E-07
3053	-3.35722E-04	-3.92019E-05	1.37241E-03	1.45186E-07	-9.29267E-06	-3.35533E-07
3056	-3.50431E-04	-4.07809E-05	1.43458E-03	1.13077E-07	-9.47890E-06	-1.90974E-07
3059	-3.53142E-04	-4.09396E-05	1.44589E-03	1.06695E-07	-9.51207E-06	-1.64566E-07
3062	-3.64509E-04	-4.12219E-05	1.49143E-03	7.82089E-08	-9.62049E-06	-8.07999E-08
3065	-3.85561E-04	-4.05023E-05	1.57459E-03	1.46515E-08	-9.79046E-06	3.70949E-08
3068	-3.96941E-04	-3.97089E-05	1.61595E-03	-2.47008E-08	-9.85748E-06	6.79488E-08
3071	-4.20339E-04	-3.78030E-05	1.69642E-03	-1.27621E-07	-9.94451E-06	4.01464E-08
3074	-4.24368E-04	-3.74949E-05	1.70998E-03	-1.50499E-07	-9.95247E-06	1.88013E-08
3077	-4.28433E-04	-3.72141E-05	1.72326E-03	-1.74575E-07	-9.95842E-06	-7.33440E-09
3080	-4.60720E-04	-3.70033E-05	1.82661E-03	-5.55798E-07	-9.88135E-06	-6.96990E-07
3083	-4.58286E-04	-3.76138E-05	1.83403E-03	-8.37901E-07	-9.75698E-06	-1.33007E-06
3086	-4.55066E-04	-3.74422E-05	1.83089E-03	-9.16182E-07	-9.71893E-06	-1.50922E-06
3089	-4.41872E-04	-3.70329E-05	1.82101E-03	-1.13066E-06	-9.61566E-06	-2.00387E-06
3092	-4.03584E-04	-3.59280E-05	1.79624E-03	-1.53066E-06	-9.42367E-06	-2.92836E-06
3095	-3.68809E-04	-3.51099E-05	1.77606E-03	-1.76641E-06	-9.30157E-06	-3.46629E-06
3098	-3.62993E-04	-3.49639E-05	1.77274E-03	-1.79930E-06	-9.28345E-06	-3.54017E-06
3100	-2.87728E-04	-3.32819E-05	1.73112E-03	-2.08246E-06	-9.08799E-06	-4.13506E-06
3101	-2.04148E-04	-3.14740E-05	1.68516E-03	-2.16895E-06	-8.91632E-06	-4.19416E-06
3104	-2.01317E-04	-3.13491E-05	1.68345E-03	-2.16785E-06	-8.91044E-06	-4.18453E-06
3107	-1.58294E-04	-3.03803E-05	1.65893E-03	-2.11626E-06	-8.83181E-06	-3.94728E-06
3110	-1.03608E-04	-1.99658E-05	1.60363E-03	-1.90213E-06	-8.73109E-06	-3.19836E-06
3113	-7.14897E-05	-5.23598E-07	1.52196E-03	-1.57512E-06	-8.63208E-06	-2.17985E-06
3115	-6.11870E-05	2.14700E-05	1.35141E-03	-8.80501E-07	-8.41884E-06	-3.19120E-07
3116	-7.72860E-05	-1.38993E-06	1.11944E-03	6.70128E-08	-8.06265E-06	1.41164E-06
3119	-8.22753E-05	-2.85633E-05	1.00608E-03	5.30177E-07	-7.88432E-06	1.79404E-06
3120	-8.85764E-05	-6.76769E-05	8.65935E-04	1.09709E-06	-7.68964E-06	1.81080E-06
3122	-9.49886E-05	-1.02601E-04	7.28815E-04	1.64147E-06	-7.53701E-06	1.29536E-06

3123	-1.02980E-04	-1.24019E-04	5.45484E-04	2.32991E-06	-7.32657E-06	-1.94079E-07
3125	-1.30531E-04	-1.10586E-04	3.81186E-04	2.91161E-06	-7.03886E-06	-1.80367E-06
3128	-2.01843E-04	-8.72195E-05	2.34783E-04	3.37856E-06	-6.55279E-06	-2.85516E-06
3198	-2.79695E-04	-8.83237E-05	1.51092E-04	3.56556E-06	-6.00002E-06	-2.58337E-06
3199	-3.32530E-04	-9.89208E-05	9.70097E-05	3.52971E-06	-5.46862E-06	-1.36752E-06
3200	-3.50282E-04	-1.03892E-04	4.36862E-05	3.33108E-06	-4.93393E-06	5.12767E-07
3205	-3.20871E-04	-1.01183E-04	-6.96890E-06	2.98435E-06	-4.39852E-06	2.59795E-06
3208	-2.48407E-04	-9.12191E-05	-4.96850E-05	2.55329E-06	-3.91990E-06	4.01593E-06
3210	-1.52714E-04	-7.71498E-05	-8.44065E-05	2.07629E-06	-3.51463E-06	3.92646E-06
3212	-9.75773E-05	-5.12939E-05	-8.97392E-05	1.39436E-06	-3.13720E-06	3.05349E-06
3215	-6.55580E-05	-3.11047E-06	-5.60721E-05	8.08349E-07	-2.71769E-06	2.63980E-06
3220	-6.11506E-05	4.97631E-05	-1.72535E-06	1.90548E-07	-2.24664E-06	1.37041E-06
3222	-6.05197E-05	5.54670E-05	4.69960E-05	-5.73913E-07	-1.85715E-06	-1.09632E-06
3225	-1.33714E-05	4.19581E-05	4.03818E-05	-8.80852E-07	-1.86237E-06	-2.07283E-06
3230	1.35286E-06	4.32882E-05	3.29140E-05	-8.84419E-07	-1.88984E-06	-2.06998E-06
3235	4.56254E-05	5.05897E-05	6.17683E-06	-6.99194E-07	-1.96992E-06	-1.69380E-06
3237	7.42852E-05	5.49120E-05	-1.35068E-05	-2.25547E-07	-2.01986E-06	-9.75814E-07
3238	7.48151E-05	5.46024E-05	-1.75367E-05	4.38861E-07	-2.01096E-06	-2.68587E-07
3240	5.43311E-05	4.52951E-05	-1.12721E-05	9.90166E-07	-1.88923E-06	1.53903E-07
3243	2.58330E-05	2.58248E-05	-2.80408E-06	1.10054E-06	-1.45467E-06	2.29266E-07
3245	4.87065E-06	6.08369E-06	1.22629E-07	5.01264E-07	-5.37286E-07	9.21301E-08
3250	1.15961E-09	1.80840E-09	3.09599E-10	5.02951E-10	-5.04174E-10	5.96545E-11

STATIC ANALYSIS

LOAD CASE 2 GROUP 1 Y EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	1.88219E-09	2.16999E-10	5.24924E-10	-1.82497E-10	1.47917E-10	4.69086E-10
3001	1.56704E-06	1.42600E-06	7.40704E-08	-2.17023E-08	1.65242E-08	5.04658E-08
3005	2.09705E-06	1.93897E-06	1.01200E-07	-3.42478E-08	2.46749E-08	7.49796E-08
3010	2.92753E-06	2.74255E-06	1.50741E-07	-5.47383E-08	3.64553E-08	1.09963E-07
3011	4.69539E-06	4.43461E-06	2.85562E-07	-1.01000E-07	5.75986E-08	1.70018E-07
3012	7.90008E-06	7.65734E-06	6.60943E-07	-1.48500E-07	6.29496E-08	1.75139E-07
3019	1.17509E-05	1.20903E-05	1.84504E-06	-1.34680E-07	-4.96658E-08	-2.02934E-07
3021	1.15627E-05	6.41418E-06	4.36819E-06	-4.12040E-08	-2.14912E-07	-7.96933E-07
3023	1.15665E-05	4.16138E-06	5.08166E-06	-2.24396E-08	-2.43366E-07	-9.07962E-07
3024	1.16203E-05	-1.03954E-05	9.32861E-06	5.73769E-08	-3.55791E-07	-1.38623E-06
3026	1.12587E-05	-3.67497E-05	1.61976E-05	1.46162E-07	-4.65977E-07	-1.93124E-06
3028	1.05205E-05	-7.16394E-05	2.44960E-05	2.15609E-07	-5.47586E-07	-2.39199E-06
3030	8.64731E-06	-1.45407E-04	4.07771E-05	2.57356E-07	-6.28783E-07	-2.84581E-06
3032	6.35042E-06	-2.24702E-04	5.81794E-05	1.80012E-07	-6.52305E-07	-2.78346E-06
3035	3.91944E-06	-2.94100E-04	7.55086E-05	-8.27768E-09	-6.41793E-07	-2.24071E-06
3037	1.47138E-06	-3.42022E-04	9.22097E-05	-2.54479E-07	-6.20669E-07	-1.44702E-06
3038	-1.01390E-06	-3.66004E-04	1.08296E-04	4.87957E-07	-6.07774E-07	-7.07559E-07
3040	-3.62563E-06	-3.71728E-04	1.24208E-04	-6.54344E-07	-6.12473E-07	-2.59219E-07
3044	-4.72967E-06	-3.71238E-04	1.30578E-04	-6.94750E-07	-6.19282E-07	-1.91879E-07
3047	-5.26712E-06	-3.70810E-04	1.33723E-04	-7.08759E-07	-6.23274E-07	-1.84053E-07
3050	-5.78977E-06	-3.70377E-04	1.36636E-04	-7.18281E-07	-6.27183E-07	-1.91729E-07
3053	-6.23726E-06	-3.70063E-04	1.39076E-04	-7.23692E-07	-6.31062E-07	-2.11059E-07
3056	-6.86481E-06	-3.69843E-04	1.42566E-04	-7.27597E-07	-6.37908E-07	-2.64530E-07
3059	-6.95781E-06	-3.69852E-04	1.43137E-04	-7.27452E-07	-6.39278E-07	-2.77838E-07
3062	-7.23135E-06	-3.70052E-04	1.45176E-04	-7.27000E-07	-6.44761E-07	-3.31977E-07
3065	-6.98864E-06	-3.71339E-04	1.47985E-04	-7.18350E-07	-6.55882E-07	-4.64976E-07
3068	-6.34101E-06	-3.72458E-04	1.48900E-04	-7.10864E-07	-6.61956E-07	-5.47330E-07
3071	-3.27807E-06	-3.75773E-04	1.49609E-04	-6.92914E-07	-6.74926E-07	-7.31806E-07
3074	-2.38315E-06	-3.76505E-04	1.49534E-04	-6.88981E-07	-6.77243E-07	-7.69047E-07
3077	-1.40041E-06	-3.77269E-04	1.49420E-04	-6.85345E-07	-6.79626E-07	-8.05389E-07
3080	1.92137E-05	-3.85487E-04	1.42871E-04	-6.57749E-07	-7.04742E-07	-1.20182E-06
3083	3.61434E-05	-3.86740E-04	1.35558E-04	-6.65037E-07	-7.16836E-07	-1.35353E-06
3086	4.12460E-05	-3.86559E-04	1.33163E-04	-6.70268E-07	-7.20446E-07	-1.38283E-06
3089	5.52356E-05	-3.86147E-04	1.26680E-04	-6.91154E-07	-7.30440E-07	-1.44463E-06
3092	8.24167E-05	-3.85276E-04	1.13668E-04	-7.53035E-07	-7.51167E-07	-1.51835E-06
3095	1.00426E-04	-3.84709E-04	1.04478E-04	-8.04966E-07	-7.65314E-07	-1.54921E-06
3098	1.03174E-04	-3.84616E-04	1.03021E-04	-8.13412E-07	-7.67484E-07	-1.55351E-06
3100	1.34799E-04	-3.83559E-04	8.53283E-05	-9.11413E-07	-7.91496E-07	-1.61526E-06
3101	1.67747E-04	-3.82426E-04	6.55127E-05	-1.00401E-06	-8.13632E-07	-1.71942E-06
3104	1.68979E-04	-3.82356E-04	6.47453E-05	-1.00715E-06	-8.14446E-07	-1.72441E-06
3107	1.87506E-04	-3.81710E-04	5.34105E-05	-1.04869E-06	-8.24954E-07	-1.80709E-06
3110	2.16678E-04	-3.76009E-04	3.39493E-05	-1.09979E-06	-8.35661E-07	-1.98031E-06
3113	2.44126E-04	-3.61351E-04	1.29964E-05	-1.12828E-06	-8.36408E-07	-2.16658E-06
3115	2.81003E-04	-3.18806E-04	-2.05177E-05	-1.13915E-06	-8.11659E-07	-2.45619E-06
3116	2.99165E-04	-2.44640E-04	-5.08327E-05	-1.11575E-06	-7.41467E-07	-2.69679E-06
3119	2.98666E-04	-2.04655E-04	-6.11298E-05	-1.09722E-06	-6.98877E-07	-2.74668E-06
3120	2.98096E-04	-1.53490E-04	-7.32343E-05	-1.07139E-06	-6.43620E-07	-2.75599E-06
3122	2.97585E-04	-1.02707E-04	-8.43258E-05	-1.04321E-06	-5.92573E-07	-2.71154E-06

3123	2.82972E-04	-3.94760E-05	-9.18684E-05	-9.98550E-07	-5.32824E-07	-2.57112E-06
3125	2.48451E-04	6.19143E-06	-8.75693E-05	-9.44194E-07	-4.91085E-07	-2.37966E-06
3128	1.99092E-04	3.32905E-05	-7.32475E-05	-8.71488E-07	-4.57538E-07	-2.13896E-06
3198	1.54651E-04	3.64513E-05	-5.55589E-05	-8.00599E-07	-4.34601E-07	-1.92666E-06
3199	1.17856E-04	3.14219E-05	-3.89872E-05	-7.41616E-07	-4.18123E-07	-1.75835E-06
3200	8.42352E-05	2.68579E-05	-2.36080E-05	-6.89781E-07	-4.03084E-07	-1.59651E-06
3205	5.28542E-05	2.25834E-05	-8.76611E-06	-6.47808E-07	-3.89285E-07	-1.42610E-06
3208	2.57500E-05	1.89547E-05	4.91373E-06	-6.19564E-07	-3.77247E-07	-1.24716E-06
3210	2.34232E-06	1.58975E-05	1.81407E-05	-6.02397E-07	-3.66007E-07	-1.04649E-06
3212	-1.54610E-05	9.21122E-06	3.28935E-05	-5.87539E-07	-3.51522E-07	-7.54886E-07
3215	-2.37283E-05	-8.48499E-08	4.56864E-05	-5.75040E-07	-3.41990E-07	-5.44506E-07
3220	-2.55415E-05	-9.49483E-06	5.50987E-05	-5.55769E-07	-3.28197E-07	-3.89139E-07
3222	-2.08094E-05	-1.72857E-05	5.47125E-05	-5.28838E-07	-2.88786E-07	-2.96462E-07
3225	-1.42385E-05	-1.86581E-05	4.41271E-05	-5.13653E-07	-2.46779E-07	-2.75953E-07
3230	-1.24870E-05	-1.83237E-05	4.06300E-05	-5.10184E-07	-2.36064E-07	-2.70352E-07
3235	-6.94712E-06	-1.68225E-05	2.88438E-05	-5.00531E-07	-2.00823E-07	-2.47038E-07
3237	-2.05739E-06	-1.54369E-05	1.74151E-05	-4.82343E-07	-1.64790E-07	-2.10889E-07
3238	3.23538E-07	-1.31414E-05	9.75419E-06	-4.47180E-07	-1.36654E-07	-1.67126E-07
3240	1.07300E-06	-8.80917E-06	3.90771E-06	-3.80002E-07	-1.05505E-07	-1.20799E-07
3243	7.20270E-07	-3.95637E-06	7.50793E-07	-2.63243E-07	-6.77681E-08	-7.36966E-08
3245	1.30794E-07	-6.64572E-07	9.69241E-09	-8.86522E-08	-2.13370E-08	-2.65386E-08
3250	1.64945E-11	-1.25699E-10	2.44701E-11	-8.02455E-11	-1.86967E-11	-1.71838E-11

STATIC ANALYSIS

LOAD CASE 3 GROUP 1 Z EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-2.46428E-10	1.55010E-11	-6.33574E-10	2.15711E-10	6.32607E-10	-1.72210E-11
3001	3.36070E-07	-3.26022E-07	-1.27257E-06	1.94663E-08	9.21842E-08	-4.63534E-09
3005	5.57182E-07	-4.47111E-07	-1.89000E-06	3.05550E-08	1.64146E-07	-6.65689E-09
3010	9.65726E-07	-6.38529E-07	-2.96883E-06	4.85093E-08	3.01888E-07	-9.22932E-09
3011	1.95802E-06	-1.04039E-06	-5.52922E-06	8.82288E-08	6.85715E-07	-1.20476E-08
3012	5.36757E-06	-1.85184E-06	-1.30397E-05	1.26891E-07	1.30205E-06	-6.81268E-09
3019	1.90194E-05	-2.95908E-06	-4.53912E-05	1.63979E-07	2.54168E-06	8.61935E-08
3021	3.31854E-05	-1.62947E-06	-9.19090E-05	1.63382E-07	3.41075E-06	2.09508E-07
3023	3.55270E-05	-1.12507E-06	-1.01599E-04	1.64851E-07	3.54096E-06	2.31671E-07
3024	4.65636E-05	1.97833E-06	-1.50422E-04	1.76440E-07	4.04787E-06	3.24249E-07
3026	6.16467E-05	7.20426E-06	-2.17307E-04	1.93225E-07	4.54520E-06	4.25236E-07
3028	7.81937E-05	1.37975E-05	-2.90568E-04	2.13045E-07	4.93806E-06	5.12994E-07
3030	1.09168E-04	2.76101E-05	-4.26973E-04	2.52852E-07	5.48001E-06	6.37233E-07
3032	1.43056E-04	4.39399E-05	-5.75557E-04	2.96328E-07	6.00512E-06	7.45400E-07
3035	1.80199E-04	6.27111E-05	-7.38511E-04	3.36435E-07	6.66749E-06	8.68100E-07
3037	2.21911E-04	8.48097E-05	-9.21303E-04	3.65385E-07	7.53894E-06	1.03931E-06
3038	2.69654E-04	1.12009E-04	-1.12967E-03	3.76941E-07	8.57557E-06	1.28592E-06
3040	3.23958E-04	1.46725E-04	-1.36682E-03	3.68707E-07	9.62057E-06	1.61807E-06
3044	3.47285E-04	1.63083E-04	-1.46830E-03	3.60376E-07	9.99402E-06	1.77160E-06
3047	3.58681E-04	1.71689E-04	-1.51927E-03	3.55350E-07	1.01595E-05	1.85004E-06
3050	3.69648E-04	1.79971E-04	-1.56699E-03	3.50434E-07	1.03002E-05	1.92420E-06
3053	3.79070E-04	1.87498E-04	-1.60908E-03	3.46013E-07	1.04201E-05	1.99455E-06
3056	3.93392E-04	2.00383E-04	-1.67824E-03	3.45144E-07	1.05917E-05	2.11133E-06
3059	3.95840E-04	2.02786E-04	-1.69076E-03	3.45115E-07	1.06219E-05	2.13434E-06
3062	4.05328E-04	2.12632E-04	-1.74099E-03	3.55329E-07	1.07205E-05	2.21739E-06
3065	4.19108E-04	2.31425E-04	-1.83202E-03	3.92090E-07	1.08702E-05	2.38025E-06
3068	4.24632E-04	2.41173E-04	-1.87696E-03	4.25102E-07	1.09260E-05	2.46660E-06
3071	4.30955E-04	2.61013E-04	-1.96361E-03	5.39238E-07	1.09912E-05	2.63971E-06
3074	4.31078E-04	2.64486E-04	-1.97806E-03	5.68452E-07	1.09950E-05	2.67212E-06
3077	4.31096E-04	2.67925E-04	-1.99217E-03	6.00127E-07	1.09972E-05	2.70336E-06
3080	4.06496E-04	2.96831E-04	-2.09667E-03	1.15854E-06	1.08967E-05	3.01814E-06
3083	3.75615E-04	3.00620E-04	-2.09683E-03	1.58282E-06	1.07759E-05	3.14037E-06
3086	3.65783E-04	3.00326E-04	-2.09080E-03	1.69664E-06	1.07396E-05	3.16545E-06
3089	3.38135E-04	2.99633E-04	-2.07252E-03	1.99405E-06	1.06434E-05	3.22007E-06
3092	2.86211E-04	2.97748E-04	-2.02987E-03	2.47718E-06	1.04647E-05	3.27459E-06
3095	2.51957E-04	2.96390E-04	-1.99766E-03	2.70566E-06	1.03504E-05	3.27695E-06
3098	2.46833E-04	2.96153E-04	-1.99254E-03	2.73304E-06	1.03331E-05	3.27508E-06
3100	1.88590E-04	2.93501E-04	-1.93180E-03	2.88370E-06	1.01390E-05	3.21592E-06
3101	1.32305E-04	2.90819E-04	-1.87114E-03	2.74827E-06	9.94778E-06	3.09103E-06
3104	1.30549E-04	2.90649E-04	-1.86899E-03	2.73803E-06	9.94074E-06	3.08518E-06
3107	1.02079E-04	2.89273E-04	-1.83907E-03	2.55764E-06	9.84031E-06	2.99333E-06
3110	6.31619E-05	2.80236E-04	-1.77628E-03	2.16489E-06	9.69873E-06	2.81500E-06
3113	3.41588E-05	2.60763E-04	-1.68636E-03	1.72313E-06	9.57193E-06	2.62054E-06
3115	7.26472E-06	2.16216E-04	-1.49889E-03	9.57169E-07	9.39395E-06	2.27346E-06
3116	5.39820E-06	1.58900E-04	-1.23798E-03	7.43715E-09	9.25316E-06	1.83429E-06
3119	1.11067E-05	1.34327E-04	-1.10672E-03	-4.62686E-07	9.22180E-06	1.63692E-06
3120	1.82386E-05	1.07590E-04	-9.40459E-04	-1.05883E-06	9.20230E-06	1.38495E-06
3122	2.53762E-05	8.58509E-05	-7.74016E-04	-1.65575E-06	9.16689E-06	1.12579E-06

3123	4.15990E-05	6.67452E-05	-5.50636E-04	-2.43209E-06	8.95780E-06	7.29473E-07
3125	6.15860E-05	6.10447E-05	-3.55688E-04	-3.03450E-06	8.50786E-06	3.42522E-07
3128	7.74522E-05	6.45965E-05	-1.91393E-04	-3.38524E-06	7.76777E-06	-8.69635E-08
3198	7.98853E-05	6.85418E-05	-1.08065E-04	-3.36030E-06	7.00970E-06	-4.49108E-07
3199	7.36215E-05	6.94497E-05	-6.31406E-05	-3.11848E-06	6.32794E-06	-7.17358E-07
3200	6.18969E-05	6.93235E-05	-2.27450E-05	-2.75506E-06	5.66747E-06	-9.31865E-07
3205	4.53646E-05	6.81778E-05	1.20518E-05	-2.32004E-06	4.99868E-06	-1.07924E-06
3208	2.65101E-05	6.63154E-05	3.89822E-05	-1.89517E-06	4.35314E-06	-1.13453E-06
3210	6.85126E-06	6.40515E-05	5.96303E-05	-1.50277E-06	3.70642E-06	-1.08906E-06
3212	-9.29495E-06	5.65400E-05	5.55466E-05	-1.03104E-06	3.01394E-06	-9.95969E-07
3215	-1.77880E-05	4.17629E-05	2.30160E-05	-6.21429E-07	2.33016E-06	-9.41697E-07
3220	-1.79507E-05	2.12455E-05	-1.94885E-05	-1.26941E-07	1.60614E-06	-8.41762E-07
3222	-3.87067E-06	3.65769E-07	-4.71946E-05	4.90671E-07	9.42494E-07	-5.75148E-07
3225	7.97621E-06	-4.43700E-06	-3.68697E-05	6.84869E-07	6.77006E-07	-2.89856E-07
3230	9.83091E-06	-4.51149E-06	-3.16775E-05	6.76836E-07	6.20448E-07	-2.14567E-07
3235	1.30239E-05	-4.60506E-06	-1.50175E-05	5.81243E-07	4.26493E-07	-4.90407E-08
3237	1.24462E-05	-5.02058E-06	-2.66256E-06	3.90976E-07	2.19044E-07	8.09985E-08
3238	1.04547E-05	-6.07067E-06	1.87198E-06	1.53061E-07	5.56086E-08	1.57974E-07
3240	7.39140E-06	-6.33009E-06	2.12073E-06	-4.54054E-08	-7.35830E-08	1.71439E-07
3243	3.74173E-06	-4.21790E-06	6.56575E-07	-1.38020E-07	-1.24550E-07	1.26095E-07
3245	8.54198E-07	-1.11581E-06	-1.04592E-09	-7.74428E-08	-6.34692E-08	4.71297E-08
3250	2.68565E-10	-3.62401E-10	-2.64060E-12	-8.14260E-11	-6.54581E-11	3.05166E-11

STATIC ANALYSIS

LOAD CASE 4 GROUP 2 X EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-8.35180E-08	1.11127E-08	-1.92983E-08	2.48691E-09	-8.13745E-09	-1.48909E-08
3001	-5.98434E-05	-3.83765E-05	1.01202E-05	2.80786E-07	-9.07362E-07	-1.59140E-06
3005	-7.96168E-05	-5.20175E-05	1.40957E-05	4.20611E-07	-1.37623E-06	-2.34612E-06
3010	-1.09960E-04	-7.28201E-05	2.00789E-05	6.24388E-07	-2.09134E-06	-3.41335E-06
3011	-1.73755E-04	-1.15374E-04	3.17461E-05	9.93747E-07	-3.54916E-06	-5.24032E-06
3012	-2.89648E-04	-1.93704E-04	5.74635E-05	1.08926E-06	-4.63722E-06	-5.43947E-06
3019	-4.42462E-04	-2.72193E-04	1.17514E-04	-8.12142E-07	-1.87553E-06	4.85021E-06
3021	-4.64906E-04	-8.41066E-05	1.04017E-04	-3.39818E-06	3.39496E-06	1.88334E-05
3023	-4.68940E-04	-2.19542E-05	9.04727E-05	-3.80855E-06	4.31404E-06	2.11324E-05
3024	-4.86007E-04	3.41757E-04	-4.61468E-06	-5.27598E-06	7.89256E-06	2.98397E-05
3026	-4.92380E-04	9.13709E-04	-1.73636E-04	-6.41017E-06	1.12355E-05	3.75922E-05
3028	-4.86746E-04	1.58104E-03	-3.83970E-04	-6.87149E-06	1.34604E-05	4.24128E-05
3030	-4.60002E-04	2.81551E-03	-7.91012E-04	-6.29605E-06	1.49601E-05	4.47271E-05
3032	-4.25684E-04	4.00564E-03	-1.19775E-03	-4.30879E-06	1.42192E-05	4.09157E-05
3035	-3.94774E-04	5.00931E-03	-1.55881E-03	-1.35786E-06	1.22567E-05	3.29339E-05
3037	-3.71223E-04	5.74085E-03	-1.85660E-03	2.05615E-06	1.00806E-05	2.29473E-05
3038	-3.53176E-04	6.17532E-03	-2.09837E-03	5.38279E-06	8.49346E-06	1.33281E-05
3040	-3.35218E-04	6.35690E-03	-2.30882E-03	8.05519E-06	7.90265E-06	6.54958E-06
3044	-3.26516E-04	6.38130E-03	-2.39012E-03	8.82449E-06	7.95335E-06	5.11344E-06
3047	-3.21981E-04	6.38791E-03	-2.43035E-03	9.12532E-06	8.02472E-06	4.74202E-06
3050	-3.17265E-04	6.39189E-03	-2.46774E-03	9.35448E-06	8.11224E-06	4.60902E-06
3053	-3.13382E-04	6.39520E-03	-2.49924E-03	9.51601E-06	8.21194E-06	4.66116E-06
3056	-3.09146E-04	6.40292E-03	-2.54463E-03	9.70979E-06	8.40828E-06	5.05504E-06
3059	-3.08699E-04	6.40473E-03	-2.55211E-03	9.73427E-06	8.45074E-06	5.16879E-06
3062	-3.08435E-04	6.41345E-03	-2.57896E-03	9.82881E-06	8.62039E-06	5.66501E-06
3065	-3.17604E-04	6.43825E-03	-2.61669E-03	9.90610E-06	8.99317E-06	6.96578E-06
3068	-3.28569E-04	6.45501E-03	-2.62931E-03	9.90911E-06	9.20874E-06	7.78590E-06
3071	-3.70960E-04	6.49834E-03	-2.63971E-03	9.88666E-06	9.67817E-06	9.66621E-06
3074	-3.82547E-04	6.50734E-03	-2.63880E-03	9.87608E-06	9.76744E-06	1.00462E-05
3077	-3.95039E-04	6.51654E-03	-2.63733E-03	9.86954E-06	9.85694E-06	1.04190E-05
3080	-6.45363E-04	6.60918E-03	-2.54172E-03	9.98933E-06	1.07965E-05	1.49377E-05
3083	-8.51051E-04	6.62056E-03	-2.42936E-03	1.03867E-05	1.12269E-05	1.69047E-05
3086	-9.13604E-04	6.61737E-03	-2.39187E-03	1.05405E-05	1.13441E-05	1.73284E-05
3089	-1.08628E-03	6.60997E-03	-2.28909E-03	1.10618E-05	1.16553E-05	1.83582E-05
3092	-1.43097E-03	6.59433E-03	-2.07759E-03	1.24003E-05	1.22447E-05	2.02593E-05
3095	-1.67176E-03	6.58406E-03	-1.92500E-03	1.34514E-05	1.26197E-05	2.16319E-05
3098	-1.70961E-03	6.58237E-03	-1.90063E-03	1.36196E-05	1.26762E-05	2.18581E-05
3100	-2.16989E-03	6.56315E-03	-1.60123E-03	1.55528E-05	1.32942E-05	2.48903E-05
3101	-2.70025E-03	6.54246E-03	-1.26050E-03	1.73759E-05	1.38730E-05	2.88175E-05
3104	-2.72100E-03	6.54121E-03	-1.24721E-03	1.74381E-05	1.38952E-05	2.89802E-05
3107	-3.04000E-03	6.52939E-03	-1.05029E-03	1.82677E-05	1.41862E-05	3.14449E-05
3110	-3.56364E-03	6.42635E-03	-7.10064E-04	1.93102E-05	1.45387E-05	3.57712E-05
3113	-4.06988E-03	6.15686E-03	-3.41503E-04	1.99134E-05	1.47191E-05	3.96909E-05
3115	-4.75189E-03	5.37409E-03	2.53047E-04	2.01786E-05	1.45538E-05	4.45727E-05
3116	-5.08056E-03	4.04824E-03	7.99736E-04	1.97402E-05	1.35462E-05	4.71482E-05
3119	-5.07222E-03	3.35574E-03	9.89005E-04	1.93893E-05	1.28332E-05	4.70955E-05
3120	-5.06266E-03	2.48931E-03	1.21234E-03	1.89069E-05	1.18357E-05	4.61690E-05
3122	-5.05409E-03	1.64870E-03	1.41654E-03	1.83929E-05	1.08458E-05	4.45178E-05

3123	-4.81789E-03	6.24317E-04	1.55698E-03	1.76028E-05	9.61465E-06	4.13901E-05
3125	-4.26553E-03	-1.07203E-04	1.48331E-03	1.66621E-05	8.74086E-06	3.82030E-05
3128	-3.46953E-03	-5.44722E-04	1.23020E-03	1.53544E-05	8.08657E-06	3.48989E-05
3198	-2.73524E-03	-5.96697E-04	9.18777E-04	1.39762E-05	7.67853E-06	3.22613E-05
3199	-2.11021E-03	-5.11083E-04	6.30457E-04	1.27313E-05	7.37932E-06	3.01493E-05
3200	-1.52544E-03	-4.31062E-04	3.68350E-04	1.15503E-05	7.08602E-06	2.79356E-05
3205	-9.69606E-04	-3.54274E-04	1.22397E-04	1.05222E-05	6.79837E-06	2.52877E-05
3208	-4.85406E-04	-2.88157E-04	-9.75968E-05	9.78627E-06	6.53472E-06	2.21424E-05
3210	-6.95915E-05	-2.32540E-04	-3.05178E-04	9.32954E-06	6.28298E-06	1.82629E-05
3212	2.31773E-04	-1.18591E-04	-5.36151E-04	8.99287E-06	5.99400E-06	1.26246E-05
3215	3.66725E-04	3.38697E-05	-7.41494E-04	8.81039E-06	5.90627E-06	8.86674E-06
3220	3.95872E-04	1.85915E-04	-9.02699E-04	8.54138E-06	5.85424E-06	6.33509E-06
3222	3.17030E-04	3.15814E-04	-9.21479E-04	8.19687E-06	5.36976E-06	5.03701E-06
3225	2.03928E-04	3.40360E-04	-7.63126E-04	8.18325E-06	4.70473E-06	4.75351E-06
3230	1.73719E-04	3.34705E-04	-7.06907E-04	8.21714E-06	4.53394E-06	4.63829E-06
3235	7.96148E-05	3.09120E-04	-5.12365E-04	8.31075E-06	3.96712E-06	4.14511E-06
3237	-2.12855E-07	2.85646E-04	-3.17364E-04	8.29051E-06	3.39276E-06	3.41105E-06
3238	-3.44977E-05	2.45786E-04	-1.81716E-04	7.96455E-06	2.94842E-06	2.58938E-06
3240	-3.72742E-05	1.67555E-04	-7.43660E-05	6.98201E-06	2.39889E-06	1.79965E-06
3243	-2.08092E-05	7.68299E-05	-1.45937E-05	4.95902E-06	1.62114E-06	1.07197E-06
3245	-3.79394E-06	1.33487E-05	-1.98058E-07	1.70391E-06	5.35908E-07	3.84543E-07
3250	-6.54421E-10	2.68755E-09	-5.00031E-10	1.55451E-09	4.80360E-10	2.48993E-10

STATIC ANALYSIS

LOAD CASE 5 GROUP 2 Y EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	8.87556E-09	-2.04193E-08	2.61661E-09	2.65293E-09	7.82853E-10	-2.94452E-09
3001	-3.69802E-06	-1.60087E-05	-6.47294E-06	2.97158E-07	8.37532E-08	-2.97856E-07
3005	-4.86484E-06	-2.09317E-05	-8.80038E-06	4.50835E-07	1.28394E-07	-4.20322E-07
3010	-6.16325E-06	-2.76602E-05	-1.22289E-05	6.93318E-07	1.97157E-07	-5.85737E-07
3011	-7.90467E-06	-4.05368E-05	-1.90137E-05	1.23890E-06	3.36594E-07	-8.79846E-07
3012	-1.04231E-05	-6.30709E-05	-3.35003E-05	1.85507E-06	4.35652E-07	-1.04840E-06
3019	-1.14926E-05	-1.09964E-04	-6.09814E-05	2.32157E-06	1.75417E-07	-3.99142E-07
3021	-6.66989E-06	-1.26765E-04	-6.54679E-05	2.03827E-06	-2.90608E-07	1.51084E-06
3023	-5.87429E-06	-1.25402E-04	-6.42676E-05	1.94741E-06	-3.66460E-07	1.96755E-06
3024	-3.15761E-06	-9.75895E-05	-5.56555E-05	1.48321E-06	-6.42151E-07	4.22791E-06
3026	-9.68314E-07	-1.40174E-05	-4.15912E-05	8.67950E-07	-8.62557E-07	7.19304E-06
3028	3.77565E-07	1.20632E-04	-2.53271E-05	3.24421E-07	-9.73519E-07	9.84560E-06
3030	1.64001E-06	4.35411E-04	3.45836E-06	-1.70621E-07	-9.77527E-07	1.24983E-05
3032	2.56837E-06	7.83495E-04	2.92992E-05	-2.10298E-08	-8.29324E-07	1.23576E-05
3035	3.79730E-06	1.08702E-03	4.95923E-05	6.65591E-07	-6.15681E-07	9.89162E-06
3037	5.47847E-06	1.29435E-03	6.36574E-05	1.63433E-06	-4.00317E-07	6.20278E-06
3038	7.44846E-06	1.38950E-03	7.21733E-05	2.59209E-06	-2.25587E-07	2.55762E-06
3040	9.37452E-06	1.39159E-03	7.66481E-05	3.29611E-06	-1.11666E-07	1.41720E-08
3044	1.00370E-05	1.37590E-03	7.76829E-05	3.47213E-06	-8.46533E-08	-5.48663E-07
3047	1.03279E-05	1.36642E-03	7.80985E-05	3.53504E-06	-7.49991E-08	-7.21314E-07
3050	1.05743E-05	1.35689E-03	7.84290E-05	3.57911E-06	-6.80241E-08	-8.20426E-07
3053	1.09606E-05	1.34822E-03	7.92613E-05	3.60727E-06	-6.31377E-08	-8.62280E-07
3056	1.23989E-05	1.33388E-03	8.31224E-05	3.62916E-06	-5.80968E-08	-8.25303E-07
3059	1.27449E-05	1.33133E-03	8.41235E-05	3.62943E-06	-5.76468E-08	-8.02531E-07
3062	1.44184E-05	1.32136E-03	8.93804E-05	3.62329E-06	-5.65722E-08	-6.78914E-07
3065	1.77003E-05	1.30596E-03	1.03603E-04	3.56328E-06	-6.10630E-08	-2.41897E-07
3068	1.87475E-05	1.30008E-03	1.13137E-04	3.50697E-06	-6.67218E-08	9.55508E-08
3071	1.67635E-05	1.29391E-03	1.37236E-04	3.34601E-06	-8.40879E-08	9.86385E-07
3074	1.54231E-05	1.29376E-03	1.42288E-04	3.30735E-06	-8.88482E-08	1.18939E-06
3077	1.36975E-05	1.29389E-03	1.47438E-04	3.26839E-06	-9.34383E-08	1.39395E-06
3080	-4.57297E-05	1.30869E-03	2.14023E-04	2.76562E-06	-1.53120E-07	3.98315E-06
3083	-1.09976E-04	1.31306E-03	2.48538E-04	2.50835E-06	-1.84372E-07	5.31168E-06
3086	-1.31058E-04	1.31247E-03	2.57492E-04	2.45160E-06	-1.89823E-07	5.61231E-06
3089	-1.92178E-04	1.31124E-03	2.80247E-04	2.32450E-06	-2.02896E-07	6.31437E-06
3092	-3.23067E-04	1.30889E-03	3.20325E-04	2.18631E-06	-2.08199E-07	7.23101E-06
3095	-4.14639E-04	1.30754E-03	3.45455E-04	2.16854E-06	-1.99613E-07	7.54240E-06
3098	-4.28789E-04	1.30733E-03	3.49272E-04	2.17068E-06	-1.97481E-07	7.57122E-06
3100	-5.90274E-04	1.30508E-03	3.93525E-04	2.27318E-06	-1.61206E-07	7.61796E-06
3101	-7.46193E-04	1.30285E-03	4.41574E-04	2.49383E-06	-1.07871E-07	7.27536E-06
3104	-7.51732E-04	1.30270E-03	4.43443E-04	2.50373E-06	-1.05862E-07	7.25766E-06
3107	-8.29846E-04	1.30144E-03	4.71393E-04	2.65352E-06	-7.39020E-08	6.99378E-06
3110	-9.37745E-04	1.28302E-03	5.15778E-04	2.90975E-06	-3.38311E-08	6.59785E-06
3113	-1.02457E-03	1.23926E-03	5.57386E-04	3.14878E-06	-2.07738E-08	6.37571E-06
3115	-1.12699E-03	1.12596E-03	6.12338E-04	3.50493E-06	-8.86987E-08	6.58291E-06
3116	-1.17729E-03	9.28269E-04	6.35492E-04	3.90498E-06	-3.41105E-07	7.76611E-06
3119	-1.17692E-03	8.10723E-04	6.29720E-04	4.09835E-06	-5.09906E-07	8.51836E-06
3120	-1.17658E-03	6.44648E-04	6.18410E-04	4.34585E-06	-7.39335E-07	9.52155E-06
3122	-1.17641E-03	4.59192E-04	6.02633E-04	4.59121E-06	-9.45985E-07	1.04711E-05

3123	-1.11704E-03	1.93808E-04	5.51975E-04	4.87530E-06	-1.11570E-06	1.14495E-05
3125	-9.56591E-04	-2.34608E-05	4.62830E-04	4.98980E-06	-1.11036E-06	1.15546E-05
3128	-7.12503E-04	-1.60839E-04	3.42624E-04	4.83892E-06	-9.66634E-07	1.05801E-05
3198	-4.97292E-04	-1.77892E-04	2.39207E-04	4.45296E-06	-7.89971E-07	8.98363E-06
3199	-3.34571E-04	-1.56426E-04	1.56957E-04	3.99280E-06	-6.25367E-07	7.39231E-06
3200	-2.05218E-04	-1.39757E-04	8.44468E-05	3.49648E-06	-4.65212E-07	5.81972E-06
3205	-1.04034E-04	-1.26952E-04	1.97676E-05	3.02185E-06	-2.82827E-07	4.43891E-06
3208	-3.00399E-05	-1.17942E-04	-3.48879E-05	2.65099E-06	-7.30370E-08	3.51464E-06
3210	3.01864E-05	-1.10766E-04	-8.39906E-05	2.39222E-06	1.78602E-07	3.13234E-06
3212	9.13529E-05	-8.70597E-05	-1.31136E-04	2.17600E-06	4.77571E-07	2.90529E-06
3215	1.26576E-04	-4.51927E-05	-1.67566E-04	2.03304E-06	7.93494E-07	2.59839E-06
3220	1.35251E-04	7.88940E-06	-1.96076E-04	1.84924E-06	1.09360E-06	2.25784E-06
3222	1.04099E-04	6.09862E-05	-2.01215E-04	1.67147E-06	1.19420E-06	1.83902E-06
3225	6.44498E-05	7.22534E-05	-1.69810E-04	1.73331E-06	1.08590E-06	1.52604E-06
3230	5.49517E-05	7.08990E-05	-1.57774E-04	1.77322E-06	1.05511E-06	1.44238E-06
3235	2.66478E-05	6.43577E-05	-1.14531E-04	1.85941E-06	9.43077E-07	1.22306E-06
3237	3.42646E-06	5.85072E-05	-6.98089E-05	1.87205E-06	8.20479E-07	9.78511E-07
3238	-6.74360E-06	4.93372E-05	-3.89588E-05	1.75451E-06	7.16754E-07	7.28920E-07
3240	-8.40580E-06	3.23899E-05	-1.54768E-05	1.47204E-06	5.82309E-07	4.99169E-07
3243	-4.83794E-06	1.39789E-05	-3.03524E-06	9.90971E-07	3.91046E-07	2.94530E-07
3245	-8.73696E-07	2.14130E-06	-1.16764E-07	3.20482E-07	1.27860E-07	1.05396E-07
3250	-1.41278E-10	3.31165E-10	-2.94790E-10	2.84565E-10	1.13941E-10	6.82439E-11

STATIC ANALYSIS

LOAD CASE 6

GROUP 2 Z EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-1.06384E-08	1.73116E-09	-1.37927E-08	3.11832E-09	2.85633E-09	-1.73425E-09
3001	-2.62755E-06	-8.21276E-06	-1.45494E-05	3.45697E-07	3.44660E-07	-1.86363E-07
3005	-3.26792E-06	-1.11597E-05	-1.96725E-05	5.32099E-07	5.58346E-07	-2.71702E-07
3010	-4.31924E-06	-1.56506E-05	-2.73759E-05	8.30107E-07	9.32894E-07	-3.86626E-07
3011	-6.69226E-06	-2.48164E-05	-4.35936E-05	1.49854E-06	1.89250E-06	-5.54023E-07
3012	-7.27429E-06	-4.26764E-05	-7.98695E-05	2.21567E-06	3.28112E-06	-4.49595E-07
3019	1.48759E-05	-6.62550E-05	-1.86561E-04	2.61367E-06	5.66124E-06	1.35474E-06
3021	4.38886E-05	-4.03759E-05	-2.97235E-04	2.32295E-06	6.71890E-06	3.65401E-06
3023	4.76306E-05	-3.06240E-05	-3.17353E-04	2.26686E-06	6.80474E-06	4.03191E-06
3024	6.26399E-05	2.75197E-05	-4.09814E-04	2.07300E-06	6.93779E-06	5.47496E-06
3026	8.01673E-05	1.19806E-04	-5.18082E-04	1.93833E-06	6.77547E-06	6.78932E-06
3028	9.66164E-05	2.28431E-04	-6.19939E-04	1.90805E-06	6.56253E-06	7.64877E-06
3030	1.24234E-04	4.32174E-04	-7.87240E-04	2.06681E-06	6.78937E-06	8.20325E-06
3032	1.57370E-04	6.33714E-04	-9.72935E-04	2.44053E-06	8.12043E-06	7.82479E-06
3035	2.03209E-04	8.11811E-04	-1.20911E-03	2.95507E-06	1.04533E-05	6.83679E-06
3037	2.66832E-04	9.54495E-04	-1.51758E-03	3.52770E-06	1.32843E-05	5.59760E-06
3038	3.49494E-04	1.05976E-03	-1.90274E-03	4.06857E-06	1.59736E-05	4.49441E-06
3040	4.47994E-04	1.13697E-03	-2.35237E-03	4.48700E-06	1.79797E-05	3.92230E-06
3044	4.90306E-04	1.16378E-03	-2.54280E-03	4.60202E-06	1.85162E-05	3.91474E-06
3047	5.10846E-04	1.17698E-03	-2.63760E-03	4.64524E-06	1.87211E-05	3.96703E-06
3050	5.30534E-04	1.18922E-03	-2.72572E-03	4.67714E-06	1.88770E-05	4.05066E-06
3053	5.47305E-04	1.20027E-03	-2.80230E-03	4.69835E-06	1.89953E-05	4.15804E-06
3056	5.72290E-04	1.21944E-03	-2.92424E-03	4.72983E-06	1.91383E-05	4.38555E-06
3059	5.76485E-04	1.22307E-03	-2.94583E-03	4.73446E-06	1.91593E-05	4.43641E-06
3062	5.92402E-04	1.23801E-03	-3.03055E-03	4.76320E-06	1.92193E-05	4.63362E-06
3065	6.13606E-04	1.26791E-03	-3.17697E-03	4.82500E-06	1.92666E-05	5.07822E-06
3068	6.20713E-04	1.28391E-03	-3.24539E-03	4.86864E-06	1.92575E-05	5.33828E-06
3071	6.23453E-04	1.31794E-03	-3.36862E-03	4.99358E-06	1.91852E-05	5.90262E-06
3074	6.21598E-04	1.32414E-03	-3.38765E-03	5.02317E-06	1.91623E-05	6.01404E-06
3077	6.19408E-04	1.33031E-03	-3.40590E-03	5.05434E-06	1.91389E-05	6.12241E-06
3080	5.36263E-04	1.38419E-03	-3.50166E-03	5.47673E-06	1.88080E-05	7.32073E-06
3083	4.52087E-04	1.39042E-03	-3.45789E-03	5.74164E-06	1.86046E-05	7.79400E-06
3086	4.25949E-04	1.38917E-03	-3.43644E-03	5.80682E-06	1.85483E-05	7.88792E-06
3089	3.53345E-04	1.38641E-03	-3.37827E-03	5.96277E-06	1.84002E-05	8.09182E-06
3092	2.15256E-04	1.38042E-03	-3.26493E-03	6.14971E-06	1.81274E-05	8.34786E-06
3095	1.23593E-04	1.37669E-03	-3.19015E-03	6.17896E-06	1.79532E-05	8.45477E-06
3098	1.09717E-04	1.37608E-03	-3.17878E-03	6.17648E-06	1.79269E-05	8.46854E-06
3100	-5.00911E-05	1.36958E-03	-3.05099E-03	6.01707E-06	1.76285E-05	8.61767E-06
3101	-2.12551E-04	1.36339E-03	-2.92924E-03	5.63717E-06	1.73294E-05	8.78507E-06
3104	-2.18137E-04	1.36302E-03	-2.92493E-03	5.61936E-06	1.73184E-05	8.79205E-06
3107	-3.05751E-04	1.35985E-03	-2.86441E-03	5.34013E-06	1.71584E-05	8.90428E-06
3110	-4.35885E-04	1.33309E-03	-2.74077E-03	4.82220E-06	1.69303E-05	9.11837E-06
3113	-5.47447E-04	1.26841E-03	-2.56840E-03	4.28540E-06	1.67352E-05	9.30486E-06
3115	-6.78910E-04	1.09750E-03	-2.21584E-03	3.35762E-06	1.64607E-05	9.46838E-06
3116	-7.25691E-04	8.30846E-04	-1.74392E-03	2.15191E-06	1.61569E-05	9.32549E-06
3119	-7.15602E-04	6.97163E-04	-1.51479E-03	1.53808E-06	1.60149E-05	9.12193E-06
3120	-7.03125E-04	5.33558E-04	-1.22699E-03	7.54714E-07	1.58180E-05	8.74672E-06
3122	-6.90825E-04	3.78419E-04	-9.42538E-04	-3.43808E-08	1.55650E-05	8.25269E-06

3123	-6.30595E-04	1.96471E-04	-5.82265E-04	-1.08147E-06	1.49743E-05	7.35544E-06
3125	-5.15860E-04	7.59470E-05	-3.00622E-04	-1.93780E-06	1.40989E-05	6.35854E-06
3128	-3.69953E-04	1.38068E-05	-9.68318E-05	-2.53415E-06	1.28488E-05	5.16310E-06
3198	-2.55887E-04	1.14256E-05	-2.48022E-05	-2.68395E-06	1.16273E-05	4.10052E-06
3199	-1.74082E-04	2.49541E-05	-5.74038E-06	-2.55669E-06	1.05327E-05	3.26252E-06
3200	-1.08996E-04	3.57925E-05	1.21921E-05	-2.28131E-06	9.46484E-06	2.50978E-06
3205	-5.74824E-05	4.44120E-05	2.65707E-05	-1.89811E-06	8.38353E-06	1.83995E-06
3208	-2.05172E-05	5.04440E-05	3.56118E-05	-1.47645E-06	7.34594E-06	1.30785E-06
3210	6.15279E-06	5.45960E-05	3.91675E-05	-1.03473E-06	6.31652E-06	9.05379E-07
3212	2.54505E-05	6.01977E-05	4.67783E-06	-4.38843E-07	5.22197E-06	3.87043E-07
3215	3.34298E-05	6.22272E-05	-6.84500E-05	1.34916E-07	4.19775E-06	-3.74430E-09
3220	3.77206E-05	5.71580E-05	-1.51827E-04	8.39795E-07	3.15034E-06	-2.05724E-07
3222	4.53243E-05	4.85865E-05	-1.97541E-04	1.73052E-06	2.14034E-06	-3.18462E-08
3225	4.46752E-05	4.59339E-05	-1.63228E-04	2.06645E-06	1.66439E-06	3.21829E-07
3230	4.26599E-05	4.50164E-05	-1.48253E-04	2.07809E-06	1.55858E-06	4.12147E-07
3235	3.25960E-05	4.10758E-05	-9.74723E-05	1.99981E-06	1.19621E-06	5.77643E-07
3237	1.91610E-05	3.69139E-05	-5.17618E-05	1.76676E-06	8.13033E-07	6.56392E-07
3238	1.06654E-05	2.93855E-05	-2.51551E-05	1.41175E-06	5.13330E-07	6.42625E-07
3240	5.42577E-06	1.70524E-05	-8.49616E-06	1.00169E-06	2.46733E-07	5.38722E-07
3243	2.38452E-06	6.01455E-06	-1.36074E-06	5.70000E-07	5.88657E-08	3.56602E-07
3245	6.77557E-07	5.17496E-07	-4.28344E-08	1.55010E-07	-1.27899E-08	1.30722E-07
3250	2.92632E-10	-8.43642E-11	-1.08143E-10	1.26672E-10	-2.38862E-11	8.46427E-11

STATIC ANALYSIS

LOAD CASE 7 GROUP 3 X EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-7.16603E-10	-7.67092E-11	6.03154E-10	-2.01861E-10	-1.00172E-09	-2.47284E-10
3001	-1.35864E-06	-3.00597E-07	1.79678E-06	-1.45203E-08	-1.43325E-07	-2.33418E-08
3005	-1.97997E-06	-4.13768E-07	2.67237E-06	-2.20710E-08	-2.52671E-07	-3.61392E-08
3010	-3.04775E-06	-5.94698E-07	4.20007E-06	-3.35231E-08	-4.59929E-07	-5.63104E-08
3011	-5.50877E-06	-9.91293E-07	7.81357E-06	-5.58164E-08	-1.03128E-06	-9.93767E-08
3012	-1.24119E-05	-1.83492E-06	1.84132E-05	-6.85211E-08	-1.93358E-06	-1.35262E-07
3019	-3.50660E-05	-4.12453E-06	6.44686E-05	-8.64573E-08	-3.68490E-06	-1.31537E-07
3021	-5.60425E-05	-5.51241E-06	1.30728E-04	-9.48581E-08	-4.87440E-06	-5.79164E-08
3023	-5.94849E-05	-5.60266E-06	1.44491E-04	-9.95957E-08	-5.05190E-06	-4.31261E-08
3024	-7.57008E-05	-5.42495E-06	2.13630E-04	-1.24732E-07	-5.74815E-06	2.11219E-08
3026	-9.77014E-05	-3.92010E-06	3.08127E-04	-1.54156E-07	-6.44595E-06	9.40756E-08
3028	-1.16912E-04	-1.16912E-06	4.11750E-04	-1.79365E-07	-7.01613E-06	1.48668E-07
3030	-1.66897E-04	5.07628E-06	6.05745E-04	-2.02513E-07	-7.83839E-06	1.55460E-07
3032	-2.16507E-04	9.96756E-06	8.18918E-04	-1.90171E-07	-8.64068E-06	8.49026E-09
3035	-2.70944E-04	8.55557E-06	1.05380E-03	-1.35178E-07	-9.58844E-06	-3.23115E-07
3037	-3.31599E-04	-4.48109E-06	1.31612E-03	-3.95122E-08	-1.07430E-05	-8.31123E-07
3038	-3.99895E-04	-3.36207E-05	1.61124E-03	8.52717E-08	-1.20416E-05	-1.46575E-06
3040	-4.76090E-04	-8.14355E-05	1.94157E-03	2.20905E-07	-1.33174E-05	-2.14692E-06
3044	-5.08437E-04	-1.05606E-04	2.08148E-03	2.73441E-07	-1.37742E-05	-2.41180E-06
3047	-5.24177E-04	-1.18451E-04	2.15152E-03	2.98385E-07	-1.39792E-05	-2.53696E-06
3050	-5.39294E-04	-1.30881E-04	2.21698E-03	3.20492E-07	-1.41557E-05	-2.64938E-06
3053	-5.52256E-04	-1.42180E-04	2.27477E-03	3.39212E-07	-1.43084E-05	-2.75137E-06
3056	-5.71904E-04	-1.61468E-04	2.37021E-03	3.60271E-07	-1.45323E-05	-2.91211E-06
3059	-5.75258E-04	-1.65055E-04	2.38756E-03	3.63890E-07	-1.45728E-05	-2.94279E-06
3062	-5.88242E-04	-1.79736E-04	2.45740E-03	3.64683E-07	-1.47074E-05	-3.05055E-06
3065	-6.07124E-04	-2.07496E-04	2.58520E-03	3.45226E-07	-1.49279E-05	-3.25225E-06
3068	-6.14759E-04	-2.21819E-04	2.64905E-03	3.19361E-07	-1.50216E-05	-3.35486E-06
3071	-6.23860E-04	-2.50757E-04	2.77426E-03	2.12345E-07	-1.51635E-05	-3.55290E-06
3074	-6.24169E-04	-2.55789E-04	2.79555E-03	1.83676E-07	-1.51816E-05	-3.58893E-06
3077	-6.24357E-04	-2.60776E-04	2.81647E-03	1.51810E-07	-1.51977E-05	-3.62345E-06
3080	-5.94419E-04	-3.02800E-04	2.98444E-03	-4.71208E-07	-1.52325E-05	-3.95660E-06
3083	-5.55262E-04	-3.08882E-04	3.00102E-03	-9.95437E-07	-1.51644E-05	-4.08396E-06
3086	-5.42739E-04	-3.08727E-04	2.99735E-03	-1.14582E-06	-1.51411E-05	-4.11078E-06
3089	-5.07443E-04	-3.08307E-04	2.98465E-03	-1.56973E-06	-1.50796E-05	-4.17016E-06
3092	-4.41503E-04	-3.06804E-04	2.94826E-03	-2.41322E-06	-1.49663E-05	-4.22825E-06
3095	-3.98038E-04	-3.05495E-04	2.91574E-03	-2.95340E-06	-1.48947E-05	-4.22487E-06
3098	-3.91555E-04	-3.05247E-04	2.91020E-03	-3.03247E-06	-1.48840E-05	-4.22133E-06
3100	-3.17992E-04	-3.02164E-04	2.83748E-03	-3.80091E-06	-1.47648E-05	-4.12163E-06
3101	-2.47727E-04	-2.98405E-04	2.75084E-03	-4.25747E-06	-1.46504E-05	-3.91201E-06
3104	-2.45620E-04	-2.98143E-04	2.74749E-03	-4.26703E-06	-1.46462E-05	-3.90214E-06
3107	-2.10742E-04	-2.95920E-04	2.69844E-03	-4.33897E-06	-1.45875E-05	-3.74470E-06
3110	-1.64442E-04	-2.83597E-04	2.59116E-03	-4.20295E-06	-1.44908E-05	-3.43353E-06
3113	-1.32036E-04	-2.58626E-04	2.43940E-03	-3.81355E-06	-1.43399E-05	-3.09238E-06
3115	-1.06201E-04	-2.05097E-04	2.13452E-03	-2.78613E-06	-1.38842E-05	-2.48725E-06
3116	-1.10044E-04	-1.43969E-04	1.74470E-03	-1.19315E-06	-1.29993E-05	-1.74007E-06
3119	-1.17956E-04	-1.21161E-04	1.56312E-03	-3.64788E-07	-1.25302E-05	-1.41448E-06
3120	-1.27446E-04	-9.95325E-05	1.34271E-03	6.84772E-07	-1.19946E-05	-1.01812E-06
3122	-1.36571E-04	-8.57077E-05	1.13116E-03	1.73429E-06	-1.15684E-05	-6.41454E-07

3123	-1.52570E-04	-8.01755E-05	8.55938E-04	3.14544E-06	-1.10948E-05	-1.30223E-07
3125	-1.66951E-04	-8.73801E-05	6.10566E-04	4.45167E-06	-1.06783E-05	3.20097E-07
3128	-1.71790E-04	-1.01732E-04	3.81672E-04	5.67569E-06	-1.01586E-05	8.22026E-07
3198	-1.60631E-04	-1.09667E-04	2.37201E-04	6.38633E-06	-9.66698E-06	1.31250E-06
3199	-1.38556E-04	-1.10844E-04	1.33970E-04	6.59061E-06	-9.28039E-06	1.77950E-06
3200	-1.06410E-04	-1.10589E-04	2.94770E-05	6.36728E-06	-8.95999E-06	2.27612E-06
3205	-6.24755E-05	-1.08240E-04	-6.93760E-05	5.70007E-06	-8.69838E-06	2.79311E-06
3208	-9.50509E-06	-1.03605E-04	-1.48528E-04	4.71491E-06	-8.49779E-06	3.29851E-06
3210	5.33752E-05	-9.64393E-05	-2.05041E-04	3.55753E-06	-8.32178E-06	3.86206E-06
3212	1.31945E-04	-6.17656E-05	-1.85576E-04	1.92797E-06	-8.22113E-06	3.98816E-06
3215	1.68879E-04	-4.30102E-06	-6.74570E-05	7.41666E-07	-7.90636E-06	3.29227E-06
3220	1.68139E-04	5.95941E-05	1.06475E-04	-3.52573E-07	-6.74474E-06	3.03153E-06
3222	9.23501E-05	1.54401E-04	2.36371E-04	-2.37741E-06	-3.80657E-06	5.03641E-06
3225	-7.09349E-05	2.02848E-04	1.73868E-04	-4.15570E-06	-1.26693E-06	7.02760E-06
3230	-1.21996E-04	1.99018E-04	1.43007E-04	-4.45425E-06	-6.41478E-07	7.19369E-06
3235	-2.86724E-04	1.73364E-04	3.51254E-05	-4.52349E-06	1.63376E-06	6.40636E-06
3237	-4.08347E-04	1.52498E-04	-5.44113E-05	-3.22538E-06	4.19405E-06	4.10538E-06
3238	-4.26547E-04	1.48379E-04	-7.78774E-05	-6.25523E-07	6.40099E-06	1.25401E-06
3240	-3.47079E-04	1.34020E-04	-5.24939E-05	1.90934E-06	8.25059E-06	-8.48650E-07
3243	-1.96266E-04	8.51203E-05	-1.29614E-05	3.04582E-06	8.14730E-06	-1.40643E-06
3245	-4.96762E-05	2.23442E-05	1.14011E-06	1.59770E-06	3.72550E-06	-5.97302E-07
3250	-1.68263E-08	7.15771E-09	2.87840E-09	1.66558E-09	3.83242E-09	-3.86755E-10

STATIC ANALYSIS

LOAD CASE 8

GROUP 3 Y EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	8.73887E-10	-9.81159E-11	-8.98066E-10	3.45204E-10	1.47532E-09	2.05940E-10
3001	1.69663E-06	4.73091E-08	-2.69134E-06	2.61228E-08	2.12767E-07	1.44277E-08
3005	2.49447E-06	5.44862E-08	-4.00788E-06	3.98938E-08	3.76156E-07	2.02198E-08
3010	3.87656E-06	5.76799E-08	-6.30751E-06	6.09953E-08	6.86720E-07	2.69559E-08
3011	7.08152E-06	5.11377E-08	-1.17518E-05	1.03074E-07	1.54551E-06	3.27518E-08
3012	1.62930E-05	-1.37896E-07	-2.77687E-05	1.30232E-07	2.90841E-06	8.44705E-09
3019	4.78179E-05	-1.53173E-06	-9.74212E-05	1.52309E-07	5.57932E-06	-8.55609E-08
3021	7.86213E-05	-4.37944E-06	-1.97956E-04	1.36822E-07	7.42139E-06	-1.82868E-07
3023	8.38216E-05	-5.05695E-06	-2.18903E-04	1.37414E-07	7.69867E-06	-1.95956E-07
3024	1.08479E-04	-8.58023E-06	-3.24423E-04	1.41375E-07	8.79226E-06	-2.34099E-07
3026	1.42104E-04	-1.32746E-05	-4.69273E-04	1.36488E-07	9.89783E-06	-2.38285E-07
3028	1.79059E-04	-1.76686E-05	-6.28735E-04	1.19829E-07	1.08040E-05	-1.91173E-07
3030	2.48592E-04	-2.19444E-05	-9.28136E-04	6.11248E-08	1.20846E-05	2.09143E-08
3032	3.25007E-04	-1.80186E-05	-1.25676E-03	-3.67705E-08	1.32707E-05	4.03165E-07
3035	4.08380E-04	-1.21285E-06	-1.61655E-03	-1.71085E-07	1.46145E-05	9.42907E-07
3037	5.00484E-04	3.25144E-05	-2.01472E-03	-3.33892E-07	1.62397E-05	1.60613E-06
3038	6.03411E-04	8.59297E-05	-2.45910E-03	-5.12784E-07	1.81002E-05	2.33964E-06
3040	7.17827E-04	1.60139E-04	-2.95456E-03	-6.93543E-07	1.99914E-05	3.08075E-06
3044	7.66412E-04	1.95147E-04	-3.16441E-03	-7.62708E-07	2.06907E-05	3.36405E-06
3047	7.90073E-04	2.13339E-04	-3.26956E-03	-7.95787E-07	2.10097E-05	3.49822E-06
3050	8.12811E-04	2.30751E-04	-3.36787E-03	-8.25446E-07	2.12876E-05	3.61926E-06
3053	8.32387E-04	2.46426E-04	-3.45479E-03	-8.50210E-07	2.15308E-05	3.72996E-06
3056	8.62439E-04	2.72901E-04	-3.59869E-03	-8.77440E-07	2.18930E-05	3.90749E-06
3059	8.67627E-04	2.77792E-04	-3.62489E-03	-8.82144E-07	2.19592E-05	3.94186E-06
3062	8.87960E-04	2.97736E-04	-3.73055E-03	-8.81785E-07	2.21819E-05	4.06517E-06
3065	9.18808E-04	3.35144E-04	-3.92462E-03	-8.52842E-07	2.25575E-05	4.30688E-06
3068	9.32096E-04	3.54372E-04	-4.02196E-03	-8.16598E-07	2.27236E-05	4.43739E-06
3071	9.50720E-04	3.93193E-04	-4.21382E-03	-6.65649E-07	2.29895E-05	4.71168E-06
3074	9.52266E-04	3.99954E-04	-4.24661E-03	-6.25396E-07	2.30268E-05	4.76565E-06
3077	9.53667E-04	4.06667E-04	-4.27888E-03	-5.80297E-07	2.30607E-05	4.81883E-06
3080	9.23331E-04	4.64026E-04	-4.54243E-03	3.30090E-07	2.32082E-05	5.45126E-06
3083	8.70945E-04	4.72699E-04	-4.57317E-03	1.11878E-06	2.31436E-05	5.79599E-06
3086	8.53494E-04	4.72525E-04	-4.56914E-03	1.34859E-06	2.31183E-05	5.88244E-06
3089	8.03123E-04	4.72009E-04	-4.55389E-03	2.00570E-06	2.30508E-05	6.10557E-06
3092	7.05054E-04	4.69993E-04	-4.50560E-03	3.35394E-06	2.29268E-05	6.47386E-06
3095	6.37338E-04	4.68144E-04	-4.45983E-03	4.24798E-06	2.28487E-05	6.65764E-06
3098	6.27023E-04	4.67789E-04	-4.45189E-03	4.38126E-06	2.28370E-05	6.68053E-06
3100	5.06352E-04	4.63254E-04	-4.34475E-03	5.72811E-06	2.27107E-05	6.81182E-06
3101	3.85359E-04	4.57531E-04	-4.21206E-03	6.63920E-06	2.25965E-05	6.66984E-06
3104	3.81575E-04	4.57124E-04	-4.20683E-03	6.66213E-06	2.25925E-05	6.65869E-06
3107	3.19785E-04	4.53655E-04	-4.12964E-03	6.89056E-06	2.25381E-05	6.44727E-06
3110	2.36666E-04	4.32734E-04	-3.95914E-03	6.85781E-06	2.24412E-05	5.90830E-06
3113	1.78364E-04	3.90079E-04	-3.71782E-03	6.39483E-06	2.22450E-05	5.21040E-06
3115	1.33620E-04	3.02464E-04	-3.23456E-03	4.95311E-06	2.15393E-05	3.83896E-06
3116	1.40763E-04	2.15959E-04	-2.62521E-03	2.57802E-06	2.00151E-05	2.15381E-06
3119	1.52672E-04	1.90052E-04	-2.34618E-03	1.33183E-06	1.91570E-05	1.50094E-06
3120	1.66799E-04	1.70548E-04	-2.01087E-03	-2.41680E-07	1.81310E-05	8.24333E-07
3122	1.80197E-04	1.62844E-04	-1.69331E-03	-1.80912E-06	1.72781E-05	3.16128E-07

3123	2.00714E-04	1.67079E-04	-1.29010E-03	-3.92966E-06	1.63653E-05	-1.69870E-07
3125	2.19128E-04	1.80229E-04	-9.39214E-04	-5.97529E-06	1.57193E-05	-4.18974E-07
3128	2.32900E-04	1.97083E-04	-6.12793E-04	-8.09633E-06	1.50971E-05	-6.58449E-07
3198	2.33513E-04	2.07432E-04	-4.01892E-04	-9.60818E-06	1.45885E-05	-9.80004E-07
3199	2.24011E-04	2.12106E-04	-2.42726E-04	-1.03855E-05	1.42348E-05	-1.36548E-06
3200	2.05700E-04	2.15730E-04	-7.21608E-05	-1.05025E-05	1.39795E-05	-1.88297E-06
3205	1.74319E-04	2.17028E-04	9.88076E-05	-9.84066E-06	1.38346E-05	-2.54608E-06
3208	1.29041E-04	2.14711E-04	2.44112E-04	-8.47666E-06	1.38064E-05	-3.24335E-06
3210	6.91069E-05	2.08286E-04	3.54518E-04	-6.58148E-06	1.38659E-05	-3.85822E-06
3212	5.19003E-06	1.72731E-04	3.31999E-04	-3.45329E-06	1.40957E-05	-5.63899E-06
3215	-5.74100E-05	5.92346E-05	1.26251E-04	-8.21494E-07	1.40331E-05	-7.98723E-06
3220	-6.17569E-05	-1.57330E-04	-1.91530E-04	1.70111E-06	1.29339E-05	-9.37853E-06
3222	1.15620E-04	-4.19988E-04	-4.47230E-04	5.46810E-06	9.72431E-06	-7.50071E-06
3225	2.71135E-04	-4.78109E-04	-3.37790E-04	8.17637E-06	7.06380E-06	-3.76166E-06
3230	2.94981E-04	-4.77745E-04	-2.75290E-04	8.55957E-06	6.44184E-06	-2.65340E-06
3235	3.27984E-04	-4.75279E-04	-5.27259E-05	8.16562E-06	4.18076E-06	-5.29697E-08
3237	2.98484E-04	-4.77474E-04	1.32405E-04	5.00337E-06	1.50363E-06	2.02448E-06
3238	2.47746E-04	-4.82555E-04	1.81134E-04	-9.82641E-07	-9.57133E-07	3.11180E-06
3240	1.74268E-04	-4.32624E-04	1.23147E-04	-7.11289E-06	-2.95037E-06	3.09971E-06
3243	8.85619E-05	-2.75087E-04	3.08431E-05	-9.85725E-06	-3.44947E-06	2.17494E-06
3245	1.99457E-05	-7.51137E-05	-3.08444E-06	-5.14389E-06	-1.60261E-06	8.01190E-07
3250	6.01547E-09	-2.55956E-08	-7.78719E-09	-5.42959E-09	-1.61848E-09	5.18772E-10

STATIC ANALYSIS

LOAD CASE 9

GROUP 3 Z EXCITATION

DISPLACEMENTS/ROTATIONS OF UNRESTRAINED NODES

NODE NUMBER	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION
7090	-1.64333E-10	-1.29173E-10	1.70933E-10	-3.12696E-11	-2.81849E-10	-1.11990E-10
3001	-4.28339E-07	-2.06533E-07	4.57369E-07	-9.67417E-10	-4.05346E-08	-1.19488E-08
3005	-6.26744E-07	-2.88649E-07	6.85767E-07	-1.10156E-09	-7.16754E-08	-1.92759E-08
3010	-9.68162E-07	-4.23723E-07	1.08714E-06	-8.70015E-10	-1.30879E-07	-3.17044E-08
3011	-1.75600E-06	-7.27186E-07	2.04391E-06	1.40748E-09	-2.94670E-07	-6.14379E-08
3012	-3.98198E-06	-1.45071E-06	4.90328E-06	8.87444E-09	-5.54712E-07	-9.69225E-08
3019	-1.11910E-05	-3.85532E-06	1.77800E-05	1.52668E-08	-1.06650E-06	-1.34283E-07
3021	-1.75489E-05	-6.24179E-06	3.68730E-05	9.47071E-09	-1.42159E-06	-1.17876E-07
3023	-1.85529E-05	-6.61576E-06	4.08814E-05	6.52180E-09	-1.47527E-06	-1.11424E-07
3024	-2.32658E-05	-8.01236E-06	6.11070E-05	-1.03773E-08	-1.68800E-06	-7.31728E-08
3026	-2.97029E-05	-8.75062E-06	8.89313E-05	-3.51085E-08	-1.90575E-06	-8.62847E-09
3028	-3.67960E-05	-8.19062E-06	1.19659E-04	-6.19829E-08	-2.08825E-06	6.52548E-08
3030	-5.02188E-05	-4.22184E-06	1.77721E-04	-1.03630E-07	-2.35775E-06	1.73119E-07
3032	-6.51265E-05	2.33297E-06	2.42173E-04	-1.29018E-07	-2.62062E-06	2.10690E-07
3035	-8.16004E-05	8.73133E-06	3.13679E-04	-1.28308E-07	-2.92097E-06	1.35192E-07
3037	-1.00005E-04	1.14006E-05	3.93728E-04	-9.89331E-08	-3.27290E-06	-6.46557E-08
3038	-1.20695E-04	6.96511E-06	4.83603E-04	-4.68731E-08	-3.65525E-06	-3.62999E-07
3040	-1.43666E-04	-6.71590E-06	5.83681E-04	1.49891E-08	-4.01848E-06	-7.03567E-07
3044	-1.53374E-04	-1.48063E-05	6.25868E-04	3.90447E-08	-4.14493E-06	-8.36625E-07
3047	-1.58087E-04	-1.92883E-05	6.46944E-04	5.02607E-08	-4.20087E-06	-8.98731E-07
3050	-1.62608E-04	-2.37136E-05	6.66611E-04	6.00013E-08	-4.24850E-06	-9.53824E-07
3053	-1.66451E-04	-2.78020E-05	6.83948E-04	6.83493E-08	-4.28926E-06	-1.00299E-06
3056	-1.72112E-04	-3.49007E-05	7.12514E-04	7.84685E-08	-4.34814E-06	-1.07800E-06
3059	-1.73053E-04	-3.62338E-05	7.17698E-04	8.02013E-08	-4.35861E-06	-1.09192E-06
3062	-1.76592E-04	-4.17208E-05	7.38545E-04	8.23131E-08	-4.39318E-06	-1.13910E-06
3065	-1.81206E-04	-5.21840E-05	7.76597E-04	7.83356E-08	-4.44785E-06	-1.21969E-06
3068	-1.82746E-04	-5.75910E-05	7.95557E-04	7.03489E-08	-4.46985E-06	-1.25562E-06
3071	-1.83503E-04	-6.84512E-05	8.32619E-04	3.50150E-08	-4.50031E-06	-1.31133E-06
3074	-1.83179E-04	-7.03215E-05	8.38899E-04	2.52641E-08	-4.50351E-06	-1.31901E-06
3077	-1.82809E-04	-7.21665E-05	8.45063E-04	1.44822E-08	-4.50617E-06	-1.32557E-06
3080	-1.68849E-04	-8.71921E-05	8.93898E-04	-1.93697E-07	-4.49526E-06	-1.32864E-06
3083	-1.55538E-04	-8.91996E-05	8.97934E-04	-3.65002E-07	-4.46596E-06	-1.28278E-06
3086	-1.51572E-04	-8.91493E-05	8.96571E-04	-4.13378E-07	-4.45658E-06	-1.26762E-06
3089	-1.40891E-04	-8.90155E-05	8.91999E-04	-5.47649E-07	-4.43203E-06	-1.22241E-06
3092	-1.22721E-04	-8.85237E-05	8.79485E-04	-8.05457E-07	-4.38623E-06	-1.12423E-06
3095	-1.11910E-04	-8.80991E-05	8.68678E-04	-9.63144E-07	-4.35679E-06	-1.05657E-06
3098	-1.10375E-04	-8.80193E-05	8.66863E-04	-9.85609E-07	-4.35231E-06	-1.04634E-06
3100	-9.40329E-05	-8.70350E-05	8.43528E-04	-1.18954E-06	-4.30107E-06	-9.40311E-07
3101	-7.97591E-05	-8.58664E-05	8.16812E-04	-1.27809E-06	-4.24867E-06	-8.60905E-07
3104	-7.93751E-05	-8.57868E-05	8.15802E-04	-1.27878E-06	-4.24669E-06	-8.58607E-07
3107	-7.24550E-05	-8.51143E-05	8.01220E-04	-1.26674E-06	-4.21813E-06	-8.31344E-07
3110	-6.30131E-05	-8.20988E-05	7.70431E-04	-1.16567E-06	-4.17247E-06	-8.07563E-07
3113	-5.57914E-05	-7.58787E-05	7.27813E-04	-9.89950E-07	-4.11304E-06	-8.00943E-07
3115	-4.85909E-05	-6.06359E-05	6.43182E-04	-5.92750E-07	-3.96475E-06	-7.86367E-07
3116	-4.85856E-05	-3.88590E-05	5.33991E-04	-1.87046E-08	-3.72395E-06	-6.91098E-07
3119	-5.08321E-05	-2.92926E-05	4.81971E-04	2.76599E-07	-3.61311E-06	-6.05422E-07
3120	-5.35306E-05	-1.95490E-05	4.18146E-04	6.52984E-07	-3.50396E-06	-4.51391E-07
3122	-5.61420E-05	-1.33744E-05	3.55840E-04	1.03176E-06	-3.43169E-06	-2.48662E-07

3123	-6.04819E-05	-1.29249E-05	2.70167E-04	1.53575E-06	-3.33745E-06	1.01592E-07
3125	-6.11532E-05	-2.02727E-05	1.87332E-04	1.96239E-06	-3.18821E-06	4.19029E-07
3128	-5.33143E-05	-3.01705E-05	1.05256E-04	2.24905E-06	-2.91573E-06	6.62001E-07
3198	-4.01084E-05	-3.36011E-05	5.12221E-05	2.23688E-06	-2.61775E-06	7.44015E-07
3199	-2.69008E-05	-3.31907E-05	1.49003E-05	1.98955E-06	-2.36561E-06	7.16690E-07
3200	-1.49979E-05	-3.27442E-05	-1.49144E-05	1.54633E-06	-2.14750E-06	6.15751E-07
3205	-5.48237E-06	-3.22547E-05	-3.47791E-05	9.46289E-07	-1.94696E-06	4.63185E-07
3208	4.53808E-07	-3.17654E-05	-4.14137E-05	3.15277E-07	-1.76042E-06	3.04034E-07
3210	3.29741E-06	-3.12393E-05	-3.55975E-05	-2.59899E-07	-1.56365E-06	1.71976E-07
3212	3.46057E-06	-3.00944E-05	-9.93207E-06	-8.73508E-07	-1.33268E-06	1.41585E-08
3215	1.36630E-06	-2.99523E-05	2.30887E-05	-1.22197E-06	-9.33671E-07	-7.86155E-08
3220	5.23862E-07	-3.08658E-05	4.13147E-05	-1.53332E-06	-2.63880E-07	-9.74882E-08
3222	3.87088E-06	-3.02684E-05	6.18660E-06	-1.82079E-06	3.65122E-07	-1.95140E-07
3225	1.19749E-05	-2.78832E-05	-4.26932E-05	-1.28765E-06	3.53556E-07	-3.80649E-07
3230	1.50889E-05	-2.67309E-05	-5.10690E-05	-9.77274E-07	3.26345E-07	-3.99488E-07
3235	2.46892E-05	-2.25160E-05	-6.36756E-05	-3.12251E-08	2.16648E-07	-3.06730E-07
3237	2.91111E-05	-1.95427E-05	-4.99475E-05	8.24784E-07	8.66480E-08	-8.72966E-08
3238	2.78824E-05	-2.19483E-05	-2.85418E-05	1.01724E-06	-7.63058E-08	1.20938E-07
3240	2.23592E-05	-2.89081E-05	-1.23803E-05	5.27534E-07	-2.97060E-07	2.19563E-07
3243	1.32045E-05	-2.76019E-05	-7.10174E-06	-2.52470E-07	-4.22496E-07	1.86579E-07
3245	3.56170E-06	-1.06803E-05	-3.87784E-06	-4.35387E-07	-2.33772E-07	7.13708E-08
3250	1.18526E-09	-4.11723E-09	-1.03686E-08	-5.51043E-10	-2.49890E-10	4.62128E-11

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	1	END-I	-135.231	5.175	106.748	2584.02	-8618.48	2416.54
			END-J	-135.231	5.175	106.748	2584.02	-6618.11	2319.56
1	TANGENT	2	END-I	141.023	127.827	-49.250	-227.51	1657.03	4972.44
			END-J	141.023	127.827	-49.250	-227.51	734.13	2577.08
1	TANGENT	3	END-I	-44.100	-29.716	-42.379	-2241.46	6177.10	-1233.34
			END-J	-44.100	-29.716	-42.379	-2241.46	5382.96	-676.49
1	TANGENT	4	END-I	-7303.088	-3869.450	2530.606	4052.51	-97227.77	-141224.99
			END-J	-7303.088	-3869.450	2530.606	4052.51	-49806.65	-68715.20
1	TANGENT	5	END-I	1920.317	-1135.631	-220.024	2044.46	11099.28	-38790.92
			END-J	1920.317	-1135.631	-220.024	2044.46	6976.25	-17510.29
1	TANGENT	6	END-I	-1411.731	-799.298	-657.453	-1824.58	33839.67	-30668.63
			END-J	-1411.731	-799.298	-657.453	-1824.58	21519.64	-15690.55
1	TANGENT	7	END-I	-21.228	-24.662	88.166	3409.06	-9881.87	-1122.77
			END-J	-21.228	-24.662	88.166	3409.06	-8229.73	-660.64
1	TANGENT	8	END-I	30.416	9.737	-121.566	-5330.89	14331.61	44.73
			END-J	30.416	9.737	-121.566	-5330.89	12053.57	-137.74
1	TANGENT	9	END-I	2.967	-13.768	23.038	965.23	-2776.08	-810.88
			END-J	2.967	-13.768	23.038	965.23	-2344.38	-552.89
2	TANGENT	1	END-I	-135.190	5.219	106.604	2581.62	-6618.98	2319.78
			END-J	-135.190	5.219	106.604	2581.62	-6140.15	2296.33
2	TANGENT	2	END-I	141.049	127.532	-49.218	-226.96	734.41	2577.06
			END-J	141.049	127.532	-49.218	-226.96	513.34	2004.23
2	TANGENT	3	END-I	-44.102	-29.654	-42.326	-2239.39	5383.80	-676.65
			END-J	-44.102	-29.654	-42.326	-2239.39	5193.69	-543.46
2	TANGENT	4	END-I	-7197.072	-3789.990	2455.409	4025.91	-49813.13	-68712.07
			END-J	-7197.072	-3789.990	2455.409	4025.91	-38784.35	-51688.86
2	TANGENT	5	END-I	1824.413	-1004.240	-220.064	2045.50	6974.19	-17510.98
			END-J	1824.413	-1004.240	-220.064	2045.50	5985.74	-13000.32
2	TANGENT	6	END-I	-1377.785	-774.274	-585.089	-1817.58	21519.25	-15691.90
			END-J	-1377.785	-774.274	-585.089	-1817.58	18891.25	-12214.15
2	TANGENT	7	END-I	-21.221	-24.579	88.050	3405.72	-8231.13	-660.39
			END-J	-21.221	-24.579	88.050	3405.72	-7835.64	-549.99
2	TANGENT	8	END-I	30.400	9.674	-121.424	-5326.11	12055.68	-138.07
			END-J	30.400	9.674	-121.424	-5326.11	11510.29	-181.52

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
2	TANGENT	9	END-I END-J	2.959 2.959	-13.734 -13.734	23.006 23.006	964.25 964.25	-2344.80 -2241.47	-552.81 -491.13
3	TANGENT	1	END-I END-J	-135.133 -135.133	5.186 5.186	106.252 106.252	2581.62 2581.62	-6140.15 -5662.91	2296.33 2273.04
3	TANGENT	2	END-I END-J	141.012 141.012	126.989 126.989	-49.098 -49.098	-226.96 -226.96	513.34 292.81	2004.23 1433.85
3	TANGENT	3	END-I END-J	-44.082 -44.082	-29.554 -29.554	-42.219 -42.219	-2239.39 -2239.39	5193.69 5004.06	-543.46 -410.71
3	TANGENT	4	END-I END-J	-7020.195 -7020.195	-3664.442 -3664.442	2330.232 2330.232	4025.91 4025.91	-38784.35 -28317.82	-51688.86 -35229.56
3	TANGENT	5	END-I END-J	1667.116 1667.116	-787.154 -787.154	-219.879 -219.879	2045.50 2045.50	5985.74 4998.13	-13000.32 -9464.72
3	TANGENT	6	END-I END-J	-1321.192 -1321.192	-733.923 -733.923	-466.449 -466.449	-1817.58 -1817.58	18891.25 16796.14	-12214.15 -8917.64
3	TANGENT	7	END-I END-J	-21.212 -21.212	-24.438 -24.438	87.766 87.766	3405.72 3405.72	-7835.64 -7441.43	-549.99 -440.22
3	TANGENT	8	END-I END-J	30.388 30.388	9.580 9.580	-121.098 -121.098	-5326.11 -5326.11	11510.29 10966.36	-181.52 -224.55
3	TANGENT	9	END-I END-J	2.953 2.953	-13.664 -13.664	22.928 22.928	964.25 964.25	-2241.47 -2138.48	-491.13 -429.75
4	TANGENT	1	END-I END-J	-135.745 -135.745	4.759 4.759	105.081 105.081	2563.15 2563.15	-5675.03 -5137.54	2263.68 2239.33
4	TANGENT	2	END-I END-J	141.384 141.384	126.580 126.580	-47.519 -47.519	-235.78 -235.78	286.52 43.46	1433.69 786.24
4	TANGENT	3	END-I END-J	-43.812 -43.812	-29.239 -29.239	-42.520 -42.520	-2233.14 -2233.14	5007.54 4790.05	-402.23 -252.67
4	TANGENT	4	END-I END-J	-6921.401 -6921.401	-3587.821 -3587.821	2189.309 2189.309	4227.29 4227.29	-28161.79 -16963.48	-35330.90 -16979.20
4	TANGENT	5	END-I END-J	1565.360 1565.360	-646.562 -646.562	-212.744 -212.744	2108.70 2108.70	5039.19 3951.01	-9429.01 -6121.84
4	TANGENT	6	END-I END-J	-1282.293 -1282.293	-704.933 -704.933	-400.651 -400.651	-1749.23 -1749.23	16837.51 14788.18	-8853.05 -5247.32
4	TANGENT	7	END-I END-J	-21.769 -21.769	-24.684 -24.684	87.251 87.251	3403.05 3403.05	-7441.93 -6995.64	-452.34 -326.07

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
4	TANGENT	8	END-I END-J	31.147 31.147	10.009 10.009	-120.547 -120.547	-5316.66 -5316.66	10971.26 10354.66	-208.60 -259.80
4	TANGENT	9	END-I END-J	2.797 2.797	-13.697 -13.697	22.814 22.814	965.39 965.39	-2137.25 -2020.55	-433.32 -363.26
5	TANGENT	1	END-I END-J	-135.460 -135.460	4.639 4.639	104.728 104.728	2573.34 2573.34	-5131.52 -4234.39	2241.45 2201.71
5	TANGENT	2	END-I END-J	141.102 141.102	125.746 125.746	-47.768 -47.768	-234.32 -234.32	44.26 -364.92	786.63 -290.54
5	TANGENT	3	END-I END-J	-43.827 -43.827	-29.189 -29.189	-42.188 -42.188	-2239.13 -2239.13	4787.13 4425.73	-254.95 -4.92
5	TANGENT	4	END-I END-J	-6790.185 -6790.185	-3506.797 -3506.797	2123.138 2123.138	4214.35 4214.35	-16981.87 1205.43	-16964.03 13076.02
5	TANGENT	5	END-I END-J	1456.657 1456.657	-497.798 -497.798	-214.458 -214.458	2092.44 2092.44	3945.03 2107.94	-6131.27 -1867.01
5	TANGENT	6	END-I END-J	-1243.391 -1243.391	-679.461 -679.461	-316.019 -316.019	-1776.28 -1776.28	14778.96 12071.87	-5264.19 556.23
5	TANGENT	7	END-I END-J	-21.551 -21.551	-24.340 -24.340	86.828 86.828	3410.47 3410.47	-6992.16 -6248.37	-323.01 -114.51
5	TANGENT	8	END-I END-J	30.882 30.882	9.715 9.715	-120.035 -120.035	-5329.07 -5329.07	10348.18 9319.93	-263.80 -347.02
5	TANGENT	9	END-I END-J	2.851 2.851	-13.531 -13.531	22.694 22.694	967.02 967.02	-2019.94 -1825.54	-362.34 -246.43
6	BEND	1	END-I CENTER END-J	-134.895 -140.414 -141.881	-44.104 -20.633 3.434	92.894 92.894 92.894	2575.89 1803.46 1123.81	-4771.15 -4289.00 -3683.04	-24.82 273.28 352.47
6	BEND	2	END-I CENTER END-J	140.925 160.912 176.255	130.085 104.352 75.606	14.689 14.689 14.689	-235.42 -252.45 -239.29	-188.29 -11.42 165.78	-426.16 -1505.70 -2334.37
6	BEND	3	END-I CENTER END-J	-43.858 -44.272 -43.408	-6.184 1.329 8.804	-49.766 -49.766 -49.766	-2235.50 -1578.43 -953.38	3920.16 3786.99 3544.51	2058.09 2080.44 2033.78
6	BEND	4	END-I CENTER END-J	-6545.740 -7107.277 -7463.670	-3875.269 -2711.280 -1469.033	203.844 203.844 203.844	4251.16 3501.42 2968.40	-5005.26 -3788.88 -2463.14	12127.29 42457.02 61706.51
6	BEND	5	END-I CENTER END-J	1241.355 1207.267 1138.333	-95.536 -304.294 -504.268	-293.907 -293.907 -293.907	2089.05 2292.81 1972.19	2735.17 -345.17 -3415.54	-679.83 1161.31 4884.57

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
6	BEND	6	END-I	-1167.862	-480.306	-430.186	-1764.83	10430.56	6106.01
			CENTER	-1232.313	-275.679	-430.186	-309.01	6645.53	9587.17
			END-J	-1261.196	-63.095	-430.186	485.08	2668.68	11147.16
6	BEND	7	END-I	-21.268	-60.145	64.353	3405.01	-5478.03	-3013.91
			CENTER	-31.142	-55.677	64.353	2478.71	-5386.98	-2480.58
			END-J	-40.117	-49.601	64.353	1581.20	-5140.44	-1995.79
6	BEND	8	END-I	30.490	62.777	-100.109	-5322.34	8411.35	4037.62
			CENTER	40.677	56.710	-100.109	-3899.69	8275.61	3487.41
			END-J	49.690	49.006	-100.109	-2520.55	7901.00	3000.60
6	BEND	9	END-I	2.896	-21.794	13.567	964.84	-1501.54	-1069.06
			CENTER	-.835	-21.969	13.567	707.31	-1519.15	-867.54
			END-J	-4.542	-21.511	13.567	450.52	-1492.91	-667.33
7	BEND	1	END-I	-140.661	2.314	85.584	1105.27	-3695.45	272.03
			CENTER	-138.806	22.883	85.584	601.81	-3144.87	172.48
			END-J	-133.960	42.959	85.584	184.39	-2526.52	-87.63
7	BEND	2	END-I	173.823	64.588	11.864	-249.55	214.54	-2329.31
			CENTER	181.406	38.442	11.864	-208.59	342.00	-2736.35
			END-J	185.080	11.468	11.864	-149.40	462.09	-2933.53
7	BEND	3	END-I	-43.359	9.538	-45.864	-924.18	3507.47	2110.05
			CENTER	-41.495	15.784	-45.864	-427.22	3244.55	2010.02
			END-J	-38.737	21.689	-45.864	25.88	2911.71	1861.97
7	BEND	4	END-I	-7093.623	-1299.709	141.175	3250.26	-3734.50	61628.41
			CENTER	-7207.472	-247.129	141.175	2750.13	-3060.67	67739.39
			END-J	-7165.987	810.778	141.175	2354.04	-2320.88	65512.62
7	BEND	5	END-I	976.300	-175.347	-157.506	1976.79	-3524.82	4804.42
			CENTER	940.107	-316.397	-157.506	1348.32	-5014.05	6747.12
			END-J	883.653	-450.629	-157.506	508.58	-6395.22	9777.35
7	BEND	6	END-I	-1180.455	-106.558	-244.557	553.07	2438.60	11196.59
			CENTER	-1183.336	67.420	-244.557	762.69	409.45	11351.21
			END-J	-1160.713	239.946	-244.557	672.97	-1628.53	10136.92
7	BEND	7	END-I	-38.656	-45.441	59.284	1543.41	-5107.19	-2107.59
			CENTER	-44.892	-39.292	59.284	813.33	-4812.23	-1772.84
			END-J	-50.161	-32.296	59.284	134.30	-4413.56	-1490.03
7	BEND	8	END-I	48.163	45.985	-93.404	-2462.79	7851.75	3172.90
			CENTER	54.376	38.438	-93.404	-1340.71	7393.69	2839.37
			END-J	59.418	30.062	-93.404	-297.78	6776.28	2568.75
7	BEND	9	END-I	-4.047	-19.430	12.420	439.12	-1481.43	-699.73
			CENTER	-6.848	-18.628	12.420	224.68	-1432.15	-549.38
			END-J	-9.502	-17.424	12.420	19.76	-1352.01	-406.95

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
8	BEND	1	END-I	-133.284	31.319	83.573	208.64	-2498.85	-370.38
			CENTER	-132.455	34.655	83.573	147.31	-2387.20	-416.22
			END-J	-131.544	37.969	83.573	88.79	-2274.04	-466.67
8	BEND	2	END-I	181.569	5.519	8.048	-179.50	784.64	-2862.44
			CENTER	181.651	.960	8.048	-159.61	800.07	-2866.94
			END-J	181.618	-3.600	8.048	-139.33	815.01	-2865.11
8	BEND	3	END-I	-39.291	24.980	-39.754	13.24	2686.06	2174.98
			CENTER	-38.652	25.958	-39.754	79.97	2629.66	2139.60
			END-J	-37.988	26.920	-39.754	145.26	2571.59	2102.86
8	BEND	4	END-I	-6958.114	712.532	253.629	2946.98	-9585.13	64824.94
			CENTER	-6938.035	886.967	253.629	2709.88	-9303.73	63713.73
			END-J	-6913.585	1060.844	253.629	2479.91	-9016.48	62360.54
8	BEND	5	END-I	850.582	-266.954	-127.911	656.99	-7439.59	8998.61
			CENTER	843.613	-288.221	-127.911	467.80	-7631.43	9384.30
			END-J	836.113	-309.306	-127.911	273.86	-7818.47	9799.41
8	BEND	6	END-I	-1129.368	205.916	-130.114	777.26	-2741.21	9886.55
			CENTER	-1123.843	234.200	-130.114	705.94	-2940.62	9580.79
			END-J	-1117.610	262.336	-130.114	629.63	-3138.17	9235.83
8	BEND	7	END-I	-47.553	-34.876	52.307	165.04	-4218.20	-1974.15
			CENTER	-48.413	-33.672	52.307	60.02	-4148.35	-1926.53
			END-J	-49.243	-32.446	52.307	-43.22	-4075.88	-1880.60
8	BEND	8	END-I	56.689	36.737	-84.857	-342.53	6444.00	3310.98
			CENTER	57.593	35.303	-84.857	-182.15	6332.69	3260.93
			END-J	58.461	33.846	-84.857	-24.61	6217.38	3212.89
8	BEND	9	END-I	-8.471	-16.842	10.019	29.61	-1297.92	-555.41
			CENTER	-8.891	-16.624	10.019	-2.80	-1284.33	-532.16
			END-J	-9.306	-16.396	10.019	-34.87	-1269.94	-509.22
9	TANGENT	1	END-I	-131.309	70.920	47.877	86.68	-2204.11	728.93
			END-J	-131.309	70.920	47.877	86.68	-1590.34	-180.24
9	TANGENT	2	END-I	178.371	-5.630	9.093	-134.59	-721.32	-2890.34
			END-J	178.371	-5.630	9.093	-134.59	-604.75	-2818.17
9	TANGENT	3	END-I	-37.913	3.900	-44.918	145.58	3277.44	541.68
			END-J	-37.913	3.900	-44.918	145.58	2701.60	491.68
9	TANGENT	4	END-I	-6733.007	1026.275	-336.610	2387.22	23262.12	58561.58
			END-J	-6733.007	1026.275	-336.610	2387.22	18946.89	45405.05
9	TANGENT	5	END-I	812.013	-189.107	41.890	251.62	-1894.41	12392.74
			END-J	812.013	-189.107	41.890	251.62	-1357.39	14817.02

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
9	TANGENT	6	END-I	-1089.195	159.496	-171.225	613.74	1882.17	9572.14
			END-J	-1089.195	159.496	-171.225	613.74	-312.87	7527.45
9	TANGENT	7	END-I	-47.656	-.251	56.896	-45.64	-4470.85	400.92
			END-J	-47.656	-.251	56.896	-45.64	-3741.46	404.13
9	TANGENT	8	END-I	57.063	-13.862	-84.547	-21.37	6991.46	-313.30
			END-J	57.063	-13.862	-84.547	-21.37	5907.59	-135.60
9	TANGENT	9	END-I	-8.622	-7.927	15.630	-35.72	-1354.75	191.40
			END-J	-8.622	-7.927	15.630	-35.72	-1154.38	293.02
10	TANGENT	1	END-I	-130.639	61.060	35.761	86.86	-1590.34	-180.15
			END-J	-130.639	61.060	35.761	86.86	-1032.06	-1133.39
10	TANGENT	2	END-I	172.303	-19.160	9.112	-131.78	-604.75	-2818.30
			END-J	172.303	-19.160	9.112	-131.78	-462.49	-2519.18
10	TANGENT	3	END-I	-37.830	4.270	-37.547	145.09	2701.60	491.82
			END-J	-37.830	4.270	-37.547	145.09	2115.44	425.16
10	TANGENT	4	END-I	-6405.793	971.805	-353.255	2341.84	18946.89	45407.41
			END-J	-6405.793	971.805	-353.255	2341.84	13432.02	30236.02
10	TANGENT	5	END-I	768.334	19.843	37.151	236.81	-1357.39	14817.27
			END-J	768.334	19.843	37.151	236.81	-777.40	14507.48
10	TANGENT	6	END-I	-1038.224	150.936	-60.626	606.22	-312.87	7528.06
			END-J	-1038.224	150.936	-60.626	606.22	-1259.34	5171.71
10	TANGENT	7	END-I	-44.541	3.569	46.394	-46.04	-3741.46	404.09
			END-J	-44.541	3.569	46.394	-46.04	-3017.18	348.37
10	TANGENT	8	END-I	54.223	-15.522	-70.902	-21.23	5907.59	-135.62
			END-J	54.223	-15.522	-70.902	-21.23	4800.70	106.70
10	TANGENT	9	END-I	-7.317	-4.927	12.794	-36.01	-1154.38	292.99
			END-J	-7.317	-4.927	12.794	-36.01	-954.65	369.91
11	TANGENT	1	END-I	-129.626	46.440	20.775	86.86	-1032.06	-1133.39
			END-J	-129.626	46.440	20.775	86.86	-707.73	-1858.40
11	TANGENT	2	END-I	165.428	-34.480	8.618	-131.78	-462.49	-2519.18
			END-J	165.428	-34.480	8.618	-131.78	-327.95	-1980.89
11	TANGENT	3	END-I	-37.709	4.150	-27.274	145.09	2115.44	425.16
			END-J	-37.709	4.150	-27.274	145.09	1689.65	360.37
11	TANGENT	4	END-I	-6047.547	894.525	-340.382	2341.84	13432.02	30236.02
			END-J	-6047.547	894.525	-340.382	2341.84	8118.13	16271.08

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
11	TANGENT	5	END-I END-J	720.315 720.315	179.123 179.123	30.750 30.750	236.81 236.81	-777.40 -297.35	14507.48 11711.08
11	TANGENT	6	END-I END-J	-982.443 -982.443	138.636 138.636	29.223 29.223	606.22 606.22	-1259.34 -803.12	5171.71 3007.37
11	TANGENT	7	END-I END-J	-40.966 -40.966	8.119 8.119	32.779 32.779	-46.04 -46.04	-3017.18 -2505.45	348.37 221.62
11	TANGENT	8	END-I END-J	50.918 50.918	-17.132 -17.132	-52.804 -52.804	-21.23 -21.23	4800.70 3976.35	106.70 374.15
11	TANGENT	9	END-I END-J	-5.852 -5.852	-1.017 -1.017	9.072 9.072	-36.01 -36.01	-954.65 -813.01	369.91 385.79
12	TANGENT	1	END-I END-J	-127.944 -127.944	22.880 22.880	-.044 -.044	85.30 85.30	-707.73 -708.91	-1858.47 -2468.74
12	TANGENT	2	END-I END-J	155.843 155.843	-52.540 -52.540	7.333 7.333	-133.44 -133.44	-327.95 -132.36	-1980.78 -579.39
12	TANGENT	3	END-I END-J	-37.432 -37.432	3.180 3.180	-11.508 -11.508	145.39 145.39	1689.65 1382.71	360.25 275.43
12	TANGENT	4	END-I END-J	-5563.582 -5563.582	768.035 768.035	-289.974 -289.974	2355.49 2355.49	8118.13 383.70	16269.11 -4216.57
12	TANGENT	5	END-I END-J	655.215 655.215	305.083 305.083	21.444 21.444	246.63 246.63	-297.35 274.63	11710.88 3573.44
12	TANGENT	6	END-I END-J	-906.801 -906.801	118.196 118.196	108.432 108.432	608.74 608.74	-803.12 2089.08	3006.87 -145.77
12	TANGENT	7	END-I END-J	-35.998 -35.998	14.109 14.109	13.101 13.101	-45.86 -45.86	-2505.45 -2156.00	221.65 -154.67
12	TANGENT	8	END-I END-J	46.290 46.290	-18.672 -18.672	-25.972 -25.972	-20.92 -20.92	3976.35 3283.62	374.16 872.19
12	TANGENT	9	END-I END-J	-3.855 -3.855	4.603 4.603	3.683 3.683	-35.69 -35.69	-813.01 -714.78	385.82 263.06
13	TANGENT	1	END-I END-J	-125.213 -125.213	-8.810 -8.810	-21.859 -21.859	83.72 83.72	-708.91 -1291.50	-2468.80 -2233.99
13	TANGENT	2	END-I END-J	143.183 143.183	-60.110 -60.110	4.925 4.925	-133.81 -133.81	-132.36 -1.09	-579.30 1022.76
13	TANGENT	3	END-I END-J	-36.792 -36.792	.310 .310	8.021 8.021	145.57 145.57	1382.71 1596.49	275.33 267.07

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
13	TANGENT	4	END-I	-4955.035	569.205	-186.523	2352.78	383.70	-4218.08
			END-J	-4955.035	569.205	-186.523	2352.78	-4587.54	-19388.63
13	TANGENT	5	END-I	572.987	304.493	10.940	248.92	274.63	3573.28
			END-J	572.987	304.493	10.940	248.92	566.20	-4542.13
13	TANGENT	6	END-I	-811.369	85.436	126.576	608.65	2089.08	-146.16
			END-J	-811.369	85.436	126.576	608.65	5462.62	-2423.22
13	TANGENT	7	END-I	-29.534	19.469	-8.997	-45.96	-2156.00	-154.64
			END-J	-29.534	19.469	-8.997	-45.96	-2395.78	-673.54
13	TANGENT	8	END-I	40.258	-18.522	6.066	-20.36	3283.62	872.20
			END-J	40.258	-18.522	6.066	-20.36	3445.29	1365.84
13	TANGENT	9	END-I	-1.319	10.733	-2.319	-35.52	-714.78	263.08
			END-J	-1.319	10.733	-2.319	-35.52	-776.60	-22.97
14	TANGENT	1	END-I	-121.827	-33.780	-32.904	84.70	-1291.50	-2233.96
			END-J	-121.827	-33.780	-32.904	84.70	-2168.37	-1333.74
14	TANGENT	2	END-I	130.005	-44.860	2.320	-134.26	-1.09	1022.70
			END-J	130.005	-44.860	2.320	-134.26	60.74	2218.20
14	TANGENT	3	END-I	-35.905	-3.490	21.213	145.45	1596.49	267.13
			END-J	-35.905	-3.490	21.213	145.45	2161.79	360.14
14	TANGENT	4	END-I	-4348.458	342.135	-73.539	2361.29	-4587.54	-19387.60
			END-J	-4348.458	342.135	-73.539	2361.29	-6547.31	-28505.32
14	TANGENT	5	END-I	490.809	203.583	2.995	250.92	566.20	-4542.02
			END-J	490.809	203.583	2.995	250.92	646.02	-9967.40
14	TANGENT	6	END-I	-716.118	47.756	86.746	609.71	5462.62	-2422.96
			END-J	-716.118	47.756	86.746	609.71	7774.35	-3695.64
14	TANGENT	7	END-I	-22.866	20.879	-21.989	-45.66	-2395.78	-673.56
			END-J	-22.866	20.879	-21.989	-45.66	-2981.78	-1229.97
14	TANGENT	8	END-I	33.991	-15.902	27.561	-20.96	3445.29	1365.83
			END-J	33.991	-15.902	27.561	-20.96	4179.77	1789.60
14	TANGENT	9	END-I	1.225	13.973	-5.667	-35.51	-776.60	-22.98
			END-J	1.225	13.973	-5.667	-35.51	-927.61	-395.35
15	TANGENT	1	END-I	-117.806	-45.250	-29.645	84.83	-2168.37	-1333.73
			END-J	-117.806	-45.250	-29.645	84.83	-2958.74	-127.32
15	TANGENT	2	END-I	116.358	-9.890	-0.063	-134.48	60.74	2218.18
			END-J	116.358	-9.890	-0.063	-134.48	59.07	2481.86

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
15	TANGENT	3	END-I	-34.757	-7.090	23.212	145.42	2161.79	360.15
			END-J	-34.757	-7.090	23.212	145.42	2780.65	549.17
15	TANGENT	4	END-I	-3743.715	94.945	28.231	2364.17	-6547.31	-28505.08
			END-J	-3743.715	94.945	28.231	2364.17	-5794.64	-31036.44
15	TANGENT	5	END-I	408.785	63.243	-2.648	251.93	646.02	-9967.38
			END-J	408.785	63.243	-2.648	251.93	575.42	-11653.52
15	TANGENT	6	END-I	-620.838	7.006	19.014	610.09	7774.35	-3695.58
			END-J	-620.838	7.006	19.014	610.09	8281.27	-3882.38
15	TANGENT	7	END-I	-16.026	17.609	-21.936	-45.54	-2981.78	-1229.98
			END-J	-16.026	17.609	-21.936	-45.54	-3566.60	-1699.46
15	TANGENT	8	END-I	27.506	-11.012	32.167	-21.14	4179.77	1789.60
			END-J	27.506	-11.012	32.167	-21.14	5037.39	2083.18
15	TANGENT	9	END-I	3.777	13.173	-5.280	-35.47	-927.61	-395.35
			END-J	3.777	13.173	-5.280	-35.47	-1068.38	-746.55
16	TANGENT	1	END-I	-113.176	-41.180	-12.981	84.76	-2958.74	-127.36
			END-J	-113.176	-41.180	-12.981	84.76	-3304.72	970.17
16	TANGENT	2	END-I	102.285	21.690	-1.688	-133.14	59.07	2481.93
			END-J	102.285	21.690	-1.688	-133.14	14.09	1903.85
16	TANGENT	3	END-I	-33.336	-9.390	12.005	145.71	2780.65	549.10
			END-J	-33.336	-9.390	12.005	145.71	3100.62	799.36
16	TANGENT	4	END-I	-3140.658	-174.615	96.977	2347.42	-5794.64	-31037.71
			END-J	-3140.658	-174.615	96.977	2347.42	-3210.00	-26383.86
16	TANGENT	5	END-I	327.033	-72.577	-5.985	245.63	575.42	-11653.66
			END-J	327.033	-72.577	-5.985	245.63	415.91	-9719.34
16	TANGENT	6	END-I	-525.629	-36.634	-48.946	607.99	8281.27	-3882.70
			END-J	-525.629	-36.634	-48.946	607.99	6976.76	-2906.34
16	TANGENT	7	END-I	-9.038	10.079	-8.775	-46.45	-3566.60	-1699.43
			END-J	-9.038	10.079	-8.775	-46.45	-3800.48	-1968.06
16	TANGENT	8	END-I	20.834	-4.382	18.036	-20.01	5037.39	2083.19
			END-J	20.834	-4.382	18.036	-20.01	5518.09	2199.97
16	TANGENT	9	END-I	6.314	8.353	-1.219	-35.87	-1068.38	-746.53
			END-J	6.314	8.353	-1.219	-35.87	-1100.88	-969.15
17	TANGENT	1	END-I	-107.925	-23.990	11.806	84.34	-3304.72	970.21
			END-J	-107.925	-23.990	11.806	84.34	-2990.10	1609.53

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
17	TANGENT	2	END-I	87.843	41.900	-2.058	-133.98	14.09	1903.79
			END-J	87.843	41.900	-2.058	-133.98	-40.76	787.18
17	TANGENT	3	END-I	-31.665	-9.310	-10.203	145.36	3100.62	799.42
			END-J	-31.665	-9.310	-10.203	145.36	2828.71	1047.52
17	TANGENT	4	END-I	-2539.471	-445.805	115.115	2358.99	-3210.00	-26382.83
			END-J	-2539.471	-445.805	115.115	2358.99	-142.25	-14502.38
17	TANGENT	5	END-I	245.716	-168.047	-6.958	249.90	415.91	-9719.23
			END-J	245.716	-168.047	-6.958	249.90	230.48	-5240.88
17	TANGENT	6	END-I	-430.484	-79.384	-96.480	609.27	6976.76	-2906.07
			END-J	-430.484	-79.384	-96.480	609.27	4405.62	-790.54
17	TANGENT	7	END-I	-1.929	.109	13.576	-45.59	-3800.48	-1968.08
			END-J	-1.929	.109	13.576	-45.59	-3438.69	-1970.99
17	TANGENT	8	END-I	13.979	2.698	-11.471	-20.98	5518.09	2199.96
			END-J	13.979	2.698	-11.471	-20.98	5212.40	2128.05
17	TANGENT	9	END-I	8.830	.883	5.284	-35.45	-1100.88	-969.16
			END-J	8.830	.883	5.284	-35.45	-960.06	-992.69
18	TANGENT	1	END-I	-103.836	-7.670	29.523	85.43	-2990.10	1609.47
			END-J	-103.836	-7.670	29.523	85.43	-2678.83	1690.33
18	TANGENT	2	END-I	77.539	47.710	-1.531	-133.44	-40.76	787.27
			END-J	77.539	47.710	-1.531	-133.44	-56.90	284.26
18	TANGENT	3	END-I	-30.326	-7.330	-28.589	146.08	2828.71	1047.43
			END-J	-30.326	-7.330	-28.589	146.08	2527.30	1124.71
18	TANGENT	4	END-I	-2120.987	-612.185	95.955	2349.12	-142.25	-14503.98
			END-J	-2120.987	-612.185	95.955	2349.12	869.42	-8049.59
18	TANGENT	5	END-I	189.334	-194.317	-6.976	246.33	230.48	-5241.05
			END-J	189.334	-194.317	-6.976	246.33	156.93	-3192.33
18	TANGENT	6	END-I	-364.243	-104.754	-105.858	608.73	4405.62	-790.96
			END-J	-364.243	-104.754	-105.858	608.73	3289.54	313.48
18	TANGENT	7	END-I	3.115	-6.731	30.950	-46.93	-3438.69	-1970.96
			END-J	3.115	-6.731	30.950	-46.93	-3112.38	-1899.99
18	TANGENT	8	END-I	9.068	7.018	-37.515	-19.53	5212.40	2128.07
			END-J	9.068	7.018	-37.515	-19.53	4816.87	2054.07
18	TANGENT	9	END-I	10.575	-4.587	10.100	-36.12	-960.06	-992.66
			END-J	10.575	-4.587	10.100	-36.12	-853.57	-944.30

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
19	TANGENT	1	END-I END-J	-102.265 -102.265	-.850 -.850	35.711 35.711	75.10 75.10	-2678.83 -2495.23	1690.82 1695.19
19	TANGENT	2	END-I END-J	73.169 73.169	49.000 49.000	-.698 -.698	-135.18 -135.18	-56.90 -60.49	283.44 31.51
19	TANGENT	3	END-I END-J	-29.508 -29.508	-6.230 -6.230	-36.216 -36.216	139.20 139.20	2527.30 2341.10	1125.58 1157.61
19	TANGENT	4	END-I END-J	-1945.187 -1945.187	-675.225 -675.225	70.047 70.047	2398.26 2398.26	869.42 1229.55	-8035.09 -4563.58
19	TANGENT	5	END-I END-J	165.676 165.676	-198.677 -198.677	-5.820 -5.820	265.83 265.83	156.93 127.01	-3190.77 -2169.32
19	TANGENT	6	END-I END-J	-335.643 -335.643	-114.214 -114.214	-107.694 -107.694	606.80 606.80	3289.54 2735.85	317.19 904.40
19	TANGENT	7	END-I END-J	5.017 5.017	-9.381 -9.381	37.990 37.990	-35.32 -35.32	-3112.38 -2917.06	-1900.24 -1852.01
19	TANGENT	8	END-I END-J	7.278 7.278	8.648 8.648	-48.577 -48.577	-32.08 -32.08	4816.87 4567.12	2053.91 2009.45
19	TANGENT	9	END-I END-J	11.229 11.229	-6.717 -6.717	12.074 12.074	-30.35 -30.35	-853.57 -791.49	-944.50 -909.96
20	TANGENT	1	END-I END-J	-100.731 -100.731	3.310 3.310	41.093 41.093	85.23 85.23	-2495.23 -2300.38	1694.72 1679.02
20	TANGENT	2	END-I END-J	70.413 70.413	49.500 49.500	-.776 -.776	-134.99 -134.99	-60.49 -64.17	32.32 -202.40
20	TANGENT	3	END-I END-J	-29.536 -29.536	-5.470 -5.470	-41.400 -41.400	146.12 146.12	2341.10 2144.79	1156.75 1182.69
20	TANGENT	4	END-I END-J	-1834.056 -1834.056	-712.295 -712.295	69.926 69.926	2370.94 2370.94	1229.55 1561.13	-4577.83 -1200.25
20	TANGENT	5	END-I END-J	150.738 150.738	-199.477 -199.477	-6.664 -6.664	252.86 252.86	127.01 95.41	-2170.87 -1224.98
20	TANGENT	6	END-I END-J	-319.026 -319.026	-119.734 -119.734	-105.767 -105.767	612.20 612.20	2735.85 2234.32	900.75 1468.51
20	TANGENT	7	END-I END-J	6.876 6.876	-10.951 -10.951	43.464 43.464	-46.39 -46.39	-2917.06 -2710.96	-1851.77 -1799.84
20	TANGENT	8	END-I END-J	5.231 5.231	9.618 9.618	-57.463 -57.463	-20.07 -20.07	4567.12 4294.64	2009.60 1963.99

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
20	TANGENT	9	END-I	11.846	-7.987	13.521	-35.79	-791.49	-909.77
			END-J	11.846	-7.987	13.521	-35.79	-727.38	-871.89
21	BEND	1	END-I	-99.641	6.880	44.524	86.79	-2300.38	1678.94
			CENTER	-99.312	10.624	44.524	1.91	-2209.93	1660.83
			END-J	-98.842	14.353	44.524	-79.50	-2116.36	1635.00
21	BEND	2	END-I	67.914	49.710	-.549	-135.17	-64.17	-202.27
			CENTER	69.736	47.120	-.549	-137.51	-60.17	-302.44
			END-J	71.459	44.463	-.549	-139.70	-56.09	-397.18
21	BEND	3	END-I	-29.220	-4.740	-45.151	147.21	2144.79	1182.56
			CENTER	-29.377	-3.637	-45.151	226.04	2044.35	1191.22
			END-J	-29.493	-2.529	-45.151	301.04	1941.02	1197.60
21	BEND	4	END-I	-1734.312	-743.165	61.078	2369.83	1561.13	-1202.44
			CENTER	-1761.044	-677.390	61.078	2429.26	1597.19	267.04
			END-J	-1785.282	-610.657	61.078	2490.01	1630.98	1599.44
21	BEND	5	END-I	137.352	-198.677	-6.684	251.73	95.41	-1225.21
			CENTER	129.780	-203.703	-6.684	254.88	72.05	-808.98
			END-J	122.025	-208.442	-6.684	257.15	48.58	-382.64
21	BEND	6	END-I	-303.295	-124.294	-103.089	613.55	2234.32	1467.94
			CENTER	-307.756	-112.795	-103.089	693.17	1996.46	1713.20
			END-J	-311.782	-101.137	-103.089	763.77	1755.76	1934.50
21	BEND	7	END-I	8.128	-12.271	47.088	-48.06	-2710.96	-1799.80
			CENTER	7.661	-12.568	47.088	-148.18	-2609.85	-1774.10
			END-J	7.183	-12.847	47.088	-244.43	-2505.04	-1747.81
21	BEND	8	END-I	3.983	10.428	-63.586	-18.25	4294.64	1964.01
			CENTER	4.373	10.271	-63.586	140.86	4160.78	1942.60
			END-J	4.756	10.099	-63.586	294.82	4021.03	1921.53
21	BEND	9	END-I	12.265	-9.047	14.463	-36.60	-727.38	-871.86
			CENTER	11.916	-9.502	14.463	-63.38	-695.58	-852.67
			END-J	11.550	-9.944	14.463	-88.94	-662.79	-832.55
22	BEND	1	END-I	-97.144	20.495	47.585	-83.88	-2050.81	1716.28
			CENTER	-95.708	26.403	47.585	-204.31	-1880.42	1636.66
			END-J	-93.912	32.212	47.585	-314.09	-1702.98	1537.16
22	BEND	2	END-I	68.509	44.511	-1.938	-140.06	-71.18	-394.62
			CENTER	71.105	40.234	-1.938	-144.36	-69.05	-538.49
			END-J	73.435	35.806	-1.938	-148.51	-66.65	-667.58
22	BEND	3	END-I	-29.017	-3.488	-49.337	306.55	1985.46	1120.90
			CENTER	-29.176	-1.706	-49.337	422.38	1795.62	1129.72
			END-J	-29.226	.084	-49.337	526.37	1599.04	1132.47

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
22	BEND	4	END-I	-1667.377	-648.383	73.200	2494.96	1685.80	1533.52
			CENTER	-1703.939	-545.105	73.200	2601.08	1778.22	3559.63
			END-J	-1734.111	-439.782	73.200	2712.65	1863.98	5231.61
22	BEND	5	END-I	105.249	-205.074	1.395	257.06	32.98	-384.36
			CENTER	92.499	-211.132	1.395	258.74	21.92	322.20
			END-J	79.402	-216.398	1.395	259.74	10.77	1047.99
22	BEND	6	END-I	-293.094	-110.775	-94.615	769.23	1827.90	1864.24
			CENTER	-299.325	-92.626	-94.615	869.84	1456.44	2209.55
			END-J	-304.433	-74.131	-94.615	947.53	1079.52	2492.64
22	BEND	7	END-I	8.541	-12.475	51.833	-251.66	-2570.64	-1648.73
			CENTER	7.761	-12.975	51.833	-403.15	-2374.59	-1605.53
			END-J	6.952	-13.425	51.833	-542.36	-2169.64	-1560.71
22	BEND	8	END-I	3.354	8.366	-71.297	305.93	4092.11	1763.20
			CENTER	3.860	8.145	-71.297	548.43	3823.87	1735.17
			END-J	4.351	7.893	-71.297	774.06	3541.28	1707.95
22	BEND	9	END-I	11.939	-10.593	15.976	-91.05	-694.51	-806.05
			CENTER	11.269	-11.304	15.976	-131.73	-633.44	-768.87
			END-J	10.556	-11.973	15.976	-168.60	-570.00	-729.36
23	BEND	1	END-I	-92.158	.096	60.923	-296.62	-2274.56	316.30
			CENTER	-92.150	1.210	60.923	-323.84	-2233.21	315.89
			END-J	-92.129	2.323	60.923	-350.57	-2191.54	314.80
23	BEND	2	END-I	71.042	31.262	18.697	-152.70	318.71	-589.30
			CENTER	71.414	30.402	18.697	-148.77	332.07	-608.32
			END-J	71.776	29.537	18.697	-144.67	345.38	-626.82
23	BEND	3	END-I	-29.126	29.461	-42.560	527.20	690.77	1833.41
			CENTER	-28.768	29.810	-42.560	535.35	658.08	1815.12
			END-J	-28.406	30.156	-42.560	543.10	625.31	1796.61
23	BEND	4	END-I	-1648.485	-444.029	-212.143	2739.74	-1376.38	5366.75
			CENTER	-1653.729	-424.082	-212.143	2722.12	-1540.29	5634.62
			END-J	-1658.731	-404.074	-212.143	2702.53	-1703.98	5890.16
23	BEND	5	END-I	68.923	-174.486	-117.375	266.70	-577.79	872.30
			CENTER	66.810	-175.306	-117.375	259.27	-653.40	980.23
			END-J	64.688	-176.100	-117.375	250.92	-728.92	1088.66
23	BEND	6	END-I	-291.391	-17.543	-118.608	959.64	-499.91	2665.63
			CENTER	-291.582	-14.022	-118.608	953.09	-584.66	2675.37
			END-J	-291.730	-10.498	-118.608	945.51	-669.33	2682.94
23	BEND	7	END-I	8.257	-42.552	36.989	-543.65	-922.46	-2508.15
			CENTER	7.743	-42.649	36.989	-554.62	-893.00	-2481.86
			END-J	7.227	-42.739	36.989	-565.23	-863.41	-2455.51

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
23	BEND	8	END-I	2.843	49.906	-58.335	770.56	1976.29	3399.63
			CENTER	3.446	49.868	-58.335	794.16	1930.84	3368.84
			END-J	4.048	49.823	-58.335	817.21	1885.11	3338.08
23	BEND	9	END-I	10.918	-19.836	6.599	-171.08	-63.19	-923.05
			CENTER	10.678	-19.967	6.599	-171.80	-57.04	-910.77
			END-J	10.436	-20.094	6.599	-172.46	-50.89	-898.41
24	BEND	1	END-I	-89.799	42.042	49.431	-360.69	-1549.12	1579.55
			CENTER	-87.973	45.741	49.431	-422.24	-1408.73	1469.37
			END-J	-85.994	49.361	49.431	-477.89	-1265.91	1349.99
24	BEND	2	END-I	70.551	33.936	-3.383	-152.67	-101.81	-706.71
			CENTER	71.901	30.972	-3.383	-156.95	-103.86	-788.19
			END-J	73.128	27.954	-3.383	-161.31	-105.73	-862.15
24	BEND	3	END-I	-28.540	-1.004	-53.830	577.38	1575.91	1047.34
			CENTER	-28.557	.184	-53.830	639.63	1415.45	1048.37
			END-J	-28.525	1.372	-53.830	695.14	1252.54	1046.42
24	BEND	4	END-I	-1601.041	-456.856	83.809	2788.34	2162.99	5696.30
			CENTER	-1618.659	-389.861	83.809	2880.28	2255.44	6759.12
			END-J	-1633.476	-322.190	83.809	2975.98	2343.98	7652.90
24	BEND	5	END-I	52.767	-207.217	12.201	263.90	74.06	1305.50
			CENTER	44.101	-209.232	12.201	267.39	93.63	1828.24
			END-J	35.360	-210.886	12.201	271.69	113.04	2355.58
24	BEND	6	END-I	-283.503	-80.036	-81.658	985.40	1074.77	2532.59
			CENTER	-286.587	-68.174	-81.658	1024.99	827.94	2718.63
			END-J	-289.175	-56.193	-81.658	1054.28	579.68	2874.74
24	BEND	7	END-I	8.204	-12.477	57.332	-612.17	-2163.63	-1427.73
			CENTER	7.677	-12.807	57.332	-698.65	-1992.43	-1396.00
			END-J	7.138	-13.115	57.332	-777.93	-1817.77	-1363.46
24	BEND	8	END-I	2.681	4.628	-80.449	886.02	3506.95	1510.12
			CENTER	2.871	4.513	-80.449	1026.94	3265.18	1498.65
			END-J	3.056	4.390	-80.449	1157.67	3017.76	1487.48
24	BEND	9	END-I	10.542	-12.731	17.870	-187.77	-581.15	-682.99
			CENTER	10.004	-13.159	17.870	-210.85	-527.99	-650.49
			END-J	9.448	-13.564	17.870	-231.70	-473.92	-616.95
25	BEND	1	END-I	-82.683	48.664	55.921	-496.07	-1373.56	1233.14
			CENTER	-78.199	55.584	55.921	-600.80	-1061.18	985.94
			END-J	-73.138	62.093	55.921	-678.31	-740.95	706.90
25	BEND	2	END-I	69.363	28.238	.165	-155.81	-30.17	-869.09
			CENTER	71.532	22.178	.165	-157.79	-15.90	-988.64
			END-J	73.172	15.953	.165	-158.54	-1.51	-1079.06

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
25	BEND	3	END-I	-27.200	7.112	-57.153	695.98	1153.02	1154.65
			CENTER	-26.489	9.421	-57.153	780.78	818.45	1115.45
			END-J	-25.582	11.661	-57.153	836.54	477.83	1065.46
25	BEND	4	END-I	-1495.360	-398.120	22.028	2936.50	1656.85	7845.34
			CENTER	-1524.023	-268.245	22.028	3072.41	1502.85	9425.47
			END-J	-1541.428	-136.388	22.028	3194.59	1337.75	10384.96
25	BEND	5	END-I	14.931	-196.297	-5.373	255.49	-91.49	2358.33
			CENTER	-1.980	-196.854	-5.373	245.60	-138.53	3290.59
			END-J	-18.876	-195.957	-5.373	231.70	-184.54	4222.05
25	BEND	6	END-I	-266.293	-59.253	-78.829	1037.44	323.15	2920.78
			CENTER	-270.397	-36.168	-78.829	1045.30	-140.29	3147.04
			END-J	-272.504	-12.815	-78.829	1013.34	-602.68	3263.20
25	BEND	7	END-I	8.007	-19.980	60.014	-780.28	-1688.34	-1519.59
			CENTER	6.261	-20.593	60.014	-910.15	-1331.02	-1423.38
			END-J	4.470	-21.055	60.014	-1008.86	-963.86	-1324.62
25	BEND	8	END-I	2.063	12.756	-87.643	1167.15	2870.46	1748.68
			CENTER	3.151	12.532	-87.643	1391.48	2344.76	1688.72
			END-J	4.215	12.215	-87.643	1569.83	1801.73	1630.04
25	BEND	9	END-I	9.422	-16.321	17.644	-230.43	-417.53	-656.88
			CENTER	7.985	-17.070	17.644	-261.83	-312.68	-577.70
			END-J	6.490	-17.693	17.644	-284.12	-205.52	-495.27
26	BEND	1	END-I	-68.484	56.498	64.534	-667.79	-812.24	634.94
			CENTER	-65.742	59.666	64.534	-701.55	-618.19	489.38
			END-J	-62.855	62.700	64.534	-726.11	-422.77	336.05
26	BEND	2	END-I	69.334	16.836	1.578	-175.17	112.46	-1070.59
			CENTER	70.051	13.546	1.578	-169.58	124.55	-1108.66
			END-J	70.612	10.227	1.578	-163.42	136.36	-1138.45
26	BEND	3	END-I	-25.383	18.294	-56.259	853.18	363.31	1097.00
			CENTER	-24.492	19.471	-56.259	866.04	181.75	1049.68
			END-J	-23.547	20.604	-56.259	870.33	-.22	999.46
26	BEND	4	END-I	-1415.905	-229.183	-4.134	3355.28	235.18	10417.73
			CENTER	-1425.140	-162.139	-4.134	3362.40	66.29	10908.09
			END-J	-1431.202	-94.735	-4.134	3361.54	-102.74	11229.96
26	BEND	5	END-I	-34.803	-174.021	-23.041	296.70	-629.78	4174.78
			CENTER	-42.973	-172.186	-23.041	265.30	-700.79	4608.60
			END-J	-51.047	-169.967	-23.041	230.59	-770.23	5037.33
26	BEND	6	END-I	-253.192	-20.008	-66.067	1063.19	-943.39	3165.15
			CENTER	-253.854	-8.043	-66.067	1013.60	-1157.97	3200.30
			END-J	-253.951	3.941	-66.067	953.95	-1369.98	3205.44

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
26	BEND	7	END-I	6.480	-29.189	59.484	-1029.79	-819.38	-1403.43
			CENTER	5.096	-29.462	59.484	-1063.78	-620.90	-1329.94
			END-J	3.700	-29.670	59.484	-1088.36	-421.04	-1255.84
26	BEND	8	END-I	1.431	23.598	-91.403	1595.93	1620.81	1787.06
			CENTER	2.543	23.504	-91.403	1665.21	1314.79	1728.04
			END-J	3.649	23.358	-91.403	1719.97	1005.84	1669.32
26	BEND	9	END-I	6.775	-20.261	15.916	-291.86	-152.27	-509.79
			CENTER	5.812	-20.558	15.916	-297.78	-98.47	-458.64
			END-J	4.836	-20.809	15.916	-301.15	-44.45	-406.80
27	BEND	1	END-I	-58.934	71.046	54.554	-722.31	-370.26	400.10
			CENTER	-51.593	76.544	54.554	-740.91	-3.70	2.71
			END-J	-43.742	81.286	54.554	-723.05	362.89	-422.25
27	BEND	2	END-I	66.462	12.144	.421	-167.91	-41.45	-1145.19
			CENTER	67.339	5.489	.421	-171.09	-22.31	-1192.67
			END-J	67.552	-1.220	.421	-172.34	-2.96	-1204.16
27	BEND	3	END-I	-22.631	11.924	-58.363	873.48	158.72	983.99
			CENTER	-21.336	14.110	-58.363	869.32	-242.26	913.89
			END-J	-19.830	16.158	-58.363	825.40	-640.85	832.39
27	BEND	4	END-I	-1303.403	-209.124	-5.359	3397.79	1646.60	11098.03
			CENTER	-1317.722	-78.749	-5.359	3542.99	1272.50	11873.14
			END-J	-1319.032	52.404	-5.359	3650.34	885.84	11944.08
27	BEND	5	END-I	-65.025	-147.311	2.912	251.53	15.61	5094.87
			CENTER	-79.322	-140.131	2.912	252.62	6.21	5868.81
			END-J	-92.836	-131.568	2.912	252.77	-3.25	6600.37
27	BEND	6	END-I	-233.335	-23.357	-51.067	972.91	-854.69	3374.11
			CENTER	-234.501	-.086	-51.067	869.65	-1221.33	3437.24
			END-J	-233.352	23.185	-51.067	730.51	-1575.92	3375.04
27	BEND	7	END-I	5.108	-21.704	64.839	-1089.62	-615.68	-1171.58
			CENTER	2.929	-22.103	64.839	-1128.01	-156.21	-1053.63
			END-J	.721	-22.285	64.839	-1120.62	304.80	-934.12
27	BEND	8	END-I	1.832	10.563	-98.688	1718.76	1260.85	1487.53
			CENTER	2.871	10.329	-98.688	1809.03	553.93	1431.28
			END-J	3.882	9.993	-98.688	1828.70	-158.45	1376.56
27	BEND	9	END-I	4.979	-18.633	19.079	-302.15	-108.30	-393.87
			CENTER	3.105	-19.035	19.079	-306.31	24.71	-292.45
			END-J	1.201	-19.249	19.079	-297.25	157.47	-189.37
28	BEND	1	END-I	-40.957	90.192	27.085	-715.57	224.80	-519.81
			CENTER	-39.161	90.986	27.085	-710.70	266.53	-612.10
			END-J	-37.350	91.744	27.085	-705.00	308.15	-705.18

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
28	BEND	2	END-I	64.474	.615	1.708	-156.96	-354.43	-1153.02
			CENTER	64.474	-.663	1.708	-163.94	-349.51	-1153.00
			END-J	64.448	-1.941	1.708	-170.82	-344.45	-1151.67
28	BEND	3	END-I	-17.993	-.812	-57.739	811.13	-370.95	994.64
			CENTER	-18.005	-.455	-57.739	803.04	-445.77	995.29
			END-J	-18.011	-.098	-57.739	793.46	-520.41	995.57
28	BEND	4	END-I	-1233.475	-41.789	-26.937	3502.35	4331.58	11213.46
			CENTER	-1234.061	-17.334	-26.937	3587.24	4233.87	11243.57
			END-J	-1234.162	7.128	-26.937	3670.18	4134.50	11248.77
28	BEND	5	END-I	-101.330	-103.844	32.798	168.42	1925.17	6316.19
			CENTER	-103.368	-101.816	32.798	206.88	1954.86	6420.94
			END-J	-105.366	-99.747	32.798	245.91	1983.78	6523.61
28	BEND	6	END-I	-218.483	-1.945	-43.306	678.60	-522.08	3697.98
			CENTER	-218.479	-2.386	-43.306	667.68	-579.54	3697.75
			END-J	-218.389	6.716	-43.306	655.62	-636.77	3693.12
28	BEND	7	END-I	.389	-3.545	68.034	-1106.89	20.30	-997.82
			CENTER	.318	-3.552	68.034	-1105.59	111.54	-994.20
			END-J	.248	-3.558	68.034	-1102.47	202.73	-990.58
28	BEND	8	END-I	4.349	-18.173	-98.501	1810.06	247.83	1387.96
			CENTER	3.988	-18.255	-98.501	1813.63	111.57	1406.52
			END-J	3.626	-18.331	-98.501	1814.49	-24.74	1425.15
28	BEND	9	END-I	.785	-12.929	23.408	-293.93	95.73	-231.21
			CENTER	.528	-12.942	23.408	-291.73	125.38	-218.03
			END-J	.272	-12.950	23.408	-288.96	154.99	-204.84
29	BEND	1	END-I	-37.507	69.201	63.421	-713.13	573.86	-501.39
			CENTER	-36.159	69.914	63.421	-701.25	652.80	-572.94
			END-J	-34.798	70.602	63.421	-687.84	731.49	-645.21
29	BEND	2	END-I	63.515	-1.016	1.011	-172.66	188.47	-1186.95
			CENTER	63.483	-2.246	1.011	-168.97	192.82	-1185.27
			END-J	63.428	-3.476	1.011	-165.19	197.10	-1182.32
29	BEND	3	END-I	-18.006	24.506	-50.881	806.12	-889.99	670.57
			CENTER	-17.528	24.851	-50.881	788.22	-957.78	645.18
			END-J	-17.043	25.186	-50.881	769.01	-1025.20	619.45
29	BEND	4	END-I	-1207.826	-27.996	-31.815	3677.54	-1118.08	11930.00
			CENTER	-1208.141	-4.591	-31.815	3654.87	-1221.84	11946.76
			END-J	-1208.004	18.817	-31.815	3630.19	-1325.15	11939.44
29	BEND	5	END-I	-106.113	-98.566	-13.061	256.01	-1048.82	6737.05
			CENTER	-108.003	-96.492	-13.061	235.52	-1067.02	6837.37
			END-J	-109.852	-94.381	-13.061	214.67	-1084.82	6935.54

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
29	BEND	6	END-I	-214.258	16.795	-33.143	685.22	-2170.46	3048.61
			CENTER	-213.892	20.942	-33.143	642.71	-2217.42	3029.20
			END-J	-213.446	25.082	-33.143	599.30	-2263.54	3005.53
29	BEND	7	END-I	.868	-33.034	59.277	-1110.74	597.28	-804.55
			CENTER	.228	-33.045	59.277	-1098.37	679.66	-770.57
			END-J	-.412	-33.043	59.277	-1084.41	761.77	-736.58
29	BEND	8	END-I	3.054	26.886	-96.674	1822.73	-615.63	1273.84
			CENTER	3.575	26.821	-96.674	1809.50	-750.26	1246.22
			END-J	4.093	26.747	-96.674	1793.66	-884.61	1218.67
29	BEND	9	END-I	.559	-21.758	15.257	-292.20	224.40	-117.22
			CENTER	.137	-21.764	15.257	-287.64	245.71	-94.84
			END-J	-.285	-21.763	15.257	-282.68	266.93	-72.45
30	BEND	1	END-I	-28.396	70.456	47.251	-686.06	633.76	-743.08
			CENTER	-11.546	75.081	47.251	-455.90	1354.20	-1648.96
			END-J	5.916	75.733	47.251	-67.19	2002.98	-2587.70
30	BEND	2	END-I	57.254	.280	2.492	-168.20	23.76	-1197.99
			CENTER	55.803	-12.810	2.492	-154.78	92.18	-1120.00
			END-J	51.400	-25.222	2.492	-126.07	155.72	-883.27
30	BEND	3	END-I	-14.941	16.779	-44.988	765.54	-928.56	760.16
			CENTER	-10.712	19.749	-44.988	469.13	-1631.56	532.79
			END-J	-5.916	21.674	-44.988	19.92	-2248.23	274.95
30	BEND	4	END-I	-1042.901	-171.185	-65.847	3664.15	406.59	11995.55
			CENTER	-1054.425	71.648	-65.847	3566.47	-1250.30	12615.12
			END-J	-1010.158	310.689	-65.847	3092.76	-2841.03	10235.29
30	BEND	5	END-I	-123.417	-47.784	.153	232.72	-64.33	7019.00
			CENTER	-131.071	-18.319	.153	212.08	-113.92	7430.45
			END-J	-131.789	12.115	.153	180.66	-157.49	7469.06
30	BEND	6	END-I	-185.630	-7.822	-11.038	597.34	-1805.14	3301.61
			CENTER	-182.506	34.801	-11.038	153.36	-2029.47	3133.68
			END-J	-169.725	75.583	-11.038	-330.13	-2146.41	2446.60
30	BEND	7	END-I	.769	-25.831	60.044	-1082.78	652.75	-836.84
			CENTER	-5.154	-25.323	60.044	-819.58	1620.49	-518.43
			END-J	-10.804	-23.476	60.044	-342.22	2502.48	-214.68
30	BEND	8	END-I	2.326	15.501	-98.791	1793.02	-708.24	1329.82
			CENTER	5.807	14.559	-98.791	1443.24	-2312.77	1142.71
			END-J	8.980	12.847	-98.791	736.07	-3794.93	972.12
30	BEND	9	END-I	-.477	-18.778	16.751	-281.47	255.19	-109.82
			CENTER	-4.756	-18.173	16.751	-191.88	518.53	120.18
			END-J	-8.782	-16.605	16.751	-44.50	754.44	336.65

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
31	BEND	1	END-I	3.976	47.513	26.860	-57.26	1914.00	-2654.42
			CENTER	9.858	46.649	26.860	192.57	2085.74	-2970.25
			END-J	15.586	45.060	26.860	461.83	2225.05	-3277.86
31	BEND	2	END-I	46.101	-15.644	4.255	-120.59	125.23	-888.86
			CENTER	43.796	-21.259	4.255	-102.29	167.69	-765.08
			END-J	40.810	-26.544	4.255	-78.86	207.55	-604.75
31	BEND	3	END-I	-4.166	15.956	-15.840	26.91	-2237.54	351.03
			CENTER	-2.148	16.350	-15.840	-258.34	-2329.34	242.67
			END-J	-.096	16.490	-15.840	-552.80	-2384.93	132.52
31	BEND	4	END-I	-897.864	54.633	-100.529	3033.28	-2480.21	10346.28
			CENTER	-884.088	165.936	-100.529	2659.12	-3510.14	9606.46
			END-J	-856.567	274.659	-100.529	2159.70	-4485.51	8128.63
31	BEND	5	END-I	-121.709	62.331	-3.961	129.73	96.01	7471.17
			CENTER	-113.007	76.992	-3.961	139.02	52.66	7003.85
			END-J	-102.548	90.456	-3.961	142.84	8.48	6442.21
31	BEND	6	END-I	-149.485	35.674	14.818	-338.52	-2063.79	2515.58
			CENTER	-143.884	53.998	14.818	-586.51	-1906.61	2214.80
			END-J	-136.047	71.483	14.818	-813.02	-1719.79	1793.92
31	BEND	7	END-I	-9.915	-22.123	42.522	-350.62	2492.33	-301.59
			CENTER	-12.591	-20.717	42.522	-20.01	2800.73	-157.89
			END-J	-15.071	-18.990	42.522	346.41	3065.59	-24.71
31	BEND	8	END-I	9.370	15.497	-76.026	744.35	-3756.76	1104.99
			CENTER	11.226	14.210	-76.026	239.36	-4328.21	1005.35
			END-J	12.907	12.703	-76.026	-332.82	-4832.38	915.07
31	BEND	9	END-I	-7.872	-12.494	11.111	-49.80	765.20	310.60
			CENTER	-9.365	-11.417	11.111	50.44	839.69	390.80
			END-J	-10.713	-10.163	11.111	159.18	901.13	463.19
32	TANGENT	1	END-I	11.358	-11.610	32.328	460.26	3634.11	1577.94
			END-J	11.358	-11.610	32.328	460.26	3753.73	1620.90
32	TANGENT	2	END-I	39.518	-8.240	-20.709	-79.07	632.74	91.64
			END-J	39.518	-8.240	-20.709	-79.07	556.11	122.13
32	TANGENT	3	END-I	.062	3.466	13.633	-551.88	-573.17	-2319.04
			END-J	.062	3.466	13.633	-551.88	-522.72	-2331.87
32	TANGENT	4	END-I	-832.043	132.877	156.210	2163.18	-8819.47	-2897.64
			END-J	-832.043	132.877	156.210	2163.18	-8241.44	-3389.33
32	TANGENT	5	END-I	-93.345	24.220	101.684	144.27	-6328.59	1204.46
			END-J	-93.345	24.220	101.684	144.27	-5952.32	1114.84

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
32	TANGENT	6	END-I	-131.040	-13.748	59.287	-811.98	-2082.26	-1357.09
			END-J	-131.040	-13.748	59.287	-811.98	-1862.88	-1306.22
32	TANGENT	7	END-I	-14.514	-35.034	-12.540	345.26	593.55	3007.82
			END-J	-14.514	-35.034	-12.540	345.26	547.14	3137.45
32	TANGENT	8	END-I	13.451	63.177	3.821	-330.82	-1796.45	-4578.58
			END-J	13.451	63.177	3.821	-330.82	-1782.31	-4812.36
32	TANGENT	9	END-I	-9.825	-9.130	-6.617	158.94	-287.78	971.52
			END-J	-9.825	-9.130	-6.617	158.94	-312.26	1005.30
33	TANGENT	1	END-I	7.952	-6.502	18.478	500.54	3748.58	1620.90
			END-J	7.952	-6.502	18.478	500.54	3929.87	1684.70
33	TANGENT	2	END-I	38.398	-7.912	-17.119	-73.09	556.93	122.13
			END-J	38.398	-7.912	-17.119	-73.09	388.98	199.76
33	TANGENT	3	END-I	.109	-8.153	13.863	-557.46	-516.77	-2331.87
			END-J	.109	-8.153	13.863	-557.46	-380.76	-2251.88
33	TANGENT	4	END-I	-811.228	127.907	86.740	2074.57	-8264.19	-3389.33
			END-J	-811.228	127.907	86.740	2074.57	-7413.17	-4644.23
33	TANGENT	5	END-I	-85.745	27.601	110.784	80.35	-5953.52	1114.84
			END-J	-85.745	27.601	110.784	80.35	-4866.61	844.05
33	TANGENT	6	END-I	-127.298	-21.289	49.037	-831.93	-1854.05	-1306.22
			END-J	-127.298	-21.289	49.037	-831.93	-1372.94	-1097.35
33	TANGENT	7	END-I	-14.373	-26.330	-13.890	351.11	543.40	3137.45
			END-J	-14.373	-26.330	-13.890	351.11	407.13	3395.78
33	TANGENT	8	END-I	14.456	51.243	8.291	-349.93	-1778.66	-4812.36
			END-J	14.456	51.243	8.291	-349.93	-1697.31	-5315.11
33	TANGENT	9	END-I	-9.187	-5.994	-5.507	155.58	-313.95	1005.30
			END-J	-9.187	-5.994	-5.507	155.58	-367.98	1064.11
34	TANGENT	1	END-I	1.043	4.942	-12.302	475.71	3932.95	1684.70
			END-J	1.043	4.942	-12.302	475.71	3705.98	1593.52
34	TANGENT	2	END-I	36.283	-5.834	-9.809	-75.55	388.51	199.76
			END-J	36.283	-5.834	-9.809	-75.55	207.53	307.39
34	TANGENT	3	END-I	.315	-29.496	13.953	-555.04	-384.27	-2251.88
			END-J	.315	-29.496	13.953	-555.04	-126.84	-1707.68
34	TANGENT	4	END-I	-771.290	91.141	-29.910	2121.35	-7399.92	-4644.23
			END-J	-771.290	91.141	-29.910	2121.35	-7951.75	-6325.78

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
34	TANGENT	5	END-I	-70.557	30.111	120.594	111.09	-4866.01	844.05
			END-J	-70.557	30.111	120.594	111.09	-2641.04	288.50
34	TANGENT	6	END-I	-118.942	-35.913	30.417	-823.24	-1378.17	-1097.35
			END-J	-118.942	-35.913	30.417	-823.24	-816.97	-434.76
34	TANGENT	7	END-I	-13.233	-6.578	-16.370	348.53	409.34	3395.78
			END-J	-13.233	-6.578	-16.370	348.53	107.32	3517.15
34	TANGENT	8	END-I	14.978	22.733	18.351	-339.21	-1699.49	-5315.11
			END-J	14.978	22.733	18.351	-339.21	-1360.91	-5734.53
34	TANGENT	9	END-I	-7.652	.831	-2.887	157.90	-366.99	1064.11
			END-J	-7.652	.831	-2.887	157.90	-420.25	1048.78
35	TANGENT	1	END-I	-6.415	17.055	-45.522	483.32	3705.00	1593.52
			END-J	-6.415	17.055	-45.522	483.32	3161.03	1389.71
35	TANGENT	2	END-I	33.950	-3.544	-2.739	-75.12	207.68	307.39
			END-J	33.950	-3.544	-2.739	-75.12	174.96	349.74
35	TANGENT	3	END-I	.400	-43.863	13.433	-555.30	-125.70	-1707.68
			END-J	.400	-43.863	13.433	-555.30	34.82	-1183.53
35	TANGENT	4	END-I	-727.214	54.340	-103.910	2105.03	-7956.09	-6325.78
			END-J	-727.214	54.340	-103.910	2105.03	-9197.77	-6975.13
35	TANGENT	5	END-I	-53.898	29.475	113.004	105.67	-2641.26	288.50
			END-J	-53.898	29.475	113.004	105.67	-1290.90	-63.71
35	TANGENT	6	END-I	-110.159	-41.790	15.557	-824.92	-815.28	-434.76
			END-J	-110.159	-41.790	15.557	-824.92	-629.38	64.63
35	TANGENT	7	END-I	-12.134	16.647	-18.220	348.75	106.60	3517.15
			END-J	-12.134	16.647	-18.220	348.75	-111.12	3318.23
35	TANGENT	8	END-I	15.843	-13.045	29.731	-342.00	-1360.21	-5734.53
			END-J	15.843	-13.045	29.731	-342.00	-1004.93	-5578.65
35	TANGENT	9	END-I	-6.003	8.553	.123	157.04	-420.57	1048.78
			END-J	-6.003	8.553	.123	157.04	-419.10	946.58
36	TANGENT	1	END-I	-9.891	22.047	-59.412	470.32	3162.99	1389.71
			END-J	-9.891	22.047	-59.412	470.32	3055.16	1349.70
36	TANGENT	2	END-I	32.902	-2.302	.101	-75.84	174.65	349.74
			END-J	32.902	-2.302	.101	-75.84	174.83	353.92
36	TANGENT	3	END-I	.661	-47.541	13.073	-555.44	32.53	-1183.53
			END-J	.661	-47.541	13.073	-555.44	56.26	-1097.24

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
36	TANGENT	4	END-I	-707.443	33.507	-124.760	2142.81	-9189.04	-6975.13
			END-J	-707.443	33.507	-124.760	2142.81	-9415.48	-7035.94
36	TANGENT	5	END-I	-46.486	27.870	104.944	110.97	-1290.46	-63.71
			END-J	-46.486	27.870	104.944	110.97	-1099.99	-114.30
36	TANGENT	6	END-I	-105.965	-42.827	10.157	-822.33	-632.76	64.63
			END-J	-105.965	-42.827	10.157	-822.33	-614.33	142.35
36	TANGENT	7	END-I	-11.737	26.869	-18.780	349.21	-109.68	3318.23
			END-J	-11.737	26.869	-18.780	349.21	-143.77	3269.46
36	TANGENT	8	END-I	16.329	-29.457	34.731	-337.87	-1006.33	-5578.65
			END-J	16.329	-29.457	34.731	-337.87	-943.29	-5525.19
36	TANGENT	9	END-I	-5.300	11.826	1.403	158.76	-418.45	946.58
			END-J	-5.300	11.826	1.403	158.76	-415.91	925.11
37	TANGENT	1	END-I	-15.350	30.099	-81.602	478.17	3053.94	1349.70
			END-J	-15.350	30.099	-81.602	478.17	1373.95	730.04
37	TANGENT	2	END-I	31.175	-.580	4.631	-75.39	175.02	353.92
			END-J	31.175	-.580	4.631	-75.39	270.37	365.87
37	TANGENT	3	END-I	.661	-52.843	12.453	-555.29	57.69	-1097.24
			END-J	.661	-52.843	12.453	-555.29	314.06	-9.33
37	TANGENT	4	END-I	-674.879	6.157	-155.870	2118.61	-9420.95	-7035.94
			END-J	-674.879	6.157	-155.870	2118.61	-12629.94	-7162.70
37	TANGENT	5	END-I	-34.162	25.463	90.794	108.15	-1100.27	-114.30
			END-J	-34.162	25.463	90.794	108.15	768.97	-638.52
37	TANGENT	6	END-I	-99.527	-43.039	1.667	-823.90	-612.21	142.35
			END-J	-99.527	-43.039	1.667	-823.90	-577.89	1028.43
37	TANGENT	7	END-I	-10.872	43.470	-19.620	348.84	-144.66	3269.46
			END-J	-10.872	43.470	-19.620	348.84	-548.59	2374.51
37	TANGENT	8	END-I	16.894	-56.257	42.791	-340.29	-942.42	-5525.19
			END-J	16.894	-56.257	42.791	-340.29	-61.45	-4366.99
37	TANGENT	9	END-I	-4.060	17.117	3.453	157.69	-416.31	925.11
			END-J	-4.060	17.117	3.453	157.69	-345.22	572.70
38	TANGENT	1	END-I	-25.511	40.070	-109.772	477.33	1374.24	730.04
			END-J	-25.511	40.070	-109.772	477.33	-884.45	-94.44
38	TANGENT	2	END-I	27.997	2.491	10.541	-75.56	270.32	365.87
			END-J	27.997	2.491	10.541	-75.56	487.22	314.61

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
38	TANGENT	3	END-I	.915	-49.279	11.043	-555.49	313.72	-9.33
			END-J	.915	-49.279	11.043	-555.49	540.94	1004.64
38	TANGENT	4	END-I	-614.930	-45.086	-164.560	2126.29	-12628.65	-7162.70
			END-J	-614.930	-45.086	-164.560	2126.29	-16014.67	-6234.99
38	TANGENT	5	END-I	-11.650	16.742	48.334	107.68	769.03	-638.52
			END-J	-11.650	16.742	48.334	107.68	1763.57	-983.01
38	TANGENT	6	END-I	-87.456	-35.719	-8.243	-823.55	-578.39	1028.43
			END-J	-87.456	-35.719	-8.243	-823.55	-748.00	1763.38
38	TANGENT	7	END-I	-9.423	67.743	-19.680	349.17	-548.38	2374.51
			END-J	-9.423	67.743	-19.680	349.17	-953.31	980.63
38	TANGENT	8	END-I	18.098	-99.077	54.841	-340.25	-61.66	-4366.99
			END-J	18.098	-99.077	54.841	-340.25	1066.77	-2328.36
38	TANGENT	9	END-I	-1.845	24.040	6.043	157.90	-345.12	572.70
			END-J	-1.845	24.040	6.043	157.90	-220.77	78.04
39	TANGENT	1	END-I	-32.188	40.541	-114.992	507.87	-867.27	-94.44
			END-J	-32.188	40.541	-114.992	507.87	-954.48	-125.19
39	TANGENT	2	END-I	26.199	4.595	12.201	-92.49	484.29	314.61
			END-J	26.199	4.595	12.201	-92.49	493.54	311.13
39	TANGENT	3	END-I	2.507	-42.335	10.373	-574.00	521.25	1004.64
			END-J	2.507	-42.335	10.373	-574.00	529.12	1036.75
39	TANGENT	4	END-I	-581.051	-86.769	-153.730	2683.18	-15930.83	-6234.99
			END-J	-581.051	-86.769	-153.730	2683.18	-16047.41	-6169.19
39	TANGENT	5	END-I	-.391	11.166	23.224	46.15	1766.25	-983.01
			END-J	-.391	11.166	23.224	46.15	1783.86	-991.47
39	TANGENT	6	END-I	-80.119	-32.297	-11.033	-796.98	-776.25	1763.38
			END-J	-80.119	-32.297	-11.033	-796.98	-784.62	1787.88
39	TANGENT	7	END-I	-11.245	74.177	-19.010	382.18	-940.56	980.63
			END-J	-11.245	74.177	-19.010	382.18	-954.98	924.37
39	TANGENT	8	END-I	22.638	-112.854	58.741	-377.23	1054.26	-2328.36
			END-J	22.638	-112.854	58.741	-377.23	1098.81	-2242.77
39	TANGENT	9	END-I	-1.564	25.304	6.453	165.50	-215.14	78.04
			END-J	-1.564	25.304	6.453	165.50	-210.24	58.85
40	TANGENT	1	END-I	-33.709	42.362	-117.652	476.02	-970.76	-125.19
			END-J	-33.709	42.362	-117.652	476.02	-2257.00	-588.31

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
40	TANGENT	2	END-I	25.426	4.364	13.081	-76.12	496.33	311.13
			END-J	25.426	4.364	13.081	-76.12	639.34	263.42
40	TANGENT	3	END-I	1.168	-38.548	10.003	-556.19	547.82	1036.75
			END-J	1.168	-38.548	10.003	-556.19	657.17	1458.18
40	TANGENT	4	END-I	-566.473	-79.045	-147.580	2150.92	-16127.38	-6169.19
			END-J	-566.473	-79.045	-147.580	2150.92	-17740.81	-5305.02
40	TANGENT	5	END-I	6.366	8.124	9.464	105.12	1781.36	-991.47
			END-J	6.366	8.124	9.464	105.12	1884.83	-1080.29
40	TANGENT	6	END-I	-77.719	-26.178	-12.523	-822.50	-757.83	1787.88
			END-J	-77.719	-26.178	-12.523	-822.50	-894.73	2074.07
40	TANGENT	7	END-I	-8.370	78.091	-18.630	350.39	-967.10	924.37
			END-J	-8.370	78.091	-18.630	350.39	-1170.77	70.64
40	TANGENT	8	END-I	19.241	-121.294	60.821	-340.68	1110.69	-2242.77
			END-J	19.241	-121.294	60.821	-340.68	1775.62	-916.71
40	TANGENT	9	END-I	-.096	26.002	6.653	158.46	-215.60	58.85
			END-J	-.096	26.002	6.653	158.46	-142.86	-225.41
41	BEND	1	END-I	-40.359	-118.209	-37.090	474.32	-505.26	2277.39
			CENTER	-57.706	-110.780	-37.090	370.00	-871.74	3211.25
			END-J	-73.737	-100.822	-37.090	211.66	-1218.33	4074.20
41	BEND	2	END-I	23.307	14.002	-5.967	-75.63	239.83	-648.61
			CENTER	25.150	10.331	-5.967	-42.31	200.10	-747.85
			END-J	26.420	6.424	-5.967	-15.34	155.80	-816.18
41	BEND	3	END-I	1.286	10.271	27.083	-555.69	1433.12	-710.55
			CENTER	2.819	9.960	27.083	-316.81	1720.12	-793.06
			END-J	4.287	9.422	27.083	-37.42	1967.85	-872.10
41	BEND	4	END-I	-526.587	-123.930	104.937	2137.54	-4651.80	17924.78
			CENTER	-539.247	-43.185	104.937	1476.82	-4069.71	18606.31
			END-J	-539.598	38.545	104.937	911.33	-3394.73	18625.23
41	BEND	5	END-I	21.205	-21.634	-.092	106.55	-1148.58	-1843.93
			CENTER	17.704	-24.581	-.092	-67.76	-1152.27	-1655.45
			END-J	13.799	-26.968	-.092	-240.63	-1129.66	-1445.22
41	BEND	6	END-I	-69.754	-14.024	17.984	-823.17	2105.42	817.57
			CENTER	-71.070	-3.355	17.984	-485.54	2351.24	888.44
			END-J	-70.765	7.390	17.984	-114.74	2543.40	871.99
41	BEND	7	END-I	-7.342	-20.351	-80.764	349.50	113.47	1167.66
			CENTER	-10.324	-19.012	-80.764	312.99	-595.46	1328.19
			END-J	-13.071	-17.240	-80.764	170.09	-1290.79	1476.03

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
41	BEND	8	END-I	19.931	68.577	129.710	-339.34	-981.13	-1741.12
			CENTER	30.034	64.791	129.710	-403.58	133.11	-2285.02
			END-J	39.452	59.527	129.710	-299.23	1244.32	-2792.02
41	BEND	9	END-I	1.400	5.469	-25.896	158.35	-220.03	151.14
			CENTER	2.208	5.195	-25.896	107.48	-451.38	107.65
			END-J	2.965	4.804	-25.896	22.35	-672.43	66.87
42	BEND	1	END-I	-78.857	-86.042	-30.700	214.90	-1183.43	4084.30
			CENTER	-90.195	-74.071	-30.700	29.46	-1435.26	4695.90
			END-J	-99.734	-60.621	-30.700	-189.63	-1658.45	5210.39
42	BEND	2	END-I	24.215	6.961	-6.543	-15.92	148.84	-817.47
			CENTER	24.954	3.479	-6.543	1.69	99.85	-857.34
			END-J	25.196	-.073	-6.543	12.23	48.88	-870.35
42	BEND	3	END-I	4.094	8.440	12.759	-39.58	1960.33	-888.80
			CENTER	5.243	7.778	12.759	243.94	2043.33	-950.75
			END-J	6.287	6.962	12.759	536.33	2085.55	-1007.05
42	BEND	4	END-I	-487.484	51.269	117.586	924.25	-3235.30	18652.95
			CENTER	-475.394	119.456	117.586	522.39	-2439.45	18000.82
			END-J	-453.816	185.258	117.586	236.70	-1594.90	16836.88
42	BEND	5	END-I	20.332	-60.305	8.849	-240.43	-1142.13	-1435.43
			CENTER	11.631	-62.568	8.849	-394.22	-1029.58	-966.08
			END-J	2.697	-63.583	8.849	-530.62	-896.48	-484.21
42	BEND	6	END-I	-62.478	3.804	8.387	-116.46	2550.63	850.37
			CENTER	-61.318	12.571	8.387	248.66	2605.34	787.83
			END-J	-58.935	21.086	8.387	617.85	2608.06	659.27
42	BEND	7	END-I	-11.504	-16.217	-75.145	172.00	-1278.04	1486.87
			CENTER	-13.675	-14.434	-75.145	-50.27	-1860.73	1603.95
			END-J	-15.572	-12.363	-75.145	-352.44	-2406.28	1706.30
42	BEND	8	END-I	40.895	60.337	126.995	-301.80	1220.25	-2802.34
			CENTER	48.990	53.972	126.995	-58.46	2215.95	-3238.98
			END-J	56.107	46.529	126.995	322.76	3167.41	-3622.87
42	BEND	9	END-I	4.334	2.818	-22.243	22.96	-671.82	72.58
			CENTER	4.688	2.179	-22.243	-83.92	-837.43	53.49
			END-J	4.948	1.497	-22.243	-213.07	-986.33	39.45
43	BEND	1	END-I	-98.825	-29.008	-19.561	-187.78	-1677.63	5204.32
			CENTER	-102.806	-6.221	-19.561	-584.06	-1828.78	5418.97
			END-J	-101.601	16.880	-19.561	-1004.07	-1887.69	5354.02
43	BEND	2	END-I	22.547	.208	-6.192	11.92	52.09	-870.17
			CENTER	22.025	-4.830	-6.192	14.82	-26.40	-842.01
			END-J	20.392	-9.623	-6.192	.13	-103.55	-753.94

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
43	BEND	3	END-I	5.680	5.974	-3.192	535.99	2089.24	-999.56
			CENTER	6.870	4.556	-3.192	984.40	1878.52	-1063.72
			END-J	7.713	2.908	-3.192	1374.48	1573.04	-1109.19
43	BEND	4	END-I	-387.023	178.616	119.023	242.70	-1656.89	16830.81
			CENTER	-337.398	260.486	119.023	28.65	-237.07	14155.23
			END-J	-270.753	329.216	119.023	136.88	1194.70	10562.01
43	BEND	5	END-I	.380	-94.739	15.886	-530.80	-894.68	-487.32
			CENTER	-20.773	-92.434	15.886	-695.48	-562.50	653.18
			END-J	-40.879	-85.466	15.886	-781.88	-201.94	1737.17
43	BEND	6	END-I	-49.968	15.682	-.959	618.11	2605.61	668.64
			CENTER	-45.207	26.439	-.959	1182.73	2390.40	411.99
			END-J	-38.167	35.861	-.959	1685.08	2054.62	32.38
43	BEND	7	END-I	-12.969	-9.967	-57.913	-351.86	-2412.55	1697.56
			CENTER	-14.866	-6.821	-57.913	-960.17	-2970.03	1799.85
			END-J	-16.013	-3.331	-57.913	-1677.55	-3377.69	1861.71
43	BEND	8	END-I	57.086	41.188	106.526	321.50	3180.73	-3611.30
			CENTER	64.838	27.409	106.526	1168.12	4310.57	-4029.28
			END-J	69.320	12.247	106.526	2245.55	5222.96	-4270.91
43	BEND	9	END-I	5.838	-1.982	-14.454	-213.06	-986.47	35.89
			CENTER	5.248	-3.235	-14.454	-447.50	-1087.96	67.68
			END-J	4.394	-4.325	-14.454	-698.68	-1134.58	113.75
44	BEND	1	END-I	-78.222	66.781	-.568	-998.61	-1868.61	5361.73
			CENTER	-57.738	85.116	-.568	-1459.02	-1545.47	4253.86
			END-J	-33.128	97.370	-.568	-1817.39	-1111.91	2922.89
44	BEND	2	END-I	16.948	-9.070	-3.993	.10	-106.51	-753.53
			CENTER	13.940	-13.235	-3.993	-35.83	-159.94	-590.85
			END-J	9.936	-16.455	-3.993	-84.63	-201.93	-374.30
44	BEND	3	END-I	6.613	2.925	-13.369	1370.99	1571.40	-1115.81
			CENTER	7.151	1.069	-13.369	1712.44	960.56	-1144.95
			END-J	7.179	-.864	-13.369	1879.88	281.10	-1146.44
44	BEND	4	END-I	-196.934	269.834	88.415	137.84	1236.50	10557.18
			CENTER	-118.421	312.362	88.415	631.28	2422.51	6310.89
			END-J	-31.447	332.573	88.415	1421.26	3435.44	1607.02
44	BEND	5	END-I	-54.951	-92.466	15.850	-780.92	-196.66	1738.21
			CENTER	-77.482	-74.607	15.850	-774.50	244.30	2956.77
			END-J	-94.477	-51.417	15.850	-651.49	667.82	3875.93
44	BEND	6	END-I	-29.681	27.422	-4.220	1680.99	2058.08	23.75
			CENTER	-21.356	34.305	-4.220	2157.97	1478.82	-426.46
			END-J	-11.506	38.737	-4.220	2464.46	793.90	-959.19

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
44	BEND	7	END-I	-11.415	-1.804	-20.675	-1670.23	-3373.68	1875.52
			CENTER	-11.485	1.284	-20.675	-2544.18	-3106.93	1879.31
			END-J	-10.735	4.281	-20.675	-3316.25	-2618.21	1838.72
44	BEND	8	END-I	66.067	1.187	49.673	2233.78	5210.58	-4292.14
			CENTER	64.022	-16.356	49.673	3630.21	5144.37	-4181.51
			END-J	57.402	-32.731	49.673	4959.22	4710.62	-3823.49
44	BEND	9	END-I	3.154	-9.795	-1.194	-696.38	-1135.51	118.43
			CENTER	.447	-10.280	-1.194	-974.60	-927.58	264.85
			END-J	-2.292	-10.031	-1.194	-1187.81	-653.39	412.99
45	TANGENT	1	END-I	3.635	-116.850	-5.787	-1819.18	986.86	-2966.34
			END-J	3.635	-116.850	-5.787	-1819.18	904.35	-1300.33
45	TANGENT	2	END-I	7.648	14.790	1.154	-84.43	217.62	365.45
			END-J	7.648	14.790	1.154	-84.43	234.07	154.58
45	TANGENT	3	END-I	6.595	.210	9.239	1880.58	-232.12	1156.23
			END-J	6.595	.210	9.239	1880.58	-100.39	1153.23
45	TANGENT	4	END-I	-7.046	-255.465	-39.312	1420.61	-3500.41	-1460.73
			END-J	-7.046	-255.465	-39.312	1420.61	-4060.91	2181.60
45	TANGENT	5	END-I	-99.832	26.133	-8.907	-653.70	-831.61	-3843.75
			END-J	-99.832	26.133	-8.907	-653.70	-958.60	-4216.35
45	TANGENT	6	END-I	-8.245	-32.304	-.142	2465.08	-752.38	990.55
			END-J	-8.245	-32.304	-.142	2465.08	-754.40	1451.12
45	TANGENT	7	END-I	-6.728	-4.071	-7.034	-3317.54	2537.69	-1946.14
			END-J	-6.728	-4.071	-7.034	-3317.54	2437.40	-1888.10
45	TANGENT	8	END-I	50.118	37.738	-.894	4961.84	-4543.96	4016.89
			END-J	50.118	37.738	-.894	4961.84	-4556.71	3478.83
45	TANGENT	9	END-I	-5.150	11.613	-6.654	-1188.10	635.22	-439.63
			END-J	-5.150	11.613	-6.654	-1188.10	540.35	-605.20
46	TANGENT	1	END-I	31.167	-124.680	-9.965	-1819.98	904.35	-1299.21
			END-J	31.167	-124.680	-9.965	-1819.98	724.22	954.48
46	TANGENT	2	END-I	5.941	13.320	-.326	-84.33	234.07	154.63
			END-J	5.941	13.320	-.326	-84.33	228.17	-86.13
46	TANGENT	3	END-I	6.189	-.930	2.081	1881.29	-100.39	1152.08
			END-J	6.189	-.930	2.081	1881.29	-62.78	1168.89
46	TANGENT	4	END-I	10.962	-196.765	-12.315	1421.95	-4060.91	2180.72
			END-J	10.962	-196.765	-12.315	1421.95	-4283.51	5737.41

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
46	TANGENT	5	END-I	-103.648	2.303	-.112	-656.29	-958.60	-4215.95
			END-J	-103.648	2.303	-.112	-656.29	-960.63	-4257.58
46	TANGENT	6	END-I	-5.778	-28.734	-7.657	2465.98	-754.40	1449.61
			END-J	-5.778	-28.734	-7.657	2465.98	-892.81	1968.99
46	TANGENT	7	END-I	-3.823	-4.461	-21.798	-3318.70	2437.40	-1886.06
			END-J	-3.823	-4.461	-21.798	-3318.70	2043.37	-1805.42
46	TANGENT	8	END-I	44.686	40.318	29.349	4963.98	-4556.71	3475.78
			END-J	44.686	40.318	29.349	4963.98	-4026.20	2746.99
46	TANGENT	9	END-I	-7.313	11.853	-9.276	-1188.47	540.35	-604.47
			END-J	-7.313	11.853	-9.276	-1188.47	372.68	-818.72
47	TANGENT	1	END-I	62.027	-121.570	-9.545	-1819.95	724.22	954.54
			END-J	62.027	-121.570	-9.545	-1819.95	551.55	3153.72
47	TANGENT	2	END-I	4.036	11.560	-1.640	-84.34	228.17	-86.13
			END-J	4.036	11.560	-1.640	-84.34	198.51	-295.25
47	TANGENT	3	END-I	5.744	-2.310	-9.419	1881.32	-62.78	1168.82
			END-J	5.744	-2.310	-9.419	1881.32	-233.18	1210.61
47	TANGENT	4	END-I	30.831	-138.155	16.188	1422.14	-4283.51	5737.36
			END-J	30.831	-138.155	16.188	1422.14	-3990.67	8236.55
47	TANGENT	5	END-I	-107.648	-27.467	10.719	-656.44	-960.63	-4257.56
			END-J	-107.648	-27.467	10.719	-656.44	-766.72	-3760.70
47	TANGENT	6	END-I	-3.021	-26.104	-18.188	2466.04	-892.81	1968.91
			END-J	-3.021	-26.104	-18.188	2466.04	-1221.82	2441.12
47	TANGENT	7	END-I	-.619	-4.801	-29.017	-3318.76	2043.37	-1805.31
			END-J	-.619	-4.801	-29.017	-3318.76	1518.46	-1718.47
47	TANGENT	8	END-I	38.506	37.848	51.041	4964.07	-4026.20	2746.82
			END-J	38.506	37.848	51.041	4964.07	-3102.87	2062.15
47	TANGENT	9	END-I	-9.739	10.623	-7.809	-1188.50	372.68	-818.68
			END-J	-9.739	10.623	-7.809	-1188.50	231.41	-1010.84
48	BEND	1	END-I	97.977	104.269	-2.600	-1820.42	-718.04	-3119.75
			CENTER	118.601	80.033	-2.600	-1937.57	-328.84	-4230.23
			END-J	133.358	51.838	-2.600	-1965.79	76.62	-5024.79
48	BEND	2	END-I	1.817	-9.416	3.150	-84.29	-182.57	305.38
			CENTER	-.309	-9.585	3.150	-118.37	-121.94	419.86
			END-J	-2.420	-9.280	3.150	-138.20	-55.27	533.53
48	BEND	3	END-I	5.246	5.064	24.450	1881.14	168.62	-1221.55
			CENTER	6.235	3.779	24.450	1904.45	39.64	-1274.83
			END-J	6.916	2.307	24.450	1898.67	-91.30	-1311.51

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
48	BEND	4	END-I	53.628	81.842	-48.605	1420.92	3548.15	-8436.84
			CENTER	70.392	67.963	-48.605	2105.31	2567.83	-9339.46
			END-J	83.673	50.723	-48.605	2556.09	1460.49	-10054.58
48	BEND	5	END-I	-112.017	58.113	-25.924	-655.88	965.13	3714.83
			CENTER	-96.402	81.436	-25.924	-460.85	777.69	2874.00
			END-J	-76.017	100.730	-25.924	-312.08	551.78	1776.40
48	BEND	6	END-I	.203	25.982	30.005	2465.68	1090.60	-2502.85
			CENTER	5.941	25.294	30.005	2685.72	875.73	-2811.81
			END-J	11.385	23.355	30.005	2852.82	617.53	-3104.93
48	BEND	7	END-I	3.034	6.701	24.895	-3318.50	-1425.15	1797.08
			CENTER	4.440	5.864	24.895	-3518.28	-360.09	1721.37
			END-J	5.627	4.738	24.895	-3477.69	722.78	1657.49
48	BEND	8	END-I	31.177	-30.755	-56.996	4963.76	2989.08	-2224.57
			CENTER	23.608	-36.886	-56.996	5425.77	1139.62	-1817.01
			END-J	14.871	-41.192	-56.996	5467.56	-766.21	-1346.58
48	BEND	9	END-I	-12.571	-7.448	1.043	-1188.35	-177.46	1021.87
			CENTER	-13.906	-4.485	1.043	-1196.79	102.01	1093.77
			END-J	-14.553	-1.300	1.043	-1143.25	376.44	1128.62
49	BEND	1	END-I	157.358	4.770	-15.126	-1960.43	80.40	-5026.83
			CENTER	154.931	-27.940	-15.126	-1918.95	315.63	-4895.78
			END-J	145.779	-59.437	-15.126	-1829.63	537.15	-4401.58
49	BEND	2	END-I	-3.772	-6.851	3.125	-138.80	-55.43	533.35
			CENTER	-5.109	-5.920	3.125	-143.61	9.50	605.59
			END-J	-6.225	-4.733	3.125	-134.86	74.02	665.84
49	BEND	3	END-I	7.338	4.063	38.422	1899.99	-91.98	-1309.55
			CENTER	8.020	2.454	38.422	1884.72	-53.76	-1346.41
			END-J	8.355	.739	38.422	1877.71	-13.21	-1364.47
49	BEND	4	END-I	86.232	14.720	-61.572	2567.72	1463.55	-10051.17
			CENTER	87.411	-3.468	-61.572	2743.10	210.79	-10114.82
			END-J	84.795	-21.505	-61.572	2655.08	-1051.13	-9973.58
49	BEND	5	END-I	-67.778	119.838	-35.478	-313.57	551.14	1776.33
			CENTER	-41.476	131.281	-35.478	-234.15	207.17	356.00
			END-J	-13.373	137.026	-35.478	-227.72	-145.78	-1161.55
49	BEND	6	END-I	14.390	22.013	41.589	2856.52	617.05	-3101.62
			CENTER	18.639	18.553	41.589	2971.13	477.11	-3331.06
			END-J	22.078	14.288	41.589	3054.25	316.46	-3516.81
49	BEND	7	END-I	9.332	3.901	2.810	-3478.94	724.39	1654.16
			CENTER	9.937	1.883	2.810	-3250.04	1460.98	1621.45
			END-J	10.112	-.217	2.810	-2873.48	2134.15	1612.04

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
49	BEND	8	END-I	14.827	-16.084	-35.385	5468.45	-769.35	-1341.17
			CENTER	11.173	-18.807	-35.385	5148.88	-2281.70	-1143.82
			END-J	7.033	-20.714	-35.385	4522.87	-3695.00	-920.28
49	BEND	9	END-I	-15.721	4.092	-13.629	-1144.19	376.69	1127.60
			CENTER	-14.532	7.261	-13.629	-1057.27	453.09	1063.39
			END-J	-12.712	10.114	-13.629	-956.42	509.83	965.12
50	BEND	1	END-I	148.748	-107.010	-31.249	-1848.18	585.10	-4387.69
			CENTER	120.664	-137.904	-31.249	-1711.33	608.33	-2879.22
			END-J	86.315	-161.638	-31.249	-1572.77	599.99	-1034.27
50	BEND	2	END-I	-6.679	-3.163	2.130	-132.44	65.71	667.20
			CENTER	-7.222	-1.569	2.130	-111.16	119.88	696.34
			END-J	-7.390	.107	2.130	-78.16	167.83	705.35
50	BEND	3	END-I	9.435	.556	44.137	1872.38	7.88	-1371.82
			CENTER	9.316	-1.594	44.137	1887.10	120.47	-1365.43
			END-J	8.713	-3.661	44.137	1926.92	226.81	-1333.06
50	BEND	4	END-I	79.039	-21.893	-55.214	2618.62	-925.05	-9995.68
			CENTER	72.031	-39.216	-55.214	2264.27	-2165.12	-9619.29
			END-J	61.284	-54.504	-55.214	1638.40	-3292.79	-9042.05
50	BEND	5	END-I	-2.571	131.042	-34.133	-231.90	-132.46	-1162.32
			CENTER	27.159	128.222	-34.133	-303.45	-491.53	-2759.18
			END-J	55.480	118.746	-34.133	-454.43	-825.09	-4280.32
50	BEND	6	END-I	24.615	11.881	46.020	3039.66	366.25	-3524.61
			CENTER	26.666	6.000	46.020	3107.82	228.21	-3634.75
			END-J	27.332	-.192	46.020	3142.97	78.33	-3670.52
50	BEND	7	END-I	13.376	.376	-30.062	-2872.46	2107.41	1648.61
			CENTER	13.114	-2.662	-30.062	-2362.77	2337.42	1662.69
			END-J	12.171	-5.561	-30.062	-1814.24	2446.08	1713.33
50	BEND	8	END-I	19.182	11.133	11.777	4528.44	-3672.24	-982.00
			CENTER	21.204	6.502	11.777	3596.04	-4458.81	-1090.61
			END-J	22.125	1.533	11.777	2509.79	-5013.90	-1140.10
50	BEND	9	END-I	-11.705	15.704	-29.350	-953.90	495.82	974.86
			CENTER	-7.846	17.946	-29.350	-857.82	342.03	767.60
			END-J	-3.580	19.257	-29.350	-799.05	170.47	538.45
51	BEND	1	END-I	72.310	-177.577	-39.167	-1571.82	596.93	-1037.49
			CENTER	35.259	-188.465	-39.167	-1463.37	474.47	970.36
			END-J	-3.222	-191.708	-39.167	-1381.66	332.76	3055.72
51	BEND	2	END-I	-7.456	.233	.583	-76.44	174.62	703.89
			CENTER	-7.258	1.722	.583	-39.26	192.73	693.17
			END-J	-6.766	3.142	.583	.80	203.01	666.49

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
51	BEND	3	END-I	9.408	-4.662	39.212	1925.87	206.65	-1337.85
			CENTER	8.283	-6.453	39.212	1971.32	242.36	-1276.88
			END-J	6.822	-7.982	39.212	2023.00	268.23	-1197.70
51	BEND	4	END-I	63.214	-23.185	-29.529	1611.62	-3382.36	-9013.76
			CENTER	57.286	-35.382	-29.529	868.69	-3957.37	-8692.50
			END-J	49.034	-46.144	-29.529	25.61	-4371.85	-8245.31
51	BEND	5	END-I	57.720	85.905	-25.951	-464.10	-862.47	-4271.90
			CENTER	73.764	72.596	-25.951	-656.04	-1033.79	-5141.32
			END-J	86.815	56.342	-25.951	-878.41	-1163.18	-5848.59
51	BEND	6	END-I	28.725	-2.504	41.457	3137.87	31.72	-3675.58
			CENTER	27.640	-8.209	41.457	3126.15	-147.52	-3616.82
			END-J	25.435	-13.581	41.457	3078.75	-320.77	-3497.29
51	BEND	7	END-I	15.958	-2.751	-60.964	-1801.69	2469.14	1693.39
			CENTER	15.083	-5.893	-60.964	-1337.37	2118.06	1740.80
			END-J	13.597	-8.795	-60.964	-952.83	1681.06	1821.36
51	BEND	8	END-I	47.765	27.769	68.620	2487.56	-5034.43	-1097.59
			CENTER	52.361	17.635	68.620	1503.70	-4685.61	-1346.64
			END-J	54.833	6.785	68.620	609.70	-4146.73	-1480.59
51	BEND	9	END-I	-.610	21.232	-39.542	-797.56	178.69	538.01
			CENTER	3.657	20.924	-39.542	-789.04	-94.51	306.77
			END-J	7.776	19.766	-39.542	-835.43	-363.88	83.58
52	TANGENT	1	END-I	-12.172	-164.197	12.211	-1382.81	1272.85	2797.29
			END-J	-12.172	-164.197	12.211	-1382.81	1518.17	6096.11
52	TANGENT	2	END-I	-7.037	1.765	-1.419	.51	401.62	569.32
			END-J	-7.037	1.765	-1.419	.51	373.10	533.86
52	TANGENT	3	END-I	6.693	-.588	30.419	2023.32	-119.71	-1220.99
			END-J	6.693	-.588	30.419	2023.32	491.44	-1209.17
52	TANGENT	4	END-I	66.068	-4.366	1.090	29.82	-6735.13	-6460.34
			END-J	66.068	-4.366	1.090	29.82	-6713.24	-6372.62
52	TANGENT	5	END-I	74.068	12.215	-17.998	-876.05	-2937.45	-5189.85
			END-J	74.068	12.215	-17.998	-876.05	-3299.05	-5435.26
52	TANGENT	6	END-I	25.593	-5.239	35.938	3080.04	-1399.12	-3220.00
			END-J	25.593	-5.239	35.938	3080.04	-677.10	-3114.75
52	TANGENT	7	END-I	18.522	-28.577	-73.564	-953.99	2166.70	1202.73
			END-J	18.522	-28.577	-73.564	-953.99	688.76	1776.86
52	TANGENT	8	END-I	84.848	51.176	101.815	611.53	-4401.57	-106.65
			END-J	84.848	51.176	101.815	611.53	-2356.04	-1134.81

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
52	TANGENT	9	END-I	10.468	4.468	-43.724	-835.34	-319.71	193.19
			END-J	10.468	4.468	-43.724	-835.34	-1198.15	103.43
53	TANGENT	1	END-I	-20.874	-91.646	-4.454	-1379.17	1540.11	6091.43
			END-J	-20.874	-91.646	-4.454	-1379.17	1450.58	7933.49
53	TANGENT	2	END-I	-7.306	-.121	-1.866	.84	375.01	532.52
			END-J	-7.306	-.121	-1.866	.84	337.50	534.96
53	TANGENT	3	END-I	6.580	-6.654	19.470	2022.63	487.01	-1212.12
			END-J	6.580	-6.654	19.470	2022.63	878.36	-1078.37
53	TANGENT	4	END-I	82.532	47.156	12.196	25.82	-6736.08	-6348.49
			END-J	82.532	47.156	12.196	25.82	-6490.94	-7296.31
53	TANGENT	5	END-I	61.752	-22.796	6.913	-879.37	-3318.51	-5422.86
			END-J	61.752	-22.796	6.913	-879.37	-3179.56	-4964.66
53	TANGENT	6	END-I	25.759	-10.781	26.898	3078.19	-688.41	-3114.11
			END-J	25.759	-10.781	26.898	3078.19	-147.76	-2897.41
53	TANGENT	7	END-I	23.024	-24.909	-79.799	-952.91	695.17	1774.93
			END-J	23.024	-24.909	-79.799	-952.91	-908.77	2275.60
53	TANGENT	8	END-I	113.479	62.623	126.293	610.78	-2360.12	-1126.71
			END-J	113.479	62.623	126.293	610.78	178.35	-2385.42
53	TANGENT	9	END-I	12.968	2.469	-35.304	-835.33	-1197.74	108.22
			END-J	12.968	2.469	-35.304	-835.33	-1907.35	58.59
54	TANGENT	1	END-I	-29.646	26.270	-30.349	-1377.13	1450.79	7933.81
			END-J	-29.646	26.270	-30.349	-1377.13	821.38	7389.01
54	TANGENT	2	END-I	-7.590	-2.131	-1.815	1.36	337.36	535.04
			END-J	-7.590	-2.131	-1.815	1.36	299.72	579.24
54	TANGENT	3	END-I	6.407	-12.906	8.725	2024.11	875.33	-1078.06
			END-J	6.407	-12.906	8.725	2024.11	1056.27	-810.39
54	TANGENT	4	END-I	99.543	95.525	18.698	15.53	-6489.10	-7297.98
			END-J	99.543	95.525	18.698	15.53	-6101.33	-9279.06
54	TANGENT	5	END-I	49.068	-56.224	29.413	-884.35	-3176.84	-4965.52
			END-J	49.068	-56.224	29.413	-884.35	-2566.84	-3799.51
54	TANGENT	6	END-I	25.869	-16.352	18.029	3078.06	-152.04	-2897.32
			END-J	25.869	-16.352	18.029	3078.06	221.86	-2558.20
54	TANGENT	7	END-I	27.435	-18.752	-72.053	-954.50	-907.80	2275.32
			END-J	27.435	-18.752	-72.053	-954.50	-2402.08	2664.22

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
54	TANGENT	8	END-I	142.256	57.108	133.712	611.17	177.96	-2385.35
			END-J	142.256	57.108	133.712	611.17	2950.98	-3569.70
54	TANGENT	9	END-I	15.465	.489	-19.352	-838.45	-1906.00	58.07
			END-J	15.465	.489	-19.352	-838.45	-2307.34	47.92
55	TANGENT	1	END-I	-38.290	181.737	-64.463	-1379.92	807.67	7390.00
			END-J	-38.290	181.737	-64.463	-1379.92	-491.32	3727.83
55	TANGENT	2	END-I	-7.871	-3.856	-1.337	.94	298.74	579.75
			END-J	-7.871	-3.856	-1.337	.94	271.80	657.44
55	TANGENT	3	END-I	6.250	-18.045	.767	2023.40	1059.43	-808.04
			END-J	6.250	-18.045	.767	2023.40	1074.88	-444.41
55	TANGENT	4	END-I	116.470	133.302	18.395	23.53	-6085.62	-9289.35
			END-J	116.470	133.302	18.395	23.53	-5714.95	-11975.52
55	TANGENT	5	END-I	36.414	-82.853	44.772	-881.01	-2561.20	-3804.09
			END-J	36.414	-82.853	44.772	-881.01	-1659.00	-2134.53
55	TANGENT	6	END-I	25.999	-20.858	11.473	3078.58	228.92	-2556.96
			END-J	25.999	-20.858	11.473	3078.58	460.11	-2136.66
55	TANGENT	7	END-I	31.699	-15.466	-48.044	-953.10	-2407.43	2659.90
			END-J	31.699	-15.466	-48.044	-953.10	-3375.55	2971.55
55	TANGENT	8	END-I	170.451	32.257	119.144	609.54	2957.55	-3564.54
			END-J	170.451	32.257	119.144	609.54	5358.43	-4214.55
55	TANGENT	9	END-I	17.868	-1.394	1.332	-836.41	-2308.16	43.78
			END-J	17.868	-1.394	1.332	-836.41	-2281.33	71.88
56	TANGENT	1	END-I	-46.633	354.353	-104.205	-1379.86	-491.48	3727.83
			END-J	-46.633	354.353	-104.205	-1379.86	-2592.74	-3417.63
56	TANGENT	2	END-I	-8.149	-4.989	-.516	.91	271.80	657.44
			END-J	-8.149	-4.989	-.516	.91	261.39	758.05
56	TANGENT	3	END-I	6.084	-21.343	-2.494	2023.28	1075.11	-444.41
			END-J	6.084	-21.343	-2.494	2023.28	1024.81	-14.04
56	TANGENT	4	END-I	133.266	156.942	9.402	24.17	-5714.95	-11975.52
			END-J	133.266	156.942	9.402	24.17	-5525.36	-15140.22
56	TANGENT	5	END-I	23.897	-100.458	50.741	-880.83	-1659.10	-2134.53
			END-J	23.897	-100.458	50.741	-880.83	-635.92	-108.81
56	TANGENT	6	END-I	26.119	-23.773	8.832	3078.53	460.45	-2136.66
			END-J	26.119	-23.773	8.832	3078.53	638.54	-1657.28

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
56	TANGENT	7	END-I	35.619	-22.317	-8.463	-952.72	-3375.66	2971.55
			END-J	35.619	-22.317	-8.463	-952.72	-3546.31	3421.57
56	TANGENT	8	END-I	197.794	-9.199	81.853	608.94	5358.49	-4214.55
			END-J	197.794	-9.199	81.853	608.94	7009.05	-4029.06
56	TANGENT	9	END-I	20.127	-2.758	21.841	-836.15	-2281.42	71.88
			END-J	20.127	-2.758	21.841	-836.15	-1841.00	127.49
57	BEND	1	END-I	-174.636	-205.707	11.624	-1379.64	-1770.52	-3907.48
			CENTER	-221.529	-154.070	11.624	-1771.06	-1232.55	-1937.38
			END-J	-253.621	-92.138	11.624	-2011.51	-612.21	-589.16
57	BEND	2	END-I	-6.603	6.021	-1.199	.66	87.03	797.12
			CENTER	-4.839	7.513	-1.199	21.26	71.04	723.01
			END-J	-2.751	8.502	-1.199	37.08	50.30	635.31
57	BEND	3	END-I	11.274	11.688	-6.638	2023.93	1000.99	214.04
			CENTER	13.894	8.407	-6.638	2203.57	377.27	104.01
			END-J	15.584	4.565	-6.638	2217.34	-271.65	32.97
57	BEND	4	END-I	96.150	-176.460	44.598	28.93	-2035.41	-15987.89
			CENTER	47.706	-195.210	44.598	-431.17	-1494.55	-13952.66
			END-J	-3.926	-200.916	44.598	-737.26	-853.82	-11783.51
57	BEND	5	END-I	34.523	30.538	13.345	-881.17	-595.39	-247.28
			CENTER	41.197	20.668	13.345	-985.61	-205.92	-527.68
			END-J	45.118	9.418	13.345	-986.73	197.32	-692.43
57	BEND	6	END-I	31.043	3.469	3.721	3079.83	987.43	-1473.52
			CENTER	30.896	-4.604	3.721	3235.26	205.06	-1467.31
			END-J	28.683	-12.369	3.721	3184.96	-591.00	-1374.36
57	BEND	7	END-I	81.318	204.568	22.982	-956.82	-4215.27	2550.91
			CENTER	131.038	176.890	22.982	-1973.09	-3581.68	462.09
			END-J	172.002	137.391	22.982	-2793.00	-2708.77	-1258.89
57	BEND	8	END-I	279.870	273.922	-11.917	615.55	7726.81	-2376.64
			CENTER	340.733	193.032	-11.917	2558.86	7182.54	-4933.64
			END-J	378.829	99.243	-11.917	4297.73	6158.34	-6534.11
57	BEND	9	END-I	24.908	5.280	35.062	-837.38	-1822.91	-283.70
			CENTER	25.429	-1.282	35.062	-1227.46	-1169.78	-305.59
			END-J	24.251	-7.757	35.062	-1437.08	-438.49	-256.09
58	BEND	1	END-I	-187.711	5.847	5.187	-2011.09	-613.93	-588.81
			CENTER	-180.630	51.404	5.187	-2093.51	-52.50	-885.53
			END-J	-162.664	93.863	5.187	-2036.67	512.10	-1638.41
58	BEND	2	END-I	-3.354	8.149	.083	37.10	50.49	635.30
			CENTER	-1.268	8.721	.083	48.39	40.77	547.86
			END-J	.895	8.767	.083	56.97	28.60	457.23

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
58	BEND	3	END-I	14.510	3.266	2.292	2217.55	-269.91	32.82
			CENTER	14.868	-.368	2.292	2087.87	-778.65	17.80
			END-J	14.331	-3.979	2.292	1838.14	-1240.46	40.33
58	BEND	4	END-I	19.543	-195.535	15.660	-737.74	-857.33	-11783.22
			CENTER	-28.686	-194.404	15.660	-904.62	-491.88	-9762.27
			END-J	-75.185	-181.557	15.660	-977.42	-96.78	-7813.75
58	BEND	5	END-I	30.131	10.826	.028	-986.95	196.37	-692.38
			CENTER	31.861	3.159	.028	-909.33	431.19	-764.86
			END-J	31.670	-4.699	.028	-776.84	640.03	-756.88
58	BEND	6	END-I	27.924	-13.779	11.306	3185.28	-588.86	-1374.53
			CENTER	23.726	-20.168	11.306	2960.11	-1231.73	-1198.59
			END-J	18.097	-25.340	11.306	2585.09	-1800.38	-962.74
58	BEND	7	END-I	143.947	60.379	71.510	-2791.00	-2711.26	-1257.94
			CENTER	154.320	23.489	71.510	-3277.17	-1219.50	-1692.61
			END-J	155.393	-14.816	71.510	-3385.23	345.75	-1737.56
58	BEND	8	END-I	381.851	56.646	-90.127	4292.28	6160.06	-6536.06
			CENTER	384.146	-38.093	-90.127	5549.95	4008.55	-6632.22
			END-J	363.289	-130.537	-90.127	6245.53	1615.45	-5758.25
58	BEND	9	END-I	25.626	-5.361	35.040	-1436.76	-439.68	-255.84
			CENTER	23.548	-11.443	35.040	-1456.35	281.35	-168.76
			END-J	20.051	-16.835	35.040	-1299.67	985.42	-22.20
59	BEND	1	END-I	-72.691	88.675	-5.541	-2035.90	511.57	-1639.53
			CENTER	-45.496	105.249	-5.541	-1825.67	987.53	-2786.95
			END-J	-14.791	113.704	-5.541	-1492.63	1387.30	-4082.47
59	BEND	2	END-I	.185	8.835	1.283	56.63	28.38	457.29
			CENTER	2.608	8.443	1.283	64.34	26.60	355.05
			END-J	4.829	7.400	1.283	71.27	22.77	261.31
59	BEND	3	END-I	12.781	-3.959	14.997	1838.99	-1239.18	40.90
			CENTER	11.199	-7.322	14.997	1451.61	-1523.18	107.65
			END-J	8.753	-10.120	14.997	1001.05	-1689.67	210.86
59	BEND	4	END-I	-49.997	-185.277	-17.470	-971.95	-93.08	-7814.48
			CENTER	-99.031	-164.378	-17.470	-988.50	-24.90	-5745.62
			END-J	-140.426	-130.797	-17.470	-985.65	45.21	-3999.10
59	BEND	5	END-I	18.173	1.742	-14.749	-776.77	639.91	-757.06
			CENTER	17.951	-3.324	-14.749	-594.80	657.71	-747.70
			END-J	16.344	-8.134	-14.749	-414.95	624.78	-679.91
59	BEND	6	END-I	16.751	-25.680	22.161	2587.03	-1798.00	-961.96
			CENTER	9.041	-29.297	22.161	2028.74	-2183.06	-636.67
			END-J	.634	-30.654	22.161	1386.07	-2399.69	-281.95

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
59	BEND	7	END-I	81.824	-103.406	94.976	-3384.28	344.33	-1739.70
			CENTER	50.224	-121.924	94.976	-3004.44	2364.18	-406.46
			END-J	14.750	-131.036	94.976	-2083.67	4201.64	1090.27
59	BEND	8	END-I	353.406	-123.274	-132.747	6248.37	1623.11	-5753.02
			CENTER	305.865	-215.728	-132.747	6237.75	-1698.79	-3747.19
			END-J	234.728	-291.539	-132.747	5313.81	-4889.64	-745.76
59	BEND	9	END-I	25.353	-1.345	12.223	-1300.35	984.52	-22.55
			CENTER	24.005	-8.267	12.223	-959.49	1446.07	34.33
			END-J	20.805	-14.551	12.223	-504.83	1796.07	169.34
60	BEND	1	END-I	61.839	6.440	-25.683	-1488.59	1037.51	-4186.50
			CENTER	59.623	-17.624	-25.683	-1062.29	1114.25	-4093.17
			END-J	48.399	-39.025	-25.683	-638.93	1022.66	-3620.44
60	BEND	2	END-I	4.149	8.212	1.325	71.38	44.83	258.41
			CENTER	6.966	6.010	1.325	87.30	35.51	139.73
			END-J	8.732	2.900	1.325	98.46	20.83	65.39
60	BEND	3	END-I	7.573	-4.292	29.121	995.37	-1668.77	354.96
			CENTER	5.365	-6.855	29.121	376.58	-1454.56	447.98
			END-J	2.346	-8.383	29.121	-113.80	-1020.60	575.14
60	BEND	4	END-I	-115.073	-153.287	-33.308	-986.13	-294.22	-3988.40
			CENTER	-164.825	-97.834	-33.308	-1129.80	-430.91	-1892.85
			END-J	-189.676	-27.601	-33.308	-1314.72	-502.50	-846.12
60	BEND	5	END-I	3.882	-1.961	-24.993	-412.94	565.64	-730.98
			CENTER	2.841	-3.293	-24.993	-245.61	278.99	-687.14
			END-J	1.371	-4.127	-24.993	-200.20	-49.81	-625.22
60	BEND	6	END-I	-.702	-25.003	36.266	1377.91	-2419.69	-75.16
			CENTER	-10.181	-22.847	36.266	466.65	-2179.87	324.14
			END-J	-18.123	-17.239	36.266	-284.34	-1610.73	658.64
60	BEND	7	END-I	-134.287	-191.937	74.390	-2069.29	4286.62	726.05
			CENTER	-197.324	-126.238	74.390	-41.93	5946.42	3381.15
			END-J	-230.550	-41.469	74.390	2465.13	6707.87	4780.63
60	BEND	8	END-I	261.733	-149.828	-67.711	5297.14	-4953.49	-323.45
			CENTER	184.837	-238.302	-67.711	2792.95	-7686.36	2915.41
			END-J	80.017	-290.775	-67.711	-564.06	-9258.01	7330.43
60	BEND	9	END-I	45.170	25.335	-45.598	-498.73	1805.67	14.78
			CENTER	51.418	6.199	-45.598	82.32	1127.16	-248.37
			END-J	49.898	-13.873	-45.598	360.78	278.36	-184.33
61	BEND	1	END-I	37.392	-121.871	-40.973	-635.10	1009.35	-3624.85
			CENTER	-2.132	-127.461	-40.973	-375.95	625.45	-1969.12
			END-J	-41.446	-120.553	-40.973	-248.24	180.22	-322.15

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
61	BEND	2	END-I	8.809	4.140	.523	98.41	21.04	65.40
			CENTER	9.657	1.212	.523	101.17	-3.65	29.86
			END-J	9.559	-1.834	.523	96.15	-27.98	33.99
61	BEND	3	END-I	6.317	-.023	29.158	-114.67	-1018.41	578.83
			CENTER	6.000	-1.975	29.158	-364.13	-555.25	592.10
			END-J	5.095	-3.734	29.158	-458.11	-37.65	630.01
61	BEND	4	END-I	-186.814	-66.101	-24.019	-1314.05	-505.25	-845.52
			CENTER	-198.098	-5.085	-24.019	-1455.22	-385.27	-372.80
			END-J	-189.959	56.429	-24.019	-1552.35	-227.52	-713.75
61	BEND	5	END-I	-7.377	-1.092	-14.762	-199.61	-52.08	-625.23
			CENTER	-7.353	1.243	-14.762	-236.25	-179.05	-626.22
			END-J	-6.608	3.456	-14.762	-310.36	-288.46	-657.42
61	BEND	6	END-I	-14.981	-9.737	36.619	-285.47	-1608.18	664.37
			CENTER	-17.258	-4.626	36.619	-693.63	-966.63	759.75
			END-J	-17.843	.938	36.619	-883.36	-230.30	784.24
61	BEND	7	END-I	-404.814	-20.087	-48.346	2462.55	6724.90	4757.98
			CENTER	-391.180	106.093	-48.346	4322.31	5007.28	4186.84
			END-J	-339.192	221.870	-48.346	5559.71	2798.69	2008.95
61	BEND	8	END-I	314.078	38.889	117.614	-574.01	-9230.45	7364.34
			CENTER	310.708	-60.151	117.614	-3158.98	-7076.63	7505.54
			END-J	276.873	-153.294	117.614	-4951.13	-4228.95	8922.96
61	BEND	9	END-I	116.216	42.550	-92.012	361.05	277.57	-185.02
			CENTER	123.678	4.522	-92.012	240.22	-1039.79	-497.61
			END-J	119.014	-33.949	-92.012	-282.10	-2255.20	-302.20
62	BEND	1	END-I	-59.321	-112.947	-42.684	-247.43	168.18	-329.20
			CENTER	-68.129	-107.863	-42.684	-238.87	46.28	36.28
			END-J	-76.503	-102.094	-42.684	-240.06	-75.92	383.80
62	BEND	2	END-I	10.012	-1.231	-.184	96.08	-26.59	35.28
			CENTER	9.882	-2.025	-.184	93.63	-34.77	40.67
			END-J	9.690	-2.805	-.184	90.54	-42.72	48.66
62	BEND	3	END-I	10.065	1.254	24.083	-460.15	-15.79	629.45
			CENTER	10.132	.448	24.083	-456.77	100.51	626.64
			END-J	10.136	-.360	24.083	-444.14	216.17	626.49
62	BEND	4	END-I	-201.952	35.088	-9.328	-1549.64	-255.38	-710.22
			CENTER	-198.515	51.062	-9.328	-1566.28	-161.97	-852.82
			END-J	-193.818	66.712	-9.328	-1575.44	-67.53	-1047.76
62	BEND	5	END-I	-11.081	3.319	-4.105	-307.75	-312.31	-647.68
			CENTER	-10.782	4.191	-4.105	-332.19	-300.37	-660.11
			END-J	-10.414	5.037	-4.105	-355.60	-286.53	-675.39

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
62	BEND	6	END-I	-13.615	5.906	32.162	-885.63	-203.47	789.09
			CENTER	-13.101	6.972	32.162	-894.78	-25.98	767.77
			END-J	-12.504	7.993	32.162	-889.77	151.67	743.00
62	BEND	7	END-I	-424.313	229.987	-130.428	5548.90	2877.61	1925.62
			CENTER	-404.646	263.053	-130.428	5743.27	1995.42	1109.54
			END-J	-382.409	294.447	-130.428	5866.76	1100.54	186.77
62	BEND	8	END-I	515.909	-6.305	248.893	-4974.61	-3914.54	9052.43
			CENTER	513.768	-47.377	248.893	-5237.78	-2683.25	9141.28
			END-J	508.362	-88.148	248.893	-5402.05	-1434.91	9365.60
62	BEND	9	END-I	173.091	-17.716	-72.497	-277.80	-2265.02	-222.16
			CENTER	171.130	-31.447	-72.497	-466.88	-2475.31	-140.79
			END-J	168.081	-44.977	-72.497	-672.11	-2669.87	-14.29
63	TANGENT	1	END-I	-89.692	93.088	22.035	-240.92	-30.91	-389.48
			END-J	-89.692	93.088	22.035	-240.92	454.63	-2440.65
63	TANGENT	2	END-I	10.173	2.481	.186	90.53	27.47	-58.66
			END-J	10.173	2.481	.186	90.53	31.56	-113.32
63	TANGENT	3	END-I	14.977	-7.777	-17.650	-446.60	-377.42	-542.75
			END-J	14.977	-7.777	-17.650	-446.60	-766.34	-371.40
63	TANGENT	4	END-I	-207.071	-49.756	7.995	-1572.21	357.09	992.47
			END-J	-207.071	-49.756	7.995	-1572.21	533.25	2088.82
63	TANGENT	5	END-I	-14.337	-6.475	-3.679	-352.78	461.46	572.10
			END-J	-14.337	-6.475	-3.679	-352.78	380.38	714.78
63	TANGENT	6	END-I	-8.358	-18.012	-23.914	-892.36	-345.53	-671.60
			END-J	-8.358	-18.012	-23.914	-892.36	-872.48	-274.72
63	TANGENT	7	END-I	-455.489	-231.838	262.888	5862.78	-1131.70	109.76
			END-J	-455.489	-231.838	262.888	5862.78	4660.95	5218.22
63	TANGENT	8	END-I	733.226	-106.602	-343.166	-5424.41	-1157.88	-9390.99
			END-J	733.226	-106.602	-343.166	-5424.41	-8719.41	-7042.05
63	TANGENT	9	END-I	217.339	43.244	32.747	-663.83	2574.72	-714.34
			END-J	217.339	43.244	32.747	-663.83	3296.30	-1667.21
64	TANGENT	1	END-I	-110.128	33.487	36.212	-242.69	464.54	-2438.61
			END-J	-110.128	33.487	36.212	-242.69	1262.93	-3176.92
64	TANGENT	2	END-I	10.897	2.077	1.309	90.45	32.04	-113.26
			END-J	10.897	2.077	1.309	90.45	60.91	-159.05
64	TANGENT	3	END-I	22.481	-10.874	-8.050	-446.63	-764.94	-374.23
			END-J	22.481	-10.874	-8.050	-446.63	-942.42	-134.48

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
64	TANGENT	4	END-I	-227.032	-31.869	-22.013	-1570.96	524.26	2092.04
			END-J	-227.032	-31.869	-22.013	-1570.96	38.92	2794.68
64	TANGENT	5	END-I	-20.446	-7.220	-16.523	-352.40	377.36	716.57
			END-J	-20.446	-7.220	-16.523	-352.40	13.06	875.75
64	TANGENT	6	END-I	-1.843	-21.058	-15.660	-892.30	-871.61	-277.68
			END-J	-1.843	-21.058	-15.660	-892.30	-1216.88	186.60
64	TANGENT	7	END-I	-565.687	-106.318	281.589	5864.97	4641.24	5233.30
			END-J	-565.687	-106.318	281.589	5864.97	10849.67	7577.39
64	TANGENT	8	END-I	1082.207	-283.331	-452.775	-5426.68	-8692.09	-7074.01
			END-J	1082.207	-283.331	-452.775	-5426.68	-18674.79	-827.18
64	TANGENT	9	END-I	292.741	-12.724	-71.156	-665.88	3302.90	-1653.27
			END-J	292.741	-12.724	-71.156	-665.88	1734.07	-1372.74
65	BEND	1	END-I	-127.355	-35.923	-41.258	-238.34	2716.88	2075.68
			CENTER	-131.853	-11.161	-41.258	248.92	2383.86	2265.12
			END-J	-131.582	14.005	-41.258	664.32	1964.61	2253.68
65	BEND	2	END-I	11.516	-2.456	1.064	90.66	136.57	101.58
			CENTER	10.843	-4.592	1.064	115.69	125.41	129.93
			END-J	9.778	-6.562	1.064	138.15	109.72	174.81
65	BEND	3	END-I	28.905	4.492	-13.451	-447.26	384.81	-870.40
			CENTER	29.233	-1.062	-13.451	-376.57	355.26	-884.19
			END-J	28.503	-6.578	-13.451	-312.74	312.86	-853.45
65	BEND	4	END-I	-244.090	46.662	-4.063	-1573.84	-2699.74	-717.01
			CENTER	-230.840	92.031	-4.063	-2059.61	-2385.34	-1275.07
			END-J	-209.241	134.071	-4.063	-2477.07	-1984.66	-2184.82
65	BEND	5	END-I	-25.733	25.296	1.670	-353.30	-846.34	-224.01
			CENTER	-20.479	29.710	1.670	-505.88	-750.83	-445.33
			END-J	-14.483	33.050	1.670	-637.61	-628.16	-697.86
65	BEND	6	END-I	3.733	15.469	-20.747	-893.49	150.32	-1221.02
			CENTER	6.594	14.482	-20.747	-864.67	151.31	-1341.53
			END-J	9.217	12.972	-20.747	-836.19	146.83	-1452.00
65	BEND	7	END-I	-660.238	-257.754	44.034	5865.99	-10234.97	8388.42
			CENTER	-697.097	-128.090	44.034	3855.66	-10809.31	9940.92
			END-J	-708.740	6.207	44.034	1772.96	-10992.65	10431.34
65	BEND	8	END-I	1386.555	613.854	-239.991	-5441.15	5853.49	-17748.56
			CENTER	1477.698	340.237	-239.991	-4417.33	4863.98	-21587.49
			END-J	1515.388	54.313	-239.991	-3599.37	3698.52	-23175.03
65	BEND	9	END-I	358.177	232.627	-16.610	-663.02	852.86	2041.53
			CENTER	395.742	160.607	-16.610	-502.22	830.51	459.29
			END-J	418.992	82.776	-16.610	-348.55	778.12	-520.00

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
66	BEND	1	END-I	-142.193	25.156	-90.263	665.14	1978.43	2241.32
			CENTER	-134.850	51.643	-90.263	959.29	1098.24	1932.93
			END-J	-122.622	76.259	-90.263	1081.33	178.26	1419.35
66	BEND	2	END-I	10.103	-7.050	.702	138.26	110.89	173.99
			CENTER	8.584	-8.837	.702	157.30	88.27	237.78
			END-J	6.754	-10.303	.702	171.71	62.45	314.63
66	BEND	3	END-I	31.815	-11.891	-17.173	-314.20	307.54	-854.85
			CENTER	28.986	-17.704	-17.173	-263.31	224.84	-736.01
			END-J	25.106	-22.875	-17.173	-229.00	133.99	-573.07
66	BEND	4	END-I	-218.186	147.736	9.403	-2477.77	-2000.04	-2169.95
			CENTER	-186.240	186.402	9.403	-2804.69	-1419.49	-3511.66
			END-J	-147.547	218.314	9.403	-3015.70	-787.52	-5136.76
66	BEND	5	END-I	-16.840	37.978	5.000	-637.84	-632.91	-693.34
			CENTER	-9.339	40.481	5.000	-742.41	-460.79	-1008.39
			END-J	-1.500	41.518	5.000	-812.46	-271.99	-1337.65
66	BEND	6	END-I	12.072	8.303	-24.230	-838.26	137.46	-1451.72
			CENTER	13.427	5.865	-24.230	-815.46	100.98	-1508.62
			END-J	14.295	3.215	-24.230	-799.99	60.84	-1545.08
66	BEND	7	END-I	-783.622	36.346	313.895	1798.64	-10929.73	10492.88
			CENTER	-762.539	184.168	313.895	-66.07	-8574.53	9607.42
			END-J	-713.830	325.316	313.895	-1450.74	-5908.66	7561.63
66	BEND	8	END-I	1780.504	7.820	-283.460	-3633.83	3559.46	-23191.42
			CENTER	1749.731	-329.689	-283.460	-3109.23	1927.71	-21898.98
			END-J	1655.565	-655.254	-283.460	-2903.31	226.11	-17944.01
66	BEND	9	END-I	526.845	221.809	-35.232	-350.08	774.69	-524.07
			CENTER	559.330	117.965	-35.232	-223.75	546.62	-1888.40
			END-J	571.549	9.847	-35.232	-142.93	298.73	-2401.62
67	BEND	1	END-I	-128.205	87.607	-124.506	1081.49	178.54	1419.19
			CENTER	-109.172	110.421	-124.506	1000.22	-1024.14	621.86
			END-J	-86.142	129.193	-124.506	691.36	-2189.33	-342.91
67	BEND	2	END-I	6.885	-10.676	.468	171.78	62.59	314.57
			CENTER	4.725	-11.792	.468	180.91	32.46	405.03
			END-J	2.393	-12.476	.468	184.14	1.14	502.75
67	BEND	3	END-I	26.589	-26.843	-19.608	-228.83	133.63	-573.23
			CENTER	20.990	-31.416	-19.608	-214.22	18.32	-338.65
			END-J	14.622	-34.839	-19.608	-221.85	-97.66	-71.88
67	BEND	4	END-I	-151.291	228.768	18.047	-3016.45	-789.59	-5136.00
			CENTER	-104.949	253.395	18.047	-3097.79	-56.61	-7077.35
			END-J	-54.765	268.746	18.047	-3038.02	678.44	-9179.67

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
67	BEND	5	END-I	-2.288	44.497	7.446	-812.74	-272.50	-1337.38
			CENTER	6.229	44.119	7.446	-844.05	-53.30	-1694.18
			END-J	14.518	42.125	7.446	-833.04	167.85	-2041.42
67	BEND	6	END-I	15.621	- .234	-26.469	-799.87	60.09	-1545.17
			CENTER	15.291	-3.205	-26.469	-794.08	.14	-1531.32
			END-J	14.400	-6.059	-26.469	-799.82	-59.82	-1494.02
67	BEND	7	END-I	-769.735	387.663	663.284	-1457.90	-5898.70	7568.03
			CENTER	-681.808	527.174	663.284	-2046.05	-220.70	3884.58
			END-J	-568.918	647.384	663.284	-1541.98	5465.37	-844.60
67	BEND	8	END-I	1876.984	-843.401	-284.577	-2902.48	209.91	-17944.34
			CENTER	1681.985	-1185.462	-284.577	-3027.60	-1511.74	-9775.44
			END-J	1425.404	-1484.121	-284.577	-3478.35	-3178.05	973.21
67	BEND	9	END-I	729.243	124.680	-47.071	-142.51	296.28	-2401.95
			CENTER	739.641	-16.498	-47.071	-119.57	-57.58	-2837.52
			END-J	722.959	-157.072	-47.071	-164.44	-409.33	-2138.66
68	BEND	1	END-I	-88.129	136.340	-140.160	694.30	-2187.53	-348.43
			CENTER	-60.693	150.571	-140.160	160.42	-3395.44	-1501.09
			END-J	-31.056	159.345	-140.160	-592.71	-4480.28	-2746.17
68	BEND	2	END-I	2.448	-12.651	.332	184.08	.09	502.77
			CENTER	.006	-12.885	.332	181.01	-32.15	605.36
			END-J	-2.436	-12.653	.332	171.89	-63.23	707.96
68	BEND	3	END-I	15.047	-36.699	-20.779	-221.71	-97.77	-72.16
			CENTER	7.819	-38.886	-20.779	-252.04	-219.43	231.50
			END-J	.308	-39.663	-20.779	-304.88	-333.13	547.07
68	BEND	4	END-I	-56.143	273.684	22.559	-3037.81	697.94	-9178.28
			CENTER	-3.257	279.365	22.559	-2833.31	1440.64	-11400.14
			END-J	49.748	274.919	22.559	-2491.75	2131.12	-13626.96
68	BEND	5	END-I	14.345	43.272	8.687	-833.02	171.97	-2041.09
			CENTER	22.286	39.770	8.687	-778.72	395.90	-2374.71
			END-J	29.419	34.825	8.687	-682.96	605.48	-2674.39
68	BEND	6	END-I	14.746	-7.663	-27.473	-799.56	-57.05	-1494.27
			CENTER	13.027	-10.318	-27.473	-816.80	-123.23	-1422.03
			END-J	10.835	-12.600	-27.473	-846.27	-184.94	-1329.96
68	BEND	7	END-I	-599.034	718.888	1077.549	-1549.11	5465.47	-830.78
			CENTER	-451.934	819.388	1077.549	335.22	14239.61	-7010.77
			END-J	-288.452	890.189	1077.549	3848.29	22497.62	-13878.97
68	BEND	8	END-I	1556.216	-1783.452	-256.059	-3474.25	-3185.14	964.64
			CENTER	1190.011	-2046.065	-256.059	-4209.90	-4507.74	16349.65
			END-J	780.672	-2234.516	-256.059	-5182.88	-5666.96	33546.80

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	LOAD CASE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
68	BEND	9	END-I	916.787	-88.763	-52.646	-163.64	-404.07	-2139.73
			CENTER	883.350	-260.905	-52.646	-277.34	-784.91	-734.94
			END-J	817.893	-423.590	-52.646	-461.15	-1137.29	2015.00
69	TANGENT	1	END-I	-30.960	-180.840	115.961	-596.54	4000.87	3406.29
			END-J	-30.960	-180.840	115.961	-596.54	5041.74	5029.51
69	TANGENT	2	END-I	-2.447	12.570	1.649	171.84	172.16	-689.63
			END-J	-2.447	12.570	1.649	171.84	186.97	-802.45
69	TANGENT	3	END-I	.264	36.240	26.857	-305.17	413.52	-488.97
			END-J	.264	36.240	26.857	-305.17	654.58	-814.26
69	TANGENT	4	END-I	50.003	-268.755	-65.442	-2489.93	-4216.19	13132.73
			END-J	50.003	-268.755	-65.442	-2489.93	-4803.60	15545.07
69	TANGENT	5	END-I	29.479	-33.117	-14.128	-682.44	-1012.60	2548.39
			END-J	29.479	-33.117	-14.128	-682.44	-1139.41	2845.65
69	TANGENT	6	END-I	10.814	8.436	29.263	-846.43	-23.80	1342.44
			END-J	10.814	8.436	29.263	-846.43	238.86	1266.72
69	TANGENT	7	END-I	-287.840	-715.771	-1554.496	3867.55	-24371.01	10231.03
			END-J	-287.840	-715.771	-1554.496	3867.55	-38324.16	16655.79
69	TANGENT	8	END-I	778.719	2454.258	601.547	-5187.72	10785.35	-32266.52
			END-J	778.719	2454.258	601.547	-5187.72	16184.83	-54295.94
69	TANGENT	9	END-I	978.881	411.723	118.526	-462.13	1435.00	-1814.81
			END-J	978.881	411.723	118.526	-462.13	2498.90	-5510.43

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 1 GROUP 1 X EXCITATION

KIND OF SUPPORT	NODE NUMBER	GLOBAL COMPONENTS						LOCAL COMPONENTS	
		FX	FY	FZ	MX	MY	MZ	FL	ML
BDRY	7090	-146.	0.	0.	0.	0.	0.	-146.	0.
BDRY	7090	0.	83.	0.	0.	0.	0.	83.	0.
BDRY	7090	0.	0.	39.	0.	0.	0.	39.	0.
BDRY	7090	0.	0.	0.	-3741.	0.	0.	0.	-3741.
BDRY	7090	0.	0.	0.	0.	-8510.	0.	0.	-8510.
BDRY	7090	0.	0.	0.	0.	0.	620.	0.	620.
BDRY	3047	0.	0.	1.	0.	0.	0.	1.	0.
BDRY	3116	0.	0.	1.	0.	0.	0.	1.	0.
BDRY	3210	-764.	0.	0.	0.	0.	0.	-764.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	116.	0.	0.	0.	0.	0.	116.	0.
BDRY	3250	0.	181.	0.	0.	0.	0.	181.	0.
BDRY	3250	0.	0.	31.	0.	0.	0.	31.	0.
BDRY	3250	0.	0.	0.	5030.	0.	0.	0.	5030.
BDRY	3250	0.	0.	0.	0.	-5042.	0.	0.	-5042.
BDRY	3250	0.	0.	0.	0.	0.	597.	0.	597.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 2 GROUP 1 Y EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS			LOCAL COMPONENTS		
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	188.	0.	0.	0.	0.	0.	188.	0.
BDRY	7090	0.	22.	0.	0.	0.	0.	22.	0.
BDRY	7090	0.	0.	52.	0.	0.	0.	52.	0.
BDRY	7090	0.	0.	0.	-1825.	0.	0.	0.	-1825.
BDRY	7090	0.	0.	0.	0.	1479.	0.	0.	1479.
BDRY	7090	0.	0.	0.	0.	0.	4691.	0.	4691.
BDRY	3047	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3116	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3210	12.	0.	0.	0.	0.	0.	12.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	2.	0.	0.	0.	0.	0.	2.	0.
BDRY	3250	0.	-13.	0.	0.	0.	0.	-13.	0.
BDRY	3250	0.	0.	2.	0.	0.	0.	2.	0.
BDRY	3250	0.	0.	0.	-802.	0.	0.	0.	-802.
BDRY	3250	0.	0.	0.	0.	-187.	0.	0.	-187.
BDRY	3250	0.	0.	0.	0.	0.	-172.	0.	-172.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 3 GROUP 1 Z EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS				LOCAL COMPONENTS	
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	-25.	0.	0.	0.	0.	0.	-25.	0.
BDRY	7090	0.	2.	0.	0.	0.	0.	2.	0.
BDRY	7090	0.	0.	-63.	0.	0.	0.	-63.	0.
BDRY	7090	0.	0.	0.	2157.	0.	0.	0.	2157.
BDRY	7090	0.	0.	0.	0.	6326.	0.	0.	6326.
BDRY	7090	0.	0.	0.	0.	0.	-172.	0.	-172.
BDRY	3047	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3116	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3210	34.	0.	0.	0.	0.	0.	34.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	27.	0.	0.	0.	0.	0.	27.	0.
BDRY	3250	0.	-36.	0.	0.	0.	0.	-36.	0.
BDRY	3250	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	0.	0.	0.	-814.	0.	0.	0.	-814.
BDRY	3250	0.	0.	0.	0.	-655.	0.	0.	-655.
BDRY	3250	0.	0.	0.	0.	0.	305.	0.	305.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL / LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 4 GROUP 2 X EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS			LOCAL COMPONENTS		
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	-8352.	0.	0.	0.	0.	0.	-8352.	0.
BDRY	7090	0.	1111.	0.	0.	0.	0.	1111.	0.
BDRY	7090	0.	0.	-1930.	0.	0.	0.	-1930.	0.
BDRY	7090	0.	0.	0.	24869.	0.	0.	0.	24869.
BDRY	7090	0.	0.	0.	0.	-81375.	0.	0.	-81375.
BDRY	7090	0.	0.	0.	0.	0.	-148909.	0.	-148909.
BDRY	3047	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3116	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3210	-348.	0.	0.	0.	0.	0.	-348.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	-65.	0.	0.	0.	0.	0.	-65.	0.
BDRY	3250	0.	269.	0.	0.	0.	0.	269.	0.
BDRY	3250	0.	0.	-50.	0.	0.	0.	-50.	0.
BDRY	3250	0.	0.	0.	15545.	0.	0.	0.	15545.
BDRY	3250	0.	0.	0.	0.	4804.	0.	0.	4804.
BDRY	3250	0.	0.	0.	0.	0.	2490.	0.	2490.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 5 GROUP 2 Y EXCITATION

KIND OF SUPPORT	NODE NUMBER	GLOBAL COMPONENTS						LOCAL COMPONENTS	
		FX	FY	FZ	MX	MY	MZ	FL	ML
BDRY	7090	888.	0.	0.	0.	0.	0.	888.	0.
BDRY	7090	0.	-2042.	0.	0.	0.	0.	-2042.	0.
BDRY	7090	0.	0.	262.	0.	0.	0.	262.	0.
BDRY	7090	0.	0.	0.	26529.	0.	0.	0.	26529.
BDRY	7090	0.	0.	0.	0.	7829.	0.	0.	7829.
BDRY	7090	0.	0.	0.	0.	0.	-29445.	0.	-29445.
BDRY	3047	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3116	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3210	151.	0.	0.	0.	0.	0.	151.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	-14.	0.	0.	0.	0.	0.	-14.	0.
BDRY	3250	0.	33.	0.	0.	0.	0.	33.	0.
BDRY	3250	0.	0.	-29.	0.	0.	0.	-29.	0.
BDRY	3250	0.	0.	0.	2846.	0.	0.	0.	2846.
BDRY	3250	0.	0.	0.	0.	1139.	0.	0.	1139.
BDRY	3250	0.	0.	0.	0.	0.	682.	0.	682.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 6 GROUP 2 Z EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS			LOCAL COMPONENTS		
				FZ	MX	MY	MZ	FL	ML
BDRY	7090	-1064.	0.	0.	0.	0.	0.	-1064.	0.
BDRY	7090	0.	173.	0.	0.	0.	0.	173.	0.
BDRY	7090	0.	0.	-1379.	0.	0.	0.	-1379.	0.
BDRY	7090	0.	0.	0.	31183.	0.	0.	0.	31183.
BDRY	7090	0.	0.	0.	0.	28563.	0.	0.	28563.
BDRY	7090	0.	0.	0.	0.	0.	-17343.	0.	-17343.
BDRY	3047	0.	0.	-2.	0.	0.	0.	-2.	0.
BDRY	3116	0.	0.	-1.	0.	0.	0.	-1.	0.
BDRY	3210	31.	0.	0.	0.	0.	0.	31.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	29.	0.	0.	0.	0.	0.	29.	0.
BDRY	3250	0.	-8.	0.	0.	0.	0.	-8.	0.
BDRY	3250	0.	0.	-11.	0.	0.	0.	-11.	0.
BDRY	3250	0.	0.	0.	1267.	0.	0.	0.	1267.
BDRY	3250	0.	0.	0.	0.	-239.	0.	0.	-239.
BDRY	3250	0.	0.	0.	0.	0.	846.	0.	846.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL / LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 7 GROUP 3 X EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS		MY	MZ	LOCAL COMPONENTS	
				FZ	MX			FL	ML
BDRY	7090	-72.	0.	0.	0.	0.	0.	-72.	0.
BDRY	7090	0.	-8.	0.	0.	0.	0.	-8.	0.
BDRY	7090	0.	0.	60.	0.	0.	0.	60.	0.
BDRY	7090	0.	0.	0.	-2019.	0.	0.	0.	-2019.
BDRY	7090	0.	0.	0.	0.	-10017.	0.	0.	-10017.
BDRY	7090	0.	0.	0.	0.	0.	-2473.	0.	-2473.
BDRY	3047	0.	0.	1.	0.	0.	0.	1.	0.
BDRY	3116	0.	0.	1.	0.	0.	0.	1.	0.
BDRY	3210	267.	0.	0.	0.	0.	0.	267.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	-1683.	0.	0.	0.	0.	0.	-1683.	0.
BDRY	3250	0.	716.	0.	0.	0.	0.	716.	0.
BDRY	3250	0.	0.	288.	0.	0.	0.	288.	0.
BDRY	3250	0.	0.	0.	16656.	0.	0.	0.	16656.
BDRY	3250	0.	0.	0.	0.	38324.	0.	0.	38324.
BDRY	3250	0.	0.	0.	0.	0.	-3868.	0.	-3868.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 8 GROUP 3 Y EXCITATION

KIND OF SUPPORT	NODE NUMBER	GLOBAL COMPONENTS						LOCAL COMPONENTS	
		FX	FY	FZ	MX	MY	MZ	FL	ML
BDRY	7090	87.	0.	0.	0.	0.	0.	87.	0.
BDRY	7090	0.	-10.	0.	0.	0.	0.	-10.	0.
BDRY	7090	0.	0.	-90.	0.	0.	0.	-90.	0.
BDRY	7090	0.	0.	0.	3452.	0.	0.	0.	3452.
BDRY	7090	0.	0.	0.	0.	14753.	0.	0.	14753.
BDRY	7090	0.	0.	0.	0.	0.	2059.	0.	2059.
BDRY	3047	0.	0.	-2.	0.	0.	0.	-2.	0.
BDRY	3116	0.	0.	-2.	0.	0.	0.	-2.	0.
BDRY	3210	346.	0.	0.	0.	0.	0.	346.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	602.	0.	0.	0.	0.	0.	602.	0.
BDRY	3250	0.	-2560.	0.	0.	0.	0.	-2560.	0.
BDRY	3250	0.	0.	-779.	0.	0.	0.	-779.	0.
BDRY	3250	0.	0.	0.	-54296.	0.	0.	0.	-54296.
BDRY	3250	0.	0.	0.	0.	-16185.	0.	0.	-16185.
BDRY	3250	0.	0.	0.	0.	0.	5188.	0.	5188.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

SUMMARY OF SUPPORT FORCES/MOMENTS IN GLOBAL/LOCAL SYSTEMS

BDRY= BOUNDARY ELEMENTS (SPRING)
 THAM= THERMAL ANCHOR MOTION
 SEAM= SEISMIC ANCHOR MOTION
 SNBR= SNUBBER ELEMENT

LOAD CASE 9 GROUP 3 Z EXCITATION

KIND OF SUPPORT	NODE NUMBER	FX	FY	GLOBAL COMPONENTS		MY	MZ	LOCAL COMPONENTS	
				FZ	MX			FL	ML
BDRY	7090	-16.	0.	0.	0.	0.	0.	-16.	0.
BDRY	7090	0.	-13.	0.	0.	0.	0.	-13.	0.
BDRY	7090	0.	0.	17.	0.	0.	0.	17.	0.
BDRY	7090	0.	0.	0.	-313.	0.	0.	0.	-313.
BDRY	7090	0.	0.	0.	0.	-2818.	0.	0.	-2818.
BDRY	7090	0.	0.	0.	0.	0.	-1120.	0.	-1120.
BDRY	3047	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3116	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3210	16.	0.	0.	0.	0.	0.	16.	0.
BDRY	3210	0.	0.	0.	0.	0.	0.	0.	0.
BDRY	3250	119.	0.	0.	0.	0.	0.	119.	0.
BDRY	3250	0.	-412.	0.	0.	0.	0.	-412.	0.
BDRY	3250	0.	0.	-1037.	0.	0.	0.	-1037.	0.
BDRY	3250	0.	0.	0.	-5510.	0.	0.	0.	-5510.
BDRY	3250	0.	0.	0.	0.	-2499.	0.	0.	-2499.
BDRY	3250	0.	0.	0.	0.	0.	462.	0.	462.
SNBR	3035	0.	0.	0.	0.	0.	0.	0.	0.
SNBR	3083	0.	0.	0.	0.	0.	0.	0.	0.

STATIC SOLUTION TIME LOG

EQUATION SOLUTION = .00
 DISPLACEMENT OUTPUT = .00
 STRESS RECOVERY = .00

BENCHMARK PROBLEM 2

TOTAL RESPONSE.

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

NODE NUMBER	D I S P L A C E M E N T S / R O T A T I O N S						A C C E L E R A T I O N S I N G ' S		
	X- TRANSLATION	Y- TRANSLATION	Z- TRANSLATION	X- ROTATION	Y- ROTATION	Z- ROTATION	X- DIRECTION	Y- DIRECTION	Z- DIRECTION
7090	.11791E-06	.17977E-06	.66067E-07	.85646E-07	.70486E-07	.10570E-06	.000	.000	.000
3001	.20090E-03	.28502E-03	.16295E-03	.11979E-04	.96795E-05	.12971E-04	.004	.004	.004
3005	.28725E-03	.40485E-03	.24695E-03	.21036E-04	.17124E-04	.21608E-04	.005	.006	.006
3010	.43315E-03	.60592E-03	.39627E-03	.38174E-04	.31296E-04	.36967E-04	.008	.009	.010
3011	.76621E-03	.10638E-02	.75514E-03	.85460E-04	.70584E-04	.76109E-04	.014	.016	.017
3012	.16587E-02	.22415E-02	.18663E-02	.16007E-03	.13316E-03	.13012E-03	.029	.035	.038
3019	.42058E-02	.63583E-02	.62099E-02	.31648E-03	.26091E-03	.20399E-03	.074	.105	.118
3021	.59294E-02	.10715E-01	.11394E-01	.44430E-03	.35232E-03	.21182E-03	.107	.191	.217
3023	.61451E-02	.11448E-01	.12376E-01	.46652E-03	.36633E-03	.20881E-03	.111	.207	.237
3024	.71439E-02	.14500E-01	.17332E-01	.56799E-03	.42099E-03	.18786E-03	.131	.280	.331
3026	.85766E-02	.17055E-01	.24258E-01	.68880E-03	.47338E-03	.18791E-03	.157	.363	.452
3028	.10199E-01	.17632E-01	.31892E-01	.80739E-03	.51110E-03	.29255E-03	.183	.430	.572
3030	.13254E-01	.13375E-01	.45877E-01	.10075E-02	.54556E-03	.68372E-03	.223	.495	.759
3032	.16440E-01	.19571E-01	.60176E-01	.12085E-02	.54990E-03	.12649E-02	.255	.510	.911
3035	.19536E-01	.56078E-01	.73997E-01	.14157E-02	.53649E-03	.20160E-02	.276	.536	1.022
3037	.22410E-01	.11800E+00	.86803E-01	.16323E-02	.52117E-03	.27991E-02	.289	.677	1.092
3038	.24997E-01	.19983E+00	.98331E-01	.18534E-02	.52126E-03	.34813E-02	.295	.901	1.127
3040	.27293E-01	.29854E+00	.10866E+00	.20758E-02	.54959E-03	.40703E-02	.291	1.152	1.127
3044	.28140E-01	.34165E+00	.11250E+00	.21637E-02	.56952E-03	.42796E-02	.287	1.250	1.118
3047	.28534E-01	.36345E+00	.11433E+00	.22067E-02	.58094E-03	.43773E-02	.285	1.297	1.112
3050	.28901E-01	.38398E+00	.11601E+00	.22463E-02	.59240E-03	.44648E-02	.283	1.339	1.106
3053	.29388E-01	.40219E+00	.11712E+00	.22811E-02	.60400E-03	.45440E-02	.281	1.375	1.097
3056	.31252E-01	.43244E+00	.11734E+00	.23377E-02	.62512E-03	.46690E-02	.279	1.431	1.073
3059	.31800E-01	.43796E+00	.11718E+00	.23482E-02	.62946E-03	.46931E-02	.278	1.441	1.068
3062	.35204E-01	.46029E+00	.11572E+00	.23891E-02	.64664E-03	.47770E-02	.277	1.480	1.040
3065	.48099E-01	.50143E+00	.10979E+00	.24662E-02	.68362E-03	.49375E-02	.279	1.546	.971
3068	.58831E-01	.52220E+00	.10498E+00	.25069E-02	.70501E-03	.50213E-02	.284	1.577	.926
3071	.90386E-01	.56349E+00	.90921E-01	.25917E-02	.75422E-03	.51891E-02	.307	1.633	.817
3074	.97629E-01	.57059E+00	.87664E-01	.26080E-02	.76399E-03	.52210E-02	.314	1.643	.795
3077	.10521E+00	.57763E+00	.84258E-01	.26240E-02	.77399E-03	.52519E-02	.321	1.651	.773
3080	.22066E+00	.63709E+00	.31346E-01	.28093E-02	.90281E-03	.55883E-02	.485	1.721	.533
3083	.29515E+00	.64645E+00	.15396E-01	.29064E-02	.97625E-03	.57499E-02	.611	1.733	.490
3086	.31638E+00	.64651E+00	.23233E-01	.29304E-02	.99672E-03	.57888E-02	.647	1.734	.496
3089	.37341E+00	.64668E+00	.50202E-01	.29897E-02	.10521E-02	.58888E-02	.743	1.736	.544
3092	.48329E+00	.64703E+00	.10556E+00	.30844E-02	.11595E-02	.60631E-02	.923	1.742	.714
3095	.55614E+00	.64725E+00	.14263E+00	.31342E-02	.12309E-02	.61667E-02	1.035	1.745	.851
3098	.56732E+00	.64729E+00	.14831E+00	.31410E-02	.12419E-02	.61820E-02	1.052	1.746	.872
3100	.69593E+00	.64768E+00	.21364E+00	.32052E-02	.13675E-02	.63437E-02	1.237	1.752	1.123
3101	.82758E+00	.64807E+00	.28004E+00	.32471E-02	.14953E-02	.64893E-02	1.416	1.757	1.382
3104	.83247E+00	.64809E+00	.28248E+00	.32483E-02	.15000E-02	.64945E-02	1.422	1.757	1.391
3107	.90363E+00	.64831E+00	.31805E+00	.32621E-02	.15687E-02	.65666E-02	1.517	1.760	1.526
3110	.10094E+01	.63294E+00	.37136E+00	.32758E-02	.16693E-02	.66801E-02	1.659	1.756	1.689
3113	.11013E+01	.59090E+00	.41902E+00	.32816E-02	.17584E-02	.67866E-02	1.785	1.732	1.766
3115	.12142E+01	.47652E+00	.48185E+00	.32837E-02	.18842E-02	.69652E-02	1.943	1.659	1.732
3116	.12667E+01	.29567E+00	.52377E+00	.32842E-02	.20051E-02	.71946E-02	2.018	1.541	1.499
3119	.12664E+01	.20918E+00	.53447E+00	.32856E-02	.20499E-02	.73008E-02	2.019	1.488	1.371
3120	.12659E+01	.13588E+00	.54989E+00	.32893E-02	.20960E-02	.74344E-02	2.020	1.438	1.279
3122	.12654E+01	.16940E+00	.56742E+00	.32951E-02	.21306E-02	.75662E-02	2.022	1.414	1.285
3123	.12243E+01	.31178E+00	.57684E+00	.33044E-02	.21651E-02	.77484E-02	1.971	1.434	1.406
3125	.11168E+01	.44062E+00	.55840E+00	.33081E-02	.21875E-02	.78903E-02	1.835	1.491	1.561
3128	.94467E+00	.52578E+00	.51243E+00	.32938E-02	.22071E-02	.79849E-02	1.613	1.547	1.675
3198	.77036E+00	.53281E+00	.45472E+00	.32545E-02	.22233E-02	.79961E-02	1.374	1.553	1.656

3199	.61131E+00	.50787E+00	.39869E+00	.31958E-02	.22367E-02	.79408E-02	1.136	1.530	1.586
3200	.45380E+00	.48316E+00	.34728E+00	.31124E-02	.22487E-02	.78185E-02	.880	1.504	1.542
3205	.29452E+00	.45785E+00	.30125E+00	.29992E-02	.22580E-02	.76193E-02	.597	1.472	1.532
3208	.14433E+00	.43405E+00	.26616E+00	.28621E-02	.22634E-02	.73526E-02	.309	1.437	1.565
3210	.21369E-02	.41111E+00	.24342E+00	.26988E-02	.22638E-02	.70131E-02	.134	1.395	1.641
3212	.13365E+00	.35283E+00	.22469E+00	.24233E-02	.22374E-02	.63856E-02	.433	1.257	1.692
3215	.20968E+00	.25478E+00	.20444E+00	.21571E-02	.21730E-02	.56755E-02	.652	.986	1.652
3220	.22655E+00	.13534E+00	.17683E+00	.18807E-02	.20352E-02	.47557E-02	.699	.641	1.532
3222	.16253E+00	.32857E-01	.12873E+00	.15746E-02	.17223E-02	.33718E-02	.534	.386	1.268
3225	.95043E-01	.25709E-01	.89254E-01	.13821E-02	.14061E-02	.23294E-02	.454	.362	.974
3230	.80985E-01	.25118E-01	.80548E-01	.13361E-02	.13240E-02	.20905E-02	.442	.358	.892
3235	.42764E-01	.23432E-01	.54034E-01	.12134E-02	.10622E-02	.15899E-02	.394	.343	.621
3237	.15342E-01	.22846E-01	.30210E-01	.10626E-02	.81502E-03	.11795E-02	.324	.323	.366
3238	.64845E-02	.19885E-01	.15751E-01	.88516E-03	.65065E-03	.84108E-03	.248	.281	.203
3240	.58615E-02	.13104E-01	.58830E-02	.67685E-03	.49092E-03	.56409E-03	.152	.195	.082
3243	.35626E-02	.56627E-02	.10739E-02	.42814E-03	.31402E-03	.33111E-03	.063	.093	.016
3245	.68679E-03	.89981E-03	.45357E-04	.13389E-03	.10014E-03	.11854E-03	.011	.018	.001
3250	.13911E-06	.18887E-06	.11456E-06	.11794E-06	.88689E-07	.76756E-07	.000	.000	.000

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

PIPE FORCES AND MOMENTS

ELEMENT NUMBER	ELEMENT TYPE	STATION	AXIAL FORCE	Y-AXIS SHEAR	Z-AXIS SHEAR	TORSIONAL MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
1	TANGENT	END-I	12833.408	17403.806	6185.114	269876.28	861796.06	1237813.14
		END-J	12833.408	17403.806	6185.114	269876.28	771856.48	916581.28
2	TANGENT	END-I	12752.716	17379.052	6146.839	269873.29	771837.30	916598.35
		END-J	12752.716	17379.052	6146.839	269873.29	751363.03	840187.21
3	TANGENT	END-I	12625.931	17338.651	6086.249	269873.29	751363.03	840187.21
		END-J	12625.931	17338.651	6086.249	269873.29	731396.72	764150.86
4	TANGENT	END-I	12539.019	17328.181	6021.286	272650.07	731694.59	762879.11
		END-J	12539.019	17328.181	6021.286	272650.07	709532.68	676689.36
5	TANGENT	END-I	12461.691	17295.679	5991.328	271741.01	709478.29	677111.98
		END-J	12461.691	17295.679	5991.328	271741.01	673957.40	534672.83
6	BEND	END-I	12296.348	16546.035	7674.102	271015.33	689993.89	513988.83
		CENTER	11469.832	17129.330	7674.102	331634.76	613530.80	375709.83
		END-J	11008.720	17429.325	7674.102	398244.36	527153.58	247762.65
7	BEND	END-I	10722.199	17294.779	7867.340	400514.55	522383.80	254123.46
		CENTER	10703.299	17306.399	7867.340	452261.78	445401.46	183844.79
		END-J	11049.174	17088.531	7867.340	494132.92	374689.53	196778.13
8	BEND	END-I	10888.777	16401.980	9167.191	493050.17	364859.15	216933.99
		CENTER	10972.867	16346.012	9167.191	498650.18	356281.83	224050.29
		END-J	11064.643	16284.114	9167.191	503880.02	348630.82	233026.26
9	TANGENT	END-I	10945.960	17830.091	5512.781	503868.09	362513.69	210817.59
		END-J	10945.960	17830.091	5512.781	503868.09	303337.48	429632.84
10	TANGENT	END-I	10732.956	17811.015	5375.772	503735.71	303337.48	429788.08
		END-J	10732.956	17811.015	5375.772	503735.71	240721.29	704439.49
11	TANGENT	END-I	10507.629	17790.140	5169.325	503735.71	240721.29	704439.49
		END-J	10507.629	17790.140	5169.325	503735.71	195306.49	980748.55
12	TANGENT	END-I	10216.649	17766.941	4816.262	503979.94	195306.49	980623.09
		END-J	10216.649	17766.941	4816.262	503979.94	180553.96	1453415.85
13	TANGENT	END-I	9872.636	17763.853	4226.696	504254.28	180553.96	1453320.65
		END-J	9872.636	17763.853	4226.696	504254.28	231092.03	1926181.92
14	TANGENT	END-I	9556.344	17818.225	3539.990	504007.17	231092.03	1926246.59
		END-J	9556.344	17818.225	3539.990	504007.17	296954.02	2400527.89
15	TANGENT	END-I	9271.164	14467.806	2823.165	503936.80	296954.02	2400542.55
		END-J	9271.164	14467.806	2823.165	503936.80	353687.74	2105957.56
16	TANGENT	END-I	9019.908	14009.724	2192.545	504264.15	353687.74	2105879.20
		END-J	9019.908	14009.724	2192.545	504264.15	393379.61	1849062.30
17	TANGENT	END-I	8804.190	13340.672	1855.775	504038.24	393379.61	1849123.83

		END-J	8804.190	13340.672	1855.775	504038.24	414553.23	1641617.70
18	TANGENT	END-I	8676.532	12716.556	1894.666	504325.67	414553.23	1641529.41
		END-J	8676.532	12716.556	1894.666	504325.67	418165.22	1575487.29
19	TANGENT	END-I	8626.800	12428.843	1991.491	502040.78	418165.22	1576217.07
		END-J	8626.800	12428.843	1991.491	502040.78	419110.97	1547480.17
20	TANGENT	END-I	8601.896	12240.227	2059.632	504166.01	419110.97	1546788.98
		END-J	8601.896	12240.227	2059.632	504166.01	419593.95	1522361.49
21	BEND	END-I	8577.693	12064.513	2132.558	504491.88	419593.95	1522253.47
		CENTER	8647.666	12014.462	2132.558	503017.71	421375.85	1511981.18
		END-J	8728.325	11955.906	2132.558	501334.62	423430.01	1501546.51
22	BEND	END-I	8695.560	11745.831	2176.888	501405.92	427908.55	1500254.87
		CENTER	8839.729	11637.870	2176.888	499052.32	429658.98	1483026.22
		END-J	9005.370	11510.242	2176.888	496204.57	432080.23	1465370.50
23	BEND	END-I	8951.424	9477.001	6660.085	498741.95	868908.23	1255581.37
		CENTER	8978.122	9451.833	6660.085	495891.31	869361.97	1252563.77
		END-J	9004.774	9426.342	6660.085	493196.89	869724.52	1249527.53
24	BEND	END-I	9012.207	11146.905	2406.505	495593.28	445219.16	1455041.86
		CENTER	9129.347	11051.107	2406.505	494027.89	445337.26	1441758.39
		END-J	9252.065	10948.567	2406.505	492273.16	445766.35	1428283.23
25	BEND	END-I	9163.971	10669.562	2530.431	489574.23	438085.61	1431581.33
		CENTER	9406.166	10456.572	2530.431	482858.18	443322.46	1405065.23
		END-J	9658.364	10224.158	2530.431	475593.20	449180.19	1377656.75
26	BEND	END-I	9499.444	9904.569	2962.196	479763.93	484115.26	1364307.89
		CENTER	9623.055	9784.543	2962.196	474155.96	487590.89	1349666.67
		END-J	9745.759	9662.342	2962.196	468652.48	490884.47	1334765.33
27	BEND	END-I	9524.468	9521.738	2874.313	470101.92	450920.01	1348294.35
		CENTER	9744.432	9296.512	2874.313	461885.92	455938.22	1315396.64
		END-J	9951.030	9075.032	2874.313	453347.88	461646.78	1281283.50
28	BEND	END-I	9739.004	8534.381	3975.659	450777.21	573397.43	1236259.94
		CENTER	9770.830	8498.070	3975.659	450000.27	572787.63	1229777.00
		END-J	9801.556	8462.508	3975.659	449296.12	572175.63	1223241.81
29	BEND	END-I	9703.945	8767.266	3236.993	450819.39	500470.03	1253738.81
		CENTER	9734.044	8733.792	3236.993	448665.46	501194.97	1247269.54
		END-J	9763.373	8701.034	3236.993	446556.28	501880.34	1240762.67
30	BEND	END-I	9270.425	8516.669	3337.024	446425.14	465932.18	1254754.04
		CENTER	9439.440	8328.815	3337.024	427085.45	477443.54	1171392.85
		END-J	9497.747	8262.188	3337.024	411798.05	488749.05	1084921.73
31	BEND	END-I	8539.572	8131.101	3611.145	411635.39	489977.57	1084429.14
		CENTER	8497.116	8175.646	3611.145	406404.79	495865.15	1038328.49
		END-J	8444.226	8229.991	3611.145	403911.50	500855.21	993289.35
32	TANGENT	END-I	8027.912	5785.675	7994.700	403931.95	971154.47	542573.51
		END-J	8027.912	5785.675	7994.700	403931.95	946684.07	525355.70
33	TANGENT	END-I	7694.164	5733.654	7935.467	403139.16	947021.94	525355.70
		END-J	7694.164	5733.654	7935.467	403139.16	884548.31	481196.69

34	TANGENT	END-I END-J	7033.199 7033.199	5553.276 5553.276	7785.731 7785.731	403673.31 403673.31	884304.59 778121.39	481196.69 407750.99
35	TANGENT	END-I END-J	6359.867 6359.867	5256.626 5256.626	7565.365 7565.365	403430.04 403430.04	778247.56 720116.19	407750.99 368038.84
36	TANGENT	END-I END-J	6080.544 6080.544	5083.959 5083.959	7450.539 7450.539	404009.36 404009.36	719791.34 711830.70	368038.84 362648.87
37	TANGENT	END-I END-J	5644.988 5644.988	4816.068 4816.068	7271.444 7271.444	403636.62 403636.62	712042.12 640401.30	362648.87 313209.26
38	TANGENT	END-I END-J	4984.009 4984.009	4166.959 4166.959	6880.497 6880.497	403749.57 403749.57	640330.16 609202.87	313209.26 284488.13
39	TANGENT	END-I END-J	4801.411 4801.411	3675.953 3675.953	6660.444 6660.444	412064.90 412064.90	603608.88 603268.72	284488.13 283800.14
40	TANGENT	END-I END-J	4620.680 4620.680	3560.227 3560.227	6552.939 6552.939	404103.36 404103.36	608631.00 610885.34	283800.14 274801.74
41	BEND	END-I CENTER END-J	4455.382 4704.674 5013.618	6330.716 6148.095 5899.922	3047.578 3047.578 3047.578	403905.97 379548.04 350120.08	276955.23 301904.67 330545.91	610049.46 621121.65 634943.64
42	BEND	END-I CENTER END-J	5095.358 5415.456 5711.065	5555.827 5244.962 4921.549	2604.886 2604.886 2604.886	350481.55 320195.56 288595.22	329105.15 350936.79 370710.63	635491.98 651542.13 667055.84
43	BEND	END-I CENTER END-J	6062.909 6366.718 6477.142	4548.040 4110.366 3931.766	2389.296 2389.296 2389.296	288721.21 241141.40 206770.83	371790.05 385580.59 387656.01	666400.37 686441.68 697975.03
44	BEND	END-I CENTER END-J	7113.580 6777.595 6146.396	4049.082 4590.313 5408.633	2795.394 2795.394 2795.394	207047.40 195479.34 211597.33	385910.59 356207.62 313160.68	698859.47 690286.75 665468.74
45	TANGENT	END-I END-J	6693.196 6693.196	6207.631 6207.631	3135.997 3135.997	211712.12 211712.12	296278.93 259377.03	673106.97 633938.25
46	TANGENT	END-I END-J	7275.111 7275.111	6807.448 6807.448	3428.574 3428.574	211807.01 211807.01	259377.03 210959.45	633906.52 592208.13
47	TANGENT	END-I END-J	8057.972 8057.972	7474.566 7474.566	3694.615 3694.615	211810.36 211810.36	210959.45 168503.43	592206.88 570948.61
48	BEND	END-I CENTER END-J	9098.727 8306.672 7530.275	8395.330 9178.610 9825.491	3611.909 3611.909 3611.909	211804.86 201413.26 180739.58	153157.90 152573.46 180233.29	575256.17 568637.45 562473.45
49	BEND	END-I CENTER END-J	8936.894 8398.394 8095.396	10567.805 11001.596 11227.304	3777.876 3777.876 3777.876	180654.28 153984.68 126352.12	180426.11 217122.90 255181.06	562438.98 558537.49 562581.91
50	BEND	END-I CENTER END-J	9570.171 9438.152 9604.168	11910.882 12015.114 11882.307	4069.493 4069.493 4069.493	126679.29 110315.96 128710.75	258864.54 291079.59 313618.36	560823.07 570522.35 591412.62
51	BEND	END-I	10763.174	12689.987	4417.293	128986.50	309318.48	593613.33

		CENTER	10923.906	12551.788	4417.293	169849.50	313609.61	614778.25
		END-J	11220.154	12288.849	4417.293	221262.95	308808.85	641821.09
52	TANGENT	END-I	11939.708	12701.839	6034.718	221302.59	181066.20	688788.13
		END-J	11939.708	12701.839	6034.718	221302.59	249822.81	781943.86
53	TANGENT	END-I	12662.240	13367.546	6620.903	221082.34	249423.52	782133.16
		END-J	12662.240	13367.546	6620.903	221082.34	355383.61	937754.00
54	TANGENT	END-I	13420.977	13921.424	7179.049	221586.76	355063.22	937756.29
		END-J	13420.977	13921.424	7179.049	221586.76	486832.13	1144966.88
55	TANGENT	END-I	14203.877	14329.578	7710.553	221319.48	486586.49	1145122.97
		END-J	14203.877	14329.578	7710.553	221319.48	629532.01	1376960.55
56	TANGENT	END-I	14994.098	14579.270	8241.047	221265.85	629550.72	1376960.55
		END-J	14994.098	14579.270	8241.047	221265.85	784679.83	1628205.82
57	BEND	END-I	14347.939	17303.562	7750.034	221702.02	724441.00	1655841.28
		CENTER	11257.775	19456.031	7750.034	387387.59	728506.76	1750896.34
		END-J	8983.087	20605.103	7750.034	559078.62	691016.81	1852488.11
58	BEND	END-I	9339.596	20922.075	8427.256	558579.78	691421.87	1852487.54
		CENTER	8774.683	21165.226	8427.256	710208.51	624179.06	1953110.37
		END-J	10526.563	20350.793	8427.256	840520.09	531646.08	2052607.31
59	BEND	END-I	10158.734	20799.582	9114.531	840108.62	532223.62	2052626.13
		CENTER	13419.430	18862.461	9114.531	952983.68	420545.44	2157611.76
		END-J	16838.544	15883.566	9114.531	1022254.88	335243.43	2240001.25
60	BEND	END-I	16406.945	16508.999	9690.755	1022823.03	346011.75	2238103.90
		CENTER	20176.073	11604.348	9690.755	1043933.33	354042.17	2299264.39
		END-J	21582.524	8716.357	9690.755	979885.32	490620.62	2267955.89
61	BEND	END-I	21478.477	8699.330	10301.905	979573.13	491261.43	2267951.82
		CENTER	20769.364	10278.257	10301.905	881045.91	610721.94	2173321.83
		END-J	18414.491	14068.020	10301.905	762694.40	695691.14	2018244.00
62	BEND	END-I	18475.058	13891.087	10644.591	762283.24	693604.13	2019116.09
		CENTER	17668.381	14903.551	10644.591	733290.86	707018.81	1972553.02
		END-J	16789.137	15887.475	10644.591	705430.31	717009.18	1923344.97
63	TANGENT	END-I	16877.431	14987.973	11947.393	705558.71	864233.77	1861788.76
		END-J	16877.431	14987.973	11947.393	705558.71	743496.65	1543582.02
64	TANGENT	END-I	16966.197	14996.122	12124.163	705309.74	740463.84	1545153.00
		END-J	16966.197	14996.122	12124.163	705309.74	708414.92	1233697.35
65	BEND	END-I	17068.090	11238.184	15750.383	705492.15	1272420.99	636041.11
		CENTER	17083.454	11213.908	15750.383	793291.74	1101721.89	659403.78
		END-J	16747.065	11710.413	15750.383	892022.94	901713.83	688223.88
66	BEND	END-I	16823.006	11771.304	15766.912	891220.05	902207.11	688617.46
		CENTER	16167.366	12657.520	15766.912	972751.67	689789.64	723650.15
		END-J	15248.903	13752.224	15766.912	1020931.81	498169.71	764949.22
67	BEND	END-I	15286.371	13817.304	15798.098	1021112.36	497983.04	764829.72
		CENTER	14184.604	14946.576	15798.098	1026757.01	405528.96	813953.05
		END-J	13049.820	15945.765	15798.098	985674.06	487607.22	871174.36

68	BEND	END-I	13086.307	16023.925	15801.533	986157.56	485397.90	871860.64
		CENTER	12090.212	16787.170	15801.533	898918.01	673077.67	937209.89
		END-J	11440.124	17236.933	15801.533	768235.35	885743.11	1009222.12
69	TANGENT	END-I	11451.031	18873.234	13896.555	767560.40	801042.67	1078163.96
		END-J	11451.031	18873.234	13896.555	767560.40	886895.19	1179408.44

***** FINAL RESULTS - SRSS COMBINATION OF DYNAMIC RESPONSES WITH HIGH FREQUENCY MODE RESPONSES *****
 MODAL COMBINATION METHOD 2-GROUPING

S U P P O R T F O R C E S A N D M O M E N T S

NODE NUMBER	COMPONENT DIRECTION	FORCE/MOMENT (LOCAL)
7090	FX	11791.
7090	FY	17977.
7090	FZ	6607.
7090	MX	856460.
7090	MY	704864.
7090	MZ	1056992.
3047	FZ	69.
3116	FZ	314.
3210	FX	10684.
3210	FZ	146.
3250	FX	13911.
3250	FY	18887.
3250	FZ	11456.
3250	MX	1179408.
3250	MY	886895.
3250	MZ	767560.
3035	FY	30794.
3083	FZ	7412.

BENCHMARK PROBLEM 3
MODAL SUPERPOSITION TIME HISTORY ANALYSIS

AP600 MAIN STEAM LINE BENCHMARK ANALYSIS - MODAL SUP TIME HISTORY METHOD

C O N T R O L I N F O R M A T I O N

NUMBER OF NODAL POINTS	=	96
NUMBER OF ELEMENT TYPES	=	3
NUMBER OF STATIC LOAD CASES	=	0
NUMBER OF DYNAMIC LOAD CASES	=	1
NUMBER OF ANCHOR MVMT CASES	=	0
NUMBER OF FREQUENCIES	=	50
SOLUTION MODE (MODEX)	=	0
EQ.0, EXECUTION		
EQ.1, DATA CHECK		
STRESS CALCULATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ASME CODE EVALUATION FLAG	=	0
EQ.1 CLASS 1 PIPING		
EQ.2 CLASS2 OR CLASS 3 PIPING		
ACCELERATION DUE TO GRAVITY	=	386.4
BANDWIDTH MINIMIZATION FLAG	=	0
EQ.0 NO		
EQ.1 YES		
ARBITRARY NODE NUMBERING FLAG	=	1
EQ.0 NO		
EQ.1 YES		
NUMBER OF SUPPORT GROUPS	=	0
FLAG FOR NODAL COORD. INPUT UNITS	=	1
EQ.0 CONSISTENT UNIT		
EQ.1 FEET TO INCHES		

LIST OF ANALYSIS TO BE PERFORMED

LOAD CASE	DISK FILE	ANALYSIS TYPE
1	0	UNIFORM TIME HISTORY ANALYSIS

NODAL POINT INPUT DATA

NEW	OLD	BOUNDARY			CONDITION			CODES	NODAL POINT COORDINATES			
NODE	NODE	X	Y	Z	XX	YY	ZZ		X	Y	Z	T
1	101	0	0	0	0	0	0		11910.000	11641.200	2095.368	520.000
2	9001	0	0	0	0	0	0		11933.760	11656.236	2163.252	520.000
3	110	0	0	0	0	0	0		11991.132	11692.524	2191.368	520.000
4	120	0	0	0	0	0	0		12001.272	11698.932	2191.368	520.000
5	130	0	0	0	0	0	0		12013.944	11706.948	2191.368	520.000
6	140	0	0	0	0	0	0		12062.856	11737.884	2191.368	520.000
7	9002	0	0	0	0	0	0		12120.228	11774.160	2163.252	520.000
8	150	0	0	0	0	0	0		12143.988	11789.196	2095.368	520.000
9	9003	0	0	0	0	0	0		12143.988	11789.196	2011.848	520.000
10	9004	0	0	0	0	0	0		12143.988	11789.196	1933.728	520.000
11	6020	0	0	0	0	0	0		12143.988	11789.196	1860.996	520.000
12	9005	0	0	0	0	0	0		12143.988	11789.196	1788.996	520.000
13	9006	0	0	0	0	0	0		12143.988	11789.196	1716.996	520.000
14	6040	0	0	0	0	0	0		12143.988	11789.196	1644.996	520.000
15	160	0	0	0	0	0	0		12143.988	11789.196	1630.680	520.000
16	9007	0	0	0	0	0	0		12172.104	11789.196	1562.796	520.000
17	170	0	0	0	0	0	0		12239.988	11789.196	1534.680	520.000
18	6050	0	0	0	0	0	0		12263.988	11789.196	1534.680	520.000
19	6060	0	0	0	0	0	0		12275.988	11789.196	1534.680	520.000
20	9008	0	0	0	0	0	0		12344.988	11789.196	1534.680	520.000
21	9009	0	0	0	0	0	0		12413.988	11789.196	1534.680	520.000
22	9010	0	0	0	0	0	0		12482.988	11789.196	1534.680	520.000
23	6070	0	0	0	0	0	0		12551.988	11789.196	1534.680	520.000
24	6080	0	0	0	0	0	0		12599.988	11789.196	1534.680	520.000
25	9011	0	0	0	0	0	0		12661.992	11789.196	1534.680	520.000
26	180	0	0	0	0	0	0		12723.984	11789.196	1534.680	520.000
27	9012	0	0	0	0	0	0		12771.984	11789.196	1534.680	520.000
28	9013	0	0	0	0	0	0		12819.984	11789.196	1534.680	520.000
29	6090	0	0	0	0	0	0		12867.984	11789.196	1534.680	520.000
30	6091	0	0	0	0	0	0		12878.988	11789.196	1534.680	520.000
31	190	0	0	0	0	0	0		12898.992	11789.196	1534.680	520.000
32	200	0	0	0	0	0	0		12907.992	11789.196	1534.680	520.000
33	210	0	0	0	0	0	0		12916.992	11789.196	1534.680	520.000
34	220	0	0	0	0	0	0		12925.992	11789.196	1534.680	520.000
35	230	0	0	0	0	0	0		12934.992	11789.196	1534.680	520.000
36	239	0	0	0	0	0	0		12978.996	11789.196	1534.680	520.000
37	240	0	0	0	0	0	0		12996.996	11789.196	1534.680	520.000
38	250	0	0	0	0	0	0		13035.996	11789.196	1534.680	520.000
39	260	0	0	0	0	0	0		13074.996	11789.196	1534.680	520.000
40	261	0	0	0	0	0	0		13092.996	11789.196	1534.680	520.000
41	9014	0	0	0	0	0	0		13149.996	11789.196	1534.680	520.000
42	280	0	0	0	0	0	0		13206.996	11789.196	1534.680	520.000
43	290	0	0	0	0	0	0		13225.992	11789.196	1534.680	520.000
44	291	0	0	0	0	0	0		13234.992	11789.196	1534.680	520.000
45	300	0	0	0	0	0	0		13246.992	11789.196	1534.680	520.000
46	310	0	0	0	0	0	0		13278.996	11789.196	1534.680	520.000
47	315	0	0	0	0	0	0		13278.996	11789.196	1606.680	520.000
48	320	0	0	0	0	0	0		13311.000	11789.196	1534.680	520.000
49	330	0	0	0	0	0	0		13329.996	11789.196	1534.680	520.000
50	340	0	0	0	0	0	0		13350.000	11789.196	1534.680	520.000
51	1000	0	0	0	0	0	0		12996.996	11789.196	1550.676	520.000
52	1002	0	0	0	0	0	0		12996.996	11789.196	1553.676	520.000
53	1003	0	0	0	0	0	0		12996.996	11789.196	1559.676	520.000
54	1010	0	0	0	0	0	0		12996.996	11789.196	1566.312	520.000
55	1020	0	0	0	0	0	0		12996.996	11789.196	1583.064	520.000
56	1025	0	0	0	0	0	0		12996.996	11789.196	1600.068	520.000

57	1040	0	0	0	0	0	0	12996.996	11799.948	1583.064	70.000
58	1050	0	0	0	0	0	0	12996.996	11804.556	1583.064	70.000
59	1060	0	0	0	0	0	0	12996.996	11819.556	1598.064	70.000
60	1070	0	0	0	0	0	0	12996.996	11819.556	1608.060	70.000
61	1080	0	0	0	0	0	0	12996.996	11778.444	1583.064	70.000
62	1090	0	0	0	0	0	0	12996.996	11773.836	1583.064	70.000
63	1100	0	0	0	0	0	0	12996.996	11758.836	1598.064	70.000
64	1110	0	0	0	0	0	0	12996.996	11758.836	1608.060	70.000
65	1120	0	0	0	0	0	0	13035.996	11789.196	1550.676	520.000
66	1122	0	0	0	0	0	0	13035.996	11789.196	1553.676	520.000
67	1123	0	0	0	0	0	0	13035.996	11789.196	1559.676	520.000
68	1130	0	0	0	0	0	0	13035.996	11789.196	1566.312	520.000
69	1140	0	0	0	0	0	0	13035.996	11789.196	1583.064	520.000
70	1145	0	0	0	0	0	0	13035.996	11789.196	1600.068	520.000
71	1160	0	0	0	0	0	0	13035.996	11799.948	1583.064	70.000
72	1170	0	0	0	0	0	0	13035.996	11804.556	1583.064	70.000
73	1180	0	0	0	0	0	0	13035.996	11819.556	1598.064	70.000
74	1190	0	0	0	0	0	0	13035.996	11819.556	1608.060	70.000
75	1200	0	0	0	0	0	0	13035.996	11778.444	1583.064	70.000
76	1210	0	0	0	0	0	0	13035.996	11773.836	1583.064	70.000
77	1220	0	0	0	0	0	0	13035.996	11758.836	1598.064	70.000
78	1230	0	0	0	0	0	0	13035.996	11758.836	1608.060	70.000
79	1240	0	0	0	0	0	0	13074.996	11789.196	1550.676	520.000
80	1242	0	0	0	0	0	0	13074.996	11789.196	1553.676	520.000
81	1243	0	0	0	0	0	0	13074.996	11789.196	1559.676	520.000
82	1250	0	0	0	0	0	0	13074.996	11789.196	1566.312	520.000
83	1260	0	0	0	0	0	0	13074.996	11789.196	1583.064	520.000
84	1265	0	0	0	0	0	0	13074.996	11789.196	1600.068	520.000
85	1280	0	0	0	0	0	0	13074.996	11799.948	1583.064	70.000
86	1290	0	0	0	0	0	0	13074.996	11804.556	1583.064	70.000
87	1300	0	0	0	0	0	0	13074.996	11819.556	1598.064	70.000
88	1310	0	0	0	0	0	0	13074.996	11819.556	1608.060	70.000
89	1320	0	0	0	0	0	0	13074.996	11778.444	1583.064	70.000
90	1330	0	0	0	0	0	0	13074.996	11773.836	1583.064	70.000
91	1340	0	0	0	0	0	0	13074.996	11758.836	1598.064	70.000
92	1350	0	0	0	0	0	0	13074.996	11758.836	1608.060	70.000
93	4000	0	0	0	0	0	0	13225.992	11789.196	1518.684	520.000
94	4010	0	0	0	0	0	0	13225.992	11789.196	1515.432	520.000
95	4020	0	0	0	0	0	0	13225.992	11789.196	1496.496	520.000
96	4030	0	0	0	0	0	0	13225.992	11789.196	1489.500	520.000

S P R I N G E L E M E N T S

ELEMENT TYPE = 1
NUMBER OF ELEMENTS = 20

ELEMENT LOAD CASE MULTIPLIERS

CASE (A)	CASE (B)	CASE (C)	CASE (D)
1.0000	1.0000	1.0000	1.0000

ELEMENT NUMBER	NODE (N)	SUPPORT GROUP	CODE KD	CODE KR	DIRECTION X-	COSINES Y-	WRT GLOBAL AXES Z-	SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
1	101	1	1	0	1.000	.000	.000	.000	.000	1.0000E+11
2	101	1	1	0	.000	1.000	.000	.000	.000	1.0000E+11
3	101	1	1	0	.000	.000	1.000	.000	.000	1.0000E+11
4	101	1	0	1	1.000	.000	.000	.000	.000	1.0000E+13
5	101	1	0	1	.000	1.000	.000	.000	.000	1.0000E+13
6	101	1	0	1	.000	.000	1.000	.000	.000	1.0000E+13
7	6020	1	1	0	-.476	.880	.000	.000	.000	5.0000E+06
8	6040	1	1	0	.000	1.000	.000	.000	.000	5.0000E+06
9	6060	1	1	0	.000	.000	1.000	.000	.000	1.0000E+00
10	6070	1	1	0	.000	1.000	.000	.000	.000	5.0000E+06
11	6090	1	1	0	.000	1.000	.000	.000	.000	5.0000E+06
12	6090	1	1	0	.000	.000	1.000	.000	.000	1.0000E+06
13	239	1	1	0	.000	.000	1.000	.000	.000	5.0000E+06
14	261	1	1	0	.000	.000	1.000	.000	.000	5.0000E+06
15	340	1	1	0	1.000	.000	.000	.000	.000	1.2000E+07
16	340	1	1	0	.000	1.000	.000	.000	.000	1.2000E+07
17	340	1	1	0	.000	.000	1.000	.000	.000	1.2000E+07
18	340	1	0	1	1.000	.000	.000	.000	.000	5.6000E+09
19	340	1	0	1	.000	1.000	.000	.000	.000	5.6000E+09
20	340	1	0	1	.000	.000	1.000	.000	.000	5.6000E+09

S N U B B E R E L E M E N T S

ELEMENT TYPE = 4
NUMBER OF ELEMENTS = 2

ELEMENT LOAD CASE MULTIPLIERS

CASE (A)	CASE (B)	CASE (C)	CASE (D)
1.0000	1.0000	1.0000	1.0000

ELEMENT NUMBER	NODE (N)	SUPPORT GROUP	CODE KD	CODE KR	DIRECTION X-	COSINES Y-	WRT GLOBAL AXES Z-	SPECIFIED DISPLACEMENT	SPECIFIED ROTATION	SPRING RATE
1	6020	1	1	0	.880	.476	.000	.000	.000	9.5000E+05
2	6050	1	1	0	.000	.000	1.000	.000	.000	1.5000E+06

PIPE ELEMENT INPUT DATA

CONTROL INFORMATION

NUMBER OF PIPE ELEMENTS	=	95
NUMBER OF MATERIAL SETS	=	2
MAXIMUM NUMBER OF MATERIAL TEMPERATURE INPUT POINTS	=	3
NUMBER OF SECTION PROPERTY SETS	=	11
NUMBER OF BRANCH POINT NODES	=	8
MAXIMUM NUMBER OF TANGENTS COMMON TO A BRANCH POINT	=	4
FLAG FOR NEGLECTING AXIAL DEFORMATIONS IN BEND ELEMENTS (EQ.1, NEGLECT)	=	0

MATERIAL PROPERTY TABLES

MATERIAL NUMBER = (1)
 NUMBER OF
 TEMPERATURE POINTS = (3)
 IDENTIFICATION = (SA-333 GR 6)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.950E+07	.300	0.000E+00
2	500.00	2.730E+07	.300	6.910E-06
3	550.00	2.700E+07	.300	7.060E-06

MATERIAL NUMBER = (2)
 NUMBER OF
 TEMPERATURE POINTS = (3)
 IDENTIFICATION = (SA-508 CL 3)

POINT NUMBER	TEMPERATURE	YOUNG'S MODULUS	POISSON'S RATIO	THERMAL EXPANSION
1	70.00	2.920E+07	.300	0.000E+00
2	500.00	2.700E+07	.300	7.250E-06
3	550.00	2.670E+07	.300	7.340E-06

SECTION PROPERTY TABLE

SECTION NUMBER	OUTSIDE DIAMETER	WALL THICKNESS	SHAPE FACTOR FOR SHEAR	WEIGHT/ UNIT LENGTH	MASS/ UNIT LENGTH	DESCRIPTION
1	32.000	1.4400	.0000	4.3333E+01	1.1215E-01	32 IN MAIN PIPE
2	32.000	1.8000	.0000	1.1025E+02	2.8533E-01	CONT PENETRATION
3	32.000	1.4400	.0000	4.3333E+01	1.1215E-01	PEN TO MSIV
4	8.625	.9060	.0000	7.5830E+00	1.9625E-02	SV INLET
5	10.750	.5930	.0000	5.4170E+00	1.4019E-02	SV OUTLET
6	12.750	.8440	.0000	1.4217E+01	3.6793E-02	DRAIN LEG
7	32.000	1.4400	.0000	0.0000E+00	0.0000E+00	FICT. SECTION
8	34.880	4.3200	.0000	0.0000E+00	0.0000E+00	MSIV BODY
9	100.000	10.0000	.0000	0.0000E+00	0.0000E+00	RIGID SECTION
10	10.437	2.7180	.0000	0.0000E+00	0.0000E+00	SV BODY 1
11	11.936	1.7790	.0000	0.0000E+00	0.0000E+00	SV BODY 2

BRANCH POINT NODE LIST

BRANCH POINT	NODE NUMBER
1	310
2	240
3	1020
4	250
5	1140
6	260
7	1260
8	290

ELEMENT LOAD CASE MULTIPLIERS

	CASE A	CASE B	CASE C	CASE D
X-DIRECTION GRAVITY	.000	.000	.000	.000
Y-DIRECTION GRAVITY	.000	.000	.000	.000
Z-DIRECTION GRAVITY	-1.000	.000	.000	.000
THERMAL DISTORTION	.000	.000	.000	.000
PRESSURE DISTORTION	.000	.000	.000	.000

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
1	BEND	101	9001	1	1	70.00 (96.000)	.00 ()	.00 (11910.000)	.00 (11641.200)	0 0 (2135.136)	(45.0036)	I
2	BEND	9001	110	1	1	70.00 (96.000)	.00 ()	.00 (11957.520)	.00 (11671.272)	0 0 (2191.368)	(44.9989)	I
3	TANGENT	110	120	1	1	70.00	.00	.00	.00	0 0	1	II
4	TANGENT	120	130	1	1	70.00	.00	.00	.00	0 0	1	II
5	TANGENT	130	140	1	1	70.00	.00	.00	.00	0 0	1	II
6	BEND	140	9002	1	1	70.00 (96.000)	.00 ()	.00 (12096.468)	.00 (11759.136)	0 0 (2191.368)	(45.0026)	I
7	BEND	9002	150	1	1	70.00 (96.000)	.00 ()	.00 (12143.988)	.00 (11789.184)	0 0 (2135.136)	(44.9943)	I
8	TANGENT	150	9003	1	1	70.00	.00	.00	.00	0 0	1	II
9	TANGENT	9003	9004	1	1	70.00	.00	.00	.00	0 0	1	II
10	TANGENT	9004	6020	1	1	70.00	.00	.00	.00	0 0	1	II
11	TANGENT	6020	9005	1	1	70.00	.00	.00	.00	0 0	1	II
12	TANGENT	9005	9006	1	1	70.00	.00	.00	.00	0 0	1	II
13	TANGENT	9006	6040	1	1	70.00	.00	.00	.00	0 0	1	II
14	TANGENT	6040	160	1	1	70.00	.00	.00	.00	0 0	1	I
15	BEND	160	9007	1	1	70.00 (96.000)	.00 ()	.00 (12143.988)	.00 (11789.196)	0 0 (1590.912)	(45.0036)	I
16	BEND	9007	170	1	1	70.00 (96.000)	.00 ()	.00 (12200.220)	.00 (11789.196)	0 0 (1534.680)	(44.9975)	I
17	TANGENT	170	6050	1	1	70.00	.00	.00	.00	0 0	1	II
18	TANGENT	6050	6060	1	1	70.00	.00	.00	.00	0 0	1	II
19	TANGENT	6060	9008	1	1	70.00	.00	.00	.00	0 0	1	II
20	TANGENT	9008	9009	1	1	70.00	.00	.00	.00	0 0	1	II
21	TANGENT	9009	9010	1	1	70.00	.00	.00	.00	0 0	1	II
22	TANGENT	9010	6070	1	1	70.00	.00	.00	.00	0 0	1	II
23	TANGENT	6070	6080	1	1	70.00	.00	.00	.00	0 0	1	II
24	TANGENT	6080	9011	1	1	70.00	.00	.00	.00	0 0	1	II
25	TANGENT	9011	180	1	1	70.00	.00	.00	.00	0 0	1	II
26	TANGENT	180	9012	1	2	70.00	.00	.00	.00	0 0	1	II
27	TANGENT	9012	9013	1	2	70.00	.00	.00	.00	0 0	1	II
28	TANGENT	9013	6090	1	2	70.00	.00	.00	.00	0 0	1	II
29	TANGENT	6090	6091	1	2	70.00	.00	.00	.00	0 0	1	II
30	TANGENT	6091	190	1	3	70.00	.00	.00	.00	0 0	1	II
31	TANGENT	190	200	1	3	70.00	.00	.00	.00	0 0	1	II
32	TANGENT	200	210	1	3	70.00	.00	.00	.00	0 0	1	II
33	TANGENT	210	220	1	3	70.00	.00	.00	.00	0 0	1	II
34	TANGENT	220	230	1	3	70.00	.00	.00	.00	0 0	1	II
35	TANGENT	230	239	1	3	70.00	.00	.00	.00	0 0	1	II
36	TANGENT	239	240	1	3	70.00	.00	.00	.00	0 0	1	II
37	TANGENT	240	250	1	3	70.00	.00	.00	.00	0 0	1	II
38	TANGENT	250	260	1	3	70.00	.00	.00	.00	0 0	1	II

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
39	TANGENT	260	261	1	3	70.00	.00	.00	.00	0 0	1	II
40	TANGENT	261	9014	1	3	70.00	.00	.00	.00	0 0	1	II
41	TANGENT	9014	280	1	3	70.00	.00	.00	.00	0 0	1	II
42	TANGENT	280	290	1	3	70.00	.00	.00	.00	0 0	1	II
43	TANGENT	290	291	1	3	70.00	.00	.00	.00	0 0	1	II
44	TANGENT	291	300	1	3	70.00	.00	.00	.00	0 0	1	II
45	TANGENT	300	310	1	8	70.00	.00	.00	.00	0 0	1	II
46	TANGENT	310	315	1	9	70.00	.00	.00	.00	0 0	1	II
47	TANGENT	310	320	1	8	70.00	.00	.00	.00	0 0	1	II
48	TANGENT	320	330	1	3	70.00	.00	.00	.00	0 0	1	II
49	TANGENT	330	340	1	3	70.00	.00	.00	.00	0 0	1	II
50	TANGENT	240	1000	1	7	70.00	.00	.00	.00	0 0	1	II
51	TANGENT	1000	1002	2	4	70.00	.00	.00	.00	0 0	1	II
52	TANGENT	1002	1003	2	4	70.00	.00	.00	.00	0 0	1	II
53	TANGENT	1003	1010	2	4	70.00	.00	.00	.00	0 0	1	II
54	TANGENT	1010	1020	2	10	70.00	.00	.00	.00	0 0	1	II
55	TANGENT	1020	1025	2	9	70.00	.00	.00	.00	0 0	1	II
56	TANGENT	1020	1040	1	11	70.00	.00	.00	.00	0 0	1	II
57	TANGENT	1040	1050	1	5	70.00	.00	.00	.00	0 0	1	II
58	BEND	1050	1060	1	5	70.00	.00	.00	.00	0 0	1	II
(15.000) () (12996.996) (11819.556) (1583.064) (90.0001)												
59	TANGENT	1060	1070	1	5	70.00	.00	.00	.00	0 0	1	II
60	TANGENT	1020	1080	1	11	70.00	.00	.00	.00	0 0	1	II
61	TANGENT	1080	1090	1	5	70.00	.00	.00	.00	0 0	1	II
62	BEND	1090	1100	1	5	70.00	.00	.00	.00	0 0	1	II
(15.000) () (12996.996) (11758.836) (1583.064) (90.0001)												
63	TANGENT	1100	1110	1	5	70.00	.00	.00	.00	0 0	1	II
64	TANGENT	250	1120	1	7	70.00	.00	.00	.00	0 0	1	II
65	TANGENT	1120	1122	2	4	70.00	.00	.00	.00	0 0	1	II
66	TANGENT	1122	1123	2	4	70.00	.00	.00	.00	0 0	1	II
67	TANGENT	1123	1130	2	4	70.00	.00	.00	.00	0 0	1	II
68	TANGENT	1130	1140	2	10	70.00	.00	.00	.00	0 0	1	II
69	TANGENT	1140	1145	2	9	70.00	.00	.00	.00	0 0	1	II
70	TANGENT	1140	1160	1	11	70.00	.00	.00	.00	0 0	1	II
71	TANGENT	1160	1170	1	5	70.00	.00	.00	.00	0 0	1	II
72	BEND	1170	1180	1	5	70.00	.00	.00	.00	0 0	1	II
(15.000) () (13035.996) (11819.556) (1583.064) (90.0001)												
73	TANGENT	1180	1190	1	5	70.00	.00	.00	.00	0 0	1	II
74	TANGENT	1140	1200	1	11	70.00	.00	.00	.00	0 0	1	II
75	TANGENT	1200	1210	1	5	70.00	.00	.00	.00	0 0	1	II
76	BEND	1210	1220	1	5	70.00	.00	.00	.00	0 0	1	II
(15.000) () (13035.996) (11758.836) (1583.064) (90.0001)												
77	TANGENT	1220	1230	1	5	70.00	.00	.00	.00	0 0	1	II
78	TANGENT	260	1240	1	7	70.00	.00	.00	.00	0 0	1	II
79	TANGENT	1240	1242	2	4	70.00	.00	.00	.00	0 0	1	II
80	TANGENT	1242	1243	2	4	70.00	.00	.00	.00	0 0	1	II

PIPE ELEMENT INPUT DATA

ELEMENT NUMBER	ELEMENT TYPE	NODE -I	NODE -J	MATL. NUMBER	SECTION NUMBER	REFERENCE TEMPERATURE (BEND RADIUS)	DESIGN PRESSURE (THIRD POINT)	PEAK PRESSURE (X3- ORDINATE)	TEST PRESSURE (Y3- ORDINATE)	END CODES END-I END-J (Z3- ORDINATE)	NODE INCREMENT (BEND DEGREE)	INPUT TAG
81	TANGENT	1243	1250	2	4	70.00	.00	.00	.00	0 0	1	II
82	TANGENT	1250	1260	2	10	70.00	.00	.00	.00	0 0	1	II
83	TANGENT	1260	1265	2	9	70.00	.00	.00	.00	0 0	1	II
84	TANGENT	1260	1280	1	11	70.00	.00	.00	.00	0 0	1	II
85	TANGENT	1280	1290	1	5	70.00	.00	.00	.00	0 0	1	II
86	BEND	1290	1300	1	5	70.00	.00	.00	.00	0 0	1	II
						(15.000)	()	(13074.996)	(11819.556)	(1583.064)	(90.0001)	I
87	TANGENT	1300	1310	1	5	70.00	.00	.00	.00	0 0	1	II
88	TANGENT	1260	1320	1	11	70.00	.00	.00	.00	0 0	1	II
89	TANGENT	1320	1330	1	5	70.00	.00	.00	.00	0 0	1	II
90	BEND	1330	1340	1	5	70.00	.00	.00	.00	0 0	1	II
						(15.000)	()	(13074.996)	(11758.836)	(1583.064)	(90.0001)	I
91	TANGENT	1340	1350	1	5	70.00	.00	.00	.00	0 0	1	II
92	TANGENT	290	4000	1	7	70.00	.00	.00	.00	0 0	1	II
93	TANGENT	4000	4010	1	6	70.00	.00	.00	.00	0 0	1	II
94	TANGENT	4010	4020	1	6	70.00	.00	.00	.00	0 0	1	II
95	TANGENT	4020	4030	1	6	70.00	.00	.00	.00	0 0	1	II

BRANCH POINT DATA

BRANCH POINT	NODE NUMBER	CONNECTIONS . . .			
1	310	-45AT J	46AT I	47AT I	ONONE
2	240	-36AT J	37AT I	50AT I	ONONE
3	1020	-54AT J	55AT I	56AT I	60AT I
4	250	-37AT J	38AT I	64AT I	ONONE
5	1140	-68AT J	69AT I	70AT I	74AT I
6	260	-38AT J	39AT I	78AT I	ONONE
7	1260	-82AT J	83AT I	84AT I	88AT I
8	290	-42AT J	43AT I	92AT I	ONONE

N O D A L L O A D S (S T A T I C) O R M A S S E S (D Y N A M I C)

NODE NUMBER	LOAD CASE	X-AXIS FORCE	Y-AXIS FORCE	Z-AXIS FORCE	X-AXIS MOMENT	Y-AXIS MOMENT	Z-AXIS MOMENT
6090	0	9.18737E+00	9.18737E+00	9.18737E+00	0.00000E+00	0.00000E+00	0.00000E+00
315	0	4.78778E+01	4.78778E+01	4.78778E+01	0.00000E+00	0.00000E+00	0.00000E+00
1010	0	5.12422E-01	5.12422E-01	5.12422E-01	0.00000E+00	0.00000E+00	0.00000E+00
1025	0	1.03520E+01	1.03520E+01	1.03520E+01	0.00000E+00	0.00000E+00	0.00000E+00
1040	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
1080	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
1130	0	5.12422E-01	5.12422E-01	5.12422E-01	0.00000E+00	0.00000E+00	0.00000E+00
1145	0	1.03520E+01	1.03520E+01	1.03520E+01	0.00000E+00	0.00000E+00	0.00000E+00
1160	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
1200	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
1250	0	5.12422E-01	5.12422E-01	5.12422E-01	0.00000E+00	0.00000E+00	0.00000E+00
1265	0	1.03520E+01	1.03520E+01	1.03520E+01	0.00000E+00	0.00000E+00	0.00000E+00
1280	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
1320	0	2.19979E-01	2.19979E-01	2.19979E-01	0.00000E+00	0.00000E+00	0.00000E+00
4030	0	6.98758E-02	6.98758E-02	6.98758E-02	0.00000E+00	0.00000E+00	0.00000E+00

E I G E N V A L U E A N A L Y S I S

SUBSPACE ITERATION SOLUTION IS CARRIED OUT

CONTROL INFORMATION

FLAG FOR ADDITIONAL PRINTING = 0
EQ.0, SUPPRESS
EQ.1, PRINT
STURM SEQUENCE CHECK FLAG (*) = 0
EQ.0, PERFORM CHECK
EQ.1, PASS
MAXIMUM ITERATION CYCLES (*) = 16

PRINT OF FREQUENCIES

MODE NUMBER	CIRCULAR FREQUENCY (RAD/SEC)	FREQUENCY (CYCLES/SEC)	PERIOD (SEC)	TOLERANCE
1	5.2933E+01	8.4246E+00	1.1870E-01	1.6230E-16
2	5.6579E+01	9.0048E+00	1.1105E-01	0.0000E+00
3	5.7365E+01	9.1300E+00	1.0953E-01	4.1457E-16
4	7.5046E+01	1.1944E+01	8.3725E-02	6.4597E-16
5	1.0085E+02	1.6051E+01	6.2300E-02	7.1533E-16
6	1.0306E+02	1.6403E+01	6.0965E-02	3.4250E-16
7	1.0362E+02	1.6492E+01	6.0634E-02	0.0000E+00
8	1.0720E+02	1.7062E+01	5.8610E-02	7.9139E-16
9	1.0848E+02	1.7265E+01	5.7920E-02	1.5457E-16
10	1.0972E+02	1.7462E+01	5.7267E-02	1.5111E-16
11	1.1787E+02	1.8759E+01	5.3307E-02	5.2372E-16
12	1.3394E+02	2.1318E+01	4.6909E-02	6.0833E-16
13	1.5102E+02	2.4036E+01	4.1604E-02	4.7851E-16
14	1.5764E+02	2.5089E+01	3.9858E-02	8.7837E-16
15	1.5874E+02	2.5264E+01	3.9582E-02	7.2188E-16
16	1.8214E+02	2.8988E+01	3.4497E-02	4.3865E-16
17	1.9219E+02	3.0587E+01	3.2693E-02	0.0000E+00
18	1.9426E+02	3.0917E+01	3.2345E-02	0.0000E+00
19	2.1184E+02	3.3715E+01	2.9660E-02	9.7281E-16
20	2.6429E+02	4.2064E+01	2.3774E-02	1.2500E-15
21	2.7585E+02	4.3902E+01	2.2778E-02	1.9124E-16
22	2.9141E+02	4.6379E+01	2.1562E-02	1.3709E-15
23	3.3969E+02	5.4064E+01	1.8497E-02	8.8277E-16
24	3.5161E+02	5.5960E+01	1.7870E-02	1.0594E-15
25	3.5263E+02	5.6122E+01	1.7818E-02	1.0533E-15
26	3.5516E+02	5.6525E+01	1.7691E-02	1.1537E-16
27	3.6871E+02	5.8682E+01	1.7041E-02	4.2816E-16

28	4.2158E+02	6.7097E+01	1.4904E-02	4.2575E-14
29	4.3044E+02	6.8507E+01	1.4597E-02	7.0687E-15
30	4.3224E+02	6.8793E+01	1.4536E-02	7.3683E-14
31	4.3382E+02	6.9045E+01	1.4483E-02	2.6289E-15
32	4.3862E+02	6.9809E+01	1.4325E-02	6.6426E-13
33	4.6646E+02	7.4240E+01	1.3470E-02	1.7790E-14
34	5.0344E+02	8.0125E+01	1.2480E-02	5.4648E-11
35	5.3088E+02	8.4493E+01	1.1835E-02	1.4659E-12
36	5.5330E+02	8.8061E+01	1.1356E-02	1.1528E-11
37	5.8645E+02	9.3336E+01	1.0714E-02	3.8135E-10
38	6.1791E+02	9.8343E+01	1.0168E-02	1.0540E-07
39	6.3676E+02	1.0134E+02	9.8674E-03	3.0901E-09
40	6.6264E+02	1.0546E+02	9.4821E-03	4.7727E-07
41	7.2689E+02	1.1569E+02	8.6440E-03	8.2430E-06

MODAL PARTICIPATION FACTORS

MODE	FREQ(CPS)	X-DIRECTION	Y-DIRECTION	Z-DIRECTION
1	8.425	1.7628E+00	-3.5065E+00	-1.9074E+00
2	9.005	1.7526E-02	-9.2385E+00	3.1391E-02
3	9.130	2.6886E+00	-4.8174E+00	2.4988E-01
4	11.944	4.2987E-01	-8.3789E-01	1.3256E+01
5	16.051	4.6637E-01	-4.1426E+00	-2.3465E-01
6	16.403	8.9312E+00	-1.1080E-01	-5.1000E-01
7	16.492	8.6635E-01	1.7592E+00	8.8641E-02
8	17.062	-1.8533E-04	5.3241E-01	8.6607E-03
9	17.265	1.2968E-01	1.0139E-02	-1.6125E-01
10	17.462	2.5490E-01	1.8153E-03	-9.1655E-02
11	18.759	-1.6340E-03	4.4782E+00	8.1443E-04
12	21.318	6.7390E+00	4.1246E+00	-2.1603E-02
13	24.036	1.6239E-02	-6.7579E-01	-1.5464E-02
14	25.089	1.1492E-01	1.4552E-01	-6.8561E-01
15	25.264	1.3080E+01	-1.5892E-01	7.7269E-01
16	28.988	-1.6022E+00	-4.0886E-01	-1.7373E+00
17	30.587	2.5262E-01	6.9992E+00	4.3225E+00
18	30.917	-5.6130E-01	-6.3501E+00	5.4424E+00
19	33.715	-3.1107E+00	1.5715E+00	1.9124E+00
20	42.064	5.2129E-01	1.2189E+00	2.3277E+00
21	43.902	-1.1698E-01	2.8043E+00	-6.5002E-01
22	46.379	-4.8035E-02	-1.5905E-01	-5.2554E+00
23	54.064	2.4604E+00	-2.0406E+00	-4.8919E-01
24	55.960	-1.6748E+00	-3.7643E-01	-9.8179E-01
25	56.122	-8.4190E-03	2.0382E+00	9.2148E-02
26	56.525	1.8567E+00	2.2680E+00	-6.8974E+00
27	58.682	-9.2944E-01	4.8440E+00	3.5055E+00
28	67.097	1.7852E+00	-1.3351E+00	1.8024E+00

29	68.507	-3.4009E-03	-2.2853E-01	-3.7532E-03
30	68.793	-3.0907E-04	-1.1763E-02	-1.0114E-03
31	69.045	-3.1828E-03	8.5398E-02	2.3825E-03
32	69.809	2.0161E+00	3.2559E-01	7.9716E-01
33	74.240	-1.4130E-02	-3.2926E-01	-8.8695E-03
34	80.125	3.4099E-01	-1.3130E+00	2.4671E-01
35	84.493	-2.2972E-01	-3.7597E+00	-1.3384E-01
36	88.061	-2.0955E-01	2.3338E-01	-1.6663E-01
37	93.336	-1.2828E+00	-7.9919E-03	-5.0093E-01
38	98.343	-7.3980E-01	-1.9698E-01	-1.3782E+00
39	101.344	-2.9153E-02	-2.1820E+00	-1.5112E-01
40	105.462	-2.0872E-01	-3.7949E-01	-8.1443E-01
41	115.688	7.6087E-01	-1.9501E-01	1.1185E-01

FORCED RESPONSE ANALYSIS

SUPPORT GROUP NUMBER = 1

CONTROL INFORMATION

NUMBER OF TIME FUNCTIONS	=	5
GROUND MOTION INDICATOR	=	0
EQ.0, NONE		
EQ.1, GROUND INPUT		
NUMBER OF ARRIVAL TIMES	=	1
NUMBER OF TIME STEPS	=	30000
OUTPUT PRINT INTERVAL	=	10
TIME STEP	=	.00010
DAMPING FACTOR	=	.03000

DYNAMIC NODAL FORCES/MOMENTS

NODE NUMBER	NODAL DEGREE OF FREEDOM	TIME FUNCTION NUMBER	ARRIVAL TIME NUMBER	TIME FUNCTION MULTIPLIER
101	3	3	1	-1.0000E+00
130	1	4	1	-8.4500E-01
130	2	4	1	-5.4300E-01
6040	3	5	1	1.0000E+00
6070	1	2	1	-1.0000E+00
310	1	1	1	-1.0000E+00
	0	0	1	0.0000E+00

ARRIVAL TIME VALUES

ENTRY NUMBER	ARRIVAL TIME VALUE
1	.000000

TIME FUNCTION NUMBER = (1)
 FUNCTION DESCRIPTION = (TH-1 NODE 310 FORCE VS TIME)
 NUMBER OF ABSCISSAE = (758)
 FUNCTION SCALE FACTOR = (.1000E+04)

TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION
.00000	5.5285E+02		.00020	5.5279E+02		.00040	5.5283E+02		.00060	5.5275E+02		.00080	5.5275E+02	
.00100	5.5265E+02		.00131	5.5275E+02		.00162	5.5293E+02		.00194	5.5311E+02		.00225	5.5255E+02	
.00256	5.5042E+02		.00288	5.4601E+02		.00319	5.3965E+02		.00350	5.3162E+02		.00381	5.2269E+02	
.00411	5.1353E+02		.00442	5.0487E+02		.00473	4.9682E+02		.00504	4.8958E+02		.00535	4.8314E+02	
.00566	4.7760E+02		.00596	4.7272E+02		.00627	4.6852E+02		.00658	4.6487E+02		.00689	4.6171E+02	
.00719	4.5897E+02		.00750	4.5665E+02		.00781	4.5459E+02		.00812	4.5276E+02		.00843	4.5121E+02	
.00873	4.4973E+02		.00904	4.4853E+02		.00935	4.4742E+02		.00966	4.4641E+02		.00996	4.4558E+02	
.01027	4.4475E+02		.01058	4.4409E+02		.01088	4.4345E+02		.01119	4.4287E+02		.01150	4.4230E+02	
.01180	4.4180E+02		.01211	4.4144E+02		.01241	4.4100E+02		.01272	4.4066E+02		.01302	4.4020E+02	
.01333	4.3995E+02		.01364	4.3958E+02		.01394	4.3931E+02		.01425	4.3910E+02		.01455	4.3881E+02	
.01485	4.3855E+02		.01516	4.3832E+02		.01546	4.3817E+02		.01576	4.3792E+02		.01607	4.3775E+02	
.01637	4.3759E+02		.01667	4.3742E+02		.01698	4.3724E+02		.01728	4.3706E+02		.01758	4.3687E+02	
.01789	4.3678E+02		.01819	4.3659E+02		.01849	4.3649E+02		.01879	4.3628E+02		.01910	4.3618E+02	
.01940	4.3608E+02		.01970	4.3589E+02		.02000	4.3580E+02		.02031	4.3572E+02		.02061	4.3552E+02	
.02091	4.3542E+02		.02121	4.3532E+02		.02151	4.3522E+02		.02181	4.3513E+02		.02212	4.3504E+02	
.02242	4.3494E+02		.02272	4.3474E+02		.02302	4.3465E+02		.02332	4.3455E+02		.02362	4.3446E+02	
.02393	4.3436E+02		.02423	4.3427E+02		.02453	4.3418E+02		.02483	4.3410E+02		.02513	4.3403E+02	
.02543	4.3395E+02		.02573	4.3388E+02		.02603	4.3381E+02		.02633	4.3364E+02		.02663	4.3358E+02	
.02694	4.3352E+02		.02724	4.3344E+02		.02754	4.3337E+02		.02784	4.3331E+02		.02814	4.3324E+02	
.02844	4.3317E+02		.02874	4.3310E+02		.02904	4.3303E+02		.02934	4.3296E+02		.02964	4.3290E+02	
.02994	4.3283E+02		.03024	4.3277E+02		.03054	4.3270E+02		.03084	4.3264E+02		.03114	4.3258E+02	
.03144	4.3251E+02		.03174	4.3246E+02		.03204	4.3239E+02		.03234	4.3234E+02		.03264	4.3229E+02	
.03294	4.3223E+02		.03324	4.3217E+02		.03354	4.3211E+02		.03384	4.3206E+02		.03414	4.3201E+02	
.03444	4.3196E+02		.03474	4.3191E+02		.03504	4.3185E+02		.03534	4.3181E+02		.03564	4.3175E+02	
.03594	4.3171E+02		.03624	4.3156E+02		.03654	4.3151E+02		.03684	4.3147E+02		.03714	4.3143E+02	
.03744	4.3138E+02		.03774	4.3134E+02		.03804	4.3130E+02		.03833	4.3125E+02		.03863	4.3121E+02	
.03893	4.3107E+02		.03923	4.3102E+02		.03953	4.3099E+02		.03983	4.3095E+02		.04013	4.3091E+02	
.04043	4.3088E+02		.04073	4.3073E+02		.04103	4.3070E+02		.04133	4.3067E+02		.04163	4.3063E+02	
.04193	4.3059E+02		.04223	4.3056E+02		.04253	4.3043E+02		.04282	4.3040E+02		.04312	4.3036E+02	
.04342	4.3033E+02		.04372	4.3030E+02		.04402	4.3017E+02		.04432	4.3014E+02		.04462	4.3010E+02	
.04492	4.3007E+02		.04522	4.3005E+02		.04552	4.2992E+02		.04582	4.2989E+02		.04612	4.2986E+02	
.04641	4.2983E+02		.04671	4.2971E+02		.04701	4.2968E+02		.04731	4.2966E+02		.04761	4.2964E+02	
.04791	4.2950E+02		.04821	4.2948E+02		.04851	4.2946E+02		.04881	4.2943E+02		.04911	4.2931E+02	
.04941	4.2929E+02		.04970	4.2927E+02		.05000	4.2915E+02		.05479	4.2843E+02		.05986	4.2759E+02	
.06492	4.2679E+02		.06999	4.2594E+02		.07477	4.2522E+02		.07984	4.2442E+02		.08492	4.2363E+02	
.08999	4.2287E+02		.09475	4.2220E+02		.09982	4.2144E+02		.10490	4.2068E+02		.11000	4.1993E+02	
.11480	4.1918E+02		.11980	4.1844E+02		.12490	4.1769E+02		.13000	4.1704E+02		.13470	4.1631E+02	
.13980	4.1565E+02		.14490	4.1491E+02		.15000	4.1417E+02		.15470	4.1353E+02		.15980	4.1279E+02	
.16490	4.1214E+02		.17000	4.1140E+02		.17480	4.1075E+02		.17980	4.1012E+02		.18490	4.0949E+02	
.19000	4.0891E+02		.19480	4.0876E+02		.19980	4.0936E+02		.20490	4.1130E+02		.21000	4.1665E+02	
.21470	4.2657E+02		.21980	4.4122E+02		.22480	4.5727E+02		.22980	4.7260E+02		.23480	4.8639E+02	
.23980	4.9862E+02		.24480	5.0948E+02		.24980	5.1913E+02		.25480	5.2778E+02		.25970	5.3563E+02	
.26500	5.4317E+02		.26990	5.4964E+02		.27490	5.5549E+02		.27990	5.6080E+02		.28480	5.6578E+02	
.28980	5.7024E+02		.29470	5.7448E+02		.30000	5.7858E+02		.30490	5.8207E+02		.30990	5.8539E+02	
.31480	5.8845E+02		.31980	5.9118E+02		.32470	5.9375E+02		.33000	5.9622E+02		.33500	5.9825E+02	
.33990	6.0011E+02		.34490	6.0177E+02		.34980	6.0324E+02		.35480	6.0459E+02		.35970	6.0587E+02	
.36500	6.0700E+02		.36990	6.0795E+02		.37490	6.0880E+02		.37980	6.0966E+02		.38470	6.1029E+02	
.39000	6.1094E+02		.39490	6.1140E+02		.39980	6.1179E+02		.40500	6.1221E+02		.40990	6.1243E+02	
.41470	6.1258E+02		.41990	6.1269E+02		.42500	6.1282E+02		.42980	6.1278E+02		.43490	6.1270E+02	
.43970	6.1259E+02		.44480	6.1252E+02		.44980	6.1232E+02		.45490	6.1208E+02		.45990	6.1182E+02	
.46470	6.1154E+02		.46980	6.1134E+02		.47480	6.1104E+02		.47980	6.1069E+02		.48490	6.1035E+02	

.48990	6.1005E+02	.49500	6.0981E+02	.50000	6.0948E+02	.50500	6.0915E+02	.51000	6.0879E+02
.51470	6.0851E+02	.51970	6.0815E+02	.52500	6.0779E+02	.53000	6.0744E+02	.53500	6.0710E+02
.54000	6.0676E+02	.54500	6.0643E+02	.55000	6.0611E+02	.55500	6.0579E+02	.56000	6.0547E+02
.56500	6.0519E+02	.57000	6.0488E+02	.57500	6.0457E+02	.58000	6.0424E+02	.58500	6.0390E+02
.59000	6.0355E+02	.59500	6.0319E+02	.60000	6.0295E+02	.60500	6.0245E+02	.61000	6.0165E+02
.61500	6.0059E+02	.62000	5.9908E+02	.62500	5.9707E+02	.62980	5.9467E+02	.63480	5.9159E+02
.63990	5.8874E+02	.64500	5.8590E+02	.64980	5.8333E+02	.65500	5.8090E+02	.65990	5.7881E+02
.66480	5.7717E+02	.67000	5.7583E+02	.67500	5.7479E+02	.67990	5.7399E+02	.68480	5.7317E+02
.68980	5.7256E+02	.69480	5.7190E+02	.69970	5.7149E+02	.70500	5.7115E+02	.70990	5.7096E+02
.71490	5.7084E+02	.71990	5.7073E+02	.72480	5.7064E+02	.72980	5.7053E+02	.73470	5.7054E+02
.74000	5.7053E+02	.74490	5.7064E+02	.74990	5.7074E+02	.75480	5.7075E+02	.75980	5.7088E+02
.76500	5.7104E+02	.76990	5.7121E+02	.77490	5.7140E+02	.77980	5.7160E+02	.78480	5.7181E+02
.78970	5.7202E+02	.79500	5.7225E+02	.79990	5.7247E+02	.80490	5.7267E+02	.80980	5.7289E+02
.81480	5.7309E+02	.81980	5.7328E+02	.82500	5.7349E+02	.83000	5.7367E+02	.83490	5.7386E+02
.83990	5.7394E+02	.84480	5.7412E+02	.84980	5.7430E+02	.85470	5.7448E+02	.86000	5.7467E+02
.86490	5.7486E+02	.86990	5.7503E+02	.87480	5.7521E+02	.87980	5.7538E+02	.88470	5.7555E+02
.89000	5.7572E+02	.89490	5.7588E+02	.89990	5.7602E+02	.90490	5.7617E+02	.90980	5.7641E+02
.91480	5.7655E+02	.92000	5.7670E+02	.92500	5.7684E+02	.92990	5.7698E+02	.93490	5.7714E+02
.93980	5.7723E+02	.94480	5.7741E+02	.94970	5.7761E+02	.95500	5.7783E+02	.95990	5.7808E+02
.96490	5.7835E+02	.96980	5.7863E+02	.97480	5.7893E+02	.97970	5.7924E+02	.98500	5.7958E+02
.98990	5.7987E+02	.99490	5.8016E+02	.99980	5.8042E+02	1.00500	5.8043E+02	1.01000	5.8047E+02
1.01500	5.8036E+02	1.02000	5.8019E+02	1.02500	5.7998E+02	1.03000	5.7983E+02	1.03500	5.7953E+02
1.04000	5.7914E+02	1.04500	5.7887E+02	1.05000	5.7854E+02	1.05500	5.7827E+02	1.06000	5.7794E+02
1.06500	5.7757E+02	1.07000	5.7727E+02	1.07500	5.7684E+02	1.08000	5.7651E+02	1.08500	5.7613E+02
1.09000	5.7568E+02	1.09500	5.7516E+02	1.10000	5.7474E+02	1.10500	5.7428E+02	1.11000	5.7382E+02
1.11500	5.7324E+02	1.12000	5.7263E+02	1.12500	5.7211E+02	1.13000	5.7144E+02	1.13500	5.7080E+02
1.14000	5.7013E+02	1.14500	5.6930E+02	1.15000	5.6859E+02	1.15500	5.6773E+02	1.16000	5.6682E+02
1.16500	5.6590E+02	1.17000	5.6487E+02	1.17500	5.6373E+02	1.18000	5.6255E+02	1.18500	5.6140E+02
1.19000	5.6011E+02	1.19500	5.5864E+02	1.20000	5.5715E+02	1.20500	5.5559E+02	1.21000	5.5390E+02
1.21500	5.5215E+02	1.22000	5.5032E+02	1.22500	5.4835E+02	1.23000	5.4625E+02	1.23500	5.4397E+02
1.24000	5.4159E+02	1.24500	5.3911E+02	1.25000	5.3659E+02	1.25500	5.3384E+02	1.26000	5.3077E+02
1.26500	5.2758E+02	1.27000	5.2437E+02	1.27500	5.2081E+02	1.28000	5.1703E+02	1.28500	5.1302E+02
1.29000	5.0858E+02	1.29500	5.0397E+02	1.30000	4.9921E+02	1.30500	4.9375E+02	1.31000	4.8825E+02
1.31500	4.8239E+02	1.32000	4.7398E+02	1.32500	4.6546E+02	1.33000	4.5642E+02	1.33500	4.4634E+02
1.34000	4.3624E+02	1.34500	4.2487E+02	1.35000	4.1336E+02	1.35500	4.0062E+02	1.36000	3.8775E+02
1.36500	3.7341E+02	1.37000	3.5897E+02	1.37500	3.4308E+02	1.38000	3.2619E+02	1.38500	3.0943E+02
1.39000	2.9083E+02	1.39500	2.7224E+02	1.40000	2.5177E+02	1.40500	2.3028E+02	1.41000	2.0894E+02
1.41500	1.8529E+02	1.42000	1.6191E+02	1.42500	1.3605E+02	1.43000	1.1034E+02	1.43500	8.3438E+01
1.44000	5.5280E+01	1.44500	2.5766E+01	1.45000	-3.5260E+00	1.45500	-3.1330E+00	1.46000	9.7760E+00
1.46500	-9.6600E-01	1.47000	-2.8700E+00	1.47500	6.0090E+00	1.48000	-1.2110E+00	1.48500	-1.2230E+00
1.49000	4.5250E+00	1.49500	-1.5320E+00	1.50000	-2.4500E-01	1.50500	3.2540E+00	1.51000	-2.0800E+00
1.51500	4.6400E-01	1.52000	2.0260E+00	1.52500	-1.9460E+00	1.53000	9.6200E-01	1.53500	1.2240E+00
1.54000	-1.6560E+00	1.54500	1.2330E+00	1.55000	3.0100E-01	1.55500	-1.1480E+00	1.56000	1.2930E+00
1.56500	-3.5000E-01	1.57000	-5.1700E-01	1.57500	1.0650E+00	1.58000	-5.6500E-01	1.58500	-1.0400E-01
1.59000	6.9100E-01	1.59500	-6.4500E-01	1.60000	2.3300E-01	1.60500	4.0900E-01	1.61000	-5.6600E-01
1.61500	3.6500E-01	1.62000	3.6000E-02	1.62500	-3.8800E-01	1.63000	4.1800E-01	1.63500	-1.0700E-01
1.64000	-2.2100E-01	1.64500	3.6500E-01	1.65000	-2.2000E-01	1.65500	-3.8000E-02	1.66000	2.5000E-01
1.66500	-2.6800E-01	1.67000	8.9000E-02	1.67500	1.0900E-01	1.68000	-2.3200E-01	1.68500	1.6700E-01
1.69000	2.1000E-02	1.69500	-1.7000E-01	1.70000	1.9300E-01	1.70500	-7.2000E-02	1.71000	-8.6000E-02
1.71500	1.7400E-01	1.72000	-1.2500E-01	1.72500	-8.0000E-03	1.73000	1.2700E-01	1.73500	-1.4500E-01
1.74000	7.9000E-02	1.74500	4.4000E-02	1.75000	-1.2000E-01	1.75500	1.0200E-01	1.76000	-7.0000E-03
1.76500	-8.4000E-02	1.77000	1.0500E-01	1.77500	-5.8000E-02	1.78000	-3.3000E-02	1.78500	8.3000E-02
1.79000	-7.2000E-02	1.79500	1.4000E-02	1.80000	4.8000E-02	1.80500	-7.1000E-02	1.81000	3.6000E-02
1.81500	2.1000E-02	1.82000	-5.6000E-02	1.82500	4.9000E-02	1.83000	-8.0000E-03	1.83500	-3.3000E-02
1.84000	4.6000E-02	1.84500	-2.5000E-02	1.85000	-1.0000E-02	1.85500	3.5000E-02	1.86000	-3.2000E-02
1.86500	9.0000E-03	1.87000	1.7000E-02	1.87500	-2.9000E-02	1.88000	2.2000E-02	1.88500	4.0000E-03
1.89000	-2.1000E-02	1.89500	2.3000E-02	1.90000	-8.0000E-03	1.90500	-9.0000E-03	1.91000	2.0000E-02
1.91500	-1.6000E-02	1.92000	0.0000E+00	1.92500	1.5000E-02	1.93000	-1.6000E-02	1.93500	6.0000E-03
1.94000	6.0000E-03	1.94500	-1.4000E-02	1.95000	1.1000E-02	1.95500	0.0000E+00	1.96000	-8.0000E-03
1.96500	1.1000E-02	1.97000	-6.0000E-03	1.97500	-3.0000E-03	1.98000	9.0000E-03	1.98500	-8.0000E-03

1.99000	1.0000E-03	1.99500	5.0000E-03	2.00000	-8.0000E-03	2.00500	5.0000E-03	2.01000	3.0000E-03
2.01500	-6.0000E-03	2.02000	6.0000E-03	2.02500	-2.0000E-03	2.03000	-4.0000E-03	2.03500	5.0000E-03
2.04000	-3.0000E-03	2.04500	-1.0000E-03	2.05000	4.0000E-03	2.05500	-4.0000E-03	2.06000	2.0000E-03
2.06500	2.0000E-03	2.07000	-3.0000E-03	2.07500	2.0000E-03	2.08000	0.0000E+00	2.08500	-3.0000E-03
2.09000	3.0000E-03	2.09500	-1.0000E-03	2.10000	-1.0000E-03	2.10500	3.0000E-03	2.11000	-2.0000E-03
2.11500	0.0000E+00	2.12000	2.0000E-03	2.12500	-2.0000E-03	2.13000	1.0000E-03	2.13500	1.0000E-03
2.14000	-2.0000E-03	2.14500	1.0000E-03	2.15000	0.0000E+00	2.15500	-1.0000E-03	2.16000	1.0000E-03
2.16500	-1.0000E-03	2.17000	0.0000E+00	2.17500	1.0000E-03	2.18000	-1.0000E-03	2.18500	0.0000E+00
2.19000	1.0000E-03	2.19500	-1.0000E-03	2.20000	1.0000E-03	2.20500	0.0000E+00	2.21000	-1.0000E-03
2.21500	1.0000E-03	2.22000	0.0000E+00	2.22500	0.0000E+00	2.23000	1.0000E-03	2.23500	0.0000E+00
2.24000	0.0000E+00	2.24500	1.0000E-03	2.25000	0.0000E+00	2.25500	0.0000E+00	2.26000	0.0000E+00
2.26500	0.0000E+00	2.27000	0.0000E+00	2.27500	0.0000E+00	2.28000	0.0000E+00	2.28500	0.0000E+00
2.29000	0.0000E+00	2.29500	0.0000E+00	2.30000	0.0000E+00	2.30500	0.0000E+00	2.31000	0.0000E+00
2.31500	0.0000E+00	2.32000	0.0000E+00	2.32500	0.0000E+00	2.33000	0.0000E+00	2.33500	0.0000E+00
2.34000	0.0000E+00	2.34500	0.0000E+00	2.35000	0.0000E+00	2.35500	0.0000E+00	2.36000	0.0000E+00
2.36500	0.0000E+00	2.37000	0.0000E+00	2.37500	0.0000E+00	2.38000	0.0000E+00	2.38500	0.0000E+00
2.39000	0.0000E+00	2.39500	0.0000E+00	2.40000	0.0000E+00	2.40500	0.0000E+00	2.41000	0.0000E+00
2.41500	0.0000E+00	2.42000	0.0000E+00	2.42500	0.0000E+00	2.43000	0.0000E+00	2.43500	0.0000E+00
2.44000	0.0000E+00	2.44500	0.0000E+00	2.45000	0.0000E+00	2.45500	0.0000E+00	2.46000	0.0000E+00
2.46500	0.0000E+00	2.47000	0.0000E+00	2.47500	0.0000E+00	2.48000	0.0000E+00	2.48500	0.0000E+00
2.49000	0.0000E+00	2.49500	0.0000E+00	2.50000	0.0000E+00	2.50500	0.0000E+00	2.51000	0.0000E+00
2.51500	0.0000E+00	2.52000	0.0000E+00	2.52500	0.0000E+00	2.53000	0.0000E+00	2.53500	0.0000E+00
2.54000	0.0000E+00	2.54500	0.0000E+00	2.55000	0.0000E+00	2.55500	0.0000E+00	2.56000	0.0000E+00
2.56500	0.0000E+00	2.57000	0.0000E+00	2.57500	0.0000E+00	2.58000	0.0000E+00	2.58500	0.0000E+00
2.59000	0.0000E+00	2.59500	0.0000E+00	2.60000	0.0000E+00	2.60500	0.0000E+00	2.61000	0.0000E+00
2.61500	0.0000E+00	2.62000	0.0000E+00	2.62500	0.0000E+00	2.63000	0.0000E+00	2.63500	0.0000E+00
2.64000	0.0000E+00	2.64500	0.0000E+00	2.65000	0.0000E+00	2.65500	0.0000E+00	2.66000	0.0000E+00
2.66500	0.0000E+00	2.67000	0.0000E+00	2.67500	0.0000E+00	2.68000	0.0000E+00	2.68500	0.0000E+00
2.69000	0.0000E+00	2.69500	0.0000E+00	2.70000	0.0000E+00	2.70500	0.0000E+00	2.71000	0.0000E+00
2.71500	0.0000E+00	2.72000	0.0000E+00	2.72500	0.0000E+00	2.73000	0.0000E+00	2.73500	0.0000E+00
2.74000	0.0000E+00	2.74500	0.0000E+00	2.75000	0.0000E+00	2.75500	0.0000E+00	2.76000	0.0000E+00
2.76500	0.0000E+00	2.77000	0.0000E+00	2.77500	0.0000E+00	2.78000	0.0000E+00	2.78500	0.0000E+00
2.79000	0.0000E+00	2.79500	0.0000E+00	2.80000	0.0000E+00	2.80500	0.0000E+00	2.81000	0.0000E+00
2.81500	0.0000E+00	2.82000	0.0000E+00	2.82500	0.0000E+00	2.83000	0.0000E+00	2.83500	0.0000E+00
2.84000	0.0000E+00	2.84500	0.0000E+00	2.85000	0.0000E+00	2.85500	0.0000E+00	2.86000	0.0000E+00
2.86500	0.0000E+00	2.87000	0.0000E+00	2.87500	0.0000E+00	2.88000	0.0000E+00	2.88500	0.0000E+00
2.89000	0.0000E+00	2.89500	0.0000E+00	2.90000	0.0000E+00	2.90500	0.0000E+00	2.91000	0.0000E+00
2.91500	0.0000E+00	2.92000	0.0000E+00	2.92500	0.0000E+00	2.93000	0.0000E+00	2.93500	0.0000E+00
2.94000	0.0000E+00	2.94500	0.0000E+00	2.95000	0.0000E+00	2.95500	0.0000E+00	2.96000	0.0000E+00
2.96500	0.0000E+00	2.97000	0.0000E+00	2.97500	0.0000E+00	2.98000	0.0000E+00	2.98500	0.0000E+00
2.99000	0.0000E+00	2.99500	0.0000E+00	3.00000	0.0000E+00				

TIME FUNCTION NUMBER = (2)
 FUNCTION DESCRIPTION = (TH-2 NODE 6070 FORCE VS TIME)
 NUMBER OF ABSCISSAE = (758)
 FUNCTION SCALE FACTOR = (.1000E+04)

TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION
.00000	-6.0000E-03		.00020	-6.0000E-03		.00040	-6.0000E-03		.00060	-6.0000E-03		.00080	-6.0000E-03	
.00100	-6.0000E-03		.00131	-7.2000E-02		.00162	-3.2300E-01		.00194	-5.6600E-01		.00225	-3.0000E-03	
.00256	2.1880E+00		.00288	6.6570E+00		.00319	1.3000E+01		.00350	2.1000E+01		.00381	2.9910E+01	
.00411	3.9040E+01		.00442	4.7770E+01		.00473	5.5810E+01		.00504	6.3050E+01		.00535	6.9440E+01	
.00566	7.5010E+01		.00596	7.9860E+01		.00627	8.4060E+01		.00658	8.7700E+01		.00689	9.0840E+01	
.00719	9.3570E+01		.00750	9.5950E+01		.00781	9.8020E+01		.00812	9.9830E+01		.00843	1.0140E+02	
.00873	1.0280E+02		.00904	1.0410E+02		.00935	1.0520E+02		.00966	1.0610E+02		.00996	1.0700E+02	
.01027	1.0780E+02		.01058	1.0850E+02		.01088	1.0910E+02		.01119	1.0970E+02		.01150	1.1020E+02	
.01180	1.1070E+02		.01211	1.1120E+02		.01241	1.1160E+02		.01272	1.1200E+02		.01302	1.1230E+02	
.01333	1.1270E+02		.01364	1.1300E+02		.01394	1.1320E+02		.01425	1.1350E+02		.01455	1.1380E+02	
.01485	1.1400E+02		.01516	1.1420E+02		.01546	1.1440E+02		.01576	1.1460E+02		.01607	1.1480E+02	
.01637	1.1500E+02		.01667	1.1520E+02		.01698	1.1530E+02		.01728	1.1550E+02		.01758	1.1570E+02	
.01789	1.1580E+02		.01819	1.1600E+02		.01849	1.1610E+02		.01879	1.1620E+02		.01910	1.1640E+02	
.01940	1.1650E+02		.01970	1.1660E+02		.02000	1.1681E+02		.02031	1.1691E+02		.02061	1.1702E+02	
.02091	1.1712E+02		.02121	1.1724E+02		.02151	1.1736E+02		.02181	1.1748E+02		.02212	1.1752E+02	
.02242	1.1767E+02		.02272	1.1772E+02		.02302	1.1790E+02		.02332	1.1800E+02		.02362	1.1811E+02	
.02393	1.1816E+02		.02423	1.1822E+02		.02453	1.1832E+02		.02483	1.1844E+02		.02513	1.1858E+02	
.02543	1.1866E+02		.02573	1.1866E+02		.02603	1.1878E+02		.02633	1.1885E+02		.02663	1.1891E+02	
.02694	1.1898E+02		.02724	1.1903E+02		.02754	1.1918E+02		.02784	1.1917E+02		.02814	1.1923E+02	
.02844	1.1939E+02		.02874	1.1942E+02		.02904	1.1951E+02		.02934	1.1949E+02		.02964	1.1963E+02	
.02994	1.1964E+02		.03024	1.1972E+02		.03054	1.1975E+02		.03084	1.1984E+02		.03114	1.1988E+02	
.03144	1.1996E+02		.03174	1.2003E+02		.03204	1.2009E+02		.03234	1.2016E+02		.03264	1.2021E+02	
.03294	1.2027E+02		.03324	1.2034E+02		.03354	1.2039E+02		.03384	1.2045E+02		.03414	1.2051E+02	
.03444	1.2056E+02		.03474	1.2062E+02		.03504	1.2068E+02		.03534	1.2074E+02		.03564	1.2080E+02	
.03594	1.2084E+02		.03624	1.2090E+02		.03654	1.2095E+02		.03684	1.2101E+02		.03714	1.2107E+02	
.03744	1.2113E+02		.03774	1.2118E+02		.03804	1.2123E+02		.03833	1.2129E+02		.03863	1.2135E+02	
.03893	1.2140E+02		.03923	1.2145E+02		.03953	1.2150E+02		.03983	1.2156E+02		.04013	1.2161E+02	
.04043	1.2166E+02		.04073	1.2171E+02		.04103	1.2177E+02		.04133	1.2181E+02		.04163	1.2187E+02	
.04193	1.2193E+02		.04223	1.2198E+02		.04253	1.2203E+02		.04282	1.2208E+02		.04312	1.2213E+02	
.04342	1.2218E+02		.04372	1.2223E+02		.04402	1.2228E+02		.04432	1.2234E+02		.04462	1.2239E+02	
.04492	1.2244E+02		.04522	1.2249E+02		.04552	1.2254E+02		.04582	1.2259E+02		.04612	1.2265E+02	
.04641	1.2269E+02		.04671	1.2275E+02		.04701	1.2280E+02		.04731	1.2285E+02		.04761	1.2290E+02	
.04791	1.2294E+02		.04821	1.2300E+02		.04851	1.2305E+02		.04881	1.2309E+02		.04911	1.2315E+02	
.04941	1.2319E+02		.04970	1.2325E+02		.05000	1.2329E+02		.05479	1.2395E+02		.05986	1.2364E+02	
.06492	1.2127E+02		.06999	1.1290E+02		.07477	1.0062E+02		.07984	8.6850E+01		.08492	7.4590E+01	
.08999	6.4470E+01		.09475	5.6760E+01		.09982	5.0160E+01		.10490	4.4870E+01		.11000	4.0606E+01	
.11480	3.7343E+01		.11980	3.4507E+01		.12490	3.2174E+01		.13000	3.0259E+01		.13470	2.8746E+01	
.13980	2.7410E+01		.14490	2.6289E+01		.15000	2.5453E+01		.15470	2.5171E+01		.15980	2.5790E+01	
.16490	2.7673E+01		.17000	3.2881E+01		.17480	4.2823E+01		.17980	5.7660E+01		.18490	7.4210E+01	
.19000	9.0430E+01		.19480	1.0431E+02		.19980	1.1700E+02		.20490	1.2700E+02		.21000	1.3240E+02	
.21470	1.3161E+02		.21980	1.2561E+02		.22480	1.1754E+02		.22980	1.0947E+02		.23480	1.0218E+02	
.23980	9.5800E+01		.24480	9.0210E+01		.24980	8.5260E+01		.25480	8.0880E+01		.25970	7.6920E+01	
.26500	7.3050E+01		.26990	6.9810E+01		.27490	6.6880E+01		.27990	6.4210E+01		.28480	6.1750E+01	
.28980	5.9470E+01		.29470	5.7360E+01		.30000	5.5270E+01		.30490	5.3430E+01		.30990	5.1690E+01	
.31480	5.0070E+01		.31980	4.8540E+01		.32470	4.7120E+01		.33000	4.5730E+01		.33500	4.4530E+01	
.33990	4.3430E+01		.34490	4.2420E+01		.34980	4.1490E+01		.35480	4.0600E+01		.35970	3.9750E+01	
.36500	3.8880E+01		.36990	3.8090E+01		.37490	3.7320E+01		.37980	3.6570E+01		.38470	3.5900E+01	
.39000	3.5200E+01		.39490	3.4590E+01		.39980	3.4050E+01		.40500	3.3570E+01		.40990	3.3230E+01	
.41470	3.3020E+01		.41990	3.2960E+01		.42500	3.3050E+01		.42980	3.3250E+01		.43490	3.3500E+01	
.43970	3.3730E+01		.44480	3.3970E+01		.44980	3.4170E+01		.45490	3.4360E+01		.45990	3.4550E+01	
.46470	3.4710E+01		.46980	3.4870E+01		.47480	3.5040E+01		.47980	3.5190E+01		.48490	3.5330E+01	

.48990	3.5460E+01	.49500	3.5590E+01	.50000	3.5710E+01	.50500	3.5810E+01	.51000	3.5910E+01
.51470	3.6000E+01	.51970	3.6090E+01	.52500	3.6170E+01	.53000	3.6240E+01	.53500	3.6300E+01
.54000	3.6330E+01	.54500	3.6350E+01	.55000	3.6350E+01	.55500	3.6300E+01	.56000	3.6390E+01
.56500	3.6330E+01	.57000	3.5860E+01	.57500	3.5160E+01	.58000	3.4060E+01	.58500	3.2460E+01
.59000	3.0260E+01	.59500	2.7520E+01	.60000	2.4520E+01	.60500	2.2237E+01	.61000	2.0154E+01
.61500	1.8618E+01	.62000	1.7791E+01	.62500	1.7893E+01	.62980	1.8920E+01	.63480	2.0773E+01
.63990	2.2740E+01	.64500	2.4660E+01	.64980	2.6510E+01	.65500	2.8330E+01	.65990	2.9940E+01
.66480	3.1330E+01	.67000	3.2470E+01	.67500	3.3340E+01	.67990	3.4080E+01	.68480	3.4760E+01
.68980	3.5400E+01	.69480	3.5970E+01	.69970	3.6440E+01	.70500	3.6790E+01	.70990	3.7050E+01
.71490	3.7260E+01	.71990	3.7490E+01	.72480	3.7690E+01	.72980	3.7870E+01	.73470	3.8020E+01
.74000	3.8160E+01	.74490	3.8260E+01	.74990	3.8340E+01	.75480	3.8380E+01	.75980	3.8400E+01
.76500	3.8400E+01	.76990	3.8350E+01	.77490	3.8290E+01	.77980	3.8210E+01	.78480	3.8110E+01
.78970	3.7990E+01	.79500	3.7870E+01	.79990	3.7760E+01	.80490	3.7670E+01	.80980	3.7580E+01
.81480	3.7530E+01	.81980	3.7480E+01	.82500	3.7450E+01	.83000	3.7440E+01	.83490	3.7430E+01
.83990	3.7420E+01	.84480	3.7410E+01	.84980	3.7390E+01	.85470	3.7360E+01	.86000	3.7340E+01
.86490	3.7310E+01	.86990	3.7270E+01	.87480	3.7230E+01	.87980	3.7200E+01	.88470	3.7160E+01
.89000	3.7150E+01	.89490	3.7150E+01	.89990	3.7160E+01	.90490	3.7200E+01	.90980	3.7260E+01
.91480	3.7340E+01	.92000	3.7460E+01	.92500	3.7590E+01	.92990	3.7750E+01	.93490	3.7910E+01
.93980	3.8080E+01	.94480	3.8230E+01	.94970	3.8360E+01	.95500	3.8450E+01	.95990	3.8490E+01
.96490	3.8470E+01	.96980	3.8380E+01	.97480	3.8240E+01	.97970	3.8060E+01	.98500	3.7800E+01
.98990	3.7550E+01	.99490	3.7290E+01	.99980	3.7030E+01	1.00500	3.6640E+01	1.01000	3.6230E+01
1.01500	3.5880E+01	1.02000	3.5570E+01	1.02500	3.5260E+01	1.03000	3.4980E+01	1.03500	3.4720E+01
1.04000	3.4470E+01	1.04500	3.4200E+01	1.05000	3.3930E+01	1.05500	3.3640E+01	1.06000	3.3310E+01
1.06500	3.2980E+01	1.07000	3.2630E+01	1.07500	3.2240E+01	1.08000	3.1870E+01	1.08500	3.1450E+01
1.09000	3.1020E+01	1.09500	3.0590E+01	1.10000	3.0150E+01	1.10500	2.9680E+01	1.11000	2.9200E+01
1.11500	2.8700E+01	1.12000	2.8180E+01	1.12500	2.7630E+01	1.13000	2.7081E+01	1.13500	2.6489E+01
1.14000	2.5924E+01	1.14500	2.5317E+01	1.15000	2.4732E+01	1.15500	2.4108E+01	1.16000	2.3491E+01
1.16500	2.2906E+01	1.17000	2.2282E+01	1.17500	2.1645E+01	1.18000	2.0985E+01	1.18500	2.0344E+01
1.19000	1.9633E+01	1.19500	1.8910E+01	1.20000	1.8147E+01	1.20500	1.7362E+01	1.21000	1.6548E+01
1.21500	1.5703E+01	1.22000	1.4871E+01	1.22500	1.3953E+01	1.23000	1.3011E+01	1.23500	1.2021E+01
1.24000	1.0805E+01	1.24500	9.5170E+00	1.25000	8.1630E+00	1.25500	6.7600E+00	1.26000	5.2090E+00
1.26500	3.6800E+00	1.27000	2.0890E+00	1.27500	4.2900E-01	1.28000	-1.3050E+00	1.28500	-3.1290E+00
1.29000	-5.1530E+00	1.29500	-7.1930E+00	1.30000	-9.3800E+00	1.30500	-1.1526E+01	1.31000	-1.3547E+01
1.31500	-1.5673E+01	1.32000	-1.9103E+01	1.32500	-2.2553E+01	1.33000	-2.6190E+01	1.33500	-3.0310E+01
1.34000	-3.4520E+01	1.34500	-3.9210E+01	1.35000	-4.3800E+01	1.35500	-4.8760E+01	1.36000	-5.3530E+01
1.36500	-5.8600E+01	1.37000	-6.3470E+01	1.37500	-6.8660E+01	1.38000	-7.3890E+01	1.38500	-7.8890E+01
1.39000	-8.4100E+01	1.39500	-8.8740E+01	1.40000	-9.3110E+01	1.40500	-9.7040E+01	1.41000	-1.0053E+02
1.41500	-1.0426E+02	1.42000	-1.0828E+02	1.42500	-1.1332E+02	1.43000	-1.1864E+02	1.43500	-1.2398E+02
1.44000	-1.2939E+02	1.44500	-1.3509E+02	1.45000	-1.4061E+02	1.45500	-1.3451E+02	1.46000	-1.2715E+02
1.46500	-1.1902E+02	1.47000	-1.0986E+02	1.47500	-9.9239E+01	1.48000	-8.6773E+01	1.48500	-7.3138E+01
1.49000	-5.9866E+01	1.49500	-4.5839E+01	1.50000	-3.0245E+01	1.50500	-2.0563E+01	1.51000	-1.8691E+01
1.51500	-1.9159E+01	1.52000	-2.0996E+01	1.52500	-2.3681E+01	1.53000	-2.7285E+01	1.53500	-3.1163E+01
1.54000	-3.5272E+01	1.54500	-3.8694E+01	1.55000	-4.2056E+01	1.55500	-4.4814E+01	1.56000	-4.6540E+01
1.56500	-4.6810E+01	1.57000	-4.5170E+01	1.57500	-4.1900E+01	1.58000	-3.6680E+01	1.58500	-3.0136E+01
1.59000	-2.2787E+01	1.59500	-1.5713E+01	1.60000	-7.8680E+00	1.60500	-7.6200E-01	1.61000	6.8230E+00
1.61500	1.3667E+01	1.62000	2.1025E+01	1.62500	2.7451E+01	1.63000	3.3201E+01	1.63500	3.8148E+01
1.64000	4.1035E+01	1.64500	4.2946E+01	1.65000	4.6657E+01	1.65500	4.9206E+01	1.66000	5.1579E+01
1.66500	5.3842E+01	1.67000	5.5650E+01	1.67500	5.7640E+01	1.68000	5.8940E+01	1.68500	5.9270E+01
1.69000	5.7990E+01	1.69500	5.5130E+01	1.70000	5.1640E+01	1.70500	4.7897E+01	1.71000	4.4107E+01
1.71500	4.0506E+01	1.72000	3.7256E+01	1.72500	3.4522E+01	1.73000	3.2422E+01	1.73500	3.0858E+01
1.74000	3.0207E+01	1.74500	3.0125E+01	1.75000	3.0269E+01	1.75500	3.1129E+01	1.76000	3.2798E+01
1.76500	3.5032E+01	1.77000	3.7581E+01	1.77500	4.0220E+01	1.78000	4.1910E+01	1.78500	4.2540E+01
1.79000	4.1870E+01	1.79500	3.9822E+01	1.80000	3.6614E+01	1.80500	3.4343E+01	1.81000	3.1888E+01
1.81500	2.7645E+01	1.82000	2.1455E+01	1.82500	1.4173E+01	1.83000	6.2400E+00	1.83500	-1.7490E+00
1.84000	-9.2510E+00	1.84500	-1.6190E+01	1.85000	-2.2494E+01	1.85500	-2.7928E+01	1.86000	-3.2458E+01
1.86500	-3.5296E+01	1.87000	-3.8042E+01	1.87500	-4.1082E+01	1.88000	-4.3645E+01	1.88500	-4.5187E+01
1.89000	-4.6190E+01	1.89500	-4.6729E+01	1.90000	-4.6901E+01	1.90500	-4.6629E+01	1.91000	-4.5800E+01
1.91500	-4.4180E+01	1.92000	-4.2366E+01	1.92500	-4.0265E+01	1.93000	-3.7502E+01	1.93500	-3.4713E+01
1.94000	-3.1579E+01	1.94500	-2.8794E+01	1.95000	-2.6007E+01	1.95500	-2.3980E+01	1.96000	-2.2618E+01
1.96500	-2.2449E+01	1.97000	-2.3514E+01	1.97500	-2.5414E+01	1.98000	-2.7782E+01	1.98500	-3.0670E+01

1.99000	-3.3598E+01	1.99500	-3.7106E+01	2.00000	-4.0241E+01	2.00500	-4.2997E+01	2.01000	-4.4370E+01
2.01500	-4.4280E+01	2.02000	-4.2290E+01	2.02500	-3.8340E+01	2.03000	-3.3293E+01	2.03500	-2.6721E+01
2.04000	-1.9657E+01	2.04500	-1.2951E+01	2.05000	-5.0900E+00	2.05500	3.2790E+00	2.06000	1.1733E+01
2.06500	1.8928E+01	2.07000	2.5762E+01	2.07500	3.0761E+01	2.08000	3.4930E+01	2.08500	3.7630E+01
2.09000	3.8881E+01	2.09500	3.8779E+01	2.10000	3.8131E+01	2.10500	3.7101E+01	2.11000	3.5532E+01
2.11500	3.5666E+01	2.12000	3.4737E+01	2.12500	3.3703E+01	2.13000	3.2568E+01	2.13500	3.1157E+01
2.14000	2.9688E+01	2.14500	2.7794E+01	2.15000	2.6181E+01	2.15500	2.4609E+01	2.16000	2.3281E+01
2.16500	2.2034E+01	2.17000	2.1205E+01	2.17500	2.0751E+01	2.18000	2.0829E+01	2.18500	2.1382E+01
2.19000	2.2483E+01	2.19500	2.3882E+01	2.20000	2.5862E+01	2.20500	2.8188E+01	2.21000	3.0958E+01
2.21500	3.2869E+01	2.22000	3.4771E+01	2.22500	3.7114E+01	2.23000	3.8570E+01	2.23500	3.8950E+01
2.24000	3.8210E+01	2.24500	3.6310E+01	2.25000	3.3461E+01	2.25500	2.8808E+01	2.26000	2.2187E+01
2.26500	1.4775E+01	2.27000	6.8570E+00	2.27500	-5.4700E-01	2.28000	-1.0118E+01	2.28500	-1.6340E+01
2.29000	-2.1899E+01	2.29500	-2.6682E+01	2.30000	-3.0158E+01	2.30500	-3.2647E+01	2.31000	-3.3827E+01
2.31500	-3.4495E+01	2.32000	-3.4310E+01	2.32500	-3.3392E+01	2.33000	-3.2076E+01	2.33500	-3.0301E+01
2.34000	-2.8431E+01	2.34500	-2.7013E+01	2.35000	-2.5927E+01	2.35500	-2.4817E+01	2.36000	-2.3832E+01
2.36500	-2.2830E+01	2.37000	-2.1830E+01	2.37500	-2.0867E+01	2.38000	-1.9732E+01	2.38500	-1.8580E+01
2.39000	-1.7602E+01	2.39500	-1.6762E+01	2.40000	-1.6317E+01	2.40500	-1.6479E+01	2.41000	-1.7279E+01
2.41500	-1.8853E+01	2.42000	-2.1008E+01	2.42500	-2.3447E+01	2.43000	-2.6673E+01	2.43500	-3.0251E+01
2.44000	-3.3541E+01	2.44500	-3.6800E+01	2.45000	-3.9046E+01	2.45500	-3.9851E+01	2.46000	-3.9220E+01
2.46500	-3.7010E+01	2.47000	-3.3250E+01	2.47500	-2.8668E+01	2.48000	-2.2606E+01	2.48500	-1.5567E+01
2.49000	-7.7160E+00	2.49500	-1.6300E-01	2.50000	8.1980E+00	2.50500	1.6020E+01	2.51000	2.2078E+01
2.51500	2.7189E+01	2.52000	3.0719E+01	2.52500	3.2743E+01	2.53000	3.3855E+01	2.53500	3.3950E+01
2.54000	3.3009E+01	2.54500	3.0998E+01	2.55000	2.8655E+01	2.55500	2.6116E+01	2.56000	2.3830E+01
2.56500	2.1631E+01	2.57000	2.1080E+01	2.57500	2.0044E+01	2.58000	1.9098E+01	2.58500	1.8093E+01
2.59000	1.7065E+01	2.59500	1.6117E+01	2.60000	1.5223E+01	2.60500	1.4625E+01	2.61000	1.4280E+01
2.61500	1.4165E+01	2.62000	1.4424E+01	2.62500	1.5128E+01	2.63000	1.6168E+01	2.63500	1.7793E+01
2.64000	1.9996E+01	2.64500	2.2586E+01	2.65000	2.6003E+01	2.65500	2.9377E+01	2.66000	3.2647E+01
2.66500	3.4899E+01	2.67000	3.6002E+01	2.67500	3.6207E+01	2.68000	3.5750E+01	2.68500	3.4420E+01
2.69000	3.1860E+01	2.69500	2.7690E+01	2.70000	2.0653E+01	2.70500	9.8070E+00	2.71000	3.0000E-01
2.71500	-7.2840E+00	2.72000	-1.3333E+01	2.72500	-1.7536E+01	2.73000	-2.0662E+01	2.73500	-2.3848E+01
2.74000	-2.6520E+01	2.74500	-2.8535E+01	2.75000	-2.9948E+01	2.75500	-3.0309E+01	2.76000	-2.8714E+01
2.76500	-2.5266E+01	2.77000	-2.2176E+01	2.77500	-2.0043E+01	2.78000	-1.8830E+01	2.78500	-1.8086E+01
2.79000	-1.7485E+01	2.79500	-1.6787E+01	2.80000	-1.6021E+01	2.80500	-1.5227E+01	2.81000	-1.4446E+01
2.81500	-1.3739E+01	2.82000	-1.3129E+01	2.82500	-1.2598E+01	2.83000	-1.2146E+01	2.83500	-1.1847E+01
2.84000	-1.1817E+01	2.84500	-1.2187E+01	2.85000	-1.2922E+01	2.85500	-1.4209E+01	2.86000	-1.6214E+01
2.86500	-1.9353E+01	2.87000	-2.3597E+01	2.87500	-2.8035E+01	2.88000	-3.1684E+01	2.88500	-3.4111E+01
2.89000	-3.5361E+01	2.89500	-3.5577E+01	2.90000	-3.4841E+01	2.90500	-3.3140E+01	2.91000	-3.0390E+01
2.91500	-2.6340E+01	2.92000	-2.0480E+01	2.92500	-1.2662E+01	2.93000	-4.5100E+00	2.93500	4.3610E+00
2.94000	1.2042E+01	2.94500	1.8027E+01	2.95000	2.2360E+01	2.95500	2.5413E+01	2.96000	2.7526E+01
2.96500	2.8863E+01	2.97000	2.9312E+01	2.97500	2.8679E+01	2.98000	2.6978E+01	2.98500	2.4551E+01
2.99000	2.1929E+01	2.99500	1.9524E+01	3.00000	1.7257E+01				

TIME FUNCTION NUMBER = (3)
 FUNCTION DESCRIPTION = (TH-3 NODE 101 FORCE VS TIME)
 NUMBER OF ABSCISSAE = (758)
 FUNCTION SCALE FACTOR = (.1000E+04)

TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION
.00000	1.2000E-02		.00020	1.1000E-02		.00040	1.2000E-02		.00060	1.2000E-02		.00080	1.2000E-02	
.00100	1.3000E-02		.00131	1.3000E-02		.00162	1.4000E-02		.00194	1.4000E-02		.00225	1.4000E-02	
.00256	1.4000E-02		.00288	1.3000E-02		.00319	1.3000E-02		.00350	1.3000E-02		.00381	1.2000E-02	
.00411	1.2000E-02		.00442	1.2000E-02		.00473	1.2000E-02		.00504	1.2000E-02		.00535	1.2000E-02	
.00566	1.2000E-02		.00596	1.1000E-02		.00627	1.1000E-02		.00658	1.1000E-02		.00689	1.1000E-02	
.00719	1.1000E-02		.00750	1.0000E-02		.00781	1.0000E-02		.00812	1.0000E-02		.00843	1.0000E-02	
.00873	1.0000E-02		.00904	1.0000E-02		.00935	1.0000E-02		.00966	1.0000E-02		.00996	1.0000E-02	
.01027	1.0000E-02		.01058	1.0000E-02		.01088	1.0000E-02		.01119	1.0000E-02		.01150	1.0000E-02	
.01180	1.0000E-02		.01211	1.0000E-02		.01241	1.0000E-02		.01272	1.0000E-02		.01302	1.0000E-02	
.01333	1.0000E-02		.01364	1.0000E-02		.01394	1.0000E-02		.01425	1.0000E-02		.01455	1.0000E-02	
.01485	1.0000E-02		.01516	1.0000E-02		.01546	1.0000E-02		.01576	1.0000E-02		.01607	1.0000E-02	
.01637	1.0000E-02		.01667	1.0000E-02		.01698	1.0000E-02		.01728	1.0000E-02		.01758	1.0000E-02	
.01789	1.0000E-02		.01819	1.0000E-02		.01849	1.0000E-02		.01879	1.0000E-02		.01910	1.0000E-02	
.01940	1.0000E-02		.01970	1.0000E-02		.02000	1.0000E-02		.02031	1.0000E-02		.02061	1.0000E-02	
.02091	1.0000E-02		.02121	1.0000E-02		.02151	1.0000E-02		.02181	1.0000E-02		.02212	1.0000E-02	
.02242	1.0000E-02		.02272	1.0000E-02		.02302	1.0000E-02		.02332	1.0000E-02		.02362	1.0000E-02	
.02393	1.0000E-02		.02423	1.0000E-02		.02453	1.0000E-02		.02483	1.0000E-02		.02513	1.0000E-02	
.02543	1.0000E-02		.02573	1.0000E-02		.02603	1.0000E-02		.02633	1.0000E-02		.02663	1.0000E-02	
.02694	1.0000E-02		.02724	1.0000E-02		.02754	1.0000E-02		.02784	1.0000E-02		.02814	1.0000E-02	
.02844	1.0000E-02		.02874	1.0000E-02		.02904	1.0000E-02		.02934	1.0000E-02		.02964	1.0000E-02	
.02994	1.0000E-02		.03024	1.0000E-02		.03054	1.0000E-02		.03084	1.0000E-02		.03114	1.0000E-02	
.03144	1.0000E-02		.03174	1.0000E-02		.03204	1.0000E-02		.03234	1.0000E-02		.03264	1.0000E-02	
.03294	1.0000E-02		.03324	1.0000E-02		.03354	1.0000E-02		.03384	1.0000E-02		.03414	1.0000E-02	
.03444	1.0000E-02		.03474	1.0000E-02		.03504	1.0000E-02		.03534	1.0000E-02		.03564	1.0000E-02	
.03594	1.0000E-02		.03624	1.0000E-02		.03654	1.0000E-02		.03684	1.0000E-02		.03714	1.0000E-02	
.03744	1.0000E-02		.03774	1.0000E-02		.03804	1.0000E-02		.03833	1.0000E-02		.03863	1.0000E-02	
.03893	1.0000E-02		.03923	1.0000E-02		.03953	1.0000E-02		.03983	1.0000E-02		.04013	1.0000E-02	
.04043	1.0000E-02		.04073	1.0000E-02		.04103	1.0000E-02		.04133	1.0000E-02		.04163	1.0000E-02	
.04193	1.0000E-02		.04223	1.0000E-02		.04253	1.0000E-02		.04282	1.0000E-02		.04312	1.0000E-02	
.04342	1.0000E-02		.04372	1.0000E-02		.04402	1.0000E-02		.04432	1.0000E-02		.04462	1.0000E-02	
.04492	1.0000E-02		.04522	1.0000E-02		.04552	1.0000E-02		.04582	1.0000E-02		.04612	1.0000E-02	
.04641	1.0000E-02		.04671	1.0000E-02		.04701	1.0000E-02		.04731	1.0000E-02		.04761	1.0000E-02	
.04791	1.0000E-02		.04821	1.0000E-02		.04851	1.0000E-02		.04881	1.0000E-02		.04911	1.0000E-02	
.04941	1.0000E-02		.04970	1.0000E-02		.05000	1.0000E-02		.05479	1.0000E-02		.05986	1.0000E-02	
.06492	1.0000E-02		.06999	1.0000E-02		.07477	1.0000E-02		.07984	1.0000E-02		.08492	1.0000E-02	
.08999	1.0000E-02		.09475	1.1000E-02		.09982	3.9000E-02		.10490	2.8000E-01		.11000	1.1230E+00	
.11480	2.2380E+00		.11980	3.9610E+00		.12490	8.4710E+00		.13000	1.4840E+01		.13470	1.9300E+01	
.13980	2.1590E+01		.14490	2.1790E+01		.15000	2.0810E+01		.15470	1.9450E+01		.15980	1.7870E+01	
.16490	1.6350E+01		.17000	1.4950E+01		.17480	1.3770E+01		.17980	1.2670E+01		.18490	1.1560E+01	
.19000	1.1140E+01		.19480	1.0220E+01		.19980	9.5620E+00		.20490	8.9810E+00		.21000	8.4680E+00	
.21470	8.0380E+00		.21980	7.6310E+00		.22480	7.2680E+00		.22980	6.9440E+00		.23480	6.6520E+00	
.23980	6.3890E+00		.24480	6.1490E+00		.24980	5.9310E+00		.25480	5.7310E+00		.25970	5.5470E+00	
.26500	5.3660E+00		.26990	5.2070E+00		.27490	5.0580E+00		.27990	4.9180E+00		.28480	4.7850E+00	
.28980	4.6590E+00		.29470	4.5380E+00		.30000	4.4160E+00		.30490	4.3050E+00		.30990	4.1970E+00	
.31480	4.0940E+00		.31980	3.9940E+00		.32470	3.8980E+00		.33000	3.8000E+00		.33500	3.7110E+00	
.33990	3.6260E+00		.34490	3.5460E+00		.34980	3.4700E+00		.35480	3.3990E+00		.35970	3.3340E+00	
.36500	3.2710E+00		.36990	3.2170E+00		.37490	3.1690E+00		.37980	3.1260E+00		.38470	3.0880E+00	
.39000	3.0520E+00		.39490	3.0230E+00		.39980	2.9980E+00		.40500	2.9750E+00		.40990	2.9570E+00	
.41470	2.9400E+00		.41990	2.9250E+00		.42500	2.9120E+00		.42980	2.9000E+00		.43490	2.8900E+00	
.43970	2.8800E+00		.44480	2.8710E+00		.44980	2.8630E+00		.45490	2.8550E+00		.45990	2.8480E+00	
.46470	2.8410E+00		.46980	2.8340E+00		.47480	2.8270E+00		.47980	2.8210E+00		.48490	2.8140E+00	

.48990	2.8060E+00	.49500	2.7980E+00	.50000	2.7860E+00	.50500	2.7700E+00	.51000	2.7440E+00
.51470	2.7050E+00	.51970	2.6370E+00	.52500	2.5160E+00	.53000	2.3270E+00	.53500	2.0330E+00
.54000	1.6050E+00	.54500	1.0340E+00	.55000	3.6100E-01	.55500	-3.0300E-01	.56000	-7.7900E-01
.56500	-8.9700E-01	.57000	-6.7600E-01	.57500	-3.2500E-01	.58000	-2.1000E-02	.58500	4.2400E-01
.59000	9.1200E-01	.59500	1.2710E+00	.60000	1.4730E+00	.60500	1.5910E+00	.61000	1.6770E+00
.61500	1.7960E+00	.62000	1.9840E+00	.62500	2.1900E+00	.62980	2.3250E+00	.63480	2.3900E+00
.63990	2.4210E+00	.64500	2.4530E+00	.64980	2.4910E+00	.65500	2.5340E+00	.65990	2.5730E+00
.66480	2.6080E+00	.67000	2.6410E+00	.67500	2.6680E+00	.67990	2.6930E+00	.68480	2.7150E+00
.68980	2.7350E+00	.69480	2.7530E+00	.69970	2.7690E+00	.70500	2.7840E+00	.70990	2.7970E+00
.71490	2.8070E+00	.71990	2.8150E+00	.72480	2.8210E+00	.72980	2.8250E+00	.73470	2.8280E+00
.74000	2.8290E+00	.74490	2.8290E+00	.74990	2.8300E+00	.75480	2.8310E+00	.75980	2.8330E+00
.76500	2.8370E+00	.76990	2.8410E+00	.77490	2.8460E+00	.77980	2.8500E+00	.78480	2.8530E+00
.78970	2.8550E+00	.79500	2.8550E+00	.79990	2.8540E+00	.80490	2.8510E+00	.80980	2.8480E+00
.81480	2.8440E+00	.81980	2.8400E+00	.82500	2.8370E+00	.83000	2.8350E+00	.83490	2.8350E+00
.83990	2.8360E+00	.84480	2.8400E+00	.84980	2.8460E+00	.85470	2.8570E+00	.86000	2.8730E+00
.86490	2.8930E+00	.86990	2.9180E+00	.87480	2.9470E+00	.87980	2.9790E+00	.88470	3.0120E+00
.89000	3.0440E+00	.89490	3.0700E+00	.89990	3.0880E+00	.90490	3.0960E+00	.90980	3.0940E+00
.91480	3.0800E+00	.92000	3.0520E+00	.92500	3.0160E+00	.92990	2.9720E+00	.93490	2.9250E+00
.93980	2.8770E+00	.94480	2.8330E+00	.94970	2.7950E+00	.95500	2.7640E+00	.95990	2.7440E+00
.96490	2.7320E+00	.96980	2.7260E+00	.97480	2.7240E+00	.97970	2.7240E+00	.98500	2.7250E+00
.98990	2.7250E+00	.99490	2.7240E+00	.99980	2.7220E+00	1.00500	2.7190E+00	1.01000	2.7140E+00
1.01500	2.7100E+00	1.02000	2.7050E+00	1.02500	2.6990E+00	1.03000	2.6940E+00	1.03500	2.6890E+00
1.04000	2.6840E+00	1.04500	2.6790E+00	1.05000	2.6750E+00	1.05500	2.6710E+00	1.06000	2.6680E+00
1.06500	2.6650E+00	1.07000	2.6620E+00	1.07500	2.6600E+00	1.08000	2.6590E+00	1.08500	2.6580E+00
1.09000	2.6570E+00	1.09500	2.6570E+00	1.10000	2.6570E+00	1.10500	2.6580E+00	1.11000	2.6580E+00
1.11500	2.6590E+00	1.12000	2.6590E+00	1.12500	2.6600E+00	1.13000	2.6600E+00	1.13500	2.6610E+00
1.14000	2.6610E+00	1.14500	2.6620E+00	1.15000	2.6630E+00	1.15500	2.6640E+00	1.16000	2.6650E+00
1.16500	2.6650E+00	1.17000	2.6660E+00	1.17500	2.6670E+00	1.18000	2.6670E+00	1.18500	2.6680E+00
1.19000	2.6680E+00	1.19500	2.6670E+00	1.20000	2.6670E+00	1.20500	2.6660E+00	1.21000	2.6640E+00
1.21500	2.6620E+00	1.22000	2.6590E+00	1.22500	2.6550E+00	1.23000	2.6490E+00	1.23500	2.6390E+00
1.24000	2.6240E+00	1.24500	2.6000E+00	1.25000	2.5620E+00	1.25500	2.5070E+00	1.26000	2.4270E+00
1.26500	2.3280E+00	1.27000	2.2090E+00	1.27500	2.0750E+00	1.28000	1.9330E+00	1.28500	1.7910E+00
1.29000	1.6500E+00	1.29500	1.5270E+00	1.30000	1.4170E+00	1.30500	1.3120E+00	1.31000	1.2180E+00
1.31500	1.1260E+00	1.32000	1.0280E+00	1.32500	9.3100E-01	1.33000	8.3100E-01	1.33500	7.1900E-01
1.34000	6.0700E-01	1.34500	4.8200E-01	1.35000	3.5300E-01	1.35500	2.0500E-01	1.36000	5.8000E-02
1.36500	-7.8000E-02	1.37000	-2.3300E-01	1.37500	-7.1200E-01	1.38000	-1.8660E+00	1.38500	-3.1370E+00
1.39000	-3.9040E+00	1.39500	-4.1090E+00	1.40000	-4.5990E+00	1.40500	-5.3790E+00	1.41000	-5.6790E+00
1.41500	-5.9070E+00	1.42000	-5.9010E+00	1.42500	-5.9660E+00	1.43000	-6.5110E+00	1.43500	-6.6570E+00
1.44000	-7.2390E+00	1.44500	-7.9900E+00	1.45000	-8.9620E+00	1.45500	-1.0320E+01	1.46000	-1.2570E+01
1.46500	-1.5600E+01	1.47000	-1.8620E+01	1.47500	-2.0870E+01	1.48000	-2.2160E+01	1.48500	-2.2860E+01
1.49000	-2.3320E+01	1.49500	-2.3730E+01	1.50000	-2.3640E+01	1.50500	-2.2950E+01	1.51000	-2.2330E+01
1.51500	-2.1830E+01	1.52000	-2.1360E+01	1.52500	-2.0980E+01	1.53000	-2.0590E+01	1.53500	-2.0220E+01
1.54000	-1.9120E+01	1.54500	-1.2400E+01	1.55000	-3.8400E+00	1.55500	-4.4700E-01	1.56000	5.7600E-01
1.56500	1.1780E+00	1.57000	1.7820E+00	1.57500	2.1950E+00	1.58000	2.4750E+00	1.58500	2.7310E+00
1.59000	2.9970E+00	1.59500	3.2180E+00	1.60000	3.4050E+00	1.60500	3.4880E+00	1.61000	3.5200E+00
1.61500	3.5750E+00	1.62000	3.7030E+00	1.62500	3.8620E+00	1.63000	4.0530E+00	1.63500	4.2930E+00
1.64000	4.6040E+00	1.64500	4.9890E+00	1.65000	5.4790E+00	1.65500	6.1270E+00	1.66000	6.9260E+00
1.66500	7.8150E+00	1.67000	8.6180E+00	1.67500	9.3890E+00	1.68000	9.9450E+00	1.68500	1.0300E+01
1.69000	9.4560E+00	1.69500	9.0880E+00	1.70000	9.4800E+00	1.70500	9.8730E+00	1.71000	1.0200E+01
1.71500	1.0480E+01	1.72000	1.0650E+01	1.72500	1.0700E+01	1.73000	1.0480E+01	1.73500	1.0150E+01
1.74000	9.9200E+00	1.74500	9.6540E+00	1.75000	9.1900E+00	1.75500	8.7040E+00	1.76000	8.3700E+00
1.76500	8.1100E+00	1.77000	7.8440E+00	1.77500	7.5410E+00	1.78000	7.2440E+00	1.78500	6.9180E+00
1.79000	6.6360E+00	1.79500	6.2830E+00	1.80000	5.8110E+00	1.80500	5.1620E+00	1.81000	4.3870E+00
1.81500	3.3680E+00	1.82000	2.2690E+00	1.82500	1.2220E+00	1.83000	3.5500E-01	1.83500	-2.8100E-01
1.84000	-7.4700E-01	1.84500	-1.1140E+00	1.85000	-1.4200E+00	1.85500	-1.6840E+00	1.86000	-1.9130E+00
1.86500	-2.1080E+00	1.87000	-2.2840E+00	1.87500	-2.4730E+00	1.88000	-2.7200E+00	1.88500	-3.0280E+00
1.89000	-3.4730E+00	1.89500	-4.0850E+00	1.90000	-4.8960E+00	1.90500	-6.2300E+00	1.91000	-7.9320E+00
1.91500	-1.0190E+01	1.92000	-1.2020E+01	1.92500	-1.2950E+01	1.93000	-1.3330E+01	1.93500	-1.4300E+01
1.94000	-1.5970E+01	1.94500	-1.6830E+01	1.95000	-1.6300E+01	1.95500	-1.4920E+01	1.96000	-1.3240E+01
1.96500	-1.1500E+01	1.97000	-9.5170E+00	1.97500	-8.2290E+00	1.98000	-7.4600E+00	1.98500	-6.8420E+00

1.99000	-6.3320E+00	1.99500	-5.7520E+00	2.00000	-5.1330E+00	2.00500	-4.2970E+00	2.01000	-3.4160E+00
2.01500	-2.4010E+00	2.02000	-1.4550E+00	2.02500	-6.7400E-01	2.03000	-1.3600E-01	2.03500	2.9400E-01
2.04000	6.0900E-01	2.04500	8.3400E-01	2.05000	1.0390E+00	2.05500	1.2150E+00	2.06000	1.3660E+00
2.06500	1.4880E+00	2.07000	1.6160E+00	2.07500	1.7410E+00	2.08000	1.9100E+00	2.08500	2.1050E+00
2.09000	2.3780E+00	2.09500	2.6980E+00	2.10000	3.1630E+00	2.10500	3.7200E+00	2.11000	4.4900E+00
2.11500	5.2980E+00	2.12000	6.2030E+00	2.12500	6.9220E+00	2.13000	7.4590E+00	2.13500	7.8530E+00
2.14000	8.1340E+00	2.14500	8.4920E+00	2.15000	8.8860E+00	2.15500	8.8670E+00	2.16000	7.8180E+00
2.16500	7.2770E+00	2.17000	7.7760E+00	2.17500	8.0980E+00	2.18000	8.0350E+00	2.18500	7.7950E+00
2.19000	7.4970E+00	2.19500	7.1700E+00	2.20000	6.5720E+00	2.20500	5.8640E+00	2.21000	5.1950E+00
2.21500	4.7780E+00	2.22000	4.4310E+00	2.22500	4.1540E+00	2.23000	3.8740E+00	2.23500	3.6250E+00
2.24000	3.3330E+00	2.24500	3.0330E+00	2.25000	2.6980E+00	2.25500	2.2970E+00	2.26000	1.8560E+00
2.26500	1.4230E+00	2.27000	9.4200E-01	2.27500	5.3300E-01	2.28000	1.4600E-01	2.28500	-1.4300E-01
2.29000	-4.0000E-01	2.29500	-6.1500E-01	2.30000	-7.7800E-01	2.30500	-9.3200E-01	2.31000	-1.0690E+00
2.31500	-1.2250E+00	2.32000	-1.3910E+00	2.32500	-1.5670E+00	2.33000	-1.8230E+00	2.33500	-2.1830E+00
2.34000	-2.6520E+00	2.34500	-3.3990E+00	2.35000	-4.4820E+00	2.35500	-5.9560E+00	2.36000	-7.4710E+00
2.36500	-8.8870E+00	2.37000	-1.0130E+01	2.37500	-1.1480E+01	2.38000	-1.2700E+01	2.38500	-1.3350E+01
2.39000	-1.3180E+01	2.39500	-1.1440E+01	2.40000	-9.5070E+00	2.40500	-8.1770E+00	2.41000	-7.1210E+00
2.41500	-6.0080E+00	2.42000	-5.1150E+00	2.42500	-4.5350E+00	2.43000	-4.0640E+00	2.43500	-3.6810E+00
2.44000	-3.3630E+00	2.44500	-3.0160E+00	2.45000	-2.6520E+00	2.45500	-2.2670E+00	2.46000	-1.9010E+00
2.46500	-1.4840E+00	2.47000	-1.0680E+00	2.47500	-7.1200E-01	2.48000	-3.6400E-01	2.48500	-7.5000E-02
2.49000	1.5700E-01	2.49500	3.3000E-01	2.50000	4.8800E-01	2.50500	6.2100E-01	2.51000	7.3100E-01
2.51500	8.4800E-01	2.52000	9.6800E-01	2.52500	1.0880E+00	2.53000	1.2440E+00	2.53500	1.4450E+00
2.54000	1.7160E+00	2.54500	2.0470E+00	2.55000	2.5310E+00	2.55500	3.1600E+00	2.56000	3.8400E+00
2.56500	4.6400E+00	2.57000	5.3990E+00	2.57500	6.0690E+00	2.58000	6.6250E+00	2.58500	7.2070E+00
2.59000	7.7320E+00	2.59500	8.1140E+00	2.60000	8.3780E+00	2.60500	8.4230E+00	2.61000	8.0630E+00
2.61500	6.6170E+00	2.62000	5.2440E+00	2.62500	5.0870E+00	2.63000	5.1830E+00	2.63500	5.0180E+00
2.64000	4.7510E+00	2.64500	4.4870E+00	2.65000	4.0910E+00	2.65500	3.5800E+00	2.66000	3.1260E+00
2.66500	2.8400E+00	2.67000	2.6160E+00	2.67500	2.4220E+00	2.68000	2.2470E+00	2.68500	2.0440E+00
2.69000	1.8280E+00	2.69500	1.5950E+00	2.70000	1.3460E+00	2.70500	1.1110E+00	2.71000	8.5000E-01
2.71500	5.9300E-01	2.72000	3.5000E-01	2.72500	1.3300E-01	2.73000	-4.1000E-02	2.73500	-2.1000E-01
2.74000	-3.5500E-01	2.74500	-4.7900E-01	2.75000	-5.9000E-01	2.75500	-7.0300E-01	2.76000	-8.2600E-01
2.76500	-9.7300E-01	2.77000	-1.1580E+00	2.77500	-1.4100E+00	2.78000	-1.7450E+00	2.78500	-2.2890E+00
2.79000	-3.0850E+00	2.79500	-4.1080E+00	2.80000	-5.2050E+00	2.80500	-6.6140E+00	2.81000	-9.1820E+00
2.81500	-1.2410E+01	2.82000	-1.3390E+01	2.82500	-1.1470E+01	2.83000	-8.8090E+00	2.83500	-6.8560E+00
2.84000	-5.9010E+00	2.84500	-5.4640E+00	2.85000	-5.1150E+00	2.85500	-4.6500E+00	2.86000	-4.1020E+00
2.86500	-3.5320E+00	2.87000	-3.0370E+00	2.87500	-2.6670E+00	2.88000	-2.3930E+00	2.88500	-2.1650E+00
2.89000	-1.9490E+00	2.89500	-1.7310E+00	2.90000	-1.5050E+00	2.90500	-1.2730E+00	2.91000	-1.0370E+00
2.91500	-8.0300E-01	2.92000	-5.7800E-01	2.92500	-3.6900E-01	2.93000	-1.9700E-01	2.93500	-3.0000E-02
2.94000	1.1400E-01	2.94500	2.3900E-01	2.95000	3.4700E-01	2.95500	4.4400E-01	2.96000	5.3800E-01
2.96500	6.3800E-01	2.97000	7.5300E-01	2.97500	8.9300E-01	2.98000	1.0770E+00	2.98500	1.3290E+00
2.99000	1.6810E+00	2.99500	2.1490E+00	3.00000	2.7240E+00				

TIME FUNCTION NUMBER = (4)
 FUNCTION DESCRIPTION = (TH-4 NODE 130 FORCE VS TIME)
 NUMBER OF ABSCISSAE = (758)
 FUNCTION SCALE FACTOR = (.1000E+04)

TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION
.00000	0.0000E+00		.00020	0.0000E+00		.00040	0.0000E+00		.00060	0.0000E+00		.00080	0.0000E+00	
.00100	0.0000E+00		.00131	0.0000E+00		.00162	0.0000E+00		.00194	0.0000E+00		.00225	1.0000E-03	
.00256	2.0000E-03		.00288	3.0000E-03		.00319	3.0000E-03		.00350	4.0000E-03		.00381	5.0000E-03	
.00411	5.0000E-03		.00442	6.0000E-03		.00473	6.0000E-03		.00504	6.0000E-03		.00535	7.0000E-03	
.00566	8.0000E-03		.00596	8.0000E-03		.00627	9.0000E-03		.00658	1.0000E-02		.00689	1.0000E-02	
.00719	1.1000E-02		.00750	1.1000E-02		.00781	1.2000E-02		.00812	1.2000E-02		.00843	1.3000E-02	
.00873	1.3000E-02		.00904	1.4000E-02		.00935	1.4000E-02		.00966	1.4000E-02		.00996	1.5000E-02	
.01027	1.5000E-02		.01058	1.6000E-02		.01088	1.6000E-02		.01119	1.6000E-02		.01150	1.7000E-02	
.01180	1.7000E-02		.01211	1.8000E-02		.01241	1.8000E-02		.01272	1.8000E-02		.01302	1.8000E-02	
.01333	1.9000E-02		.01364	1.9000E-02		.01394	1.9000E-02		.01425	1.9000E-02		.01455	1.9000E-02	
.01485	1.9000E-02		.01516	1.9000E-02		.01546	1.9000E-02		.01576	1.9000E-02		.01607	1.9000E-02	
.01637	1.9000E-02		.01667	1.9000E-02		.01698	1.9000E-02		.01728	1.9000E-02		.01758	1.9000E-02	
.01789	1.9000E-02		.01819	1.9000E-02		.01849	1.8000E-02		.01879	1.8000E-02		.01910	1.8000E-02	
.01940	1.8000E-02		.01970	1.8000E-02		.02000	1.8000E-02		.02031	1.8000E-02		.02061	1.7000E-02	
.02091	1.7000E-02		.02121	1.7000E-02		.02151	1.7000E-02		.02181	1.7000E-02		.02212	1.7000E-02	
.02242	1.7000E-02		.02272	1.7000E-02		.02302	1.7000E-02		.02332	1.7000E-02		.02362	1.7000E-02	
.02393	1.7000E-02		.02423	1.7000E-02		.02453	1.7000E-02		.02483	1.7000E-02		.02513	1.7000E-02	
.02543	1.7000E-02		.02573	1.7000E-02		.02603	1.7000E-02		.02633	1.7000E-02		.02663	1.7000E-02	
.02694	1.7000E-02		.02724	1.7000E-02		.02754	1.7000E-02		.02784	1.7000E-02		.02814	1.7000E-02	
.02844	1.7000E-02		.02874	1.7000E-02		.02904	1.7000E-02		.02934	1.7000E-02		.02964	1.7000E-02	
.02994	1.7000E-02		.03024	1.7000E-02		.03054	1.7000E-02		.03084	1.7000E-02		.03114	1.7000E-02	
.03144	1.7000E-02		.03174	1.7000E-02		.03204	1.7000E-02		.03234	1.7000E-02		.03264	1.7000E-02	
.03294	1.7000E-02		.03324	1.7000E-02		.03354	1.7000E-02		.03384	1.7000E-02		.03414	1.7000E-02	
.03444	1.7000E-02		.03474	1.7000E-02		.03504	1.7000E-02		.03534	1.7000E-02		.03564	1.7000E-02	
.03594	1.7000E-02		.03624	1.7000E-02		.03654	1.7000E-02		.03684	1.7000E-02		.03714	1.7000E-02	
.03744	1.7000E-02		.03774	1.7000E-02		.03804	1.7000E-02		.03833	1.7000E-02		.03863	1.7000E-02	
.03893	1.7000E-02		.03923	1.7000E-02		.03953	1.7000E-02		.03983	1.7000E-02		.04013	1.7000E-02	
.04043	1.7000E-02		.04073	1.7000E-02		.04103	1.7000E-02		.04133	1.7000E-02		.04163	1.7000E-02	
.04193	1.7000E-02		.04223	1.7000E-02		.04253	1.7000E-02		.04282	1.7000E-02		.04312	1.7000E-02	
.04342	1.7000E-02		.04372	1.7000E-02		.04402	1.7000E-02		.04432	1.7000E-02		.04462	1.7000E-02	
.04492	1.7000E-02		.04522	1.7000E-02		.04552	1.7000E-02		.04582	1.7000E-02		.04612	1.7000E-02	
.04641	1.7000E-02		.04671	1.7000E-02		.04701	1.7000E-02		.04731	1.7000E-02		.04761	1.7000E-02	
.04791	1.7000E-02		.04821	1.7000E-02		.04851	1.7000E-02		.04881	1.7000E-02		.04911	1.7000E-02	
.04941	1.7000E-02		.04970	1.7000E-02		.05000	1.7000E-02		.05479	1.6000E-02		.05986	1.6000E-02	
.06492	1.6000E-02		.06999	1.6000E-02		.07477	1.6000E-02		.07984	1.7000E-02		.08492	3.3000E-02	
.08999	2.4300E-01		.09475	1.0780E+00		.09982	2.5440E+00		.10490	5.7580E+00		.11000	1.2150E+01	
.11480	2.0210E+01		.11980	2.9040E+01		.12490	3.4810E+01		.13000	3.8350E+01		.13470	4.2710E+01	
.13980	4.9220E+01		.14490	5.4840E+01		.15000	5.6740E+01		.15470	5.5400E+01		.15980	5.2070E+01	
.16490	4.8020E+01		.17000	4.3940E+01		.17480	4.0360E+01		.17980	3.6930E+01		.18490	3.3910E+01	
.19000	3.1150E+01		.19480	2.9270E+01		.19980	2.7440E+01		.20490	2.5610E+01		.21000	2.4160E+01	
.21470	2.2950E+01		.21980	2.1810E+01		.22480	2.0800E+01		.22980	1.9890E+01		.23480	1.9080E+01	
.23980	1.8350E+01		.24480	1.7680E+01		.24980	1.7070E+01		.25480	1.6520E+01		.25970	1.6000E+01	
.26500	1.5490E+01		.26990	1.5050E+01		.27490	1.4630E+01		.27990	1.4230E+01		.28480	1.3850E+01	
.28980	1.3500E+01		.29470	1.3160E+01		.30000	1.2810E+01		.30490	1.2500E+01		.30990	1.2200E+01	
.31480	1.1920E+01		.31980	1.1640E+01		.32470	1.1380E+01		.33000	1.1110E+01		.33500	1.0870E+01	
.33990	1.0640E+01		.34490	1.0420E+01		.34980	1.0220E+01		.35480	1.0030E+01		.35970	9.8510E+00	
.36500	9.6790E+00		.36990	9.5310E+00		.37490	9.3960E+00		.37980	9.2750E+00		.38470	9.1670E+00	
.39000	9.0660E+00		.39490	8.9810E+00		.39980	8.9070E+00		.40500	8.8380E+00		.40990	8.7810E+00	
.41470	8.7300E+00		.41990	8.6830E+00		.42500	8.6400E+00		.42980	8.6040E+00		.43490	8.5700E+00	
.43970	8.5400E+00		.44480	8.5100E+00		.44980	8.4820E+00		.45490	8.4560E+00		.45990	8.4290E+00	
.46470	8.4030E+00		.46980	8.3740E+00		.47480	8.3390E+00		.47980	8.2930E+00		.48490	8.2280E+00	

.48990	8.1310E+00	.49500	7.9830E+00	.50000	7.7580E+00	.50500	7.4300E+00	.51000	6.9840E+00
.51470	6.4620E+00	.51970	5.8400E+00	.52500	5.1690E+00	.53000	4.5720E+00	.53500	4.0290E+00
.54000	3.5190E+00	.54500	2.8420E+00	.55000	2.1950E+00	.55500	1.4390E+00	.56000	6.3800E-01
.56500	-7.3000E-02	.57000	-2.1100E-01	.57500	8.6600E-01	.58000	7.1400E-01	.58500	1.4570E+00
.59000	2.2970E+00	.59500	3.3240E+00	.60000	4.2900E+00	.60500	4.9800E+00	.61000	5.4130E+00
.61500	5.6700E+00	.62000	5.8570E+00	.62500	6.1270E+00	.62980	6.4990E+00	.63480	6.8890E+00
.63990	7.1440E+00	.64500	7.2720E+00	.64980	7.3490E+00	.65500	7.4360E+00	.65990	7.5290E+00
.66480	7.6230E+00	.67000	7.7160E+00	.67500	7.7950E+00	.67990	7.8650E+00	.68480	7.9270E+00
.68980	7.9810E+00	.69480	8.0290E+00	.69970	8.0710E+00	.70500	8.1090E+00	.70990	8.1400E+00
.71490	8.1660E+00	.71990	8.1890E+00	.72480	8.2080E+00	.72980	8.2230E+00	.73470	8.2360E+00
.74000	8.2470E+00	.74490	8.2550E+00	.74990	8.2620E+00	.75480	8.2670E+00	.75980	8.2730E+00
.76500	8.2780E+00	.76990	8.2840E+00	.77490	8.2900E+00	.77980	8.2960E+00	.78480	8.3010E+00
.78970	8.3050E+00	.79500	8.3070E+00	.79990	8.3060E+00	.80490	8.3040E+00	.80980	8.3020E+00
.81480	8.2990E+00	.81980	8.2980E+00	.82500	8.3010E+00	.83000	8.3080E+00	.83490	8.3230E+00
.83990	8.3450E+00	.84480	8.3750E+00	.84980	8.4120E+00	.85470	8.4570E+00	.86000	8.5110E+00
.86490	8.5660E+00	.86990	8.6240E+00	.87480	8.6820E+00	.87980	8.7370E+00	.88470	8.7870E+00
.89000	8.8300E+00	.89490	8.8570E+00	.89990	8.8690E+00	.90490	8.8630E+00	.90980	8.8390E+00
.91480	8.7970E+00	.92000	8.7350E+00	.92500	8.6620E+00	.92990	8.5780E+00	.93490	8.4850E+00
.93980	8.3890E+00	.94480	8.2950E+00	.94970	8.2070E+00	.95500	8.1260E+00	.95990	8.0630E+00
.96490	8.0160E+00	.96980	7.9840E+00	.97480	7.9640E+00	.97970	7.9530E+00	.98500	7.9470E+00
.98990	7.9440E+00	.99490	7.9400E+00	.99980	7.9340E+00	1.00500	7.9260E+00	1.01000	7.9150E+00
1.01500	7.9020E+00	1.02000	7.8890E+00	1.02500	7.8760E+00	1.03000	7.8620E+00	1.03500	7.8490E+00
1.04000	7.8350E+00	1.04500	7.8230E+00	1.05000	7.8120E+00	1.05500	7.8030E+00	1.06000	7.7940E+00
1.06500	7.7860E+00	1.07000	7.7800E+00	1.07500	7.7750E+00	1.08000	7.7710E+00	1.08500	7.7680E+00
1.09000	7.7660E+00	1.09500	7.7650E+00	1.10000	7.7650E+00	1.10500	7.7650E+00	1.11000	7.7660E+00
1.11500	7.7670E+00	1.12000	7.7690E+00	1.12500	7.7700E+00	1.13000	7.7720E+00	1.13500	7.7740E+00
1.14000	7.7760E+00	1.14500	7.7770E+00	1.15000	7.7790E+00	1.15500	7.7810E+00	1.16000	7.7820E+00
1.16500	7.7840E+00	1.17000	7.7850E+00	1.17500	7.7850E+00	1.18000	7.7850E+00	1.18500	7.7840E+00
1.19000	7.7820E+00	1.19500	7.7780E+00	1.20000	7.7720E+00	1.20500	7.7630E+00	1.21000	7.7480E+00
1.21500	7.7240E+00	1.22000	7.6890E+00	1.22500	7.6360E+00	1.23000	7.5610E+00	1.23500	7.4610E+00
1.24000	7.3350E+00	1.24500	7.1820E+00	1.25000	7.0030E+00	1.25500	6.7980E+00	1.26000	6.5550E+00
1.26500	6.2960E+00	1.27000	6.0080E+00	1.27500	5.6930E+00	1.28000	5.3540E+00	1.28500	4.9970E+00
1.29000	4.6160E+00	1.29500	4.2580E+00	1.30000	3.9150E+00	1.30500	3.5730E+00	1.31000	3.2660E+00
1.31500	2.9680E+00	1.32000	2.6550E+00	1.32500	2.3490E+00	1.33000	2.0290E+00	1.33500	1.6710E+00
1.34000	1.3580E+00	1.34500	8.1500E-01	1.35000	4.8000E-02	1.35500	-8.7000E-01	1.36000	-1.7780E+00
1.36500	-2.9170E+00	1.37000	-4.0950E+00	1.37500	-5.1850E+00	1.38000	-6.0850E+00	1.38500	-7.6110E+00
1.39000	-1.0290E+01	1.39500	-1.2680E+01	1.40000	-1.3740E+01	1.40500	-1.4310E+01	1.41000	-1.5440E+01
1.41500	-1.6730E+01	1.42000	-1.7800E+01	1.42500	-1.8770E+01	1.43000	-1.9450E+01	1.43500	-2.1090E+01
1.44000	-2.3420E+01	1.44500	-2.6680E+01	1.45000	-3.0900E+01	1.45500	-3.5250E+01	1.46000	-3.9640E+01
1.46500	-4.3720E+01	1.47000	-4.7950E+01	1.47500	-5.2770E+01	1.48000	-5.7650E+01	1.48500	-6.1490E+01
1.49000	-6.3830E+01	1.49500	-6.5390E+01	1.50000	-6.6650E+01	1.50500	-6.7150E+01	1.51000	-6.6630E+01
1.51500	-6.5390E+01	1.52000	-6.3760E+01	1.52500	-6.2360E+01	1.53000	-5.9730E+01	1.53500	-4.8640E+01
1.54000	-2.9490E+01	1.54500	-1.7800E+01	1.55000	-1.3940E+01	1.55500	-1.0840E+01	1.56000	-6.1200E+00
1.56500	-1.2860E+00	1.57000	2.7320E+00	1.57500	5.2820E+00	1.58000	6.9000E+00	1.58500	7.9180E+00
1.59000	8.6740E+00	1.59500	9.1440E+00	1.60000	9.4540E+00	1.60500	9.7260E+00	1.61000	1.0140E+01
1.61500	1.0600E+01	1.62000	1.1110E+01	1.62500	1.1640E+01	1.63000	1.2290E+01	1.63500	1.3120E+01
1.64000	1.4170E+01	1.64500	1.5540E+01	1.65000	1.7230E+01	1.65500	1.9130E+01	1.66000	2.1070E+01
1.66500	2.2880E+01	1.67000	2.4390E+01	1.67500	2.5250E+01	1.68000	2.5110E+01	1.68500	2.5360E+01
1.69000	2.6830E+01	1.69500	2.8140E+01	1.70000	2.8420E+01	1.70500	2.8400E+01	1.71000	2.8330E+01
1.71500	2.8760E+01	1.72000	2.9190E+01	1.72500	2.9590E+01	1.73000	2.9870E+01	1.73500	2.9560E+01
1.74000	2.8700E+01	1.74500	2.7680E+01	1.75000	2.6820E+01	1.75500	2.6000E+01	1.76000	2.4990E+01
1.76500	2.3830E+01	1.77000	2.2820E+01	1.77500	2.1880E+01	1.78000	2.0990E+01	1.78500	1.9840E+01
1.79000	1.8550E+01	1.79500	1.6840E+01	1.80000	1.4900E+01	1.80500	1.2790E+01	1.81000	1.0810E+01
1.81500	8.6080E+00	1.82000	6.3750E+00	1.82500	4.1230E+00	1.83000	1.9120E+00	1.83500	-1.2300E-01
1.84000	-1.8210E+00	1.84500	-3.1240E+00	1.85000	-4.1150E+00	1.85500	-4.9170E+00	1.86000	-5.6300E+00
1.86500	-6.3370E+00	1.87000	-7.0890E+00	1.87500	-7.9310E+00	1.88000	-8.9580E+00	1.88500	-1.0200E+01
1.89000	-1.2130E+01	1.89500	-1.4820E+01	1.90000	-1.7860E+01	1.90500	-2.1340E+01	1.91000	-2.4090E+01
1.91500	-2.6940E+01	1.92000	-3.0270E+01	1.92500	-3.4570E+01	1.93000	-3.9070E+01	1.93500	-4.1180E+01
1.94000	-4.1440E+01	1.94500	-4.1220E+01	1.95000	-4.1220E+01	1.95500	-4.0060E+01	1.96000	-3.6990E+01
1.96500	-3.3480E+01	1.97000	-2.9850E+01	1.97500	-2.6760E+01	1.98000	-2.3760E+01	1.98500	-2.0730E+01

1.99000	-1.8270E+01	1.99500	-1.5760E+01	2.00000	-1.3490E+01	2.00500	-1.0960E+01	2.01000	-8.7300E+00
2.01500	-6.4780E+00	2.02000	-4.4780E+00	2.02500	-2.7130E+00	2.03000	-1.2880E+00	2.03500	8.1000E-02
2.04000	1.2250E+00	2.04500	2.0660E+00	2.05000	2.8010E+00	2.05500	3.3880E+00	2.06000	3.8870E+00
2.06500	4.3190E+00	2.07000	4.8170E+00	2.07500	5.3250E+00	2.08000	5.9750E+00	2.08500	6.6940E+00
2.09000	7.7020E+00	2.09500	8.8870E+00	2.10000	1.0510E+01	2.10500	1.2210E+01	2.11000	1.4160E+01
2.11500	1.5840E+01	2.12000	1.7460E+01	2.12500	1.8800E+01	2.13000	2.0160E+01	2.13500	2.1740E+01
2.14000	2.3070E+01	2.14500	2.2860E+01	2.15000	2.2250E+01	2.15500	2.2330E+01	2.16000	2.3580E+01
2.16500	2.4200E+01	2.17000	2.3410E+01	2.17500	2.2330E+01	2.18000	2.1940E+01	2.18500	2.1800E+01
2.19000	2.0920E+01	2.19500	1.9710E+01	2.20000	1.8430E+01	2.20500	1.7380E+01	2.21000	1.6070E+01
2.21500	1.4700E+01	2.22000	1.3260E+01	2.22500	1.2170E+01	2.23000	1.1150E+01	2.23500	1.0250E+01
2.24000	9.2420E+00	2.24500	8.2920E+00	2.25000	7.2880E+00	2.25500	6.1140E+00	2.26000	4.9140E+00
2.26500	3.8400E+00	2.27000	2.7060E+00	2.27500	1.7040E+00	2.28000	6.6500E-01	2.28500	-1.9300E-01
2.29000	-1.0150E+00	2.29500	-1.7100E+00	2.30000	-2.2610E+00	2.30500	-2.8120E+00	2.31000	-3.2940E+00
2.31500	-3.8520E+00	2.32000	-4.5240E+00	2.32500	-5.3070E+00	2.33000	-6.4580E+00	2.33500	-8.0480E+00
2.34000	-9.9880E+00	2.34500	-1.2580E+01	2.35000	-1.5270E+01	2.35500	-1.8150E+01	2.36000	-2.1170E+01
2.36500	-2.4840E+01	2.37000	-2.8430E+01	2.37500	-3.0680E+01	2.38000	-3.1610E+01	2.38500	-3.1490E+01
2.39000	-3.1050E+01	2.39500	-3.0450E+01	2.40000	-2.8610E+01	2.40500	-2.5320E+01	2.41000	-2.1920E+01
2.41500	-1.8720E+01	2.42000	-1.6260E+01	2.42500	-1.4370E+01	2.43000	-1.2530E+01	2.43500	-1.0970E+01
2.44000	-9.7450E+00	2.44500	-8.5350E+00	2.45000	-7.3810E+00	2.45500	-6.2380E+00	2.46000	-5.2020E+00
2.46500	-4.0920E+00	2.47000	-3.0440E+00	2.47500	-2.1670E+00	2.48000	-1.2880E+00	2.48500	-4.9900E-01
2.49000	1.9600E-01	2.49500	7.4600E-01	2.50000	1.2710E+00	2.50500	1.7320E+00	2.51000	2.1170E+00
2.51500	2.5280E+00	2.52000	2.9620E+00	2.52500	3.4170E+00	2.53000	4.0330E+00	2.53500	4.8280E+00
2.54000	5.8620E+00	2.54500	7.0410E+00	2.55000	8.5760E+00	2.55500	1.0250E+01	2.56000	1.1800E+01
2.56500	1.3500E+01	2.57000	1.5260E+01	2.57500	1.7050E+01	2.58000	1.8600E+01	2.58500	2.0060E+01
2.59000	2.1150E+01	2.59500	2.1740E+01	2.60000	2.1220E+01	2.60500	2.0100E+01	2.61000	1.9550E+01
2.61500	1.9700E+01	2.62000	1.9310E+01	2.62500	1.7360E+01	2.63000	1.5300E+01	2.63500	1.3800E+01
2.64000	1.3080E+01	2.64500	1.2350E+01	2.65000	1.1440E+01	2.65500	1.0600E+01	2.66000	9.7210E+00
2.66500	8.8190E+00	2.67000	7.8360E+00	2.67500	7.0080E+00	2.68000	6.3720E+00	2.68500	5.7200E+00
2.69000	5.0620E+00	2.69500	4.3850E+00	2.70000	3.6930E+00	2.70500	3.0580E+00	2.71000	2.3670E+00
2.71500	1.6970E+00	2.72000	1.0590E+00	2.72500	4.6100E-01	2.73000	-3.8000E-02	2.73500	-5.3500E-01
2.74000	-9.8400E-01	2.74500	-1.4040E+00	2.75000	-1.8160E+00	2.75500	-2.2370E+00	2.76000	-2.7190E+00
2.76500	-3.3340E+00	2.77000	-4.1810E+00	2.77500	-5.3710E+00	2.78000	-6.7600E+00	2.78500	-8.5270E+00
2.79000	-1.0760E+01	2.79500	-1.4270E+01	2.80000	-1.9190E+01	2.80500	-2.3310E+01	2.81000	-2.4710E+01
2.81500	-2.3930E+01	2.82000	-2.4010E+01	2.82500	-2.5760E+01	2.83000	-2.6670E+01	2.83500	-2.4930E+01
2.84000	-2.1230E+01	2.84500	-1.7530E+01	2.85000	-1.4980E+01	2.85500	-1.3060E+01	2.86000	-1.1670E+01
2.86500	-1.0510E+01	2.87000	-9.4130E+00	2.87500	-8.3370E+00	2.88000	-7.3180E+00	2.88500	-6.4080E+00
2.89000	-5.6130E+00	2.89500	-4.8990E+00	2.90000	-4.2230E+00	2.90500	-3.5640E+00	2.91000	-2.9180E+00
2.91500	-2.2920E+00	2.92000	-1.6970E+00	2.92500	-1.1410E+00	2.93000	-6.7200E-01	2.93500	-2.0200E-01
2.94000	2.2200E-01	2.94500	6.0300E-01	2.95000	9.5500E-01	2.95500	1.2930E+00	2.96000	1.6350E+00
2.96500	2.0070E+00	2.97000	2.4490E+00	2.97500	3.0140E+00	2.98000	3.7580E+00	2.98500	4.7160E+00
2.99000	5.8770E+00	2.99500	7.2280E+00	3.00000	8.8440E+00				

TIME FUNCTION NUMBER = (5)
 FUNCTION DESCRIPTION = (TH-5 NODE 6040 FORCE VS TIME)
 NUMBER OF ABSCISSAE = (758)
 FUNCTION SCALE FACTOR = (.1000E+04)

TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION	TIME	VALUE	FUNCTION
.00000	0.0000E+00		.00020	0.0000E+00		.00040	0.0000E+00		.00060	0.0000E+00		.00080	0.0000E+00	
.00100	0.0000E+00		.00131	0.0000E+00		.00162	0.0000E+00		.00194	0.0000E+00		.00225	0.0000E+00	
.00256	0.0000E+00		.00288	0.0000E+00		.00319	0.0000E+00		.00350	0.0000E+00		.00381	0.0000E+00	
.00411	0.0000E+00		.00442	0.0000E+00		.00473	0.0000E+00		.00504	0.0000E+00		.00535	0.0000E+00	
.00566	0.0000E+00		.00596	0.0000E+00		.00627	0.0000E+00		.00658	0.0000E+00		.00689	0.0000E+00	
.00719	0.0000E+00		.00750	0.0000E+00		.00781	0.0000E+00		.00812	0.0000E+00		.00843	0.0000E+00	
.00873	0.0000E+00		.00904	0.0000E+00		.00935	0.0000E+00		.00966	0.0000E+00		.00996	0.0000E+00	
.01027	0.0000E+00		.01058	0.0000E+00		.01088	0.0000E+00		.01119	0.0000E+00		.01150	0.0000E+00	
.01180	0.0000E+00		.01211	0.0000E+00		.01241	0.0000E+00		.01272	0.0000E+00		.01302	0.0000E+00	
.01333	1.0000E-03		.01364	1.0000E-03		.01394	1.0000E-03		.01425	1.0000E-03		.01455	1.0000E-03	
.01485	2.0000E-03		.01516	2.0000E-03		.01546	3.0000E-03		.01576	3.0000E-03		.01607	3.0000E-03	
.01637	4.0000E-03		.01667	4.0000E-03		.01698	5.0000E-03		.01728	5.0000E-03		.01758	6.0000E-03	
.01789	6.0000E-03		.01819	7.0000E-03		.01849	7.0000E-03		.01879	8.0000E-03		.01910	9.0000E-03	
.01940	9.0000E-03		.01970	1.0000E-02		.02000	1.0000E-02		.02031	1.1000E-02		.02061	1.1000E-02	
.02091	1.2000E-02		.02121	1.2000E-02		.02151	1.2000E-02		.02181	1.3000E-02		.02212	1.3000E-02	
.02242	1.4000E-02		.02272	1.4000E-02		.02302	1.5000E-02		.02332	1.5000E-02		.02362	1.6000E-02	
.02393	1.6000E-02		.02423	1.6000E-02		.02453	1.7000E-02		.02483	1.7000E-02		.02513	1.8000E-02	
.02543	1.8000E-02		.02573	1.8000E-02		.02603	1.9000E-02		.02633	1.9000E-02		.02663	1.9000E-02	
.02694	2.0000E-02		.02724	2.0000E-02		.02754	2.1000E-02		.02784	2.1000E-02		.02814	2.1000E-02	
.02844	2.2000E-02		.02874	2.2000E-02		.02904	2.3000E-02		.02934	2.3000E-02		.02964	2.3000E-02	
.02994	2.4000E-02		.03024	2.4000E-02		.03054	2.4000E-02		.03084	2.5000E-02		.03114	2.5000E-02	
.03144	2.6000E-02		.03174	2.6000E-02		.03204	2.6000E-02		.03234	2.7000E-02		.03264	2.7000E-02	
.03294	2.8000E-02		.03324	2.8000E-02		.03354	2.8000E-02		.03384	2.9000E-02		.03414	2.9000E-02	
.03444	2.9000E-02		.03474	3.0000E-02		.03504	3.0000E-02		.03534	3.1000E-02		.03564	3.1000E-02	
.03594	3.1000E-02		.03624	3.2000E-02		.03654	3.2000E-02		.03684	3.2000E-02		.03714	3.3000E-02	
.03744	3.3000E-02		.03774	3.4000E-02		.03804	3.4000E-02		.03833	3.4000E-02		.03863	3.5000E-02	
.03893	3.5000E-02		.03923	3.5000E-02		.03953	3.6000E-02		.03983	3.6000E-02		.04013	3.6000E-02	
.04043	3.7000E-02		.04073	3.7000E-02		.04103	3.7000E-02		.04133	3.8000E-02		.04163	3.8000E-02	
.04193	3.8000E-02		.04223	3.9000E-02		.04253	3.9000E-02		.04282	3.9000E-02		.04312	3.9000E-02	
.04342	4.0000E-02		.04372	4.0000E-02		.04402	4.0000E-02		.04432	4.0000E-02		.04462	4.0000E-02	
.04492	4.1000E-02		.04522	4.1000E-02		.04552	4.1000E-02		.04582	4.1000E-02		.04612	4.1000E-02	
.04641	4.1000E-02		.04671	4.1000E-02		.04701	4.1000E-02		.04731	4.1000E-02		.04761	4.1000E-02	
.04791	4.1000E-02		.04821	4.1000E-02		.04851	4.1000E-02		.04881	4.1000E-02		.04911	4.2000E-02	
.04941	4.2000E-02		.04970	4.2000E-02		.05000	4.3000E-02		.05479	1.6100E-01		.05986	1.3240E+00	
.06492	4.4280E+00		.06999	1.3610E+01		.07477	2.6630E+01		.07984	4.1180E+01		.08492	5.4190E+01	
.08999	6.4870E+01		.09475	7.2460E+01		.09982	7.8320E+01		.10490	8.0900E+01		.11000	7.8720E+01	
.11480	7.3670E+01		.11980	6.7000E+01		.12490	6.0350E+01		.13000	5.4670E+01		.13470	5.0690E+01	
.13980	4.8100E+01		.14490	4.9370E+01		.15000	5.6040E+01		.15470	6.5800E+01		.15980	7.7490E+01	
.16490	8.8630E+01		.17000	9.6240E+01		.17480	9.7810E+01		.17980	9.4430E+01		.18490	8.8460E+01	
.19000	8.1880E+01		.19480	7.5950E+01		.19980	7.0180E+01		.20490	6.5330E+01		.21000	6.0950E+01	
.21470	5.7320E+01		.21980	5.3990E+01		.22480	5.0910E+01		.22980	4.8170E+01		.23480	4.5800E+01	
.23980	4.3710E+01		.24480	4.1890E+01		.24980	4.0320E+01		.25480	3.8970E+01		.25970	3.7780E+01	
.26500	3.6650E+01		.26990	3.5670E+01		.27490	3.4770E+01		.27990	3.3930E+01		.28480	3.3140E+01	
.28980	3.2390E+01		.29470	3.1690E+01		.30000	3.0990E+01		.30490	3.0350E+01		.30990	2.9750E+01	
.31480	2.9180E+01		.31980	2.8620E+01		.32470	2.8090E+01		.33000	2.7540E+01		.33500	2.7050E+01	
.33990	2.6570E+01		.34490	2.6100E+01		.34980	2.5660E+01		.35480	2.5230E+01		.35970	2.4810E+01	
.36500	2.4400E+01		.36990	2.4030E+01		.37490	2.3680E+01		.37980	2.3350E+01		.38470	2.3040E+01	
.39000	2.2720E+01		.39490	2.2430E+01		.39980	2.2130E+01		.40500	2.1790E+01		.40990	2.1420E+01	
.41470	2.0970E+01		.41990	2.0410E+01		.42500	1.9750E+01		.42980	1.9090E+01		.43490	1.8390E+01	
.43970	1.7770E+01		.44480	1.7190E+01		.44980	1.6670E+01		.45490	1.6210E+01		.45990	1.5800E+01	
.46470	1.5440E+01		.46980	1.5090E+01		.47480	1.4770E+01		.47980	1.4490E+01		.48490	1.4240E+01	

1.99000	-4.7580E+01	1.99500	-4.0930E+01	2.00000	-3.4770E+01	2.00500	-2.8540E+01	2.01000	-2.3660E+01
2.01500	-1.9110E+01	2.02000	-1.5290E+01	2.02500	-1.2060E+01	2.03000	-9.5470E+00	2.03500	-7.0660E+00
2.04000	-4.6450E+00	2.04500	-2.3590E+00	2.05000	3.1600E-01	2.05500	3.2040E+00	2.06000	6.3580E+00
2.06500	9.5070E+00	2.07000	1.3310E+01	2.07500	1.7060E+01	2.08000	2.1350E+01	2.08500	2.5160E+01
2.09000	2.8960E+01	2.09500	3.1890E+01	2.10000	3.4520E+01	2.10500	3.6480E+01	2.11000	3.8240E+01
2.11500	3.7780E+01	2.12000	3.8030E+01	2.12500	3.8240E+01	2.13000	3.8360E+01	2.13500	3.8350E+01
2.14000	3.8440E+01	2.14500	4.0060E+01	2.15000	4.1480E+01	2.15500	4.2340E+01	2.16000	4.2860E+01
2.16500	4.3410E+01	2.17000	4.3950E+01	2.17500	4.4460E+01	2.18000	4.4180E+01	2.18500	4.3340E+01
2.19000	4.2650E+01	2.19500	4.2060E+01	2.20000	4.1060E+01	2.20500	3.9570E+01	2.21000	3.7520E+01
2.21500	3.5990E+01	2.22000	3.3910E+01	2.22500	3.0640E+01	2.23000	2.7220E+01	2.23500	2.4120E+01
2.24000	2.0830E+01	2.24500	1.8020E+01	2.25000	1.5550E+01	2.25500	1.3340E+01	2.26000	1.1490E+01
2.26500	9.9430E+00	2.27000	8.2430E+00	2.27500	6.6300E+00	2.28000	4.6720E+00	2.28500	2.6370E+00
2.29000	3.5000E-02	2.29500	-3.0270E+00	2.30000	-6.2790E+00	2.30500	-1.0420E+01	2.31000	-1.4480E+01
2.31500	-1.8870E+01	2.32000	-2.3520E+01	2.32500	-2.7960E+01	2.33000	-3.2500E+01	2.33500	-3.6690E+01
2.34000	-3.9870E+01	2.34500	-4.1790E+01	2.35000	-4.2660E+01	2.35500	-4.2680E+01	2.36000	-4.1840E+01
2.36500	-4.0380E+01	2.37000	-3.8600E+01	2.37500	-3.7350E+01	2.38000	-3.7300E+01	2.38500	-3.8220E+01
2.39000	-3.9490E+01	2.39500	-4.1480E+01	2.40000	-4.3900E+01	2.40500	-4.6180E+01	2.41000	-4.7640E+01
2.41500	-4.7820E+01	2.42000	-4.6400E+01	2.42500	-4.3980E+01	2.43000	-4.0250E+01	2.43500	-3.5640E+01
2.44000	-3.0970E+01	2.44500	-2.5740E+01	2.45000	-2.1020E+01	2.45500	-1.7100E+01	2.46000	-1.4150E+01
2.46500	-1.1420E+01	2.47000	-9.1360E+00	2.47500	-7.3780E+00	2.48000	-5.6760E+00	2.48500	-4.0900E+00
2.49000	-2.5040E+00	2.49500	-9.8500E-01	2.50000	8.4300E-01	2.50500	2.9080E+00	2.51000	5.0620E+00
2.51500	7.7980E+00	2.52000	1.0920E+01	2.52500	1.4010E+01	2.53000	1.7500E+01	2.53500	2.0950E+01
2.54000	2.4230E+01	2.54500	2.6960E+01	2.55000	2.9550E+01	2.55500	3.1630E+01	2.56000	3.3020E+01
2.56500	3.3850E+01	2.57000	3.2670E+01	2.57500	3.1740E+01	2.58000	3.0830E+01	2.58500	2.9880E+01
2.59000	2.9230E+01	2.59500	2.9080E+01	2.60000	3.0070E+01	2.60500	3.1640E+01	2.61000	3.2860E+01
2.61500	3.4170E+01	2.62000	3.5480E+01	2.62500	3.6590E+01	2.63000	3.7200E+01	2.63500	3.6850E+01
2.64000	3.5170E+01	2.64500	3.3070E+01	2.65000	3.0280E+01	2.65500	2.7390E+01	2.66000	2.4320E+01
2.66500	2.1910E+01	2.67000	2.0080E+01	2.67500	1.8320E+01	2.68000	1.6440E+01	2.68500	1.4330E+01
2.69000	1.2320E+01	2.69500	1.0450E+01	2.70000	8.7840E+00	2.70500	7.4840E+00	2.71000	6.2320E+00
2.71500	5.0350E+00	2.72000	3.7950E+00	2.72500	2.4190E+00	2.73000	9.8000E-01	2.73500	-9.0000E-01
2.74000	-3.2040E+00	2.74500	-5.9280E+00	2.75000	-8.8990E+00	2.75500	-1.2440E+01	2.76000	-1.7300E+01
2.76500	-2.3380E+01	2.77000	-2.8530E+01	2.77500	-3.2080E+01	2.78000	-3.4010E+01	2.78500	-3.4970E+01
2.79000	-3.4920E+01	2.79500	-3.3310E+01	2.80000	-3.0120E+01	2.80500	-2.7260E+01	2.81000	-2.5730E+01
2.81500	-2.5470E+01	2.82000	-2.6100E+01	2.82500	-2.7270E+01	2.83000	-2.9350E+01	2.83500	-3.2820E+01
2.84000	-3.6710E+01	2.84500	-3.9450E+01	2.85000	-4.0490E+01	2.85500	-4.0210E+01	2.86000	-3.8640E+01
2.86500	-3.5670E+01	2.87000	-3.1380E+01	2.87500	-2.6640E+01	2.88000	-2.2390E+01	2.88500	-1.8950E+01
2.89000	-1.6210E+01	2.89500	-1.3900E+01	2.90000	-1.1820E+01	2.90500	-9.8960E+00	2.91000	-8.1500E+00
2.91500	-6.5940E+00	2.92000	-5.2240E+00	2.92500	-4.0040E+00	2.93000	-2.9690E+00	2.93500	-1.8340E+00
2.94000	-6.2100E-01	2.94500	7.5200E-01	2.95000	2.3670E+00	2.95500	4.2870E+00	2.96000	6.5320E+00
2.96500	9.1070E+00	2.97000	1.2080E+01	2.97500	1.5540E+01	2.98000	1.9370E+01	2.98500	2.3160E+01
2.99000	2.6400E+01	2.99500	2.8680E+01	3.00000	2.9770E+01				

CODE FOR OUTPUT TYPE = 3
 EQ.1, HISTORY TABLE
 EQ.2, PRINTER PLOT
 EQ.3, MAXIMA ONLY
 PRINTER PLOT SPACING = 0

DYNAMIC (INERTIA ONLY) RESPONSES

DISPLACEMENT MAXIMA,

NODE NUMBER	DISPLACEMENT COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM	DISPLACEMENT COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM
101	1	6.8605E-07	1.5130E+00	4	3.7121E-07	1.5180E+00
	2	4.1342E-07	1.5160E+00	5	6.1538E-07	1.5140E+00
	3	1.9816E-07	1.3000E-01	6	1.0863E-07	5.4200E-01
9001	1	7.6967E-02	1.5140E+00	4	1.0047E-03	1.5190E+00
	2	4.2772E-02	1.5190E+00	5	1.7333E-03	1.5150E+00
	3	4.6348E-02	1.5160E+00	6	3.0736E-04	5.4200E-01
110	1	1.3840E-01	1.5140E+00	4	1.0048E-03	1.2300E-01
	2	7.6701E-02	1.9470E+00	5	1.7331E-03	1.5140E+00
	3	1.8978E-01	1.5170E+00	6	5.9056E-04	5.4200E-01
120	1	1.4053E-01	1.5140E+00	4	1.0000E-03	1.2200E-01
	2	7.9904E-02	1.9470E+00	5	1.7115E-03	1.5140E+00
	3	2.1340E-01	1.5170E+00	6	5.9997E-04	5.4200E-01
130	1	1.4323E-01	1.5140E+00	4	9.9156E-04	1.2200E-01
	2	8.3924E-02	1.9470E+00	5	1.6830E-03	1.5120E+00
	3	2.4246E-01	1.5170E+00	6	6.0895E-04	5.4200E-01
140	1	1.5410E-01	1.5140E+00	4	9.3331E-04	1.2200E-01
	2	1.0698E-01	5.4300E-01	5	1.5594E-03	1.5070E+00
	3	3.4910E-01	1.5170E+00	6	6.1814E-04	5.4200E-01
9002	1	1.3494E-01	1.5160E+00	4	6.0306E-04	1.2000E-01
	2	1.2571E-01	5.4300E-01	5	9.7769E-04	1.5070E+00
	3	4.4560E-01	1.5160E+00	6	5.4524E-04	1.7160E+00
150	1	9.3631E-02	1.5220E+00	4	5.2416E-04	5.4400E-01
	2	1.0145E-01	5.4200E-01	5	5.3759E-04	1.4900E+00
	3	4.6908E-01	1.5150E+00	6	4.7322E-04	1.7160E+00
9003	1	5.3841E-02	1.5300E+00	4	4.8217E-04	5.4300E-01
	2	6.1653E-02	1.8910E+00	5	5.0641E-04	1.5190E+00
	3	4.6880E-01	1.5150E+00	6	4.1769E-04	1.7160E+00
9004	1	2.8749E-02	4.6000E-02	4	3.7998E-04	5.4300E-01
	2	3.0780E-02	1.7210E+00	5	6.2047E-04	1.5200E+00
	3	4.6819E-01	1.5150E+00	6	3.6582E-04	1.7170E+00
6020	1	4.1655E-02	1.5180E+00	4	2.2190E-04	1.8910E+00
	2	2.1310E-02	6.1000E-02	5	8.4753E-04	1.5190E+00
	3	4.6733E-01	1.5150E+00	6	3.1759E-04	1.7170E+00
9005	1	1.1127E-01	1.5190E+00	4	8.6179E-05	1.1600E-01
	2	1.8514E-02	6.2000E-02	5	9.1441E-04	1.5180E+00
	3	4.6618E-01	1.5150E+00	6	2.6984E-04	1.7170E+00
9006	1	1.7043E-01	1.5180E+00	4	1.2062E-04	6.1000E-02
	2	1.2804E-02	7.4000E-02	5	5.8826E-04	1.5100E+00
	3	4.6475E-01	1.5150E+00	6	2.2210E-04	1.7170E+00
6040	1	1.9147E-01	1.5180E+00	4	1.3763E-04	7.4000E-02
	2	2.7471E-03	2.7000E-02	5	5.2443E-04	1.3000E-02

	3	4.6301E-01	1.5150E+00	6	1.7446E-04	1.7180E+00
160	1	1.8901E-01	1.5170E+00	4	1.3526E-04	1.9500E-01
	2	2.4511E-03	1.1700E-01	5	5.2246E-04	1.3000E-02
	3	4.6263E-01	1.5150E+00	6	1.6649E-04	1.6000E-01
9007	1	1.3434E-01	2.1000E-02	4	1.2117E-04	1.2200E-01
	2	8.0312E-03	1.9600E-01	5	2.8261E-03	1.5180E+00
	3	4.0253E-01	1.5140E+00	6	1.4759E-04	6.1000E-02
170	1	1.3582E-01	2.0000E-02	4	1.2028E-04	1.2200E-01
	2	1.1635E-02	2.0800E-01	5	3.1465E-03	1.4890E+00
	3	1.7183E-01	1.5140E+00	6	9.9673E-05	6.0000E-02
6050	1	1.3552E-01	2.0000E-02	4	1.1748E-04	1.2200E-01
	2	1.1620E-02	2.0800E-01	5	2.9093E-03	1.4880E+00
	3	9.8559E-02	1.5170E+00	6	8.6529E-05	6.0000E-02
6060	1	1.3534E-01	2.0000E-02	4	1.1608E-04	1.2200E-01
	2	1.1542E-02	2.0800E-01	5	2.7540E-03	1.4880E+00
	3	6.9644E-02	2.0500E-01	6	8.1914E-05	4.6000E-02
9008	1	1.3408E-01	2.0000E-02	4	1.0804E-04	1.2200E-01
	2	1.0657E-02	6.0000E-02	5	1.8958E-03	1.4870E+00
	3	1.3678E-01	2.3900E-01	6	5.7718E-05	4.7000E-02
9009	1	1.3237E-01	2.0000E-02	4	9.9998E-05	1.2200E-01
	2	1.0030E-02	6.0000E-02	5	1.2029E-03	1.6950E+00
	3	2.3539E-01	2.3900E-01	6	4.6954E-05	2.0800E-01
9010	1	1.3019E-01	2.0000E-02	4	9.1972E-05	1.2100E-01
	2	6.0248E-03	6.1000E-02	5	6.5231E-04	2.4100E-01
	3	2.9986E-01	2.3900E-01	6	6.5647E-05	6.0000E-02
6070	1	1.2754E-01	2.0000E-02	4	8.4145E-05	1.2100E-01
	2	1.6822E-03	4.7000E-02	5	2.8489E-04	1.9800E-01
	3	3.2476E-01	2.3900E-01	6	5.1778E-05	6.2000E-02
6080	1	1.2571E-01	1.9000E-02	4	7.8699E-05	1.2100E-01
	2	2.5775E-03	8.5000E-02	5	4.6945E-04	1.4870E+00
	3	3.1850E-01	2.3900E-01	6	3.4901E-05	6.5000E-02
9011	1	1.2321E-01	1.9000E-02	4	7.1666E-05	1.2100E-01
	2	4.3477E-03	8.5000E-02	5	7.7609E-04	1.4200E-01
	3	2.8391E-01	2.4000E-01	6	2.0300E-05	1.1700E-01
180	1	1.2027E-01	1.9000E-02	4	6.4633E-05	1.2100E-01
	2	4.9576E-03	8.5000E-02	5	1.0875E-03	2.4000E-01
	3	2.2425E-01	2.4000E-01	6	7.1710E-06	6.0000E-02
9012	1	1.1835E-01	1.8000E-02	4	6.0125E-05	1.2100E-01
	2	4.3625E-03	8.6000E-02	5	1.1803E-03	2.4000E-01
	3	1.6767E-01	2.4000E-01	6	1.9916E-05	8.5000E-02
9013	1	1.1581E-01	1.8000E-02	4	5.5694E-05	1.2000E-01
	2	3.0046E-03	8.6000E-02	5	1.1210E-03	2.4000E-01
	3	1.0962E-01	2.4000E-01	6	2.9502E-05	8.6000E-02
6090	1	1.1258E-01	1.8000E-02	4	5.1383E-05	1.2000E-01
	2	1.4477E-03	8.5000E-02	5	8.8625E-04	2.4000E-01

	3	3.1643E-02	6.0000E-02	6	1.5413E-05	1.6500E-01
300	1	6.3177E-02	2.4000E-02	4	2.3170E-05	1.4900E-01
	2	1.6383E-03	1.6600E-01	5	3.8285E-04	6.2000E-02
	3	2.8784E-02	5.9000E-02	6	1.5885E-05	1.6600E-01
310	1	6.1907E-02	2.4000E-02	4	2.2242E-05	1.4900E-01
	2	1.1138E-03	1.6600E-01	5	5.1339E-04	6.2000E-02
	3	2.8156E-02	4.3000E-02	6	1.5855E-05	1.6600E-01
315	1	9.6327E-02	2.4000E-02	4	2.2260E-05	1.4900E-01
	2	1.4526E-03	2.1830E+00	5	5.1896E-04	6.2000E-02
	3	2.8245E-02	4.3000E-02	6	1.5855E-05	1.6600E-01
320	1	6.0116E-02	2.4000E-02	4	2.0120E-05	1.4900E-01
	2	6.0677E-04	1.6600E-01	5	3.9905E-04	6.1000E-02
	3	2.4518E-02	4.3000E-02	6	1.5218E-05	1.6600E-01
330	1	5.6914E-02	2.4000E-02	4	1.6275E-05	1.4900E-01
	2	3.1783E-04	1.6600E-01	5	2.6914E-04	6.0000E-02
	3	1.8084E-02	4.3000E-02	6	1.3401E-05	1.6600E-01
340	1	5.3510E-02	2.4000E-02	4	1.2225E-05	1.4900E-01
	2	5.6939E-05	5.4000E-02	5	2.1742E-04	4.3000E-02
	3	1.1494E-02	1.0000E-02	6	1.0918E-05	1.6600E-01
1000	1	9.7232E-02	1.8000E-02	4	4.4470E-05	1.4600E-01
	2	2.0874E-03	1.6500E-01	5	2.2650E-04	1.5700E-01
	3	5.0969E-03	8.3000E-02	6	1.1761E-05	1.6400E-01
1002	1	9.6743E-02	1.8000E-02	4	4.9395E-05	1.4600E-01
	2	2.0642E-03	1.6500E-01	5	6.1552E-04	3.5000E-02
	3	5.1696E-03	8.3000E-02	6	1.1937E-05	1.6400E-01
1003	1	9.4036E-02	1.8000E-02	4	5.8445E-05	1.4600E-01
	2	2.1461E-03	8.3300E-01	5	1.4505E-03	3.5000E-02
	3	5.3141E-03	8.3000E-02	6	1.2342E-05	1.6500E-01
1010	1	9.2817E-02	2.5000E-02	4	6.7306E-05	1.4700E-01
	2	2.4150E-03	8.3300E-01	5	2.2219E-03	3.5000E-02
	3	5.4726E-03	8.3000E-02	6	1.3022E-05	1.6600E-01
1020	1	1.1303E-01	3.2000E-02	4	7.2229E-05	1.4700E-01
	2	3.2002E-03	8.3200E-01	5	2.6309E-03	6.0000E-02
	3	5.6001E-03	8.3000E-02	6	1.3702E-05	1.6600E-01
1025	1	1.5672E-01	3.4000E-02	4	7.2229E-05	1.4700E-01
	2	4.0270E-03	8.3200E-01	5	2.6309E-03	6.0000E-02
	3	5.6026E-03	8.3000E-02	6	1.3702E-05	1.6600E-01
1040	1	1.1310E-01	3.2000E-02	4	8.0191E-05	1.4700E-01
	2	3.2017E-03	8.3200E-01	5	2.6365E-03	6.0000E-02
	3	5.7509E-03	8.3000E-02	6	1.6374E-05	1.6500E-01
1050	1	1.1316E-01	3.2000E-02	4	8.6766E-05	1.4700E-01
	2	3.2036E-03	8.3200E-01	5	2.6436E-03	6.0000E-02
	3	5.8679E-03	8.3000E-02	6	1.7466E-05	1.6400E-01
1060	1	1.5280E-01	3.4000E-02	4	2.0449E-04	5.0000E-03
	2	5.3977E-03	8.3200E-01	5	2.7039E-03	6.0000E-02

	3	5.8532E-02	2.3900E-01	6	2.5473E-05	8.7000E-02
6091	1	1.1163E-01	1.8000E-02	4	5.0394E-05	1.2000E-01
	2	1.2622E-03	1.0000E-01	5	8.1400E-04	2.4000E-01
	3	4.9407E-02	2.3900E-01	6	2.2481E-05	8.7000E-02
190	1	1.0943E-01	1.8000E-02	4	4.8224E-05	1.2000E-01
	2	1.1302E-03	9.9000E-02	5	6.6809E-04	2.3900E-01
	3	3.5107E-02	2.3900E-01	6	1.7358E-05	1.9500E-01
200	1	1.0842E-01	1.8000E-02	4	4.7275E-05	1.4500E-01
	2	1.1521E-03	1.6600E-01	5	6.0787E-04	2.3900E-01
	3	2.9586E-02	2.3900E-01	6	1.5823E-05	1.9600E-01
210	1	1.0740E-01	1.8000E-02	4	4.6952E-05	1.4500E-01
	2	1.2396E-03	1.6600E-01	5	5.5086E-04	2.3900E-01
	3	2.4589E-02	2.3900E-01	6	1.4407E-05	1.9600E-01
220	1	1.0636E-01	1.8000E-02	4	4.6628E-05	1.4500E-01
	2	1.3352E-03	1.6600E-01	5	4.9700E-04	2.3900E-01
	3	2.0139E-02	1.5500E-01	6	1.4248E-05	4.4000E-01
230	1	1.0532E-01	1.8000E-02	4	4.6305E-05	1.4500E-01
	2	1.4370E-03	1.6600E-01	5	4.4621E-04	2.3900E-01
	3	1.6984E-02	1.5500E-01	6	1.4137E-05	4.4100E-01
239	1	1.0004E-01	1.8000E-02	4	4.4724E-05	1.4500E-01
	2	1.9765E-03	1.6600E-01	5	2.3898E-04	2.3800E-01
	3	6.1059E-03	4.3000E-02	6	1.2261E-05	4.4100E-01
240	1	9.7805E-02	1.8000E-02	4	4.4159E-05	1.4600E-01
	2	2.1934E-03	1.6600E-01	5	2.0560E-04	1.5700E-01
	3	5.0359E-03	8.3000E-02	6	1.1752E-05	1.6400E-01
250	1	9.2838E-02	1.8000E-02	4	4.1928E-05	1.4600E-01
	2	2.6245E-03	1.6500E-01	5	1.9004E-04	4.2000E-02
	3	5.6254E-03	2.3600E-01	6	9.1698E-06	1.1700E-01
260	1	8.7692E-02	1.8000E-02	4	3.8925E-05	1.4700E-01
	2	2.9096E-03	1.6500E-01	5	1.8821E-04	4.2000E-02
	3	9.4367E-03	4.2000E-02	6	5.2008E-06	1.1600E-01
261	1	8.5256E-02	1.8000E-02	4	3.7246E-05	1.4700E-01
	2	2.9743E-03	1.6500E-01	5	2.0992E-04	6.0000E-02
	3	1.1878E-02	4.2000E-02	6	4.5763E-06	6.9000E-02
9014	1	7.7282E-02	1.8000E-02	4	3.1929E-05	1.4700E-01
	2	2.8567E-03	1.6500E-01	5	2.1625E-04	6.0000E-02
	3	2.3730E-02	6.1000E-02	6	6.9354E-06	4.4100E-01
280	1	6.8950E-02	1.8000E-02	4	2.6779E-05	1.4800E-01
	2	2.2684E-03	1.6600E-01	5	1.1537E-04	1.0000E-02
	3	3.3488E-02	6.1000E-02	6	1.3287E-05	1.6400E-01
290	1	6.6103E-02	1.8000E-02	4	2.5076E-05	1.4800E-01
	2	1.9879E-03	1.6600E-01	5	1.7679E-04	6.2000E-02
	3	3.2903E-02	6.0000E-02	6	1.4869E-05	1.6500E-01
291	1	6.4731E-02	1.8000E-02	4	2.4257E-05	1.4800E-01
	2	1.8418E-03	1.6600E-01	5	2.5976E-04	6.2000E-02

	3	7.3430E-03	2.7800E-01	6	6.5845E-05	6.2000E-02
1070	1	1.7915E-01	3.4000E-02	4	2.0545E-04	5.0000E-03
	2	7.0025E-03	8.3200E-01	5	2.7051E-03	6.0000E-02
	3	7.3453E-03	2.7800E-01	6	6.5845E-05	6.2000E-02
1080	1	1.1311E-01	3.2000E-02	4	6.4592E-05	1.4600E-01
	2	3.1988E-03	8.3200E-01	5	2.6368E-03	6.0000E-02
	3	5.6256E-03	8.3000E-02	6	1.3035E-05	2.0700E-01
1090	1	1.1318E-01	3.2000E-02	4	7.1526E-05	4.2500E-01
	2	3.1970E-03	8.3200E-01	5	2.6442E-03	6.0000E-02
	3	5.6892E-03	8.3000E-02	6	1.4843E-05	8.4000E-02
1100	1	1.5276E-01	3.4000E-02	4	2.0902E-04	5.0000E-03
	2	5.1703E-03	5.4900E-01	5	2.7075E-03	6.0000E-02
	3	7.3386E-03	4.3000E-02	6	6.9492E-05	5.9000E-02
1110	1	1.7912E-01	3.4000E-02	4	2.0999E-04	5.0000E-03
	2	6.8586E-03	5.4900E-01	5	2.7088E-03	6.0000E-02
	3	7.3411E-03	4.3000E-02	6	6.9492E-05	5.9000E-02
1120	1	9.2157E-02	1.8000E-02	4	4.2171E-05	1.4600E-01
	2	2.5085E-03	1.6400E-01	5	2.0999E-04	4.2000E-02
	3	5.6205E-03	2.3600E-01	6	9.1743E-06	1.1700E-01
1122	1	9.1716E-02	1.8000E-02	4	4.6531E-05	1.4700E-01
	2	2.4898E-03	1.6400E-01	5	6.2175E-04	3.5000E-02
	3	5.6147E-03	2.3600E-01	6	9.2775E-06	1.6400E-01
1123	1	8.9359E-02	1.8000E-02	4	5.5155E-05	1.4800E-01
	2	2.4387E-03	1.6400E-01	5	1.4013E-03	3.5000E-02
	3	5.6031E-03	2.3600E-01	6	9.7229E-06	1.6400E-01
1130	1	9.0095E-02	2.5000E-02	4	6.4342E-05	1.4800E-01
	2	2.6676E-03	1.8980E+00	5	2.1188E-03	3.5000E-02
	3	5.6005E-03	1.6200E-01	6	1.0352E-05	1.6500E-01
1140	1	1.0885E-01	3.2000E-02	4	6.9981E-05	1.4800E-01
	2	3.4263E-03	2.1830E+00	5	2.4769E-03	3.5000E-02
	3	5.6098E-03	1.6200E-01	6	1.0840E-05	1.6500E-01
1145	1	1.5043E-01	3.4000E-02	4	6.9981E-05	1.4800E-01
	2	4.2509E-03	2.1830E+00	5	2.4769E-03	3.5000E-02
	3	5.6100E-03	1.6200E-01	6	1.0840E-05	1.6500E-01
1160	1	1.0891E-01	3.2000E-02	4	7.1485E-05	1.4800E-01
	2	3.4264E-03	2.1830E+00	5	2.4800E-03	3.5000E-02
	3	5.7119E-03	1.6200E-01	6	1.3809E-05	1.6400E-01
1170	1	1.0897E-01	3.2000E-02	4	7.2866E-05	1.4800E-01
	2	3.4264E-03	2.1830E+00	5	2.4840E-03	3.5000E-02
	3	5.7563E-03	1.6200E-01	6	1.5039E-05	1.6300E-01
1180	1	1.4659E-01	3.4000E-02	4	8.8694E-05	1.4800E-01
	2	4.3667E-03	8.3400E-01	5	2.5152E-03	3.5000E-02
	3	5.8711E-03	1.6200E-01	6	6.1671E-05	6.1000E-02
1190	1	1.7163E-01	3.4000E-02	4	8.8813E-05	1.4800E-01
	2	5.0782E-03	8.3400E-01	5	2.5155E-03	3.5000E-02

1200	1	1.0894E-01	3.2000E-02	4	6.9359E-05	1.4800E-01
	2	3.4264E-03	2.1830E+00	5	2.4801E-03	3.5000E-02
	3	5.7817E-03	2.3600E-01	6	1.3135E-05	8.4000E-02
1210	1	1.0900E-01	3.2000E-02	4	6.8755E-05	1.4800E-01
	2	3.4264E-03	2.1830E+00	5	2.4842E-03	3.5000E-02
	3	5.8604E-03	2.3600E-01	6	1.5985E-05	8.4000E-02
1220	1	1.4663E-01	3.4000E-02	4	6.8368E-05	1.5000E-02
	2	4.1727E-03	2.1830E+00	5	2.5166E-03	3.5000E-02
	3	6.6509E-03	1.4600E-01	6	6.3388E-05	6.0000E-02
1230	1	1.7169E-01	3.4000E-02	4	6.8661E-05	1.5000E-02
	2	4.6723E-03	2.1830E+00	5	2.5169E-03	3.5000E-02
	3	6.6508E-03	1.4600E-01	6	6.3388E-05	6.0000E-02
1240	1	8.6525E-02	1.7000E-02	4	3.9165E-05	1.4700E-01
	2	2.7836E-03	1.6400E-01	5	2.0626E-04	4.2000E-02
	3	9.5291E-03	4.2000E-02	6	5.2128E-06	1.1600E-01
1242	1	8.6104E-02	1.7000E-02	4	4.3538E-05	1.4800E-01
	2	2.7614E-03	1.6400E-01	5	5.8248E-04	3.6000E-02
	3	9.6391E-03	4.2000E-02	6	5.4510E-06	1.1700E-01
1243	1	8.4071E-02	1.8000E-02	4	5.2647E-05	1.4800E-01
	2	2.7008E-03	1.6400E-01	5	1.3266E-03	3.5000E-02
	3	9.8579E-03	4.2000E-02	6	6.0147E-06	1.1700E-01
1250	1	8.6027E-02	2.5000E-02	4	6.2320E-05	1.4800E-01
	2	2.7602E-03	4.9200E-01	5	2.0177E-03	3.4000E-02
	3	1.0107E-02	4.3000E-02	6	6.6382E-06	1.1700E-01
1260	1	1.0400E-01	3.0000E-02	4	6.8597E-05	1.4800E-01
	2	3.5201E-03	2.1830E+00	5	2.3685E-03	3.4000E-02
	3	1.0319E-02	4.3000E-02	6	7.1114E-06	1.1700E-01
1265	1	1.4313E-01	3.4000E-02	4	6.8597E-05	1.4800E-01
	2	4.3675E-03	2.1830E+00	5	2.3685E-03	3.4000E-02
	3	1.0323E-02	4.3000E-02	6	7.1114E-06	1.1700E-01
1280	1	1.0406E-01	3.0000E-02	4	6.0232E-05	1.4800E-01
	2	3.5202E-03	2.1830E+00	5	2.3717E-03	3.4000E-02
	3	1.0770E-02	4.3000E-02	6	9.5140E-06	3.9000E-02
1290	1	1.0412E-01	3.0000E-02	4	6.7341E-05	8.9200E-01
	2	3.5203E-03	2.1830E+00	5	2.3757E-03	3.4000E-02
	3	1.1054E-02	4.3000E-02	6	1.2675E-05	3.9000E-02
1300	1	1.3944E-01	3.4000E-02	4	1.9201E-04	5.0000E-03
	2	5.6370E-03	8.9000E-01	5	2.4082E-03	3.4000E-02
	3	1.3063E-02	4.3000E-02	6	5.7137E-05	5.9000E-02
1310	1	1.6352E-01	3.4000E-02	4	1.9283E-04	5.0000E-03
	2	7.2177E-03	8.9000E-01	5	2.4085E-03	3.4000E-02
	3	1.3067E-02	4.3000E-02	6	5.7137E-05	5.9000E-02
1320	1	1.0408E-01	3.0000E-02	4	7.8212E-05	1.4800E-01
	2	3.5202E-03	2.1830E+00	5	2.3718E-03	3.4000E-02

	3	1.0159E-02	4.3000E-02	6	1.1367E-05	8.4000E-02
1330	1	1.0414E-01	3.0000E-02	4	8.5879E-05	1.4800E-01
	2	3.5202E-03	2.1830E+00	5	2.3759E-03	3.4000E-02
	3	1.0171E-02	4.3000E-02	6	1.4026E-05	8.4000E-02
1340	1	1.3951E-01	3.4000E-02	4	1.9867E-04	5.0000E-03
	2	5.5336E-03	4.9100E-01	5	2.4093E-03	3.4000E-02
	3	1.1169E-02	4.3000E-02	6	5.4328E-05	6.0000E-02
1350	1	1.6360E-01	3.4000E-02	4	1.9952E-04	5.0000E-03
	2	7.1299E-03	4.9100E-01	5	2.4096E-03	3.4000E-02
	3	1.1171E-02	4.3000E-02	6	5.4328E-05	6.0000E-02
4000	1	6.6208E-02	1.7000E-02	4	2.5087E-05	1.4800E-01
	2	2.1563E-03	1.6600E-01	5	1.7379E-04	6.2000E-02
	3	3.2900E-02	6.0000E-02	6	1.4869E-05	1.6500E-01
4010	1	6.6431E-02	1.7000E-02	4	2.5151E-05	1.4900E-01
	2	2.1930E-03	1.6600E-01	5	1.6898E-04	1.0000E-02
	3	3.2897E-02	6.0000E-02	6	1.4869E-05	1.6500E-01
4020	1	6.8336E-02	1.7000E-02	4	2.5420E-05	1.4900E-01
	2	2.4843E-03	1.1500E-01	5	1.6276E-04	1.0000E-02
	3	3.2886E-02	6.0000E-02	6	1.4869E-05	1.6500E-01
4030	1	6.9076E-02	1.7000E-02	4	2.5429E-05	1.4900E-01
	2	2.6515E-03	1.1500E-01	5	1.6258E-04	1.0000E-02
	3	3.2885E-02	6.0000E-02	6	1.4869E-05	1.6500E-01

ABSOLUTE ACCELERATION RESPONSES IN G-UNITS

ACCELERATION MAXIMA

NODE NUMBER	ACCELERATION COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM	ACCELERATION COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM
101	1	3.4783E+02	1.5060E+00	4	2.6456E-05	4.6000E-02
	2	3.4783E+02	1.5060E+00	5	2.9146E-05	3.2000E-02
	3	3.4783E+02	1.5060E+00	6	3.0024E-06	4.5000E-02
9001	1	3.4779E+02	1.5060E+00	4	3.9350E-02	4.4000E-02
	2	3.4773E+02	1.5060E+00	5	3.3383E-02	5.7000E-02
	3	3.4787E+02	1.5060E+00	6	6.8653E-03	1.0200E-01
110	1	3.4780E+02	1.5060E+00	4	1.6740E-02	1.0000E-01
	2	3.4765E+02	1.5060E+00	5	2.8134E-02	3.1000E-02
	3	3.4793E+02	1.5060E+00	6	1.9838E-02	2.2000E-02
120	1	3.4780E+02	1.5060E+00	4	1.7145E-02	1.0000E-01
	2	3.4764E+02	1.5060E+00	5	2.4139E-02	4.8000E-02
	3	3.4793E+02	1.5060E+00	6	2.0067E-02	2.2000E-02
130	1	3.4780E+02	1.5060E+00	4	1.7540E-02	1.0000E-01
	2	3.4764E+02	1.5060E+00	5	2.3089E-02	2.3000E-02
	3	3.4793E+02	1.5060E+00	6	1.9812E-02	2.2000E-02
140	1	3.4780E+02	1.5060E+00	4	2.1747E-02	8.6000E-02
	2	3.4765E+02	1.5060E+00	5	3.7444E-02	3.6000E-02
	3	3.4791E+02	1.5060E+00	6	1.4669E-02	4.5000E-02
9002	1	3.4773E+02	1.5060E+00	4	2.6111E-02	5.1000E-02
	2	3.4771E+02	1.5060E+00	5	4.7229E-02	2.3000E-02
	3	3.4785E+02	1.5060E+00	6	2.8885E-02	3.4000E-02
150	1	3.4771E+02	1.5060E+00	4	3.0772E-02	4.4000E-02
	2	3.4783E+02	1.5060E+00	5	5.0022E-02	3.6000E-02
	3	3.4786E+02	1.5060E+00	6	2.5878E-02	3.4000E-02
9003	1	3.4786E+02	1.5060E+00	4	3.0576E-02	4.6000E-02
	2	3.4795E+02	1.5060E+00	5	5.1879E-02	3.2000E-02
	3	3.4785E+02	1.5060E+00	6	2.3823E-02	3.4000E-02
9004	1	3.4803E+02	1.5060E+00	4	2.7741E-02	3.7000E-02
	2	3.4801E+02	1.5060E+00	5	5.1320E-02	3.7000E-02
	3	3.4785E+02	1.5060E+00	6	2.1900E-02	3.4000E-02
6020	1	3.4817E+02	1.5060E+00	4	2.0978E-02	4.6000E-02
	2	3.4802E+02	1.5060E+00	5	5.5594E-02	1.3000E-02
	3	3.4785E+02	1.5060E+00	6	2.0110E-02	3.4000E-02
9005	1	3.4827E+02	1.5060E+00	4	2.4835E-02	4.7000E-02
	2	3.4803E+02	1.5060E+00	5	5.8039E-02	2.6000E-02
	3	3.4786E+02	1.5060E+00	6	1.8338E-02	3.4000E-02
9006	1	3.4821E+02	1.5060E+00	4	1.8572E-02	6.2000E-02
	2	3.4797E+02	1.5060E+00	5	5.9668E-02	1.4000E-02
	3	3.4786E+02	1.5060E+00	6	1.6566E-02	3.4000E-02
6040	1	3.4799E+02	1.5060E+00	4	2.2168E-02	7.3000E-02
	2	3.4785E+02	1.5060E+00	5	7.6599E-02	1.2000E-02

	3	3.4786E+02	1.5060E+00	6	1.4829E-02	4.1000E-02
160	1	3.4793E+02	1.5060E+00	4	2.2231E-02	4.2000E-02
	2	3.4782E+02	1.5060E+00	5	7.9122E-02	2.7000E-02
	3	3.4786E+02	1.5060E+00	6	1.4872E-02	4.1000E-02
9007	1	3.4771E+02	1.5060E+00	4	2.0306E-02	3.6000E-02
	2	3.4776E+02	1.5060E+00	5	8.8634E-02	1.0000E-02
	3	3.4778E+02	1.5060E+00	6	1.8524E-02	4.1000E-02
170	1	3.4770E+02	1.5060E+00	4	1.4722E-02	3.6000E-02
	2	3.4780E+02	1.5060E+00	5	4.6064E-02	9.0000E-03
	3	3.4780E+02	1.5060E+00	6	1.7762E-02	3.6000E-02
6050	1	3.4769E+02	1.5060E+00	4	1.4310E-02	3.6000E-02
	2	3.4782E+02	1.5060E+00	5	5.6136E-02	9.0000E-03
	3	3.4783E+02	1.5060E+00	6	1.5541E-02	3.6000E-02
6060	1	3.4769E+02	1.5060E+00	4	1.4104E-02	3.6000E-02
	2	3.4783E+02	1.5060E+00	5	5.8436E-02	9.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.3957E-02	3.6000E-02
9008	1	3.4769E+02	1.5060E+00	4	1.2919E-02	3.6000E-02
	2	3.4787E+02	1.5060E+00	5	4.9393E-02	2.6000E-02
	3	3.4793E+02	1.5060E+00	6	1.2386E-02	4.7000E-02
9009	1	3.4770E+02	1.5060E+00	4	1.1733E-02	3.6000E-02
	2	3.4788E+02	1.5060E+00	5	3.9369E-02	1.3000E-02
	3	3.4793E+02	1.5060E+00	6	8.5914E-03	4.1000E-02
9010	1	3.4770E+02	1.5060E+00	4	1.0548E-02	3.6000E-02
	2	3.4786E+02	1.5060E+00	5	4.7727E-02	1.5000E-02
	3	3.4786E+02	1.5060E+00	6	7.5232E-03	5.9000E-02
6070	1	3.4770E+02	1.5060E+00	4	9.3802E-03	7.4000E-02
	2	3.4784E+02	1.5060E+00	5	3.4211E-02	3.2000E-02
	3	3.4779E+02	1.5060E+00	6	9.7614E-03	4.6000E-02
6080	1	3.4771E+02	1.5060E+00	4	8.7650E-03	7.4000E-02
	2	3.4783E+02	1.5060E+00	5	3.7136E-02	1.4000E-02
	3	3.4777E+02	1.5060E+00	6	5.9737E-03	4.7000E-02
9011	1	3.4771E+02	1.5060E+00	4	7.9702E-03	7.4000E-02
	2	3.4782E+02	1.5060E+00	5	4.2932E-02	2.0000E-02
	3	3.4779E+02	1.5060E+00	6	4.5017E-03	7.4000E-02
180	1	3.4772E+02	1.5060E+00	4	7.1757E-03	7.4000E-02
	2	3.4782E+02	1.5060E+00	5	3.4549E-02	3.8000E-02
	3	3.4784E+02	1.5060E+00	6	3.0588E-03	4.5000E-02
9012	1	3.4772E+02	1.5060E+00	4	6.6663E-03	7.4000E-02
	2	3.4782E+02	1.5060E+00	5	3.5118E-02	2.0000E-02
	3	3.4787E+02	1.5060E+00	6	2.3858E-03	6.4000E-02
9013	1	3.4773E+02	1.5060E+00	4	6.1570E-03	7.4000E-02
	2	3.4783E+02	1.5060E+00	5	4.0912E-02	2.0000E-02
	3	3.4788E+02	1.5060E+00	6	4.8316E-03	7.4000E-02
6090	1	3.4774E+02	1.5060E+00	4	5.6477E-03	7.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.8403E-02	3.2000E-02

	3	3.4787E+02	1.5060E+00	6	4.2155E-03	8.9000E-02
6091	1	3.4774E+02	1.5060E+00	4	5.5309E-03	7.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.6362E-02	3.8000E-02
	3	3.4787E+02	1.5060E+00	6	3.6870E-03	8.9000E-02
190	1	3.4775E+02	1.5060E+00	4	5.2745E-03	7.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.8929E-02	5.0000E-03
	3	3.4786E+02	1.5060E+00	6	2.3905E-03	8.9000E-02
200	1	3.4775E+02	1.5060E+00	4	5.1887E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.0785E-02	1.0000E-02
	3	3.4785E+02	1.5060E+00	6	1.7749E-03	8.8000E-02
210	1	3.4775E+02	1.5060E+00	4	5.1068E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.2169E-02	1.0000E-02
	3	3.4785E+02	1.5060E+00	6	1.6531E-03	6.9000E-02
220	1	3.4775E+02	1.5060E+00	4	5.0249E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.2296E-02	1.0000E-02
	3	3.4784E+02	1.5060E+00	6	2.1135E-03	6.9000E-02
230	1	3.4776E+02	1.5060E+00	4	4.9430E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.2726E-02	1.5000E-02
	3	3.4784E+02	1.5060E+00	6	2.5459E-03	6.9000E-02
239	1	3.4777E+02	1.5060E+00	4	4.5424E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	2.8164E-02	2.7000E-02
	3	3.4782E+02	1.5060E+00	6	4.0089E-03	5.9000E-02
240	1	3.4777E+02	1.5060E+00	4	4.3786E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.0364E-02	4.3000E-02
	3	3.4782E+02	1.5060E+00	6	3.9703E-03	5.9000E-02
250	1	3.4778E+02	1.5060E+00	4	4.1795E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	5.8806E-02	5.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.5124E-03	4.9000E-02
260	1	3.4780E+02	1.5060E+00	4	4.0789E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	6.3610E-02	5.0000E-03
	3	3.4785E+02	1.5060E+00	6	9.4436E-04	3.6000E-02
261	1	3.4780E+02	1.5060E+00	4	4.0500E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	5.7309E-02	5.0000E-03
	3	3.4787E+02	1.5060E+00	6	2.0252E-03	5.3000E-02
9014	1	3.4782E+02	1.5060E+00	4	3.9585E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.3077E-02	4.7000E-02
	3	3.4795E+02	1.5060E+00	6	4.1212E-03	5.9000E-02
280	1	3.4784E+02	1.5060E+00	4	3.8670E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	7.1381E-02	1.0000E-02
	3	3.4797E+02	1.5060E+00	6	2.0867E-03	5.9000E-02
290	1	3.4784E+02	1.5060E+00	4	3.8365E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	8.3935E-02	1.0000E-02
	3	3.4795E+02	1.5060E+00	6	1.1291E-03	1.1700E-01
291	1	3.4784E+02	1.5060E+00	4	3.6630E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	8.5454E-02	1.0000E-02

	3	3.4793E+02	1.5060E+00	6	1.0706E-03	1.1400E-01
300	1	3.4785E+02	1.5060E+00	4	3.4315E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	8.4391E-02	1.0000E-02
	3	3.4791E+02	1.5060E+00	6	1.5260E-03	6.9000E-02
310	1	3.4785E+02	1.5060E+00	4	3.2293E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	7.9031E-02	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	2.0299E-03	6.9000E-02
315	1	3.4811E+02	1.5060E+00	4	3.2309E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	8.0105E-02	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	2.0299E-03	6.9000E-02
320	1	3.4785E+02	1.5060E+00	4	2.9212E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	3.5726E-02	2.2000E-02
	3	3.4773E+02	1.5060E+00	6	2.2660E-03	6.9000E-02
330	1	3.4785E+02	1.5060E+00	4	2.3629E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.3406E-02	4.5000E-02
	3	3.4773E+02	1.5060E+00	6	2.3205E-03	5.4000E-02
340	1	3.4785E+02	1.5060E+00	4	1.7750E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	2.7116E-02	4.3000E-02
	3	3.4774E+02	1.5060E+00	6	2.0207E-03	5.4000E-02
1000	1	3.4777E+02	1.5060E+00	4	4.3227E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	3.0971E-02	4.3000E-02
	3	3.4782E+02	1.5060E+00	6	3.9190E-03	5.9000E-02
1002	1	3.4777E+02	1.5060E+00	4	3.1424E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	4.5667E-02	3.3000E-02
	3	3.4782E+02	1.5060E+00	6	2.9705E-03	5.9000E-02
1003	1	3.4776E+02	1.5060E+00	4	2.5227E-03	9.9000E-02
	2	3.4783E+02	1.5060E+00	5	1.0083E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	1.4396E-03	9.4000E-02
1010	1	3.4773E+02	1.5060E+00	4	3.6321E-03	5.8000E-02
	2	3.4783E+02	1.5060E+00	5	1.6495E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	1.2192E-03	5.3000E-02
1020	1	3.4765E+02	1.5060E+00	4	5.9461E-03	5.8000E-02
	2	3.4783E+02	1.5060E+00	5	2.0310E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	2.6341E-03	5.3000E-02
1025	1	3.4757E+02	1.5060E+00	4	5.9461E-03	5.8000E-02
	2	3.4783E+02	1.5060E+00	5	2.0310E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	2.6341E-03	5.3000E-02
1040	1	3.4765E+02	1.5060E+00	4	1.1007E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.0396E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	3.1634E-03	6.4000E-02
1050	1	3.4765E+02	1.5060E+00	4	2.0359E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.0504E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	3.3741E-03	6.4000E-02
1060	1	3.4758E+02	1.5060E+00	4	1.1347E-01	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.1589E-01	1.0000E-03

	3	3.4781E+02	1.5060E+00	6	9.6106E-03	1.0000E-03
1070	1	3.4753E+02	1.5060E+00	4	1.1399E-01	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.1619E-01	1.0000E-03
	3	3.4781E+02	1.5060E+00	6	9.6106E-03	1.0000E-03
1080	1	3.4765E+02	1.5060E+00	4	1.2531E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.0392E-01	1.6000E-02
	3	3.4781E+02	1.5060E+00	6	2.8879E-03	5.9000E-02
1090	1	3.4765E+02	1.5060E+00	4	2.2116E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.0496E-01	1.0000E-03
	3	3.4781E+02	1.5060E+00	6	3.3445E-03	5.9000E-02
1100	1	3.4758E+02	1.5060E+00	4	1.1788E-01	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.1606E-01	1.0000E-03
	3	3.4781E+02	1.5060E+00	6	9.8025E-03	1.0000E-03
1110	1	3.4753E+02	1.5060E+00	4	1.1842E-01	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.1636E-01	1.0000E-03
	3	3.4781E+02	1.5060E+00	6	9.8025E-03	1.0000E-03
1120	1	3.4777E+02	1.5060E+00	4	4.1370E-03	5.3000E-02
	2	3.4783E+02	1.5060E+00	5	5.7377E-02	5.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.4862E-03	4.9000E-02
1122	1	3.4777E+02	1.5060E+00	4	3.1105E-03	9.9000E-02
	2	3.4783E+02	1.5060E+00	5	4.8204E-02	3.3000E-02
	3	3.4782E+02	1.5060E+00	6	2.0008E-03	4.9000E-02
1123	1	3.4776E+02	1.5060E+00	4	2.4870E-03	1.4800E-01
	2	3.4783E+02	1.5060E+00	5	8.9652E-02	1.6000E-02
	3	3.4782E+02	1.5060E+00	6	1.3269E-03	1.1800E-01
1130	1	3.4773E+02	1.5060E+00	4	6.5331E-03	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	1.6841E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.0717E-03	8.4000E-02
1140	1	3.4766E+02	1.5060E+00	4	1.0644E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.2053E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.8222E-03	8.4000E-02
1145	1	3.4757E+02	1.5060E+00	4	1.0644E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.2054E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.8222E-03	8.4000E-02
1160	1	3.4766E+02	1.5060E+00	4	1.2304E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.2175E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.1360E-03	3.9000E-02
1170	1	3.4766E+02	1.5060E+00	4	1.3702E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.2330E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.4042E-03	3.9000E-02
1180	1	3.4758E+02	1.5060E+00	4	3.8781E-02	1.0000E-02
	2	3.4783E+02	1.5060E+00	5	2.3700E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.2140E-02	1.0000E-03
1190	1	3.4753E+02	1.5060E+00	4	3.8935E-02	1.0000E-02
	2	3.4783E+02	1.5060E+00	5	2.3736E-01	1.0000E-03

	3	3.4782E+02	1.5060E+00	6	1.2140E-02	1.0000E-03
1200	1	3.4766E+02	1.5060E+00	4	1.0485E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.2177E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.0372E-03	8.4000E-02
1210	1	3.4766E+02	1.5060E+00	4	1.0694E-02	5.8000E-02
	2	3.4783E+02	1.5060E+00	5	2.2334E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	2.3316E-03	8.4000E-02
1220	1	3.4758E+02	1.5060E+00	4	4.0193E-02	1.5000E-02
	2	3.4783E+02	1.5060E+00	5	2.3723E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.2437E-02	5.0000E-03
1230	1	3.4753E+02	1.5060E+00	4	4.0354E-02	1.5000E-02
	2	3.4783E+02	1.5060E+00	5	2.3760E-01	1.0000E-03
	3	3.4782E+02	1.5060E+00	6	1.2437E-02	5.0000E-03
1240	1	3.4778E+02	1.5060E+00	4	4.0581E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	6.2046E-02	5.0000E-03
	3	3.4785E+02	1.5060E+00	6	9.3391E-04	3.6000E-02
1242	1	3.4778E+02	1.5060E+00	4	3.2185E-03	9.9000E-02
	2	3.4783E+02	1.5060E+00	5	3.8144E-02	3.4000E-02
	3	3.4785E+02	1.5060E+00	6	7.4078E-04	3.6000E-02
1243	1	3.4776E+02	1.5060E+00	4	3.0686E-03	1.1700E-01
	2	3.4783E+02	1.5060E+00	5	8.0170E-02	1.6000E-02
	3	3.4785E+02	1.5060E+00	6	7.6131E-04	1.1800E-01
1250	1	3.4774E+02	1.5060E+00	4	7.3205E-03	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	1.6467E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	9.9491E-04	1.1800E-01
1260	1	3.4767E+02	1.5060E+00	4	1.1910E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.1655E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.3973E-03	4.0000E-02
1265	1	3.4760E+02	1.5060E+00	4	1.1910E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.1655E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.3973E-03	4.0000E-02
1280	1	3.4767E+02	1.5060E+00	4	1.6044E-02	4.3000E-02
	2	3.4783E+02	1.5060E+00	5	2.1778E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.6262E-03	4.0000E-02
1290	1	3.4767E+02	1.5060E+00	4	2.1501E-02	4.3000E-02
	2	3.4783E+02	1.5060E+00	5	2.1934E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.8476E-03	4.0000E-02
1300	1	3.4761E+02	1.5060E+00	4	9.4379E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.3315E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.2483E-02	5.0000E-03
1310	1	3.4756E+02	1.5060E+00	4	9.4800E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.3352E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.2483E-02	5.0000E-03
1320	1	3.4767E+02	1.5060E+00	4	1.1589E-02	5.9000E-02
	2	3.4783E+02	1.5060E+00	5	2.1779E-01	1.0000E-03

	3	3.4785E+02	1.5060E+00	6	1.5083E-03	4.7000E-02
1330	1	3.4767E+02	1.5060E+00	4	1.9503E-02	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.1936E-01	1.0000E-03
	3	3.4785E+02	1.5060E+00	6	1.4227E-03	4.7000E-02
1340	1	3.4761E+02	1.5060E+00	4	1.0179E-01	5.0000E-03
	2	3.4783E+02	1.5060E+00	5	2.3328E-01	1.0000E-03
	3	3.4784E+02	1.5060E+00	6	1.2739E-02	5.0000E-03
1350	1	3.4756E+02	1.5060E+00	4	1.0225E-01	5.0000E-03
	2	3.4782E+02	1.5060E+00	5	2.3365E-01	1.0000E-03
	3	3.4784E+02	1.5060E+00	6	1.2739E-02	5.0000E-03
4000	1	3.4781E+02	1.5060E+00	4	4.0016E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	8.6183E-02	1.0000E-02
	3	3.4795E+02	1.5060E+00	6	1.1291E-03	1.1700E-01
4010	1	3.4781E+02	1.5060E+00	4	4.6006E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	9.4438E-02	1.0000E-02
	3	3.4795E+02	1.5060E+00	6	1.1291E-03	1.1700E-01
4020	1	3.4777E+02	1.5060E+00	4	6.3329E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	1.1842E-01	1.0000E-02
	3	3.4795E+02	1.5060E+00	6	1.1291E-03	1.1700E-01
4030	1	3.4776E+02	1.5060E+00	4	6.3930E-03	5.4000E-02
	2	3.4783E+02	1.5060E+00	5	1.1926E-01	1.0000E-02
	3	3.4795E+02	1.5060E+00	6	1.1291E-03	1.1700E-01

S T R E S S C O M P O N E N T M A X I M A

ELEMENT TYPE NUMBER = 1

ELEMENT NUMBER	LOCATION	FORCE COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM
1		FOR. MOM.	6.8605E+04 0.0000E+00	1.5130E+00 0.0000E+00
2		FOR. MOM.	4.1342E+04 0.0000E+00	1.5160E+00 0.0000E+00
3		FOR. MOM.	1.9816E+04 0.0000E+00	1.3000E-01 0.0000E+00
4		FOR. MOM.	0.0000E+00 3.7121E+06	0.0000E+00 1.5180E+00
5		FOR. MOM.	0.0000E+00 6.1538E+06	0.0000E+00 1.5140E+00
6		FOR. MOM.	0.0000E+00 1.0863E+06	0.0000E+00 5.4200E-01
7		FOR. MOM.	2.4904E+04 0.0000E+00	2.0300E-01 0.0000E+00
8		FOR. MOM.	1.3735E+04 0.0000E+00	2.7000E-02 0.0000E+00
9		FOR. MOM.	6.9644E-02 0.0000E+00	2.0500E-01 0.0000E+00
10		FOR. MOM.	8.4112E+03 0.0000E+00	4.7000E-02 0.0000E+00
11		FOR. MOM.	7.2384E+03 0.0000E+00	8.5000E-02 0.0000E+00
12		FOR. MOM.	5.8532E+04 0.0000E+00	2.3900E-01 0.0000E+00
13		FOR. MOM.	3.0529E+04 0.0000E+00	4.3000E-02 0.0000E+00

14	FOR. MOM.	5.9390E+04 0.0000E+00	4.2000E-02 0.0000E+00
15	FOR. MOM.	6.4212E+05 0.0000E+00	2.4000E-02 0.0000E+00
16	FOR. MOM.	6.8326E+02 0.0000E+00	5.4000E-02 0.0000E+00
17	FOR. MOM.	1.3793E+05 0.0000E+00	1.0000E-02 0.0000E+00
18	FOR. MOM.	0.0000E+00 6.8460E+04	0.0000E+00 1.4900E-01
19	FOR. MOM.	0.0000E+00 1.2176E+06	0.0000E+00 4.3000E-02
20	FOR. MOM.	0.0000E+00 6.1142E+04	0.0000E+00 1.6600E-01

STRESS COMPONENT MAXIMA

ELEMENT TYPE NUMBER = 4

ELEMENT NUMBER	LOCATION	FORCE COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM
1		FOR. MOM.	4.3135E+04 0.0000E+00	1.5180E+00 0.0000E+00
2		FOR. MOM.	1.4784E+05 0.0000E+00	1.5170E+00 0.0000E+00

STRESS COMPONENT MAXIMA

ELEMENT TYPE NUMBER = 2

ELEMENT NUMBER	LOCATION	FORCE COMPONENT	MAXIMUM VALUE	TIME AT MAXIMUM
1	END-I	FX	1.9816E+04	1.3000E-01
		FY	7.9978E+04	1.5140E+00
		FZ	1.0997E+04	1.4000E-01
		TX	1.0863E+06	5.4200E-01
		MY	9.6164E+05	1.4000E-01
		MZ	7.1731E+06	1.5150E+00
1	END-J	FX	2.3467E+04	3.2000E-02
		FY	7.9331E+04	1.5140E+00
		FZ	1.0997E+04	1.4000E-01
		TX	7.4292E+05	5.4200E-01
		MY	8.9098E+05	5.4200E-01
		MZ	4.1391E+06	1.5170E+00
1	END-J	FX	4.6693E+04	1.5120E+00
		FY	6.6703E+04	1.5160E+00
		FZ	1.0997E+04	1.4000E-01
		TX	4.2024E+05	1.7160E+00
		MY	8.1121E+05	5.4200E-01
		MZ	1.5017E+06	1.2700E-01
2	END-I	FX	3.9167E+04	1.5120E+00
		FY	4.9607E+04	1.5180E+00
		FZ	8.1438E+03	1.3900E-01
		TX	4.2026E+05	1.7160E+00
		MY	8.1142E+05	5.4200E-01
		MZ	1.5019E+06	1.2700E-01
2	END-J	FX	5.4902E+04	1.5130E+00
		FY	3.2472E+04	1.3100E-01
		FZ	8.1438E+03	1.3900E-01
		TX	1.8936E+05	1.2200E-01
		MY	6.4604E+05	5.4200E-01
		MZ	7.5467E+05	5.8000E-02
2	END-J	FX	6.2394E+04	1.5150E+00
		FY	1.5333E+04	1.2900E-01
		FZ	8.1438E+03	1.3900E-01
		TX	9.0589E+04	5.4400E-01
		MY	5.0932E+05	1.2000E-01
		MZ	1.0017E+06	1.5340E+00

3	END-I	FX	5.1423E+04	1.5150E+00
		FY	6.2216E+03	5.4300E-01
		FZ	1.1140E+04	1.2800E-01
		TX	9.0573E+04	5.4400E-01
		MY	1.0018E+06	1.5340E+00
		MZ	5.0922E+05	1.2000E-01
3	END-J	FX	5.1423E+04	1.5150E+00
		FY	6.2216E+03	5.4300E-01
		FZ	1.1140E+04	1.2800E-01
		TX	9.0573E+04	5.4400E-01
		MY	1.0931E+06	1.3300E-01
		MZ	5.2934E+05	1.2000E-01
4	END-I	FX	4.8019E+04	1.5150E+00
		FY	5.9517E+03	5.4300E-01
		FZ	1.0490E+04	1.2400E-01
		TX	9.0611E+04	5.4400E-01
		MY	1.0932E+06	1.3300E-01
		MZ	5.2934E+05	1.2000E-01
4	END-J	FX	4.8019E+04	1.5150E+00
		FY	5.9517E+03	5.4300E-01
		FZ	1.0490E+04	1.2400E-01
		TX	9.0611E+04	5.4400E-01
		MY	1.2100E+06	1.3200E-01
		MZ	5.4173E+05	1.2000E-01
5	END-I	FX	3.8814E+04	1.5160E+00
		FY	5.1448E+03	5.4300E-01
		FZ	1.0099E+04	1.2300E-01
		TX	9.0603E+04	5.4400E-01
		MY	1.2100E+06	1.3200E-01
		MZ	5.4173E+05	1.2000E-01
5	END-J	FX	3.8814E+04	1.5160E+00
		FY	5.1448E+03	5.4300E-01
		FZ	1.0099E+04	1.2300E-01
		TX	9.0603E+04	5.4400E-01
		MY	1.5276E+06	1.3100E-01
		MZ	4.5551E+05	1.2000E-01
6	END-I	FX	2.2758E+04	1.3500E-01
		FY	1.4841E+04	4.3000E-02
		FZ	5.8373E+03	1.2000E-01
		TX	9.0565E+04	5.4400E-01
		MY	4.5547E+05	1.2000E-01
		MZ	1.5276E+06	1.3100E-01
6	END-J	FX	2.3998E+04	1.5020E+00

		FY	1.2461E+04	4.3000E-02
		FZ	5.8373E+03	1.2000E-01
		TX	1.3368E+05	1.0300E-01
		MY	2.4335E+05	5.0000E-02
		MZ	1.5633E+06	1.5210E+00
6	END-J	FX	2.3500E+04	1.5020E+00
		FY	1.2711E+04	1.3300E-01
		FZ	5.8373E+03	1.2000E-01
		TX	1.5132E+05	5.0000E-02
		MY	3.0480E+05	5.4300E-01
		MZ	1.4618E+06	1.5020E+00
7	END-I	FX	2.3770E+04	3.7000E-02
		FY	1.2012E+04	2.3000E-02
		FZ	7.7235E+03	1.2100E-01
		TX	1.5132E+05	5.0000E-02
		MY	3.0471E+05	5.4300E-01
		MZ	1.4618E+06	1.5020E+00
7	END-J	FX	2.0451E+04	3.7000E-02
		FY	1.5286E+04	2.2000E-02
		FZ	7.7235E+03	1.2100E-01
		TX	1.6897E+05	5.4300E-01
		MY	3.8573E+05	1.2000E-01
		MZ	1.2883E+06	1.5030E+00
7	END-J	FX	1.4020E+04	3.7000E-02
		FY	1.9596E+04	3.7000E-02
		FZ	7.7235E+03	1.2100E-01
		TX	2.2516E+05	1.7150E+00
		MY	6.6002E+05	1.2100E-01
		MZ	1.0484E+06	9.8000E-02
8	END-I	FX	1.9573E+04	3.7000E-02
		FY	8.8080E+03	4.5000E-02
		FZ	1.1819E+04	1.9000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.0513E+06	9.9000E-02
		MZ	1.0545E+06	1.1900E-01
8	END-J	FX	1.9573E+04	3.7000E-02
		FY	8.8080E+03	4.5000E-02
		FZ	1.1819E+04	1.9000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.3646E+06	2.1000E-02
		MZ	8.6876E+05	1.1900E-01

9	END-I	FX	3.0777E+04	1.5230E+00
		FY	7.2790E+03	1.1900E-01
		FZ	1.2127E+04	1.6000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.3646E+06	2.1000E-02
		MZ	8.6876E+05	1.1900E-01
9	END-J	FX	3.0777E+04	1.5230E+00
		FY	7.2790E+03	1.1900E-01
		FZ	1.2127E+04	1.6000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.4322E+06	1.9000E-02
		MZ	9.3005E+05	4.6000E-02
10	END-I	FX	4.5860E+04	1.5220E+00
		FY	8.6635E+03	3.6000E-02
		FZ	9.8741E+03	4.4000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.4322E+06	1.9000E-02
		MZ	9.3005E+05	4.6000E-02
10	END-J	FX	4.5860E+04	1.5220E+00
		FY	8.6635E+03	3.6000E-02
		FZ	9.8741E+03	4.4000E-02
		TX	2.2502E+05	1.7150E+00
		MY	1.7305E+06	1.5160E+00
		MZ	1.2151E+06	5.4400E-01
11	END-I	FX	6.0694E+04	1.5210E+00
		FY	8.5359E+03	2.1000E-02
		FZ	3.6447E+04	1.5190E+00
		TX	2.2502E+05	1.7150E+00
		MY	1.7305E+06	1.5160E+00
		MZ	1.2151E+06	5.4400E-01
11	END-J	FX	6.0694E+04	1.5210E+00
		FY	8.5359E+03	2.1000E-02
		FZ	3.6447E+04	1.5190E+00
		TX	2.2502E+05	1.7150E+00
		MY	1.6141E+06	1.3000E-02
		MZ	7.9926E+05	5.4500E-01
12	END-I	FX	7.5745E+04	1.5200E+00
		FY	5.7971E+03	5.4400E-01
		FZ	3.2805E+04	1.5190E+00
		TX	2.2502E+05	1.7150E+00
		MY	1.6141E+06	1.3000E-02
		MZ	7.9926E+05	5.4500E-01
12	END-J	FX	7.5745E+04	1.5200E+00

		FY	5.7971E+03	5.4400E-01
		FZ	3.2805E+04	1.5190E+00
		TX	2.2502E+05	1.7150E+00
		MY	3.2701E+06	1.5200E+00
		MZ	5.6228E+05	7.3000E-02
13	END-I	FX	9.1010E+04	1.5190E+00
		FY	1.0077E+04	7.3000E-02
		FZ	2.9674E+04	1.5070E+00
		TX	2.2502E+05	1.7150E+00
		MY	3.2701E+06	1.5200E+00
		MZ	5.6228E+05	7.3000E-02
13	END-J	FX	9.1010E+04	1.5190E+00
		FY	1.0077E+04	7.3000E-02
		FZ	2.9674E+04	1.5070E+00
		TX	2.2502E+05	1.7150E+00
		MY	5.2340E+06	1.5190E+00
		MZ	3.3140E+05	3.7000E-02
14	END-I	FX	1.0023E+05	1.5180E+00
		FY	4.5603E+03	3.6000E-02
		FZ	2.8190E+04	1.5050E+00
		TX	2.2502E+05	1.7150E+00
		MY	5.2340E+06	1.5190E+00
		MZ	3.3140E+05	3.7000E-02
14	END-J	FX	1.0023E+05	1.5180E+00
		FY	4.5603E+03	3.6000E-02
		FZ	2.8190E+04	1.5050E+00
		TX	2.2502E+05	1.7150E+00
		MY	5.5812E+06	1.5180E+00
		MZ	2.6969E+05	3.8000E-02
15	END-I	FX	1.0982E+05	1.5180E+00
		FY	2.8251E+04	2.5000E-02
		FZ	4.3193E+03	3.7000E-02
		TX	2.2502E+05	1.7150E+00
		MY	2.6969E+05	3.8000E-02
		MZ	5.5812E+06	1.5180E+00
15	END-J	FX	1.0981E+05	1.5150E+00
		FY	2.7738E+04	2.5000E-02
		FZ	4.3193E+03	3.7000E-02
		TX	1.9210E+05	1.8910E+00
		MY	1.4603E+05	1.5000E-01
		MZ	5.5924E+06	1.5120E+00
15	END-J	FX	9.4561E+04	1.5080E+00

		FY	6.2844E+04	1.5200E+00
		FZ	4.3193E+03	3.7000E-02
		TX	1.6263E+05	1.5900E-01
		MY	1.7055E+05	5.4400E-01
		MZ	4.1515E+06	1.5060E+00
16	END-I	FX	1.0443E+05	1.5050E+00
		FY	7.3697E+04	1.5190E+00
		FZ	2.8160E+03	4.2000E-02
		TX	1.6264E+05	1.5900E-01
		MY	1.7054E+05	5.4400E-01
		MZ	4.1515E+06	1.5060E+00
16	END-J	FX	7.1644E+04	1.4650E+00
		FY	1.0694E+05	1.5180E+00
		FZ	2.8160E+03	4.2000E-02
		TX	1.0072E+05	1.6000E-01
		MY	2.0185E+05	1.5900E-01
		MZ	1.3175E+06	1.4600E-01
16	END-J	FX	5.7867E+04	6.0000E-03
		FY	1.2415E+05	1.5160E+00
		FZ	2.8160E+03	4.2000E-02
		TX	4.0287E+04	1.2400E-01
		MY	2.5697E+05	1.6000E-01
		MZ	3.9912E+06	2.0100E-01
17	END-I	FX	8.5352E+04	6.0000E-03
		FY	2.8135E+03	5.9000E-02
		FZ	1.2845E+05	1.5140E+00
		TX	4.0283E+04	1.2400E-01
		MY	3.9912E+06	2.0100E-01
		MZ	2.5697E+05	1.6000E-01
17	END-J	FX	8.5352E+04	6.0000E-03
		FY	2.8135E+03	5.9000E-02
		FZ	1.2845E+05	1.5140E+00
		TX	4.0283E+04	1.2400E-01
		MY	6.9964E+06	1.5190E+00
		MZ	2.7224E+05	5.9000E-02
18	END-I	FX	9.4989E+04	6.0000E-03
		FY	2.5597E+03	5.9000E-02
		FZ	3.0228E+04	2.0200E-01
		TX	4.0283E+04	1.2400E-01
		MY	6.9964E+06	1.5190E+00
		MZ	2.7224E+05	5.9000E-02
18	END-J	FX	9.4989E+04	6.0000E-03

		FY	2.5597E+03	5.9000E-02
		FZ	3.0228E+04	2.0200E-01
		TX	4.0283E+04	1.2400E-01
		MY	6.7666E+06	1.5190E+00
		MZ	3.0295E+05	5.9000E-02
19	END-I	FX	1.1798E+05	5.0000E-03
		FY	3.0141E+03	4.6000E-02
		FZ	2.7848E+04	2.0200E-01
		TX	4.0283E+04	1.2400E-01
		MY	6.7666E+06	1.5190E+00
		MZ	3.0295E+05	5.9000E-02
19	END-J	FX	1.1798E+05	5.0000E-03
		FY	3.0141E+03	4.6000E-02
		FZ	2.7848E+04	2.0200E-01
		TX	4.0283E+04	1.2400E-01
		MY	5.5519E+06	1.5140E+00
		MZ	4.1981E+05	5.9000E-02
20	END-I	FX	1.5201E+05	5.0000E-03
		FY	2.0633E+03	4.1000E-02
		FZ	2.6737E+04	2.0000E-01
		TX	4.0283E+04	1.2400E-01
		MY	5.5519E+06	1.5140E+00
		MZ	4.1981E+05	5.9000E-02
20	END-J	FX	1.5201E+05	5.0000E-03
		FY	2.0633E+03	4.1000E-02
		FZ	2.6737E+04	2.0000E-01
		TX	4.0283E+04	1.2400E-01
		MY	4.7634E+06	1.4880E+00
		MZ	3.7896E+05	4.6000E-02
21	END-I	FX	1.7922E+05	5.0000E-03
		FY	4.0521E+03	5.9000E-02
		FZ	2.5294E+04	1.9900E-01
		TX	4.0283E+04	1.2400E-01
		MY	4.7634E+06	1.4880E+00
		MZ	3.7896E+05	4.6000E-02
21	END-J	FX	1.7922E+05	5.0000E-03
		FY	4.0521E+03	5.9000E-02
		FZ	2.5294E+04	1.9900E-01
		TX	4.0283E+04	1.2400E-01
		MY	4.0651E+06	1.4860E+00
		MZ	2.3459E+05	4.7000E-02
22	END-I	FX	1.9823E+05	5.0000E-03

		FY	6.0758E+03	4.6000E-02
		FZ	1.8419E+04	1.9900E-01
		TX	4.0283E+04	1.2400E-01
		MY	4.0651E+06	1.4860E+00
		MZ	2.3459E+05	4.7000E-02
22	END-J	FX	1.9823E+05	5.0000E-03
		FY	6.0758E+03	4.6000E-02
		FZ	1.8419E+04	1.9900E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.7530E+06	1.6950E+00
		MZ	2.9325E+05	5.8000E-02
23	END-I	FX	2.0654E+05	5.0000E-03
		FY	3.5140E+03	8.5000E-02
		FZ	1.4393E+04	1.5260E+00
		TX	4.0283E+04	1.2400E-01
		MY	3.7530E+06	1.6950E+00
		MZ	2.9325E+05	5.8000E-02
23	END-J	FX	2.0654E+05	5.0000E-03
		FY	3.5140E+03	8.5000E-02
		FZ	1.4393E+04	1.5260E+00
		TX	4.0283E+04	1.2400E-01
		MY	3.4692E+06	2.4000E-01
		MZ	2.1469E+05	6.0000E-02
24	END-I	FX	2.0897E+05	5.0000E-03
		FY	2.6720E+03	8.7000E-02
		FZ	1.5629E+04	1.4850E+00
		TX	4.0283E+04	1.2400E-01
		MY	3.4692E+06	2.4000E-01
		MZ	2.1469E+05	6.0000E-02
24	END-J	FX	2.0897E+05	5.0000E-03
		FY	2.6720E+03	8.7000E-02
		FZ	1.5629E+04	1.4850E+00
		TX	4.0283E+04	1.2400E-01
		MY	2.8846E+06	2.4100E-01
		MZ	1.4504E+05	6.7000E-02
25	END-I	FX	2.2604E+05	2.1000E-02
		FY	2.0626E+03	5.9000E-02
		FZ	2.0285E+04	1.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.8846E+06	2.4100E-01
		MZ	1.4504E+05	6.7000E-02
25	END-J	FX	2.2604E+05	2.1000E-02
		FY	2.0626E+03	5.9000E-02

		FZ	2.0285E+04	1.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.7613E+06	2.4100E-01
		MZ	1.9903E+05	8.6000E-02
26	END-I	FX	2.5776E+05	2.1000E-02
		FY	1.1704E+03	4.6000E-02
		FZ	3.0471E+04	2.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.7613E+06	2.4100E-01
		MZ	1.9903E+05	8.6000E-02
26	END-J	FX	2.5776E+05	2.1000E-02
		FY	1.1704E+03	4.6000E-02
		FZ	3.0471E+04	2.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	9.4451E+05	2.0600E-01
		MZ	1.9222E+05	8.8000E-02
27	END-I	FX	2.9899E+05	2.1000E-02
		FY	2.8800E+03	1.3300E-01
		FZ	3.9713E+04	2.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	9.4451E+05	2.0600E-01
		MZ	1.9222E+05	8.8000E-02
27	END-J	FX	2.9899E+05	2.1000E-02
		FY	2.8800E+03	1.3300E-01
		FZ	3.9713E+04	2.4100E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.9050E+06	1.4000E-01
		MZ	7.0760E+04	8.9000E-02
28	END-I	FX	3.4527E+05	2.0000E-02
		FY	4.4219E+03	8.7000E-02
		FZ	4.1180E+04	2.4000E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.9050E+06	1.4000E-01
		MZ	7.0760E+04	8.9000E-02
28	END-J	FX	3.4527E+05	2.0000E-02
		FY	4.4219E+03	8.7000E-02
		FZ	4.1180E+04	2.4000E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.5852E+06	2.4000E-01
		MZ	1.8217E+05	1.1700E-01
29	END-I	FX	4.0875E+05	1.9000E-02
		FY	1.8988E+03	9.9000E-02

		FZ	1.8320E+04	1.4700E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.5852E+06	2.4000E-01
		MZ	1.8217E+05	1.1700E-01
29	END-J	FX	4.0875E+05	1.9000E-02
		FY	1.8988E+03	9.9000E-02
		FZ	1.8320E+04	1.4700E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.3878E+06	2.4000E-01
		MZ	1.6775E+05	1.1700E-01
30	END-I	FX	4.2002E+05	1.9000E-02
		FY	1.6633E+03	9.9000E-02
		FZ	1.8754E+04	1.4600E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.3878E+06	2.4000E-01
		MZ	1.6775E+05	1.1700E-01
30	END-J	FX	4.2002E+05	1.9000E-02
		FY	1.6633E+03	9.9000E-02
		FZ	1.8754E+04	1.4600E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.0301E+06	2.4000E-01
		MZ	1.4200E+05	1.1700E-01
31	END-I	FX	4.2674E+05	1.9000E-02
		FY	1.5154E+03	1.0000E-01
		FZ	1.8799E+04	1.4600E-01
		TX	4.0283E+04	1.2400E-01
		MY	3.0301E+06	2.4000E-01
		MZ	1.4200E+05	1.1700E-01
31	END-J	FX	4.2674E+05	1.9000E-02
		FY	1.5154E+03	1.0000E-01
		FZ	1.8799E+04	1.4600E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.8720E+06	2.4000E-01
		MZ	1.3030E+05	1.1700E-01
32	END-I	FX	4.3088E+05	1.9000E-02
		FY	1.4330E+03	1.0000E-01
		FZ	1.8762E+04	1.4500E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.8720E+06	2.4000E-01
		MZ	1.3030E+05	1.1700E-01
32	END-J	FX	4.3088E+05	1.9000E-02
		FY	1.4330E+03	1.0000E-01
		FZ	1.8762E+04	1.4500E-01

		TX	4.0283E+04	1.2400E-01
		MY	2.7163E+06	2.4000E-01
		MZ	1.1865E+05	1.1800E-01
33	END-I	FX	4.3500E+05	1.9000E-02
		FY	1.3494E+03	1.0000E-01
		FZ	1.8664E+04	1.4500E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.7163E+06	2.4000E-01
		MZ	1.1865E+05	1.1800E-01
33	END-J	FX	4.3500E+05	1.9000E-02
		FY	1.3494E+03	1.0000E-01
		FZ	1.8664E+04	1.4500E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.5640E+06	2.4000E-01
		MZ	1.0720E+05	1.1800E-01
34	END-I	FX	4.3909E+05	1.9000E-02
		FY	1.3418E+03	1.1700E-01
		FZ	1.8476E+04	1.4500E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.5640E+06	2.4000E-01
		MZ	1.0720E+05	1.1800E-01
34	END-J	FX	4.3909E+05	1.9000E-02
		FY	1.3418E+03	1.1700E-01
		FZ	1.8476E+04	1.4500E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.4158E+06	2.4000E-01
		MZ	9.5476E+04	1.1800E-01
35	END-I	FX	4.5105E+05	1.9000E-02
		FY	1.3875E+03	1.1800E-01
		FZ	1.7681E+04	1.4400E-01
		TX	4.0283E+04	1.2400E-01
		MY	2.4158E+06	2.4000E-01
		MZ	9.5476E+04	1.1800E-01
35	END-J	FX	4.5105E+05	1.9000E-02
		FY	1.3875E+03	1.1800E-01
		FZ	1.7681E+04	1.4400E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.8578E+06	2.8400E-01
		MZ	5.5923E+04	8.8000E-02
36	END-I	FX	4.6691E+05	1.8000E-02
		FY	1.3552E+03	1.1800E-01
		FZ	3.6231E+04	1.5500E-01

		TX	4.0283E+04	1.2400E-01
		MY	1.8578E+06	2.8400E-01
		MZ	5.5923E+04	8.8000E-02
36	END-J	FX	4.6691E+05	1.8000E-02
		FY	1.3552E+03	1.1800E-01
		FZ	3.6231E+04	1.5500E-01
		TX	4.0283E+04	1.2400E-01
		MY	1.9320E+06	2.8200E-01
		MZ	4.7424E+04	7.0000E-02
37	END-I	FX	4.7859E+05	1.8000E-02
		FY	1.1273E+03	1.1800E-01
		FZ	2.6654E+04	6.2000E-02
		TX	3.7709E+04	1.2800E-01
		MY	1.6374E+06	2.8600E-01
		MZ	4.6394E+04	7.0000E-02
37	END-J	FX	4.7859E+05	1.8000E-02
		FY	1.1273E+03	1.1800E-01
		FZ	2.6654E+04	6.2000E-02
		TX	3.7709E+04	1.2800E-01
		MY	1.0559E+06	2.8100E-01
		MZ	5.2459E+04	4.4100E-01
38	END-I	FX	4.9582E+05	1.8000E-02
		FY	6.8636E+02	1.4800E-01
		FZ	3.2093E+04	1.5000E-02
		TX	3.2506E+04	1.2800E-01
		MY	1.2069E+06	1.4800E-01
		MZ	5.2485E+04	4.4100E-01
38	END-J	FX	4.9582E+05	1.8000E-02
		FY	6.8636E+02	1.4800E-01
		FZ	3.2093E+04	1.5000E-02
		TX	3.2506E+04	1.2800E-01
		MY	1.2292E+06	6.2000E-02
		MZ	6.2363E+04	1.6300E-01
39	END-I	FX	5.0848E+05	1.8000E-02
		FY	5.6150E+02	7.0000E-02
		FZ	3.4743E+04	4.2000E-02
		TX	3.3331E+04	1.4400E-01
		MY	1.4288E+06	3.3000E-02
		MZ	6.2607E+04	1.6300E-01
39	END-J	FX	5.0848E+05	1.8000E-02
		FY	5.6150E+02	7.0000E-02
		FZ	3.4743E+04	4.2000E-02
		TX	3.3331E+04	1.4400E-01

		MY	1.1479E+06	2.3000E-02
		MZ	6.6213E+04	1.6300E-01
40	END-I	FX	5.2567E+05	1.8000E-02
		FY	7.3387E+02	6.9000E-02
		FZ	2.9102E+04	6.2000E-02
		TX	3.3331E+04	1.4400E-01
		MY	1.1479E+06	2.3000E-02
		MZ	6.6213E+04	1.6300E-01
40	END-J	FX	5.2567E+05	1.8000E-02
		FY	7.3387E+02	6.9000E-02
		FZ	2.9102E+04	6.2000E-02
		TX	3.3331E+04	1.4400E-01
		MY	9.9617E+05	5.0000E-03
		MZ	6.4856E+04	1.6500E-01
41	END-I	FX	5.4990E+05	1.7000E-02
		FY	6.6445E+02	5.9000E-02
		FZ	3.9828E+04	2.4000E-02
		TX	3.3331E+04	1.4400E-01
		MY	9.9617E+05	5.0000E-03
		MZ	6.4856E+04	1.6500E-01
41	END-J	FX	5.4990E+05	1.7000E-02
		FY	6.6445E+02	5.9000E-02
		FZ	3.9828E+04	2.4000E-02
		TX	3.3331E+04	1.4400E-01
		MY	2.9570E+06	6.2000E-02
		MZ	4.8025E+04	9.9000E-02
42	END-I	FX	5.6577E+05	1.7000E-02
		FY	6.8023E+02	1.6400E-01
		FZ	4.6342E+04	2.5000E-02
		TX	3.3331E+04	1.4400E-01
		MY	2.9570E+06	6.2000E-02
		MZ	4.8025E+04	9.9000E-02
42	END-J	FX	5.6577E+05	1.7000E-02
		FY	6.8023E+02	1.6400E-01
		FZ	4.6342E+04	2.5000E-02
		TX	3.3331E+04	1.4400E-01
		MY	3.7660E+06	6.1000E-02
		MZ	4.5945E+04	5.4000E-02
43	END-I	FX	5.7701E+05	1.7000E-02
		FY	8.7396E+02	1.6600E-01
		FZ	4.9954E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01

		MY	3.8913E+06	6.1000E-02
		MZ	4.5945E+04	5.4000E-02
43	END-J	FX	5.7701E+05	1.7000E-02
		FY	8.7396E+02	1.6600E-01
		FZ	4.9954E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01
		MY	4.2910E+06	6.1000E-02
		MZ	4.2162E+04	5.4000E-02
44	END-I	FX	5.8106E+05	1.7000E-02
		FY	9.5672E+02	1.6600E-01
		FZ	5.1265E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01
		MY	4.2910E+06	6.1000E-02
		MZ	4.2162E+04	5.4000E-02
44	END-J	FX	5.8106E+05	1.7000E-02
		FY	9.5672E+02	1.6600E-01
		FZ	5.1265E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01
		MY	4.8313E+06	6.1000E-02
		MZ	3.5400E+04	5.4000E-02
45	END-I	FX	5.8330E+05	1.7000E-02
		FY	9.9991E+02	1.6600E-01
		FZ	5.1858E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01
		MY	4.8313E+06	6.1000E-02
		MZ	3.5400E+04	5.4000E-02
45	END-J	FX	5.8330E+05	1.7000E-02
		FY	9.9991E+02	1.6600E-01
		FZ	5.1858E+04	2.5000E-02
		TX	3.4917E+04	1.4400E-01
		MY	6.2808E+06	6.1000E-02
		MZ	2.7702E+04	5.9000E-02
46	END-I	FX	1.1008E+05	1.0000E-02
		FY	5.3509E+02	1.4900E-01
		FZ	1.8323E+05	2.4000E-02
		TX	5.8908E-09	1.4000E-02
		MY	1.3193E+07	2.4000E-02
		MZ	3.8527E+04	1.4900E-01
46	END-J	FX	1.1008E+05	1.0000E-02
		FY	5.3509E+02	1.4900E-01
		FZ	1.8323E+05	2.4000E-02
		TX	5.8908E-09	1.4000E-02
		MY	9.2960E-08	6.2000E-02

		MZ	2.6048E-08	1.4300E-01
47	END-I	FX	6.3062E+05	2.4000E-02
		FY	5.9990E+02	1.6700E-01
		FZ	1.2982E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	9.0028E+06	1.0000E-02
		MZ	2.7702E+04	5.9000E-02
47	END-J	FX	6.3062E+05	2.4000E-02
		FY	5.9990E+02	1.6700E-01
		FZ	1.2982E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	4.8677E+06	1.0000E-02
		MZ	3.7627E+04	1.6400E-01
48	END-I	FX	6.3358E+05	2.4000E-02
		FY	6.3322E+02	1.6700E-01
		FZ	1.3233E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	4.8677E+06	1.0000E-02
		MZ	3.7627E+04	1.6400E-01
48	END-J	FX	6.3358E+05	2.4000E-02
		FY	6.3322E+02	1.6700E-01
		FZ	1.3233E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	2.4666E+06	2.4000E-02
		MZ	4.8286E+04	1.6500E-01
49	END-I	FX	6.3934E+05	2.4000E-02
		FY	6.7456E+02	1.6700E-01
		FZ	1.3646E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	2.4666E+06	2.4000E-02
		MZ	4.8286E+04	1.6500E-01
49	END-J	FX	6.3934E+05	2.4000E-02
		FY	6.7456E+02	1.6700E-01
		FZ	1.3646E+05	9.0000E-03
		TX	6.8460E+04	1.4900E-01
		MY	1.2176E+06	4.3000E-02
		MZ	6.1142E+04	1.6600E-01
50	END-I	FX	3.0030E+04	5.0000E-03
		FY	2.0079E+02	4.7000E-02
		FZ	1.6848E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	9.8620E+05	3.6000E-02

		MZ	1.2838E+04	5.5000E-01
50	END-J	FX	3.0030E+04	5.0000E-03
		FY	2.0079E+02	4.7000E-02
		FZ	1.6848E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	7.1923E+05	3.5000E-02
		MZ	9.7952E+03	5.5000E-01
51	END-I	FX	2.9975E+04	5.0000E-03
		FY	2.0013E+02	4.7000E-02
		FZ	1.6761E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	7.1923E+05	3.5000E-02
		MZ	9.7952E+03	5.5000E-01
51	END-J	FX	2.9975E+04	5.0000E-03
		FY	2.0013E+02	4.7000E-02
		FZ	1.6761E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	6.6954E+05	3.5000E-02
		MZ	9.2242E+03	5.5000E-01
52	END-I	FX	2.9804E+04	5.0000E-03
		FY	1.9799E+02	4.7000E-02
		FZ	1.6499E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	6.6954E+05	3.5000E-02
		MZ	9.2242E+03	5.5000E-01
52	END-J	FX	2.9804E+04	5.0000E-03
		FY	1.9799E+02	4.7000E-02
		FZ	1.6499E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	5.7746E+05	6.0000E-02
		MZ	8.0810E+03	5.5000E-01
53	END-I	FX	2.9547E+04	5.0000E-03
		FY	1.9461E+02	4.7000E-02
		FZ	1.6137E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	5.7746E+05	6.0000E-02
		MZ	8.0810E+03	5.5000E-01
53	END-J	FX	2.9547E+04	5.0000E-03
		FY	1.9461E+02	4.7000E-02
		FZ	1.6137E+04	3.6000E-02
		TX	1.1677E+03	6.4000E-02
		MY	4.9422E+05	6.0000E-02
		MZ	6.8153E+03	5.5000E-01

54	END-I	FX	2.8272E+04	5.0000E-03
		FY	1.9066E+02	5.5000E-01
		FZ	1.4626E+04	3.5000E-02
		TX	1.1677E+03	6.4000E-02
		MY	4.9422E+05	6.0000E-02
		MZ	6.8153E+03	5.5000E-01
54	END-J	FX	2.8272E+04	5.0000E-03
		FY	1.9066E+02	5.5000E-01
		FZ	1.4626E+04	3.5000E-02
		TX	1.1677E+03	6.4000E-02
		MY	2.5629E+05	6.0000E-02
		MZ	4.2827E+03	4.3000E-02
55	END-I	FX	2.4033E+04	5.0000E-03
		FY	1.6910E+02	5.5000E-01
		FZ	1.4042E+04	6.0000E-02
		TX	4.8270E-08	1.5190E+00
		MY	2.3877E+05	6.0000E-02
		MZ	2.8754E+03	5.5000E-01
55	END-J	FX	2.4033E+04	5.0000E-03
		FY	1.6910E+02	5.5000E-01
		FZ	1.4042E+04	6.0000E-02
		TX	4.8270E-08	1.5190E+00
		MY	3.5323E-06	2.1000E-02
		MZ	5.7459E-07	3.3000E-02
56	END-I	FX	4.0549E+02	5.0000E-03
		FY	2.1107E+03	5.0000E-03
		FZ	1.2642E+03	3.7000E-02
		TX	8.5401E+03	6.0000E-02
		MY	2.1849E+04	3.7000E-02
		MZ	5.2295E+04	5.0000E-03
56	END-J	FX	4.0549E+02	5.0000E-03
		FY	2.1107E+03	5.0000E-03
		FZ	1.2642E+03	3.7000E-02
		TX	8.5401E+03	6.0000E-02
		MY	8.3129E+03	3.6000E-02
		MZ	2.9600E+04	5.0000E-03
57	END-I	FX	4.0337E+02	5.0000E-03
		FY	1.5064E+03	5.0000E-03
		FZ	7.3735E+02	3.7000E-02
		TX	8.5401E+03	6.0000E-02
		MY	8.3129E+03	3.6000E-02
		MZ	2.9600E+04	5.0000E-03

57	END-J	FX	4.0337E+02	5.0000E-03
		FY	1.5064E+03	5.0000E-03
		FZ	7.3735E+02	3.7000E-02
		TX	8.5401E+03	6.0000E-02
		MY	6.7731E+03	6.0000E-02
		MZ	2.2659E+04	5.0000E-03
58	END-I	FX	4.0145E+02	5.0000E-03
		FY	1.0173E+03	5.0000E-03
		FZ	4.5154E+02	6.0000E-02
		TX	8.5401E+03	6.0000E-02
		MY	6.7731E+03	6.0000E-02
		MZ	2.2659E+04	5.0000E-03
58	END-J	FX	4.3549E+02	5.0000E-03
		FY	1.0032E+03	5.0000E-03
		FZ	4.5154E+02	6.0000E-02
		TX	3.2333E+03	6.0000E-02
		MY	6.0388E+03	6.0000E-02
		MZ	1.0105E+04	5.0000E-03
58	END-J	FX	1.0173E+03	5.0000E-03
		FY	4.0145E+02	5.0000E-03
		FZ	4.5154E+02	6.0000E-02
		TX	3.8917E-10	3.5000E-02
		MY	1.7823E+03	5.9000E-02
		MZ	1.3777E+03	5.0000E-03
59	END-I	FX	2.3358E+02	5.0000E-03
		FY	1.3782E+02	5.0000E-03
		FZ	1.7830E+02	5.9000E-02
		TX	1.7428E-10	3.3000E-02
		MY	1.7823E+03	5.9000E-02
		MZ	1.3777E+03	5.0000E-03
59	END-J	FX	2.3358E+02	5.0000E-03
		FY	1.3782E+02	5.0000E-03
		FZ	1.7830E+02	5.9000E-02
		TX	1.7428E-10	3.3000E-02
		MY	1.5467E-09	3.6000E-02
		MZ	3.2608E-10	1.5000E+00
60	END-I	FX	4.0685E+02	5.0000E-03
		FY	2.1284E+03	5.0000E-03
		FZ	1.2406E+03	3.7000E-02
		TX	9.0497E+03	5.9000E-02
		MY	2.1333E+04	3.6000E-02
		MZ	5.2898E+04	5.0000E-03

60	END-J	FX	4.0685E+02	5.0000E-03
		FY	2.1284E+03	5.0000E-03
		FZ	1.2406E+03	3.7000E-02
		TX	9.0497E+03	5.9000E-02
		MY	8.5764E+03	6.0000E-02
		MZ	3.0014E+04	5.0000E-03
61	END-I	FX	4.0841E+02	5.0000E-03
		FY	1.5218E+03	5.0000E-03
		FZ	7.1911E+02	3.6000E-02
		TX	9.0497E+03	5.9000E-02
		MY	8.5764E+03	6.0000E-02
		MZ	3.0014E+04	5.0000E-03
61	END-J	FX	4.0841E+02	5.0000E-03
		FY	1.5218E+03	5.0000E-03
		FZ	7.1911E+02	3.6000E-02
		TX	9.0497E+03	5.9000E-02
		MY	7.1846E+03	5.9000E-02
		MZ	2.3001E+04	5.0000E-03
62	END-I	FX	4.0936E+02	5.0000E-03
		FY	1.0301E+03	5.0000E-03
		FZ	4.7897E+02	5.9000E-02
		TX	9.0497E+03	5.9000E-02
		MY	7.1846E+03	5.9000E-02
		MZ	2.3001E+04	5.0000E-03
62	END-J	FX	4.3892E+02	5.0000E-03
		FY	1.0178E+03	5.0000E-03
		FZ	4.7897E+02	5.9000E-02
		TX	3.4232E+03	5.9000E-02
		MY	6.3991E+03	5.9000E-02
		MZ	1.0277E+04	5.0000E-03
62	END-J	FX	1.0301E+03	5.0000E-03
		FY	4.0936E+02	5.0000E-03
		FZ	4.7897E+02	5.9000E-02
		TX	4.4097E-10	3.4000E-02
		MY	1.8652E+03	5.9000E-02
		MZ	1.4098E+03	5.0000E-03
63	END-I	FX	2.3651E+02	5.0000E-03
		FY	1.4103E+02	5.0000E-03
		FZ	1.8659E+02	5.9000E-02
		TX	2.6777E-11	1.3700E-01
		MY	1.8652E+03	5.9000E-02
		MZ	1.4098E+03	5.0000E-03

63	END-J	FX	2.3651E+02	5.0000E-03
		FY	1.4103E+02	5.0000E-03
		FZ	1.8659E+02	5.9000E-02
		TX	2.6777E-11	1.3700E-01
		MY	8.0060E-10	3.7000E-02
		MZ	3.6028E-10	2.9000E-02
64	END-I	FX	1.0857E+04	1.5000E-02
		FY	2.0142E+02	4.9000E-02
		FZ	1.6064E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	9.2788E+05	3.5000E-02
		MZ	9.8789E+03	8.3400E-01
64	END-J	FX	1.0857E+04	1.5000E-02
		FY	2.0142E+02	4.9000E-02
		FZ	1.6064E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	6.7354E+05	3.5000E-02
		MZ	7.4591E+03	8.3400E-01
65	END-I	FX	1.0836E+04	1.5000E-02
		FY	1.9918E+02	4.9000E-02
		FZ	1.5972E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	6.7354E+05	3.5000E-02
		MZ	7.4591E+03	8.3400E-01
65	END-J	FX	1.0836E+04	1.5000E-02
		FY	1.9918E+02	4.9000E-02
		FZ	1.5972E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	6.2608E+05	3.5000E-02
		MZ	7.0057E+03	8.3400E-01
66	END-I	FX	1.0773E+04	1.5000E-02
		FY	1.9217E+02	4.9000E-02
		FZ	1.5692E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	6.2608E+05	3.5000E-02
		MZ	7.0057E+03	8.3400E-01
66	END-J	FX	1.0773E+04	1.5000E-02
		FY	1.9217E+02	4.9000E-02
		FZ	1.5692E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	5.3264E+05	3.5000E-02
		MZ	6.7539E+03	4.4000E-02

67	END-I	FX	1.0678E+04	1.5000E-02
		FY	1.8187E+02	4.9000E-02
		FZ	1.5302E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	5.3264E+05	3.5000E-02
		MZ	6.7539E+03	4.4000E-02
67	END-J	FX	1.0678E+04	1.5000E-02
		FY	1.8187E+02	4.9000E-02
		FZ	1.5302E+04	3.6000E-02
		TX	6.9383E+02	8.4000E-02
		MY	4.5129E+05	6.0000E-02
		MZ	6.5667E+03	5.9000E-02
68	END-I	FX	1.0213E+04	1.5000E-02
		FY	1.4745E+02	8.3400E-01
		FZ	1.3681E+04	3.5000E-02
		TX	6.9383E+02	8.4000E-02
		MY	4.5129E+05	6.0000E-02
		MZ	6.5667E+03	5.9000E-02
68	END-J	FX	1.0213E+04	1.5000E-02
		FY	1.4745E+02	8.3400E-01
		FZ	1.3681E+04	3.5000E-02
		TX	6.9383E+02	8.4000E-02
		MY	2.3615E+05	6.0000E-02
		MZ	5.6068E+03	5.9000E-02
69	END-I	FX	8.7179E+03	1.5000E-02
		FY	1.2986E+02	8.3400E-01
		FZ	1.2902E+04	6.0000E-02
		TX	9.7728E-09	2.1000E-02
		MY	2.1938E+05	6.0000E-02
		MZ	2.2081E+03	8.3400E-01
69	END-J	FX	8.7179E+03	1.5000E-02
		FY	1.2986E+02	8.3400E-01
		FZ	1.2902E+04	6.0000E-02
		TX	9.7728E-09	2.1000E-02
		MY	3.3408E-06	2.4000E-02
		MZ	1.9691E-07	1.1600E-01
70	END-I	FX	1.2179E+02	1.5000E-02
		FY	7.4484E+02	1.5000E-02
		FZ	1.2473E+03	3.7000E-02
		TX	8.2706E+03	6.0000E-02
		MY	2.0931E+04	3.7000E-02
		MZ	1.7920E+04	1.5000E-02

70	END-J	FX	1.2179E+02	1.5000E-02
		FY	7.4484E+02	1.5000E-02
		FZ	1.2473E+03	3.7000E-02
		TX	8.2706E+03	6.0000E-02
		MY	7.6257E+03	6.1000E-02
		MZ	9.9117E+03	1.5000E-02
71	END-I	FX	1.2119E+02	1.5000E-02
		FY	5.2658E+02	1.5000E-02
		FZ	7.0738E+02	3.7000E-02
		TX	8.2706E+03	6.0000E-02
		MY	7.6257E+03	6.1000E-02
		MZ	9.9117E+03	1.5000E-02
71	END-J	FX	1.2119E+02	1.5000E-02
		FY	5.2658E+02	1.5000E-02
		FZ	7.0738E+02	3.7000E-02
		TX	8.2706E+03	6.0000E-02
		MY	6.5084E+03	6.0000E-02
		MZ	7.4853E+03	1.5000E-02
72	END-I	FX	1.2065E+02	1.5000E-02
		FY	3.5079E+02	1.5000E-02
		FZ	4.3389E+02	6.0000E-02
		TX	8.2706E+03	6.0000E-02
		MY	6.5084E+03	6.0000E-02
		MZ	7.4853E+03	1.5000E-02
72	END-J	FX	1.6273E+02	1.5000E-02
		FY	3.3336E+02	1.5000E-02
		FZ	4.3389E+02	6.0000E-02
		TX	3.1523E+03	6.0000E-02
		MY	5.8482E+03	6.0000E-02
		MZ	3.2345E+03	1.5000E-02
72	END-J	FX	3.5079E+02	1.5000E-02
		FY	1.2065E+02	1.5000E-02
		FZ	4.3389E+02	6.0000E-02
		TX	2.0211E-10	3.2000E-02
		MY	1.7654E+03	5.9000E-02
		MZ	4.1365E+02	1.5000E-02
73	END-I	FX	8.0539E+01	1.5000E-02
		FY	4.1382E+01	1.5000E-02
		FZ	1.7661E+02	5.9000E-02
		TX	3.2063E-11	6.1000E-02
		MY	1.7654E+03	5.9000E-02
		MZ	4.1365E+02	1.5000E-02

73	END-J	FX	8.0539E+01	1.5000E-02
		FY	4.1382E+01	1.5000E-02
		FZ	1.7661E+02	5.9000E-02
		TX	3.2063E-11	6.1000E-02
		MY	7.4811E-10	3.6000E-02
		MZ	4.5188E-10	1.4910E+00
74	END-I	FX	1.2309E+02	1.6000E-02
		FY	7.5049E+02	1.5000E-02
		FZ	1.2344E+03	3.7000E-02
		TX	8.4933E+03	6.0000E-02
		MY	2.0733E+04	3.6000E-02
		MZ	1.8118E+04	1.5000E-02
74	END-J	FX	1.2309E+02	1.6000E-02
		FY	7.5049E+02	1.5000E-02
		FZ	1.2344E+03	3.7000E-02
		TX	8.4933E+03	6.0000E-02
		MY	7.8107E+03	6.0000E-02
		MZ	1.0049E+04	1.5000E-02
75	END-I	FX	1.2381E+02	1.6000E-02
		FY	5.3153E+02	1.5000E-02
		FZ	7.0018E+02	3.6000E-02
		TX	8.4933E+03	6.0000E-02
		MY	7.8107E+03	6.0000E-02
		MZ	1.0049E+04	1.5000E-02
75	END-J	FX	1.2381E+02	1.6000E-02
		FY	5.3153E+02	1.5000E-02
		FZ	7.0018E+02	3.6000E-02
		TX	8.4933E+03	6.0000E-02
		MY	6.6979E+03	6.0000E-02
		MZ	7.5998E+03	1.5000E-02
76	END-I	FX	1.2430E+02	1.6000E-02
		FY	3.5490E+02	1.5000E-02
		FZ	4.4652E+02	6.0000E-02
		TX	8.4933E+03	6.0000E-02
		MY	6.6979E+03	6.0000E-02
		MZ	7.5998E+03	1.5000E-02
76	END-J	FX	1.6367E+02	1.5000E-02
		FY	3.3824E+02	1.5000E-02
		FZ	4.4652E+02	6.0000E-02
		TX	3.2313E+03	6.0000E-02
		MY	6.0057E+03	6.0000E-02
		MZ	3.2931E+03	1.5000E-02

76	END-J	FX	3.5490E+02	1.5000E-02
		FY	1.2430E+02	1.6000E-02
		FZ	4.4652E+02	6.0000E-02
		TX	9.0260E-11	1.5700E-01
		MY	1.8066E+03	5.9000E-02
		MZ	4.2812E+02	1.6000E-02
77	END-I	FX	8.1483E+01	1.5000E-02
		FY	4.2830E+01	1.6000E-02
		FZ	1.8074E+02	5.9000E-02
		TX	1.1314E-10	3.1000E-02
		MY	1.8066E+03	5.9000E-02
		MZ	4.2812E+02	1.6000E-02
77	END-J	FX	8.1483E+01	1.5000E-02
		FY	4.2830E+01	1.6000E-02
		FZ	1.8074E+02	5.9000E-02
		TX	1.1314E-10	3.1000E-02
		MY	9.8639E-10	3.0000E-02
		MZ	8.7905E-11	2.1800E-01
78	END-I	FX	3.1690E+04	5.0000E-03
		FY	2.0742E+02	8.9000E-01
		FZ	1.5304E+04	3.6000E-02
		TX	5.1299E+02	4.1000E-02
		MY	8.9318E+05	3.4000E-02
		MZ	1.2407E+04	8.9000E-01
78	END-J	FX	3.1690E+04	5.0000E-03
		FY	2.0742E+02	8.9000E-01
		FZ	1.5304E+04	3.6000E-02
		TX	5.1299E+02	4.1000E-02
		MY	6.5202E+05	3.4000E-02
		MZ	9.0894E+03	8.9000E-01
79	END-I	FX	3.1630E+04	5.0000E-03
		FY	2.0695E+02	8.9000E-01
		FZ	1.5218E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	6.5202E+05	3.4000E-02
		MZ	9.0894E+03	8.9000E-01
79	END-J	FX	3.1630E+04	5.0000E-03
		FY	2.0695E+02	8.9000E-01
		FZ	1.5218E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	6.0699E+05	3.4000E-02
		MZ	8.5133E+03	4.8800E-01

80	END-I	FX	3.1443E+04	5.0000E-03
		FY	2.0547E+02	8.9000E-01
		FZ	1.4977E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	6.0699E+05	3.4000E-02
		MZ	8.5133E+03	4.8800E-01
80	END-J	FX	3.1443E+04	5.0000E-03
		FY	2.0547E+02	8.9000E-01
		FZ	1.4977E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	5.1811E+05	3.4000E-02
		MZ	7.4630E+03	4.8700E-01
81	END-I	FX	3.1166E+04	5.0000E-03
		FY	2.0320E+02	8.9000E-01
		FZ	1.4637E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	5.1811E+05	3.4000E-02
		MZ	7.4630E+03	4.8700E-01
81	END-J	FX	3.1166E+04	5.0000E-03
		FY	2.0320E+02	8.9000E-01
		FZ	1.4637E+04	3.5000E-02
		TX	5.1299E+02	4.1000E-02
		MY	4.2169E+05	3.4000E-02
		MZ	6.7235E+03	1.7800E-01
82	END-I	FX	2.9805E+04	5.0000E-03
		FY	1.9186E+02	8.9000E-01
		FZ	1.3263E+04	3.4000E-02
		TX	5.1299E+02	4.1000E-02
		MY	4.2169E+05	3.4000E-02
		MZ	6.7235E+03	1.7800E-01
82	END-J	FX	2.9805E+04	5.0000E-03
		FY	1.9186E+02	8.9000E-01
		FZ	1.3263E+04	3.4000E-02
		TX	5.1299E+02	4.1000E-02
		MY	2.0718E+05	6.0000E-02
		MZ	5.8106E+03	5.9000E-02
83	END-I	FX	2.5452E+04	5.0000E-03
		FY	1.7206E+02	8.9000E-01
		FZ	1.1295E+04	6.0000E-02
		TX	9.3618E-09	1.9100E-01
		MY	1.9206E+05	6.0000E-02
		MZ	2.9257E+03	8.9000E-01

83	END-J	FX	2.5452E+04	5.0000E-03
		FY	1.7206E+02	8.9000E-01
		FZ	1.1295E+04	6.0000E-02
		TX	9.3618E-09	1.9100E-01
		MY	3.3421E-06	2.1000E-02
		MZ	4.9099E-07	2.1300E-01
84	END-I	FX	3.5194E+02	5.0000E-03
		FY	2.1631E+03	5.0000E-03
		FZ	1.2016E+03	3.7000E-02
		TX	7.6132E+03	6.0000E-02
		MY	1.9760E+04	3.7000E-02
		MZ	5.1910E+04	5.0000E-03
84	END-J	FX	3.5194E+02	5.0000E-03
		FY	2.1631E+03	5.0000E-03
		FZ	1.2016E+03	3.7000E-02
		TX	7.6132E+03	6.0000E-02
		MY	7.3460E+03	3.3000E-02
		MZ	2.8652E+04	5.0000E-03
85	END-I	FX	3.4891E+02	5.0000E-03
		FY	1.5272E+03	5.0000E-03
		FZ	6.6837E+02	3.7000E-02
		TX	7.6132E+03	6.0000E-02
		MY	7.3460E+03	3.3000E-02
		MZ	2.8652E+04	5.0000E-03
85	END-J	FX	3.4891E+02	5.0000E-03
		FY	1.5272E+03	5.0000E-03
		FZ	6.6837E+02	3.7000E-02
		TX	7.6132E+03	6.0000E-02
		MY	5.9516E+03	6.0000E-02
		MZ	2.1615E+04	5.0000E-03
86	END-I	FX	3.4631E+02	5.0000E-03
		FY	1.0156E+03	5.0000E-03
		FZ	3.9678E+02	6.0000E-02
		TX	7.6132E+03	6.0000E-02
		MY	5.9516E+03	6.0000E-02
		MZ	2.1615E+04	5.0000E-03
86	END-J	FX	4.7327E+02	5.0000E-03
		FY	9.6303E+02	5.0000E-03
		FZ	3.9678E+02	6.0000E-02
		TX	2.9181E+03	6.0000E-02
		MY	5.3833E+03	6.0000E-02
		MZ	9.3215E+03	5.0000E-03

86	END-J	FX	1.0156E+03	5.0000E-03
		FY	3.4631E+02	5.0000E-03
		FZ	3.9678E+02	6.0000E-02
		TX	1.9042E-10	3.4000E-02
		MY	1.6715E+03	5.9000E-02
		MZ	1.1864E+03	5.0000E-03
87	END-I	FX	2.3317E+02	5.0000E-03
		FY	1.1868E+02	5.0000E-03
		FZ	1.6722E+02	5.9000E-02
		TX	9.9267E-11	3.6000E-02
		MY	1.6715E+03	5.9000E-02
		MZ	1.1864E+03	5.0000E-03
87	END-J	FX	2.3317E+02	5.0000E-03
		FY	1.1868E+02	5.0000E-03
		FZ	1.6722E+02	5.9000E-02
		TX	9.9267E-11	3.6000E-02
		MY	6.8323E-10	6.0000E-02
		MZ	2.7654E-10	1.4720E+00
88	END-I	FX	3.5425E+02	5.0000E-03
		FY	2.1906E+03	5.0000E-03
		FZ	1.2037E+03	3.7000E-02
		TX	7.5010E+03	6.0000E-02
		MY	1.9959E+04	3.6000E-02
		MZ	5.2849E+04	5.0000E-03
88	END-J	FX	3.5425E+02	5.0000E-03
		FY	2.1906E+03	5.0000E-03
		FZ	1.2037E+03	3.7000E-02
		TX	7.5010E+03	6.0000E-02
		MY	7.4675E+03	3.4000E-02
		MZ	2.9295E+04	5.0000E-03
89	END-I	FX	3.5681E+02	5.0000E-03
		FY	1.5512E+03	5.0000E-03
		FZ	6.7451E+02	3.6000E-02
		TX	7.5010E+03	6.0000E-02
		MY	7.4675E+03	3.4000E-02
		MZ	2.9295E+04	5.0000E-03
89	END-J	FX	3.5681E+02	5.0000E-03
		FY	1.5512E+03	5.0000E-03
		FZ	6.7451E+02	3.6000E-02
		TX	7.5010E+03	6.0000E-02
		MY	5.8555E+03	6.0000E-02
		MZ	2.2147E+04	5.0000E-03

90	END-I	FX	3.5859E+02	5.0000E-03
		FY	1.0355E+03	5.0000E-03
		FZ	3.9037E+02	6.0000E-02
		TX	7.5010E+03	6.0000E-02
		MY	5.8555E+03	6.0000E-02
		MZ	2.2147E+04	5.0000E-03
90	END-J	FX	4.7865E+02	5.0000E-03
		FY	9.8577E+02	5.0000E-03
		FZ	3.9037E+02	6.0000E-02
		TX	2.8785E+03	6.0000E-02
		MY	5.3040E+03	6.0000E-02
		MZ	9.5886E+03	5.0000E-03
90	END-J	FX	1.0355E+03	5.0000E-03
		FY	3.5859E+02	5.0000E-03
		FZ	3.9037E+02	6.0000E-02
		TX	6.4716E-10	3.1000E-02
		MY	1.6494E+03	5.9000E-02
		MZ	1.2359E+03	5.0000E-03
91	END-I	FX	2.3774E+02	5.0000E-03
		FY	1.2364E+02	5.0000E-03
		FZ	1.6500E+02	5.9000E-02
		TX	5.7959E-11	2.5000E-02
		MY	1.6494E+03	5.9000E-02
		MZ	1.2359E+03	5.0000E-03
91	END-J	FX	2.3774E+02	5.0000E-03
		FY	1.2364E+02	5.0000E-03
		FZ	1.6500E+02	5.9000E-02
		TX	5.7959E-11	2.5000E-02
		MY	2.3791E-09	2.7000E-02
		MZ	3.8044E-10	1.5030E+00
92	END-I	FX	2.8996E+03	6.0000E-03
		FY	2.1614E+02	5.4000E-02
		FZ	6.1801E+03	1.6000E-02
		TX	2.5586E-10	2.1800E-01
		MY	2.0314E+05	1.6000E-02
		MZ	7.1509E+03	5.4000E-02
92	END-J	FX	2.8996E+03	6.0000E-03
		FY	2.1614E+02	5.4000E-02
		FZ	6.1801E+03	1.6000E-02
		TX	2.5586E-10	2.1800E-01
		MY	1.0428E+05	1.6000E-02
		MZ	3.6936E+03	5.4000E-02

93	END-I	FX	2.7484E+03	6.0000E-03
		FY	2.0715E+02	5.4000E-02
		FZ	5.9145E+03	1.6000E-02
		TX	1.9359E-11	1.5000E-02
		MY	1.0428E+05	1.6000E-02
		MZ	3.6936E+03	5.4000E-02
93	END-J	FX	2.7484E+03	6.0000E-03
		FY	2.0715E+02	5.4000E-02
		FZ	5.9145E+03	1.6000E-02
		TX	1.9359E-11	1.5000E-02
		MY	8.5049E+04	1.6000E-02
		MZ	3.0199E+03	5.4000E-02
94	END-I	FX	1.7158E+03	6.0000E-03
		FY	1.4299E+02	5.4000E-02
		FZ	4.0300E+03	1.6000E-02
		TX	4.1174E-12	1.4560E+00
		MY	8.5049E+04	1.6000E-02
		MZ	3.0199E+03	5.4000E-02
94	END-J	FX	1.7158E+03	6.0000E-03
		FY	1.4299E+02	5.4000E-02
		FZ	4.0300E+03	1.6000E-02
		TX	4.1174E-12	1.4560E+00
		MY	8.7501E+03	5.0000E-03
		MZ	3.1225E+02	5.4000E-02
95	END-I	FX	5.0445E+02	6.0000E-03
		FY	4.4633E+01	5.4000E-02
		FZ	1.2507E+03	5.0000E-03
		TX	4.7051E-12	1.3800E-01
		MY	8.7501E+03	5.0000E-03
		MZ	3.1225E+02	5.4000E-02
95	END-J	FX	5.0445E+02	6.0000E-03
		FY	4.4633E+01	5.4000E-02
		FZ	1.2507E+03	5.0000E-03
		TX	4.7051E-12	1.3800E-01
		MY	7.4503E-10	1.8000E-02
		MZ	1.6862E-10	1.3600E-01

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11. ABSTRACT (200 words or less)

To satisfy the need for verification of the computer programs and modeling techniques that will be used to perform the final piping analyses for the Westinghouse AP600 Standardized Plant, three benchmark problems were developed. The problems are representative piping systems subjected to representative dynamic loads with solutions developed using the methods being proposed for analysis for the AP600 standard design. It will be required that the combined licensees demonstrate that their solutions to these problems are in agreement with the benchmark problem set.

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piping, Westinghouse AP600, dynamic loads

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