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HUNTSVILLE RESEARCH & ENGINEERING CENTER

HUNTSVILLE RESEARCH PARK

4800 BRADFORD DRIVE, HUNTSVILLE, ALABAMA

VIBRATIONAL CHARACTERISTICS OF LARGE COMPLEX SPACE VEHICLES

FINAL REPORT

20 December 1966

Contract NAS8-20161

by

W. D. Whetstone and M. L. Pearson

APPROVED BY: _____

R. E. Bieber, Manager
Structures & Mechanics

J. S. Farrior

J. S. Farrior
Resident Manager

FOREWORD

The work described in this report was carried out by Lockheed Missiles & Space Company, Huntsville Research & Engineering Center for the George C. Marshall Space Flight Center of the National Aeronautics and Space Administration, Contract NAS8-20161.

The work was administered under the direction of the Aero-Astrodynamics Laboratory, NASA/MSFC, with Dr. George F. McDonough as Contracting Officer Representative.

SUMMARY

Results are presented of an analytical study involving development of methods of analysis of the vibrational characteristics of a class of large, complex space vehicles.

The method of analysis and computer program presented in this report provide a practical and accurate means of calculating the lateral modes and frequencies of a broad class of non-symmetrical vehicles. An energy method of solution involving the solution of only relatively low-order eigenproblems is used, so that computer execution times are short. For example, many modes and frequencies of a typical Saturn V configuration may be computed in three or four minutes of IBM 7094 time, including the generation of an extensive set of SC-4020 plots of both the problem definition data and the vehicle mode shapes.

The formulation upon which the program is based in presented in detail. A discussion of the computer program itself is presented, including a User's Manual which provides a guide to the use of the program.

A listing of the program, sample printed output, and solution data for a number of examples are included in the Appendixes.

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Section 1
INTRODUCTION

The method of analysis and computer program presented in this report provide a practical and accurate means of calculating the lateral modes and frequencies of a broad class of non-symmetrical space vehicles. In this analysis vehicles are modeled as a tandem sequence of non-uniform beams interconnected by arbitrary elastic interstages, with branch beams representing engines and internally cantilevered payloads, etc. Each beam is assumed to have two symmetry planes, with properties in the two planes not necessarily equal. The orientation relative to the vehicle pitch and yaw directions of the principal directions of the individual beams is arbitrary.

An energy method of solution is utilized which requires only a relatively small number of degrees of freedom, hence very short computer execution time. The generalized coordinates employed are: (1) the coefficients of arbitrary sets of lateral displacement functions representing the bending deformations of the individual beams, (2) the lateral displacement components of the end points of the beams, and (3) coordinates specifying the motions of the branch beams relative to their points of attachment to the vehicle.

The usual Timoshenko beam postulates are employed in calculating the kinetic and potential energy quadratic forms characterizing the states of the individual beams. (In the case of beams which are cylindrical shells of revolution, the Timoshenko beam postulates coincide identically with linear shell theory for the lateral bending modes - even if the shell properties vary meridionally.)

The interstages connecting the beams are assumed to be very light compared to the beams themselves, so that their kinetic energies may be adequately represented by placing appropriate lumped masses at the ends

of beams they interconnect. The flexibility characteristics of interstages are characterized by 4 x 4 flexibility matrices representing the relation between the (quasi-static) relative motions of the interstage extremities and the corresponding stress resultant quantities. Consider, for example, a conical interstage with stiff end rings, as shown in Figure 1-1.

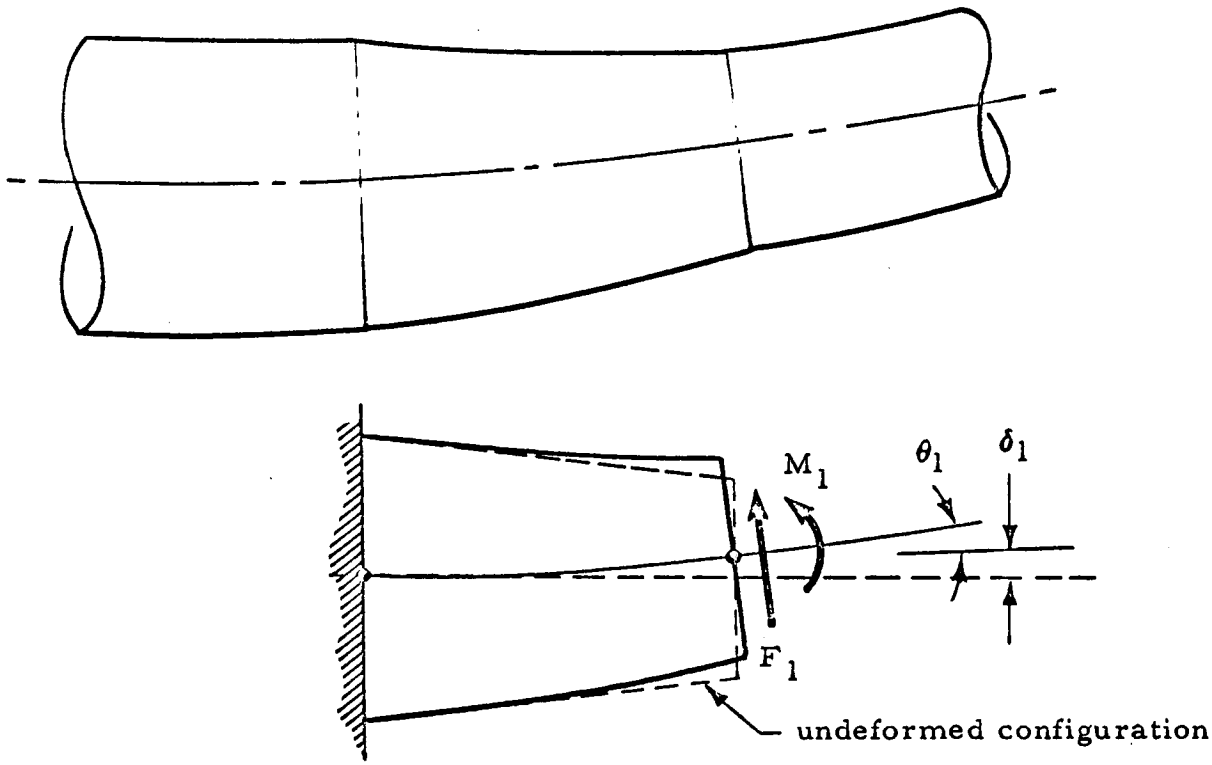


Figure 1-1 - Typical Interstage

If the above conical interstage were rotationally symmetric, it would be a straightforward matter to calculate* a 2 x 2 flexibility matrix, D_{11} , such that

*See e.g., Reference 3.

$$\begin{bmatrix} \delta_1 \\ \theta_1 \end{bmatrix} = D_{11} \begin{bmatrix} F_1 \\ M_1 \end{bmatrix}$$

where the subscript (1) refers to the plane of Figure 1-1. For any other plane, say plane 2, we have similarly

$$\begin{bmatrix} \delta_2 \\ \theta_2 \end{bmatrix} = D_{22} \begin{bmatrix} F_2 \\ M_2 \end{bmatrix}$$

and, for a shell of revolution, $D_{22} = D_{11}$. In general, however, interstages may be elastically non-symmetrical and their force-deflection characteristics are represented as

$$\begin{bmatrix} \delta_1 \\ \theta_1 \\ \delta_2 \\ \theta_2 \end{bmatrix} = \begin{bmatrix} D_{11} & D_{12} \\ (D_{12})^t & D_{22} \end{bmatrix} \begin{bmatrix} F_1 \\ M_1 \\ F_2 \\ M_2 \end{bmatrix},$$

where D_{11} and D_{22} are not necessarily equal, and where D_{12} is generally non-zero.

Interstage flexibility characteristics may, of course, be determined in various ways; for example the flexibility matrix of a complicated interstage (e.g., the Apollo Command Module-Service Module interstage) might best be determined by a static test.

The computer program developed to implement the method described in this report is coded in FORTRAN IV and configured for execution on the IBM 7094/SC-4020. Appendix B contains a list of the program and printed output for a sample problem. Appendix A presents the solutions, including

SC-4020 output, for several test problems. The SC-4020 plots present the projections of the vehicle mode shapes onto the pitch and yaw planes. Since most of the examples presented in the appendixes involve rotationally symmetrical vehicles, the corresponding solutions appear as pure pitch (or yaw) modes. In such cases, the program has actually computed two separate modes (a pitch mode and a yaw mode) at the same frequency. For brevity, only one of each such pairs of planar modes is included in the appendixes. In general , however, vehicle modes may be non-planar. The functioning of the program for non-symmetrical vehicles has been carefully checked out in a sequence of test executions. One such solution is included as Problem 2 in Appendix A.

Program execution time is relatively short; for example, calculation of a complete set of Saturn V modes and frequencies requires 2 to 5 minutes of IBM 7094 execution time, depending on the amount and type of output data requested. The program is set up primarily for analysis of free-free vehicles; however, provision is included for external support springs so that cantilever modes, etc., can also be calculated.

Section 2
FORMULATION

2.1 Mathematical Model

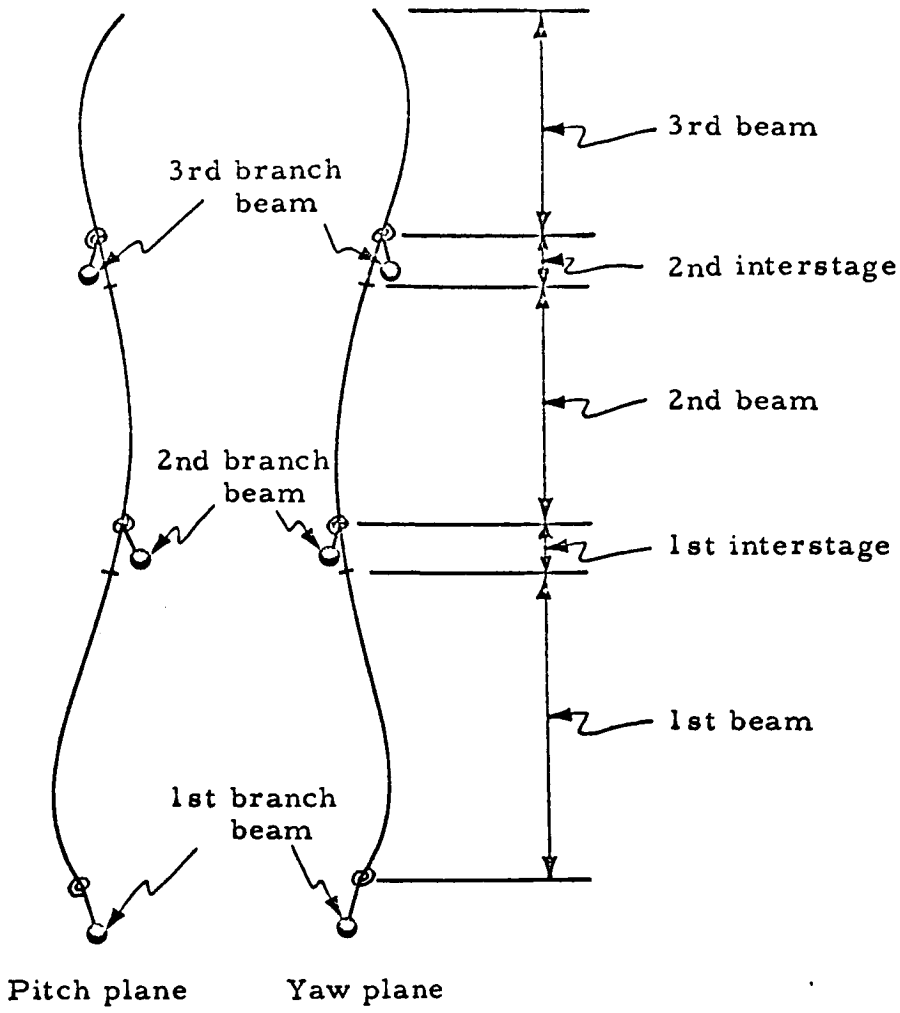
The mathematical model for this analysis consists of a system of linearly connected "beams" joined by "interstages" representable by 4 x 4 flexibility matrices. (See Figure 2-1.) The cross section of each of the beams has two axes of symmetry which define two principal directions for that beam. The properties of a beam may be different in the two principal directions. Each beam may be oriented such that its principal axes do not coincide with a set of reference axes (pitch and yaw) for the system.

A "branch beam" with two degrees of freedom may be included at each interstage.

The bending of the individual beams is characterized by arbitrary shape functions for each principal direction.

2.2 Coordinates

The generalized coordinates for the analysis are taken to be the displacements of the ends of the "beams", $U_i^{\ell(1)}$, $U_i^{\ell(2)}$, $U_i^{r(1)}$, $U_i^{r(2)}$, (see Figure 2-2)the "branch beam" angular displacements, $\beta_i^{(1)}$, $\beta_i^{(2)}$, and the coefficients, $\lambda_{ij}^{(1)}$, $\lambda_{ij}^{(2)}$, of the corresponding displacement functions $Y_{ij}^{(1)}(x)$ and $Y_{ij}^{(2)}(x)$.



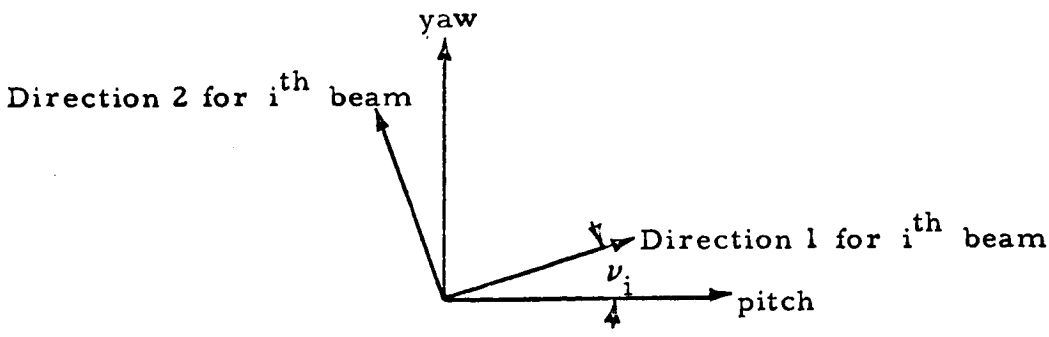


Figure 2-1 - Model Configuration

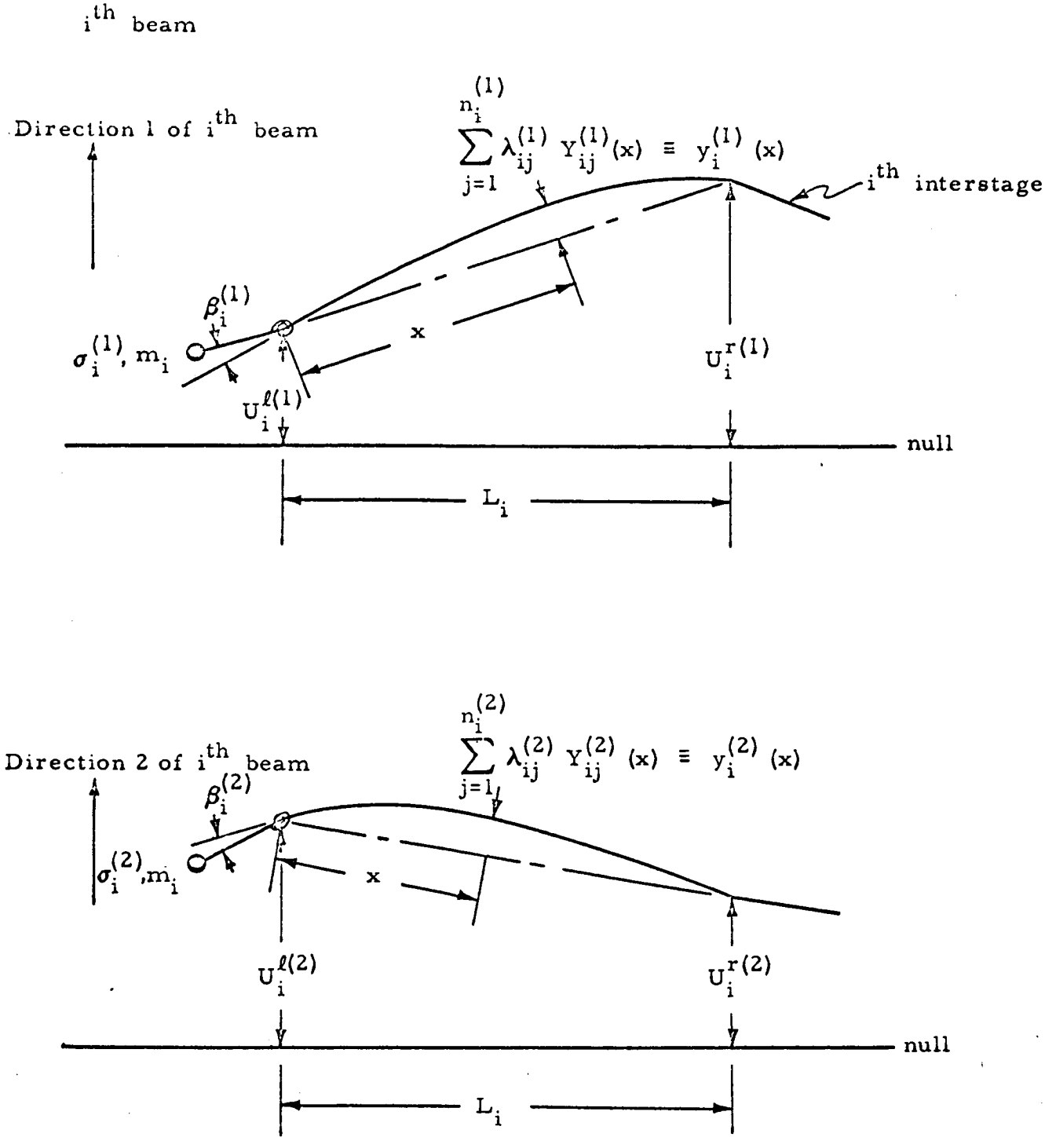


Figure 2-2 - Coordinates Associated with the ith Beam

The subscripts i and j represent the ith beam and the jth deflection function for that beam. Superscripts ℓ and r are used to denote the left and right ends of a beam respectively. Superscripts p and y indicate the two reference directions of the system, pitch and yaw.

2.3 Equations of Motion

For undamped, free vibrations, Lagrange's equation of motion reduces to

$$\frac{d}{dt}\left(\frac{\partial T}{\partial \dot{q}_i}\right) + \frac{\partial V}{\partial q_i} = 0 \qquad i = 1, 2, ---, n \tag{1}$$

where T and V are the kinetic and potential energies of the system, respectively and $(q_1, q_2, ---, q_n)$ are the generalized coordinates of the system.

The quantities T and V may be expressed as quadratic forms in the generalized coordinates, e.g.,

$$2\,T = \dot{Q}^t A \dot{Q} \qquad \text{and}$$
$$2\,V = Q^t B Q \tag{2}$$

where

$$Q = \begin{Bmatrix} q_1 \\ q_2 \\ \vdots \\ q_n \end{Bmatrix}$$

and A and B are kinetic and potential energy coefficient matrices, termed the "mass" matrix and "stiffness" matrix, respectively.

Equation (1) may now be written as

$$A\ddot{Q} + BQ = O. \tag{3}$$

Assuming solutions of Equation (3) of the form

$$Q = X \sin\omega t$$

we get

$$\omega^2 AX - BX = O. \tag{4}$$

The method of solution employed by the computer program to solve for the eigenvalues, ω^2, and eigenvectors, X, of Equation (4) is discussed in Section 3.1.1.

2.4 Energy Terms

The kinetic and potential energy terms associated with the various components of the mathematical model are discussed below.

2.4.1 Beams

In deriving the kinetic and potential energy expressions for beam bending, a Timoshenko beam model is used, i.e., strain energy due to shear deformation is included in the analysis, as well as kinetic energy due to rotatory inertia. For tank properties involved in the Saturn V class of vehicles, the strain energy due to shear is quite significant, and the effect of including rotatory inertia is significant in the second and higher modes.

Kinetic Energy

The displacement of the ith beam in the tth principal direction, $\Delta_i^t(x)$, is:

$$\Delta_i^t(x) = U_i^{\ell t} + \frac{U_i^{rt} - U_i^{\ell t}}{L_i} x + \sum_{j=1}^{n_i^t} \lambda_{ij}^t Y_{ij}^t(x) \tag{5}$$

where L_i is the length of the ith beam,

Y_{ij}^t is the jth deflection function in the tth principal direction for the ith beam, and

n_i^t is the number of deflection functions used in the tth principal direction for the ith beam.

The kinetic energy associated with the tth principal direction of the ith beam, T_i^{bt}, may now be written as

$$T_i^{bt} = \frac{1}{2}\int_0^{L_i} \left\{ \mu_i(x) \left[\dot{U}_i^{\ell t} + \frac{\dot{U}_i^{rt} - \dot{U}_i^{\ell t}}{L_i} x + \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t Y_{ij}^t(x) \right]^2 \right.$$

$$\left. + I_i^t(x) \left[\frac{\dot{U}_i^{rt} - \dot{U}_i^{\ell t}}{L_i} + \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t Z_{ij}^t(x) \right]^2 \right\} dx \tag{6}$$

where

μ_i is the mass per unit length of the ith beam,

I_i^t is the mass moment of inertia per unit length for the tth principal direction of the ith beam, and

Z_{ij}^t is the cross-section rotation associated with the jth displacement function for the tth direction of the ith beam.

Equation (6) may be written in the form

$$
\begin{aligned}
2\,T_i^{bt} = {} & \left(\dot{U}_i^{\ell t}\right)^2 \int_o^{L_i} \mu_i(x)\,dx \\
& + \left(\frac{\dot{U}_i^{rt} - \dot{U}_i^{\ell t}}{L_i}\right)^2 \int_o^{L_i} \left[x^2 \mu_i(x) + I_i^t(x)\right] dx \\
& + 2\left(\dot{U}_i^{\ell t}\right)\left(\frac{\dot{U}^{rt} - \dot{U}^{\ell t}}{L_i}\right) \int_o^{L_i} x\,\mu_i(x)\,dx \\
& + \int_o^{L_i} \mu_i(x) \left[\sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t\; Y_{ij}^t(x)\right]^2 dx \\
& + \int_o^{L_i} I_i^t(x) \left[\sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t\; Z_{ij}^t(x)\right]^2 dx \\
& + 2\,\dot{U}_i^{\ell t} \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \int_o^{L_i} \mu_i(x)\; Y_{ij}^t(x)\,dx \\
& + 2\left(\frac{\dot{U}_i^{rt} - \dot{U}_i^{\ell t}}{L_i}\right) \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \int_o^{L_i} x\,\mu_i(x)\; Y_{ij}^t(x)\,dx \\
& + 2\left(\frac{\dot{U}_i^{rt} - \dot{U}_i^{\ell t}}{L_i}\right) \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \int_o^{L_i} I_i^t(x)\, Z_{ij}^t(x)\,dx \;. \qquad (7)
\end{aligned}
$$

The two terms of Equation (7) involving the square of a summation may be expressed as double sums, i.e.,

$$\int_0^{L_i} \mu_i(x) \left[\sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \, Y_{ij}^t(x)\right]^2 dx = \sum_{j=1}^{n_i^t} \sum_{k=1}^{n_i^t} \dot{\lambda}_{ij}^t \, \dot{\lambda}_{ik}^t \int_0^{L_i} \mu_i(x) \, Y_{ij}^t(x) \, Y_{ik}^t(x) \, dx$$

$$\int_0^{L_i} I_i^t(x) \left[\sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \, Z_{ij}^t(x)\right]^2 dx = \sum_{j=1}^{n_i^t} \sum_{k=1}^{n_i^t} \dot{\lambda}_{ij}^t \, \dot{\lambda}_{ik}^t \int_0^{L_i} I_i(x) \, Z_{ij}^t(x) \, Z_{ik}^t(x) \, dx$$

Making the following definitions

$$\begin{aligned}
\int_0^{L_i} \mu_i(x) \, dx &\equiv M_i \\
\int_0^{L_i} x \, \mu_i(x) \, dx &\equiv J_i \\
\int_0^{L_i} \left[x^2 \mu_i(x) + I_i^t(x)\right] dx &\equiv R_i^t \\
\int_0^{L_i} \mu_i(x) \, Y_{ij}^t(x) \, dx &\equiv \gamma_{ij}^t \\
\int_0^{L_i} \left[x \, \mu_i(x) \, Y_{ij}^t(x) + I_i^t(x) \, Z_{ij}^t(x)\right] dx &\equiv \Omega_{ij}^t \\
\int_0^{L_i} \left[\mu_i(x) \, Y_{ij}^t(x) \, Y_{ik}^t(x) + I_i^t(x) \, Z_{ij}^t(x) \, Z_{ik}^t(x)\right] dx &\equiv \Psi_{ijk}^t
\end{aligned} \tag{8}$$

equation (7) may be written in terms of the generalized coordinates.

$$
\begin{aligned}
2\,T_i^{bt} = {} & \left(\dot{U}_i^{\ell t}\right)^2 \left[M_i + \left(\frac{1}{L_i}\right)^2 R_i^t - \left(\frac{2}{L_i}\right) J_i^t\right] \\
& + \left(\dot{U}_i^{rt}\right)^2 \left[\left(\frac{1}{L_i}\right)^2 R_i^t\right] \\
& + \left(\dot{U}_i^{\ell t}\ \dot{U}_i^{rt}\right) \left[-2\left(\frac{1}{L_i}\right)^2 R_i^t + \left(\frac{2}{L_i}\right) J_i^t\right] \\
& + 2\,\dot{U}_i^{\ell t} \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[\gamma_{ij}^t - \left(\frac{1}{L_i}\right) \Omega_{ij}^t\right] \\
& + 2\,\dot{U}_i^{rt} \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[\left(\frac{1}{L_i}\right) \Omega_{ij}^t\right] \\
& + \sum_{j=1}^{n_i^t} \sum_{k=1}^{n_i^t} \dot{\lambda}_{ij}^t\ \dot{\lambda}_{ij}^t\ \Psi_{ijk}^t
\end{aligned}
\tag{9}
$$

The total kinetic energy associated with the ith beam, T_i^b, may be written as

$$
T_i^b = T_i^{b1} + T_i^{b2} \,. \tag{10}
$$

Potential Energy

The potential energy of the ith beam in the tth principal direction, V_i^{bt}, may be expressed as

$$V_i^{bt} = \frac{1}{2}\int_o^{L_i}\left[EI_i^t(x)\left\{\sum_{j=1}^{n_i^t}\lambda_{ij}^t\left[Z_{ij}^t(x)\right]'\right\}^2 + GA_i^t(x)\left\{\sum_{j=1}^{n_i^t}\lambda_{ij}^t H_{ij}^t(x)\right\}^2\right]dx \quad (11)$$

where

EI_i^t is the bending stiffness distribution for the tth principal direction of the ith beam,

GA_i^t is the shear stiffness distribution for the tth principal direction of the ith beam, and

H_{ij}^t is the shear slope associated with the jth displacement function for the tth direction of the ith beam.

Expanding and interchanging the order of summation and integration in Equation (11) yields

$$V_i^{bt} = \frac{1}{2}\sum_{j=1}^{n_i^t}\sum_{k=1}^{n_i^t}\lambda_{ij}^t\lambda_{ik}^t\int_o^{L_i}\left\{EI_i^t(x)\left[Z_{ij}^t(x)\right]'\left[Z_{ik}^t(x)\right]' + GA_i^t(x)\,H_{ij}^t(x)\,H_{ik}^t(x)\right\}dx. \quad (12)$$

Making the definition

$$G_{ijk}^t = \int_o^{L_i}\left\{EI_i^t(x)\left[Z_{ij}^t(x)\right]'\left[Z_{ik}^t(x)\right]' + GA_i^t(x)\,H_{ij}^t(x)\,H_{ik}^t(x)\right\}dx \quad (13)$$

equation (12) may be written as

$$V_i^{bt} = \frac{1}{2} \sum_{j=1}^{n_i^t} \sum_{k=1}^{n_i^t} \lambda_{ij}^t \lambda_{ik}^t G_{ijk}^t \quad . \tag{14}$$

The total potential energy of the ith beam due to bending, V_i^b, may be written as

$$V_i^b = V_i^{b1} + V_i^{b2} \quad . \tag{15}$$

2.4.2 Interstages

An interstage in the idealized model may be either of two types:

a. Zero-length interstage
b. Non-zero length interstage

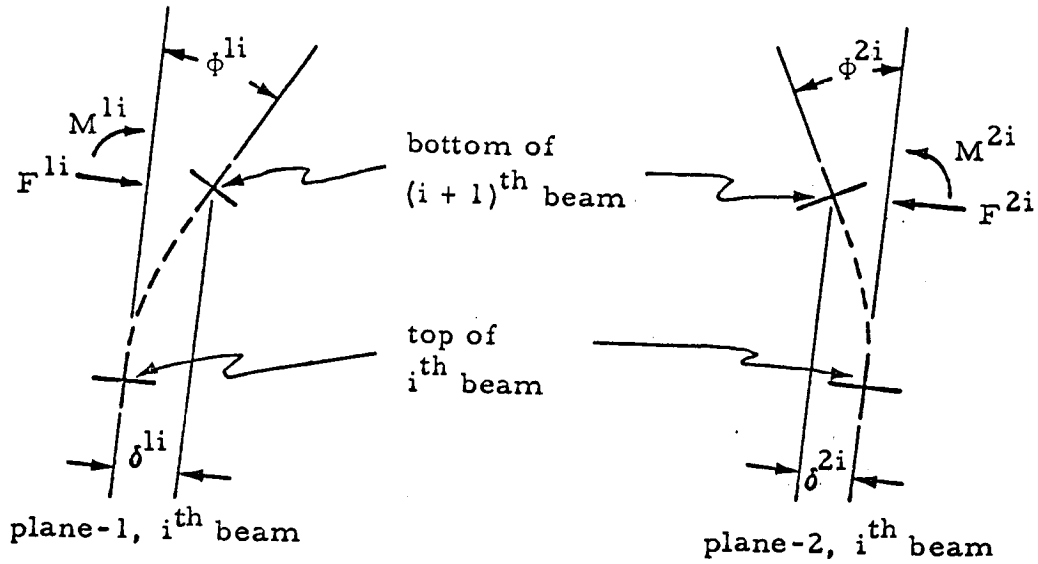
Most of the following discussion is directed toward the interstages of type-b, However, the resulting matrix equations representing the interstage strain energy are of the same form for either case.

Kinetic Energy

The interstages of type-a have no kinetic energy associated with their displacements due to the nature of that class of interstage.

The type-b interstages are assumed to be very light compared with the weights of other parts of the vehicle in the same neighborhood (engines, bulkheads, etc.) The engines are represented by branch beams and bulkhead, and other associated tank masses are included in the beams. So there are no kinetic energy terms for the interstage itself, rather the interstage mass is lumped at the ends of the adjacent beams in appropriate proportions.

The strain energy associated with the ith "interstage" (type b), V_i^s, is derived as follows:



M^1, M^2, F^1, F^2 are the moments and forces exerted on the top of the interstage by the bottom of the $(i + 1)^{th}$ beam.

The flexibility properties of the interstage are represented by:

$$\begin{bmatrix} M^{1i} \\ F^{1i} \\ M^{2i} \\ F^{2i} \end{bmatrix} = \left[\begin{array}{cc|cc} k_{11}^{11i} & k_{12}^{11i} & k_{11}^{12i} & k_{12}^{12i} \\ k_{12}^{11i} & k_{22}^{11i} & k_{21}^{12i} & k_{22}^{12i} \\ \hline \multicolumn{2}{c|}{\text{Symmetric}} & k_{11}^{22i} & k_{12}^{22i} \\ & & k_{12}^{22i} & k_{22}^{22i} \end{array}\right] \begin{bmatrix} \phi^{1i} \\ \delta^{1i} \\ \phi^{2i} \\ \delta^{2i} \end{bmatrix} \tag{16}$$

The strain energy associated with the ith interstage may then be written as

$$V_i^s = [\phi]_i^t \, [K]_i \, [\phi]_i, \quad \text{where } \Phi_i \equiv \begin{bmatrix} \phi^{1i} \\ \delta^{1i} \\ \phi^{2i} \\ \delta^{2i} \end{bmatrix}, \tag{17}$$

and where K_i is the stiffness matrix of Equation (16).

It is convenient to represent the strain energy associated with an interstage in terms of a set of angular displacements, α.

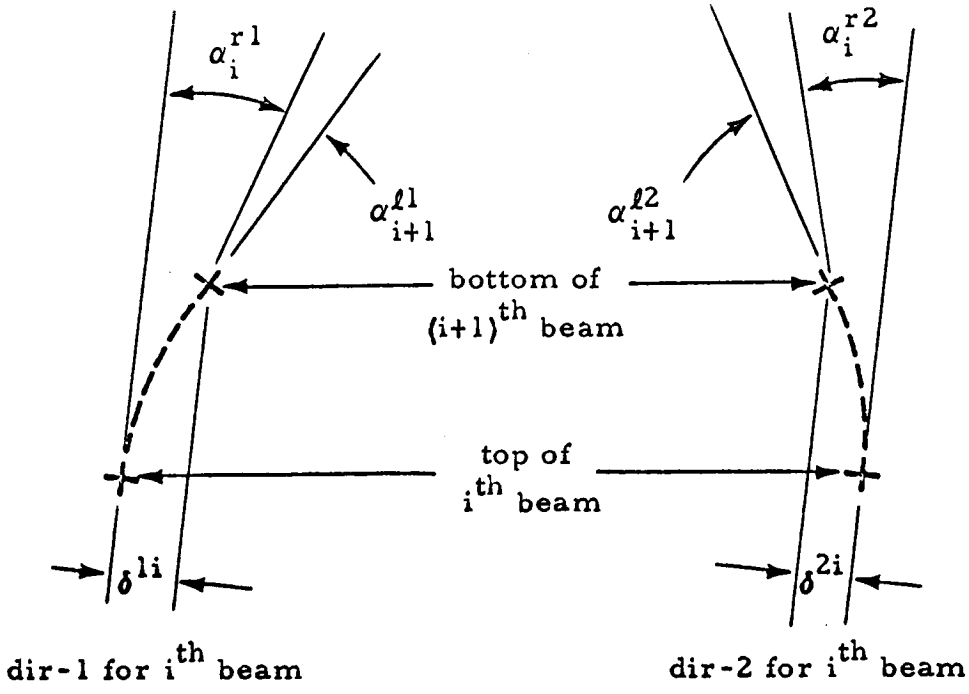


Figure 2-3

From Figure 2-3 it is easily seen that

$$\phi^{1i} = \alpha_i^{r1} + \alpha_{i+1}^{\ell 1}, \text{ and}$$
$$\delta^{1i} = \ell \alpha_i^{r1} \tag{18}$$

where ℓ is the length of the interstage.

Writing Equations (18) in matrix form for the ith interstage

$$\begin{bmatrix} \phi^{1i} \\ \delta^{1i} \\ \phi^{2i} \\ \delta^{2i} \end{bmatrix} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ \ell & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & \ell & 0 \end{bmatrix} \begin{bmatrix} \alpha_i^{r1} \\ \alpha_{i+1}^{\ell 1} \\ \alpha_i^{r2} \\ \alpha_{i+1}^{\ell 2} \end{bmatrix} \tag{19}$$

or

$$[\phi]_i = [T]_i \, [\alpha]_i \tag{20}$$

where $[T]_i$ is the transformation matrix of Equation (19).

We may now write the expression for the strain energy associated with the ith interstage as

$$V_i^s = [\alpha]_i^t \, [T]_i^t \, [K]_i \, [T]_i \, [\alpha]_i . \tag{21}$$

Hence from Equation (21) we may define a new stiffness matrix, $\widetilde{K}$,

$$[\widetilde{K}]_i = [T]_i^t \, [K]_i \, [T]_i \tag{22}$$

so that

$$V_i^s = [\alpha]_i^t \, [\widetilde{K}]_i \, [\alpha]_i . \tag{23}$$

For a type-b interstage, the α's may be expressed in terms of the generalized coordinates as follows:

$$\alpha_i^{r1} = \Theta_{i1} - \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=L_i} + \Theta_{i3}$$

$$\alpha_i^{r2} = \Theta_{i2} - \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ij}^{(2)}(x)\right]_{x=L_i} + \Theta_{i4}$$

$$\alpha_{i+1}^{\ell 1} = -\Theta_{i3} - \Theta_{i5} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0} \tag{24}$$

$$\alpha_{i+1}^{\ell 2} = -\Theta_{i4} - \Theta_{i6} - \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0}$$

where

$$\Theta_{i1} = \frac{1}{L_i}\left(U_i^{\ell 1} - U_i^{r1}\right)$$

$$\Theta_{i2} = \frac{1}{L_i}\left(U_i^{\ell 2} - U_i^{r2}\right)$$

$$\Theta_{i3} = \frac{1}{\ell_i}\left(U_{i+1}^{\ell 1}\cos\bar{\nu}_i + U_{i+1}^{\ell 2}\sin\bar{\nu}_i - U_i^{r1}\right)$$

$$\Theta_{i4} = \frac{1}{\ell_i}\left(-U_{i+1}^{\ell 1}\sin\bar{\nu}_i + U_{i+1}^{\ell 2}\cos\bar{\nu}_i - U_i^{r2}\right) \tag{25}$$

$$\Theta_{i5} = \frac{1}{L_{i+1}}\left(U_{i+1}^{\ell 1}\cos\bar{\nu}_i + U_{i+1}^{\ell 2}\sin\bar{\nu}_i - U_{i+1}^{r1}\cos\bar{\nu}_i - U_{i+1}^{r2}\sin\bar{\nu}_i\right)$$

$$\Theta_{i6} = \frac{1}{L_{i+1}}\left(-U_{i+1}^{\ell 1}\sin\bar{\nu}_i + U_{i+1}^{\ell 2}\cos\bar{\nu}_i + U_{i+1}^{r1}\sin\bar{\nu}_i - U_{i+1}^{r2}\cos\bar{\nu}_i\right)$$

and

$$\bar{\nu}_i = \nu_i - \nu_{i+1},$$

the angle between the principal axes of the ith beam and the principal axes of the $(i+1)^{th}$ beam.

Substituting for the Θ's and collecting terms we get

$$\alpha_i^{r1} = \frac{1}{L_i} U_i^{\ell 1} - \left(\frac{1}{L_i} + \frac{1}{\ell_i}\right) U_i^{r1} + \frac{1}{\ell_i}\left[U_{i+1}^{\ell 1} \cos\bar{\nu}_i + U_{i+1}^{\ell 2} \sin\bar{\nu}_i\right] - \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=L_i}$$

$$\alpha_i^{r2} = \frac{1}{L_i} U_i^{\ell 2} - \left(\frac{1}{L_i} + \frac{1}{\ell_i}\right) U_i^{r2} + \frac{1}{\ell_i}\left[-U_{i+1}^{\ell 1} \sin\bar{\nu}_i + U_{i+1}^{\ell 2} \cos\bar{\nu}_i\right] - \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ik}^{(2)}(x)\right]_{x=L_i}$$

$$\alpha_{i+1}^{\ell 1} = \frac{1}{\ell_i} U_i^{r1} - \left(\frac{1}{\ell_i} + \frac{1}{L_{i+1}}\right)\left[U_{i+1}^{\ell 1} \cos\bar{\nu}_i + U_{i+1}^{\ell 2} \sin\bar{\nu}_i\right] + \frac{1}{L_{i+1}}\left[U_{i+1}^{r1} \cos\bar{\nu}_i + U_{i+1}^{r2} \sin\bar{\nu}_i\right]$$

$$+ \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0} \tag{26}$$

$$\alpha_{i+1}^{\ell 2} = \frac{1}{\ell_i} U_i^{r2} - \left(\frac{1}{\ell_i} + \frac{1}{L_{i+1}}\right)\left[-U_{i+1}^{\ell 1} \sin\bar{\nu}_i + U_{i+1}^{\ell 2} \cos\bar{\nu}_i\right] + \frac{1}{L_{i+1}}\left[-U_{i+1}^{r1} \sin\bar{\nu}_i + U_{i+1}^{r2} \cos\bar{\nu}_i\right]$$

$$- \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0}$$

For an interstage of type a, the flexibility properties of the interstage are represented by a 2 x 2 matrix. The strain energy is still expressed by Equation (23) where the stiffness matrix $[\widetilde{K}]_i$ for the ith interstage is composed of the spring constants for the two principle directions of the ith beam (there may be coupling between these two directions) and the components of the displacement vector $[\alpha]_i$ are defined below:

$$\alpha_i^{r1} = \Theta_{i1} - \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=L_i} - \Theta_{i5} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0}$$

$$\alpha_i^{r2} = \Theta_{i2} - \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ij}^{(2)}(x)\right]_{x=L_i} - \Theta_{i6} - \sin\nu_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0} \tag{27}$$

Substituting for the Θ's yields

$$\alpha_i^{r1} = \frac{1}{L_i}\left(U_i^{\ell 1} - U_i^{r1}\right) + \frac{1}{L_{i+1}}\left(U_{i+1}^{r1}\cos\bar{\nu}_i + U_{i+1}^{r2}\sin\bar{\nu}_i - U_{i+1}^{\ell 1}\cos\bar{\nu}_i - U_{i+1}^{\ell 2}\sin\bar{\nu}_i\right)$$

$$- \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=L_i} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0} \tag{28}$$

$$\alpha_i^{r2} = \frac{1}{L_i}\left(U_i^{\ell 2} - U_i^{r2}\right) + \frac{1}{L_{i+1}}\left(-U_{i+1}^{r1}\sin\bar{\nu}_i + U_{i+1}^{r2}\cos\bar{\nu}_i + U_{i+1}^{\ell 1}\sin\bar{\nu}_i - U_{i+1}^{\ell 2}\cos\bar{\nu}_i\right)$$

$$- \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ij}^{(2)}(x)\right]_{x=L_i} - \sin\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(1)}} \lambda_{i+1,j}^{(1)} \left[Z_{i+1,j}^{(1)}(x)\right]_{x=0} + \cos\bar{\nu}_i \sum_{j=1}^{n_{i+1}^{(2)}} \lambda_{i+1,j}^{(2)} \left[Z_{i+1,j}^{(2)}(x)\right]_{x=0}$$

For either type of interstage the vector of angular displacements, $[\alpha]$, may be written in terms of the generalized coordinate vector $[Q]$,

$$[\alpha] = [C]\,[Q] \tag{29}$$

where $[C]$ is the matrix of coefficients defined by Equation (28) (for a type-a interstage) or by Equation (26) (for a type-b interstage). Therefore, the expression

$$V = [\alpha]^t\,[\tilde{K}]\,[\alpha]$$

may be written as

$$V = [Q]^t\,[C]^t\,[\tilde{K}]\,[C]\,[Q]. \tag{30}$$

Hence, the potential energy coefficient matrix for the interstage spring system, $[\bar{B}]$, is

$$[\bar{B}] = [C]^t\,[\tilde{K}]\,[C]. \tag{31}$$

2.4.3 Branch Beams

Kinetic Energy

The kinetic energy expression for the ith branch beam in the tth principal direction of the ith beam may be written as

$$T_i^{mt} = \frac{1}{2} m_i \left\{ \dot{U}_i^{\ell t} - d_i \left[\dot{S}_{ij}^t \right] \right\}^2 + \frac{1}{2} \sigma_i^t \left[\dot{S}_{ij}^t \right]^2 \tag{32}$$

where

$$\dot{S}_{ij}^t = \frac{1}{L_i} \left(\dot{U}_i^{rt} - \dot{U}_i^{\ell t} \right) + \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x) \right]_{x=0} - \dot{\beta}_i^t$$

m_i is the effective mass of the ith branch beam,

d_i is the effective length of the ith branch beam,

and σ_i is the effective mass moment of inertia of the ith branch beam.

Substituting for S yields

$$T_i^{mt} = \frac{1}{2} m_i \left[\left(\dot{U}_i^{\ell t} \right)^2 \right.$$

$$+ \left(d_i^2 + \frac{\sigma_i^t}{m_i} \right) \left\{ \frac{1}{L_i} \left(\dot{U}_i^{rt} - \dot{U}_i^{\ell t} \right) + \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x) \right]_{x=0} - \dot{\beta}_i^t \right\}^2$$

$$\left. - 2 \dot{U}_i^{\ell t} d_i \left\{ \frac{1}{L_i} \left(\dot{U}_i^{rt} - \dot{U}_i^{\ell t} \right) + \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x) \right]_{x=0} - \dot{\beta}_i^t \right\} \right] \tag{33}$$

which may be written as

$$
\begin{aligned}
2\,T_i^{mt} = {} & \left(\dot{U}_i^{\ell t}\right)^2 \left[m_i + \left(\frac{1}{L_i}\right)^2 \left(m_i\, d_i^2 + \sigma_i^t\right) + \frac{2\, m_i\, d_i}{L_i}\right] \\
& + \left(\dot{U}_i^{rt}\right)^2 \left[\left(\frac{1}{L_i}\right)^2 \left(m_i\, d_i^2 + \sigma_i^t\right)\right] \\
& - 2\left(\dot{U}_i^{\ell t}\, \dot{U}_i^{rt}\right) \left[\left(\frac{1}{L_i}\right)^2 \left(m_i\, d_i^2 + \sigma_i^t\right) + \frac{m_i\, d_i}{L_i}\right] \\
& + \left(\dot{\beta}_i^t\right)^2 \left[m_i\, d_i^2 + \sigma_i^t\right] \\
& + 2\left(\dot{U}_i^{\ell t}\, \dot{\beta}_i^t\right) \left[\left(\frac{1}{L_i}\right) \left(m_i\, d_i^2 + \sigma_i^t\right) + m_i\, d_i\right] \\
& + 2\left(\dot{U}_i^{rt}\, \dot{\beta}_i^t\right) \left[-\left(\frac{1}{L_i}\right) \left(m_i\, d_i^2 + \sigma_i^t\right)\right] \\
& + \left\{\sum_{j=1}^{n_i^t} \sum_{k=1}^{n_i^t} \dot{\lambda}_{ij}^t\, \dot{\lambda}_{ik}^t \left[Z_{ij}^t(x)\right]_{x=0} \left[Z_{ik}^t(x)\right]_{x=0}\right\} \left(m_i\, d_i^2 + \sigma_i^t\right) \\
& - 2\left\{\dot{U}_i^{\ell t} \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x)\right]_{x=0}\right\} \left[\left(\frac{1}{L_i}\right) \left(m_i\, d_i^2 + \sigma_i^t\right) + m_i\, d_i\right] \\
& + 2\left\{\dot{U}_i^{rt} \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x)\right]_{x=0}\right\} \left[\left(\frac{1}{L_i}\right) \left(m_i\, d_i^2 + \sigma_i^t\right)\right] \\
& - 2\left\{\dot{\beta}_i^t \sum_{j=1}^{n_i^t} \dot{\lambda}_{ij}^t \left[Z_{ij}^t(x)\right]_{x=0}\right\} \left[m_i\, d_i^2 + \sigma_i^t\right] .
\end{aligned}
\tag{34}
$$

The total kinetic energy associated with the ith branch beam may be written as

$$T_i^m = T_i^{m1} + T_i^{m2}. \tag{35}$$

Potential Energy

The potential energy associated with the branch displacements may be written as

$$V_i^m = [\beta]_i^t \, [K_b]_i \, [\beta]_i \tag{36}$$

where

$$[\beta]_i = \begin{bmatrix} \beta_i^{(1)} \\ \beta_i^{(2)} \end{bmatrix}, \quad \text{and} \quad \left[K_b\right]_i = \begin{bmatrix} k_{bi}^{11} & k_{bi}^{12} \\ k_{bi}^{12} & k_{bi}^{22} \end{bmatrix}$$

the branch beam displacement vector and stiffness matrix respectively.

2.4.4 External Support Springs

External support springs, which may be placed at the beam ends, are of two types:

a. lateral

b. rotational

The strain energy associated with each is discussed below.

The strain energy associated with the lateral support springs for the ith beam may be expressed as

$$V_i^{\ell s} = \left[U_{\ell s}\right]_i^t \left[K_{\ell s}\right]_i \left[U_{\ell s}\right]_i \tag{37}$$

where

$$\left[U_{\ell s}\right]_i = \begin{bmatrix} U_i^{\ell 1} \\ U_i^{r1} \\ U_i^{\ell 2} \\ U_i^{r2} \end{bmatrix}, \quad \text{and} \quad \left[K_{\ell s}\right]_i = \begin{bmatrix} k_{\ell si}^{\ell 1} & 0 & 0 & 0 \\ 0 & k_{\ell si}^{r1} & 0 & 0 \\ 0 & 0 & k_{\ell si}^{\ell 2} & 0 \\ 0 & 0 & 0 & k_{\ell si}^{r2} \end{bmatrix}.$$

The strain energy associated with the rotational support springs for the ith beam may be expressed as

$$V_i^{rs} = \left[U_{rs}\right]_i^t \left[K_{rs}\right]_i \left[U_{rs}\right]_i \tag{38}$$

where

$$\left[U_{rs}\right]_i = \begin{bmatrix} \tilde{\theta}_i^{\ell 1} \\ \tilde{\theta}_i^{r1} \\ \tilde{\theta}_i^{\ell 2} \\ \tilde{\theta}_i^{r2} \end{bmatrix}, \quad \text{and} \quad \left[K_{rs}\right]_i = \begin{bmatrix} k_{rsi}^{\ell 1} & 0 & 0 & 0 \\ 0 & k_{rsi}^{r1} & 0 & 0 \\ 0 & 0 & k_{rsi}^{\ell 2} & 0 \\ 0 & 0 & 0 & k_{rsi}^{r2} \end{bmatrix}.$$

The $\tilde{\theta}_i$'s are defined in terms of the generalized coordinates as follows:

$$\tilde{\theta}_i^{\ell 1} = \frac{U_i^{r1} - U_i^{\ell 1}}{L_i} + \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=0}$$

$$\tilde{\theta}_i^{r1} = \frac{U_i^{r1} - U_i^{\ell 1}}{L_i} + \sum_{j=1}^{n_i^{(1)}} \lambda_{ij}^{(1)} \left[Z_{ij}^{(1)}(x)\right]_{x=L_i}$$

$$\tilde{\theta}_i^{\ell 2} = \frac{U_i^{r2} - U_i^{\ell 2}}{L_i} + \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ij}^{(2)}(x)\right]_{x=0} \tag{39}$$

$$\tilde{\theta}_i^{r2} = \frac{U_i^{r2} - U_i^{\ell 2}}{L_i} + \sum_{j=1}^{n_i^{(2)}} \lambda_{ij}^{(2)} \left[Z_{ij}^{(2)}(x)\right]_{x=L_i} .$$

The total potential energy due to support springs for the ith beam, V_i^{ss}, may be written as

$$V_i^{ss} = V_i^{\ell s} + V_i^{rs} . \tag{40}$$

The total kinetic energy for the system may now be written as

$$T = \sum_{i=1}^{N} \left(T_i^b + T_i^m\right) \tag{41}$$

where N is the number of beams in the system.

The total potential energy for the system may similarly be written as

$$V = \sum_{i=1}^{N} \left(V_i^b + V_i^s + V_i^m + V_i^{ss}\right) . \tag{42}$$

From T and V the coefficient matrices A and B may be constructed.

Section 3
COMPUTER PROGRAM

3.1 General Features

A digital computer program has been developed implementing the solution method described in the preceding section. The program is coded in FORTRAN IV and configured for execution on the IBM 7094 computer with 32 K core storage capacity. Only minor modifications would be necessary to configure the program for execution on another computer equipped with a FORTRAN IV compiler.

Due to the storage limitation of the present computer the present version of the program restricts the beam properties to be identical in two directions. By changing a few cards in the program, different properties may be allowed in each direction, at the expense of limiting program "size" in other aspects. This program version solves up to a 60 degree-of-freedom system obtaining all 60 eigenvalues and eigenvectors in from 2 to 5 minutes of execution time,depending on the amount of printed and plotted output requested.

3.1.1 Method of Eigenproblem Solution

The solution of the $\omega^2 A X - B X = 0$ problem is acquired by transforming the equation into the standard eigenvalue problem $(F - \lambda I) Y = 0$, solving for the eigenvalues and eigenvectors, and transforming the eigenvectors obtained back into the vectors for the original system.

Define a non-singular, triangular matrix P such that $A = PP^t$.

Substitution into Equation (4) yields

$$\omega^2 PP^t X - B X = 0 \tag{43}$$

Define the transformation

$$Y = P^t X \tag{44}$$

so that

$$X = \left(P^{-1}\right)^t Y \tag{45}$$

Equation (43) now becomes

$$\omega^2 P Y - B \left(P^{-1}\right)^t Y = 0$$

Pre-multiplying by P^{-1} yields

$$\omega^2 Y - P^{-1} B \left(P^{-1}\right)^t Y = 0$$

or

$$\left(F - \omega^2 I\right) Y = 0 \tag{46}$$

where

$$F = P^{-1} B \left(P^{-1}\right)^t$$

Once the Y's are obtained, the original system vectors are obtained by Equation (45). The eigenvalues, ω^2, are the system eigenvalues or natural frequencies of vibration.

3.1.2 Program Organization

The OVERLAY configuration of the program is illustrated on Figure 3-1.

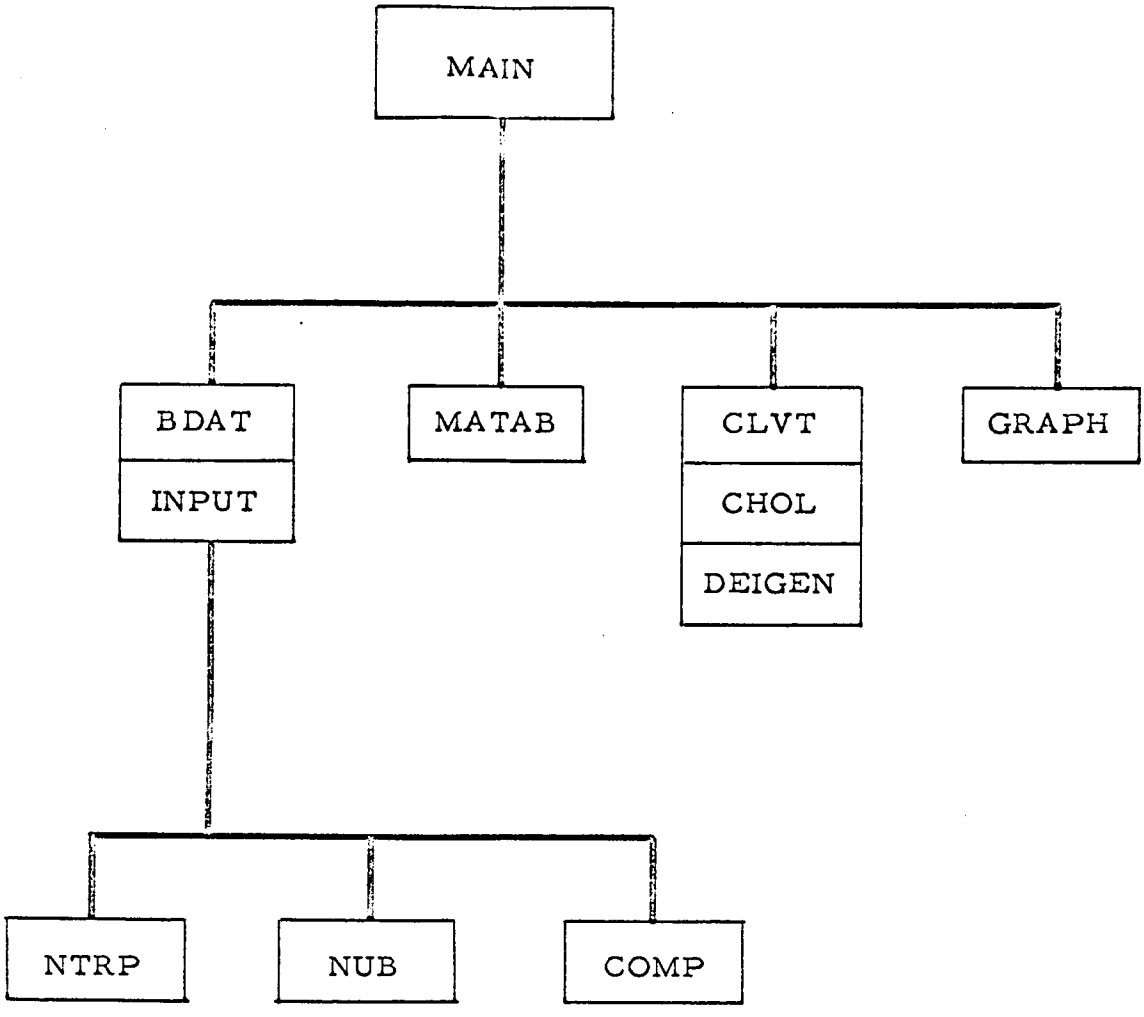


Figure 3-1 - Overlay Configuration

The functions of the principal subroutines are briefly outlined below.

BLOCK DATA: Used for input of all spring constant data, i.e., interstage spring constants, branch beam spring constants, and support spring constants if any.

INPUT: Reads in all problem definition data, other than spring constants, from cards.

NTRP: Interpolates the beam property input data (which may be input in a minimum fashion) to the array form used by the program for integral evaluations and plots.

NUB: Performs static deflection analysis of the beams subject to specified loading conditions to generate displacement functions (along with the associated functions -- shear angle, etc.) which are used in the solution process.

COMP: Evaluates all integral terms needed for construction of the kinetic and potential energy coefficient matrices and prints out these terms along with the problem definition data.

MATAB: Constructs the kinetic and potential energy coefficient matrices.

CLVT: Using subroutines CHOL and DEIGEN, CLVT solves the eigenvalue problem, computing the vehicle natural frequencies and lateral modes.

GRAPH: Plots beam input data and the displacement functions used in the analysis for each beam, and the vehicle mode shapes.

3.1.3 Calculation of Static Displacement Functions

The method employed in the subroutine (NUB) used by the program to calculate the lateral deflections of arbitrary non-uniform Timoshenko beams is described below. The method accommodates all possible boundary conditions and allows for both edge loading and arbitrary lateral loading.

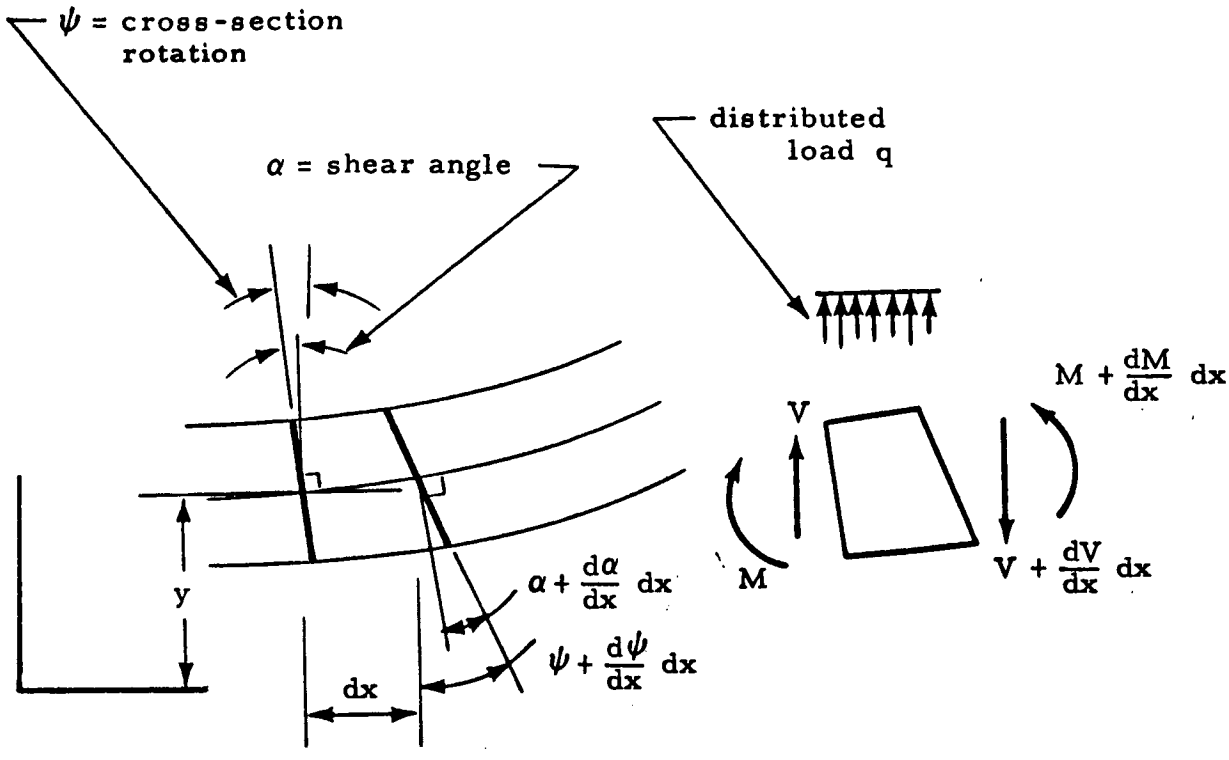


Figure 3-2 - Arbitrary Timoshenko Beam Element

Where, as shown on Figure 3-2 above,

y ≡ lateral deflection,

ψ ≡ cross-section rotation (sometimes called "bending slope"),

α ≡ shear angle,

M ≡ bending moment,

V ≡ shear,

x ≡ position coordinate along beam center line,

$EI(x)$ ≡ bending stiffness, and

$GA(x)$ ≡ shear stiffness,

the usual Timoshenko beam postulates are:

$$\psi' = \frac{M}{EI} \tag{47}$$

and

$$\alpha = \frac{V}{GA} \; . \tag{48}$$

The static relations between the stress resultants and applied loads are:

$$M' = V \tag{49}$$

and

$$V' = q \ . \tag{50}$$

The geometrical relation,

$$\psi = y' + \alpha \tag{51}$$

will be used subsequently.

Expanding y and ψ in power of Δ about x we have:

$$y(x+\Delta) = y(x) + y'(x)\Delta + y''(x)\frac{\Delta^2}{2} + y'''(x)\frac{\Delta^3}{3!} + y''''(x)\frac{\Delta^4}{4!} + \ldots . \tag{52}$$

and

$$\psi(x+\Delta) = \psi(x) + \psi'(x)\Delta + \psi''(x)\frac{\Delta^2}{2} + \psi'''(x)\frac{\Delta^3}{3!} + \ldots .. \quad . \tag{53}$$

From equations (47) through (51) we have (assuming, over the interval Δ, $EI' \equiv 0$, $GA' \equiv 0$, q' and all higher derivatives of $q \equiv 0$):

$$y' = \psi - \alpha = \psi - \frac{V}{GA} , \tag{54}$$

$$y'' = \psi' - \alpha' = \frac{M}{EI} - \frac{q}{GA} , \tag{55}$$

$$y''' = \frac{M'}{EI} = \frac{V}{EI} = \psi'', \text{ and} \tag{56}$$

$$y'''' = \frac{V'}{EI} = \frac{q}{EI} = \psi''' . \tag{57}$$

The assumptions involved in the four preceeding equations are consistent with modeling non-uniform beams as "stepped" beams composed of a large number of short uniform segments, over each of which the distributed load, q, is constant.

Substitution of Equations (54) through (57) into (52) and (53) yields:

$$y(x+\Delta) = y(x) + \left[\psi(x) - \frac{V(x)}{GA}\right]\Delta + \left[\frac{M(x)}{EI} - \frac{q(x)}{GA}\right]\frac{\Delta^2}{2} + \frac{V(x)}{EI}\frac{\Delta^3}{6} + \frac{q(x)}{EI}\frac{\Delta^4}{24} ,$$

or

$$y(x+\Delta) = y(x) + \psi(x)\Delta + M(x)\frac{\Delta^2}{2EI} + V(x)\left[\frac{\Delta^3}{6EI} - \frac{\Delta}{GA}\right] + q(x)\left[\frac{\Delta^4}{24EI} - \frac{\Delta^2}{2GA}\right] , \tag{58}$$

and

$$\psi(x+\Delta) = \psi(x) + M(x)\frac{\Delta}{EI} + V(x)\frac{\Delta^2}{2EI} + q(x)\frac{\Delta^3}{6EI} . \tag{59}$$

The expansions of M and V are

$$M(x+\Delta) = M(x) + V(x)\Delta + q(x)\frac{\Delta^2}{2} \tag{60}$$

and

$$V(x+\Delta) = V(x) + q(x)\Delta . \tag{61}$$

Equations (58) through (61) may be written as:

$$\begin{bmatrix} y(x+\Delta) \\ \psi(x+\Delta) \\ M(x+\Delta) \\ V(x+\Delta) \end{bmatrix} = \begin{bmatrix} 1 & \Delta & \frac{\Delta^2}{2EI} & \left(\frac{\Delta^3}{6EI} - \frac{\Delta}{GA}\right) \\ 0 & 1 & \frac{\Delta}{EI} & \frac{\Delta^2}{2EI} \\ 0 & 0 & 1 & \Delta \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} y(x) \\ \psi(x) \\ M(x) \\ V(x) \end{bmatrix}$$

$$+ q(x) \begin{bmatrix} \frac{\Delta^4}{24EI} - \frac{\Delta^2}{2GA} \\ \frac{\Delta^3}{6EI} \\ \frac{\Delta^2}{2} \\ \Delta \end{bmatrix} . \tag{62}$$

It will now be assumed that the beam is divided into a large number (n - 1) of uniform segments, each of the same length, Δ. It will also be convenient to make the following definitions:

For $i = 1$ to n,

$$x_i \equiv (i-1)\Delta,$$

$$y_i \equiv y(x_i), \quad \psi_i \equiv \psi(x_i), \quad M \equiv M(x_i), \quad V_i \equiv V(x_i), \text{ and } q_i \equiv q(x_i),$$

and for $x_i < x < x_{i+1}$:

$$EI_i \equiv EI(x) \text{ and}$$

$$GA_i \equiv GA(x);$$

also,

$$S_i \equiv \begin{bmatrix} y_i \\ \psi_i \\ M_i \\ V_i \end{bmatrix} .$$

Using the above definitions, Equation (62) may be re-written as

$$S_{i+1} \equiv T_i S_i + R_i , \tag{63}$$

where

$$T_i \equiv \begin{bmatrix} 1 & \Delta & \dfrac{\Delta^2}{2EI_i} & \left(\dfrac{\Delta^3}{6EI_i} - \dfrac{\Delta}{GA_i}\right) \\ & 1 & \dfrac{\Delta}{EI_i} & \dfrac{\Delta^2}{2EI_i} \\ & & 1 & \Delta \\ & & & 1 \end{bmatrix}$$

, and

$$R_i \equiv q_i \begin{bmatrix} \frac{\Delta^4}{24EI_i} - \frac{\Delta^2}{2GA_i} \\ \frac{\Delta^3}{6EI_i} \\ \frac{\Delta^2}{2} \\ \Delta \end{bmatrix} .$$

Where $i = 1$ at the extreme left end of the beam, the "state", S_2, at the right end of the first segment may be written in terms of the left end boundary conditions, S_1, as

$$S_2 = T_1 S_1 + R_1 .$$

Similarly,

$$S_3 = T_2 S_2 + R_2 = T_2 T_1 S_1 + T_2 R_1 + R_2 .$$

In general, then,

$$S_i = C_i S_1 + E_i , \tag{64}$$

so that

$$S_{i+1} = T_i C_i S_1 + T_i E_i + R_i .$$

Accordingly, the recursion relations for the 4 x 4 matrix C_i and the vector E_i are

$$C_{i+1} = T_i C_i \quad \text{and} \tag{65}$$

$$E_{i+1} = T_i E_i + R_i . \tag{66}$$

The foregoing equations provide a straightforward basis for calculations C_n and E_n, so that the relation between the boundary conditions at the left end, S_1, the boundary conditions at the right end, S_n, and the applied loading field may be written as:

$$S_n = C_n S_1 + E_n \tag{67}$$

As boundary conditions, the values of the following quantities must be prescribed (not necessarily zero):

- At the left end, either Y_1 or V_1, and either ψ_1 or M_1.
- At the right end, either Y_n or V_n, and either ψ_n or M_n.

Since C_n and E_n are known, Equation (67) becomes a set of four linear equations in the four unknown boundary conditions once the four known boundary conditions have been stated.

The program is set up to solve Equation (67) for the unknown boundary conditions for any possible set of edge conditions. Once the state, S_1, at the left edge has been evaluated in this way, Equation (63) may be used to calculate the state at all interior points in the beam.

3.2 Modeling

3.2.1 Beam Selection and Choice of Displacement Functions

Selection of the number of beams and their end-point locations is closely related to the choice of beam displacement functions. For example, in a particular problem one might achieve equally accurate solutions by either (1) using a small number of beams and a large number of complicated displacement functions for each beam, or (2) using a larger number of beams and only a few displacement functions for each beam. In general, the latter approach appears to be more appropriate; especially if the stiffness properties of the vehicle vary drastically. The two approaches usually involve about the same number of degrees of freedom, hence about the same computer execution time.

Another consideration is that the present program set-up allows external support springs (translational and/or rotational) only at the ends of beams.

Usually, the governing factor in the selection of beam end point locations is the vehicle stiffness distribution. Interior spans of beams should not contain zones which are very weak in shear or bending relative to adjacent parts of the beam--that is, the stiffness properties of a given beam should not vary drastically. Otherwise, the static displacement functions calculated by the program for such beams will not be capable of describing accurately the dynamic behavior of that part of the system--hence the calculated vehicle frequencies may be significantly too high.

In all of the examples presented in Appendix A, the displacement functions used are "static displacement functions" generated internally by the program. The set most commonly used is:

- For each interior beam, three functions, each corresponding to a particular loading of the beam with pinned-pinned boundary conditions: (1) moment applied at one end, (2) moment applied at the other end, and (3) lateral distributed loading proportional to the beam's mass distribution.

- For the end beams, the above three pinned-pinned static functions are used, except where the end is free, in which case the last function mentioned above is replaced by a cantilever function with lateral loading proportional to beam mass intensity.

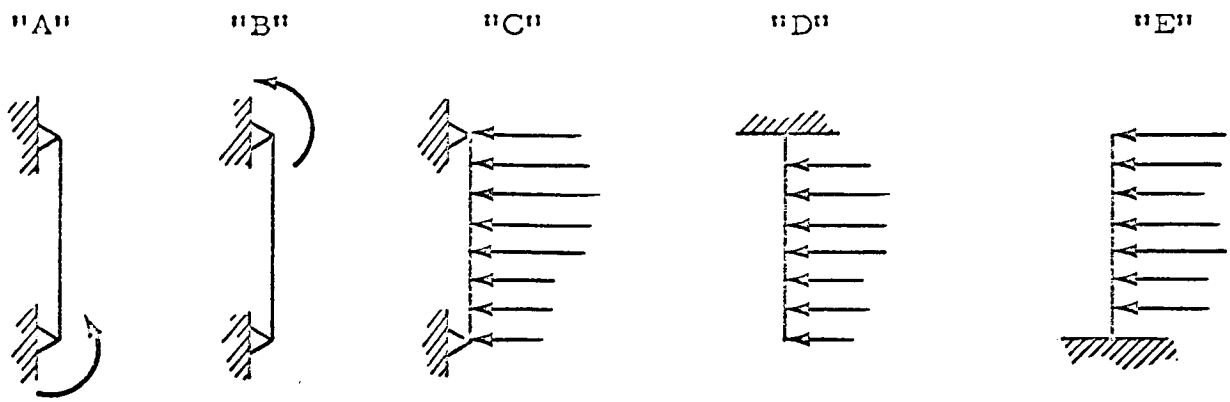
These "standard" sets of displacement functions are illustrated on Figure 3-3.

The configuration of the program is such that with only a few minor alterations in the coding, virtually any static displacement function that one might wish to use can be internally generated (see the discussion in Section 3.1.3). Also, it is easy to provide for reading in displacement function data generated externally. However, as may be seen in the results presented in Appendix A, the simple "standard" set of displacement functions described above works quite well, provided that the locations of the beam end points are well-selected.

3.2.2 Interstages

Normally the interstage stiffness matrices (K_i in Section 2.4.2) may be calculated by shell theory, finite element methods, etc.; or perhaps they might be known from full-scale or model tests.

Also, one may wish to rigidly butt together the ends of two beams for various modeling purposes. In order to do this a zero-length interstage, as discussed in Section 2.4.2, may be employed. In this case, relatively large moment-rotational stiffness constants must be used; however, care must be exercised not to select numbers so large that serious arithmetic round-off errors are introduced into the solution. Normally, a good choice of such constants is approximately 10^3 or 10^4 times a representative value of beam bending stiffness (EI adjacent to the interstage) divided by the length of one of the connected beams. If the constant so selected is too small, it will be evident in the calculated mode shapes. If it is too large, numerical inaccuracies, which will be reflected in the program error checks, will appear.



Types of Static Displacement Functions

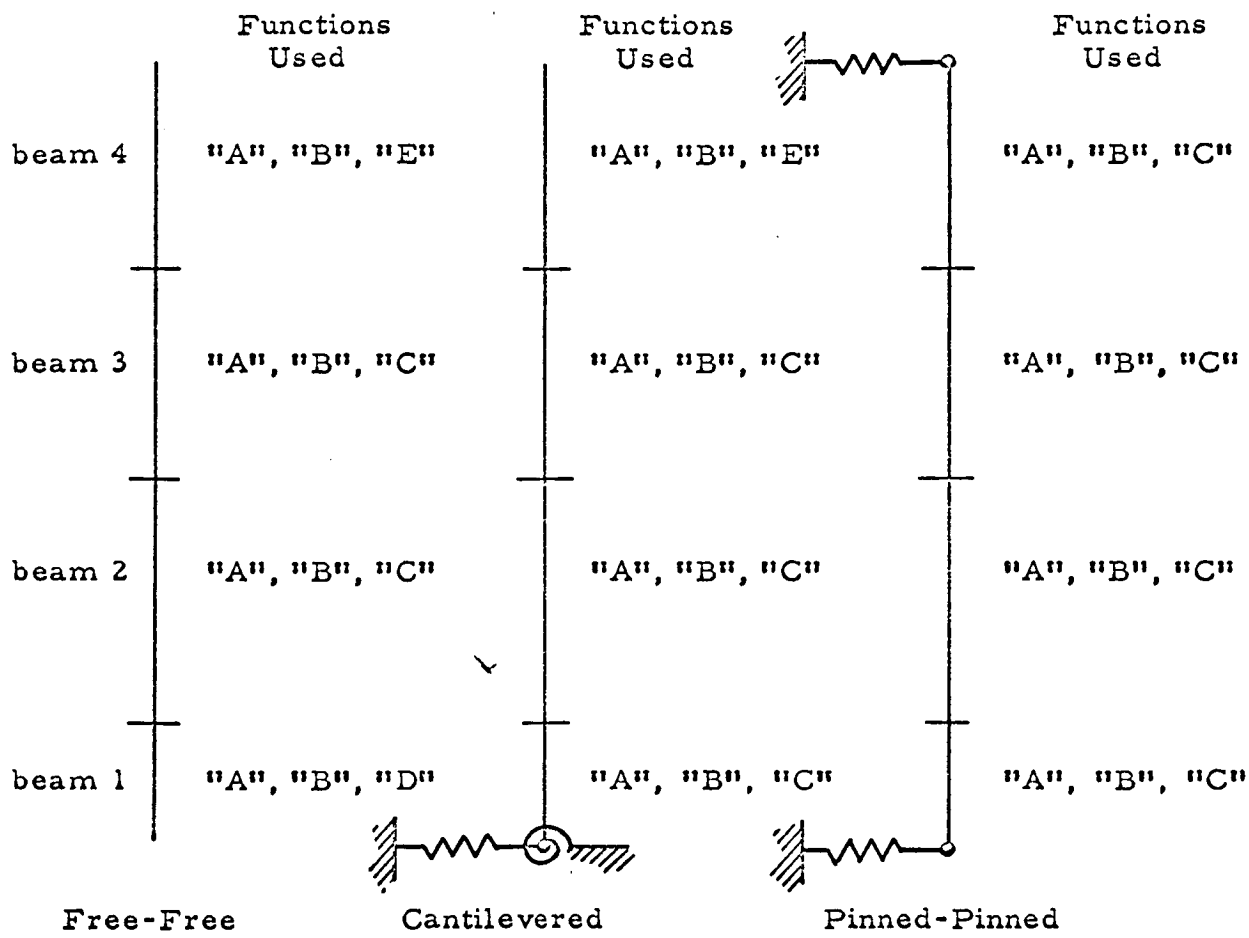


Figure 3-3 - Standard Beam Displacement Functions Used in the Program

In the case of free-free vehicles, a common symptom of arithmetic round-off difficulties is obvious error in the rigid body modes. Some round-off error is always present, of course, so that the frequencies calculated for the rigid body modes will not be exactly zero; for example they may be typically 1/100 or 1/1000 of the lowest elastic frequency for a large complicated vehicle. However, when comparatively large frequencies are calculated for these modes, the trouble is usually due to an unreasonably large value of some spring constant having been arbitrarily chosen.

Another possible source of round-off error is the use of extremely short non-zero length interstages where a zero-length interstage is more appropriate for modeling purposes. Care should be exercised in modeling the interstages to avoid the possibility of this difficulty. Normally, if the interstage is at least 1/100 the length of the shortest attached beam, no accuracy problem will arise.

3.2.3 External Support Springs

External support springs which, as discussed in Section 2.4.4, are allowed at the ends of any or all of the beams comprising the vehicle may, if inappropriately chosen, result in substantial round-off errors. Where EI is the maximum value of bending stiffness occurring throughout the vehicle and L is the vehicle length, one should normally not use values of lateral support spring constants exceeding approximately $10^5 \times EI/L^3$, nor values of rotational spring constants exceeding about $10^4 \times EI/L$ when employing such springs to approximate pinned, guided, or fixed boundary conditions. Spring constants in the neighborhood of those values effectively suppress lateral displacement and rotation, respectively, for the lower vehicle modes. If an error is inadvertently made in choosing the values of such spring constants, it is normally immediately evident in the calculated results.

3.3 User's Manual

3.3.1 Input

All problem definition data is input on data cards (FORMAT described below) except spring constant data which is input through a BLOCK DATA subroutine.

Data Cards

The first three data cards contain general data for the system. The remainder of the cards, which contain beam definition data, are assembled in data groups - a group for each beam in the system.

The format for the first three cards is given below.

Card No.	Symbol	Format	Card Column
1	TITLE	12A6	1-72
2	OPTION (1)	I6	1-6
	OPTION (2)	I6	7-12
	OPTION (3)	I6	13-18
	OPTION (4)	I6	19-24
	OPTION (5)	I6	25-30
	OPTION (6)	I6	31-36
3	N	I3	1-3
	REF (1)	E12.8	4-15

The symbols appearing on the first three cards are defined below

TITLE: BCD Problem description (Veh. no., Date, etc.)

OPTION (1): = 1 Rotary inertia is included.

= 0 Rotary inertia is neglected.

OPTION (2): = 1 Displacement functions and associated arrays (shear angle, etc.) are printed out

= 0 Arrays not printed out

OPTION (3)	= 1	Shear deflections are included
	= 0	Shear deflections are neglected
OPTION (4)		Not operational
OPTION (5)		Not operational
OPTION (6)	= K	K is the number of modes to be plotted by the SC-4020 plotter. If N = 0 the plot routine (GRAPH) will not be called.
N :		Number of beams
REF(1)		Vehicle reference location (normally 0.). This value is used for plotting purposes and in calculating distance to CG.

A description of the cards which compose a beam data group is given below. The group defining the ith beam will be discussed.

Card No.	Symbol	Format	Card Column
I1	NP(I)	I6	1-6
	NF(I)	I6	7-12
	NMP(I)	I6	13-18
	NIP(I)	I6	19-24
	NEI(I)	I6	25-30
	NGA(I)	I6	31-36
I2	BL(I)	E12.8	1-12
	SL(I)	E12.8	13-24
	BM(I)	E12.8	25-36
	BD(I)	E12.8	37-48

The symbols appearing on the first two cards of the data group for the ith beam are defined below.

NP(I)	No. of stations for purposes of numerical integration and plotting
NF(I)	No. of displacement functions (N_i) (the same number in both principal directions)

NMP(I)	No. of mass input points (2 x no. of mass data pairs)
NIP(I)	No. of mass moment of inertia input points
NEI(I)	No. of bending stiffness input points
NGA(I)	No. of shear stiffness input points
BL(I)	Beam length (L_i)
SL(I)	Interstage length (ℓ_i)
BM(I)	Branch beam mass (m_i)
BD(I)	Branch beam length (d_i)

The DIMENSION statements presently used in the program require that the following limitations be observed:

$$N \leq 12,$$

For any I,

$$NP(I) \leq 200, \qquad NF(I) \leq 4,$$

$$NMP(I) \leq 500, \qquad NIP(I) \leq 500,$$

$$NEI(I) \leq 500, \qquad NGA(I) \leq 500.$$

Also,

$$\sum_{I=1}^{N} NMP(I) \leq 900, \qquad \sum_{I=1}^{N} NIP(I) \leq 900,$$

$$\sum_{I=1}^{N} NEI(I) \leq 900, \qquad \sum_{I=1}^{N} NGA(I) \leq 900.$$

The remainder of the cards of a beam data group contain the beam mass, inertia and stiffness distribution data. This data is input as a set of data pairs for each beam property function. Each data pair consists

of a position coordinate (origin at lower end of beam) and the corresponding magnitude of the function.

A listing of a sample set of input cards which constitute a data group for a typical beam (Figure 3-4) is presented below.

```
   100      3     10     10      8      8
20        +02 20        +01 240       +03 15        +01
                4        +04 6         +01 6         +04 14        +02 6         +04
14        +02 4         +04 20        +02 4         +04
                2        +02 6         +01 3         +02 14        +02 3         +02
14        +02 2         +02 20        +02 2         +02
                8        +09 6         +01 10        +10 14        +02 10        +10
20        +02 8         +09
                7        +07 6         +01 8         +07 14        +02 8         +07
20        +02 7         +07
```

In the above list, the first card specifies NP = 100, NF = 3, NMP = 10, NIP = 10, NEI = 8, NGA = 8. The second card specifies BL = 20.0, SL = 2.0, BM = 240.00, BD = 1.5. The next two cards specify the mass distribution, the next two the cross-section mass mount data, the next two the bending stiffness, and the last two the shear stiffness.

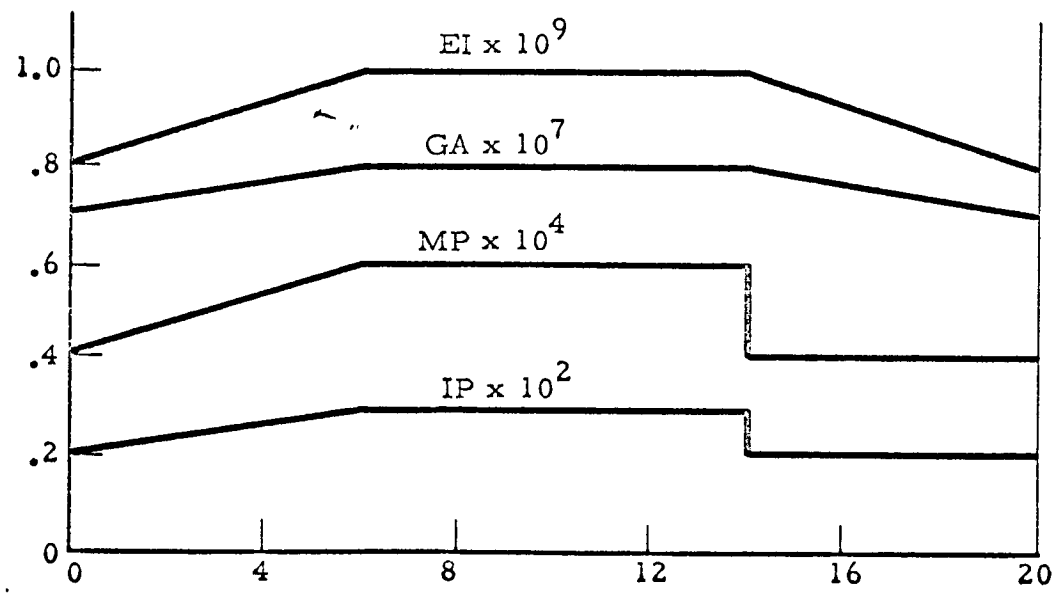


Figure 3-4 - Typical Beam Properties

Block Data

The following quantities are input through block data. The corresponding variable used in Section 2 is listed parenthetically.

SK's	interstage spring constants	$\left(k^{i}\right)$
SKB's	branch beam spring constants	$\left(k_{bi}\right)$
SSL1	lateral support springs (left end-dir 1)	$\left(k_{\ell si}^{\ell 1}\right)$
SSL2	lateral support springs (left end-dir 2)	$\left(k_{\ell si}^{\ell 2}\right)$
SSR1	lateral support springs (right end-dir 1)	$\left(k_{\ell si}^{r 1}\right)$
SSR2	lateral support springs (right end-dir 2)	$\left(k_{\ell si}^{r 2}\right)$
RSL1	rotational support springs (left end-dir 1)	$\left(k_{rsi}^{\ell 1}\right)$
RSL2	rotational support springs (left end-dir 2)	$\left(k_{rsi}^{\ell 2}\right)$
RSR1	rotational support springs (right end-dir 1)	$\left(k_{rsi}^{r 1}\right)$
RSR2	rotational support springs (right end-dir 2)	$\left(k_{rsi}^{r 2}\right)$

Only the non-zero spring constant values need be input. A sample BLOCK DATA input appears in the program listing (Appendix B).

3.3.2 Output

The program output is in two parts:

a. Printed output

b. SC-4020 plotted output.

Printed Output:

- Problem Definition Data

The input data is printed out, including the beam property arrays containing the interpolated values. The displacement functions and associated functions for each beam may be printed out (OPTION(2)). If these arrays are not printed, only the beam boundary conditions used in the static analysis are printed out.

- Intermediate Computed Terms, used for construction of the "mass" matrix and "stiffness" matrix.

The quantities are identified in the output by their FORTRAN variable names. A table is presented below showing the correlation between the FORTRAN variables and the symbols used in the formulation (Section 2.4).

BW	M
BJ	J
R1	$R^{(1)}$
R2	$R^{(2)}$
Y1	$\gamma(1)$
Y2	$\gamma(2)$
YZ1	$\Omega(1)$
YZ2	$\Omega(2)$
Y1PL	$[Z^{(1)}(x)]_{x=0}$

Y2PL	$[Z^{(2)}(x)]_{x=0}$
Y1PR	$[Z^{(1)}(x)]_{x=L}$
Y2PR	$[Z^{(2)}(x)]_{x=L}$
G1	$G^{(1)}$
G2	$G^{(2)}$
BYZ1	$\psi^{(1)}$
BYZ2	$\psi^{(2)}$

- Kinetic and Potential Energy Coefficient Arrays.

These and other arrays are identified in the output by English text headings.

- System Frequencies and Eigenvectors.

The system eigenvectors are printed out in an unnormalized matrix form and in a normalized tabular form along with the natural frequency and generalized mass for each mode.

- Solution Accuracy Checks.

Two matrix solution accuracy checks are included in the output: (1) an eigenvector orthogonality check, which gives an indication of the accuracy of the eigenproblem solution (for diagonal elements of unity, off-diagonal terms should be of the order of 10^{-6} or smaller), (2) a normalized error matrix which represents the right side of Equation (4) (ideally zero) upon substitution of the system eigenvalues and eigenvectors computed by the program. The elements of this array are typically 10^{-3} or smaller.

Note that this type of solution accuracy check represents a sufficient but not necessary condition for judging the accuracy of the solution.

Plotted Output:

The SC-4020 plots contain both problem definition data and solution information. For each beam, the distributed property data (mass distribution, bending stiffness, etc.) is plotted in both the minimal input form and in the interpolated form generated by the program for use in calculating various integrals. The minimal input form of such data is represented by the piecewise continuous straight lines appearing on the plots, and the interpolated values are shown as "points." Also included are plots of the sets of lateral displacement functions used to represent the deformation of each beam.

The solution data plots consist of projections of each vehicle mode shape onto the pitch and yaw planes.

Section 4
RECOMMENDED ADDITIONAL DEVELOPMENTS

While the program in its present configuration provides a basis for solving a wide class of problems, there are several additional developments which could be incorporated to expand the program's usefulness greatly. They are:

- Torsion. By inserting as additional coordinates the angles of twist (roll) of the ends of the individual beams comprising the vehicle, provision could be made for taking into account the effects of bending-torsion coupling in interstages (such as the Apollo Command Module-Service Module interstage). Internally-calculated quasi-static twist functions would be used for each beam and the effects of off-center mass placement accounted for.

- Lateral Propellant Slosh. Lateral propellant slosh effects may be modeled using the usual mass-spring mechanical analogy. One significant advantage of having the capability of doing this is to permit closer verification of mathematical models with dynamic test stand and model test results. This is desirable regardless of whether or not lateral slosh modes are employed in analysis of flight vehicle stability, response, etc.

- Internal Stress Resultants. Moment and shear distributions (and twisting moment, if torsion is included) should be calculated and plotted.

- Automatic Error Analyses. Further solution accuracy checks should be incorporated to check for the occurrence of significant round-off error, and to prominently flag any such error in the output.

- Propellant Mass Distribution. Provision should be incorporated for automatic calculation of propellant levels, propellant mass distribution, etc., for arbitrary flight times.

- Displacement Functions. Further study should be made of beam displacement functions. As noted in the present report, static displacement functions work quite well if the internal points of subdivision into "beams" and interstages are well-chosen. However, several other techniques appear quite attractive. For example,

one could initially use static displacement functions to calculate a vehicle mode, then use a "static loading" based on this vehicle mode and the mass distribution to calculate a new additional set of displacement functions which would then be used in a second analysis, and so on until convergence is observed. This would have to be done for each vehicle mode separately; however, since the calculations involved require only a few seconds at each such step, there appears to be no problem of excessive expense in terms of computer execution time.

Section 5
REFERENCES

1. Pearson, M. L., "Nonplanar Vibrational Characteristics of Complex Space Vehicles," LMSC/HREC A782412, Lockheed Missiles & Space Company, Huntsville Research & Engineering Center, 22 March 1966.

2. Kiefling, L., "Modified Stodola Method for Bending Vibration Analyses," NASA/MSFC R-AERO-IN-22-64, 18 September 1964.

3. Yen, C. L., "Numerical Analysis of Orthotropic Shells of Revolution," LMSC/HREC A782778, Lockheed Missiles & Space Company, Huntsville Research & Engineering Center, May 1966.

APPENDIX A

PROGRAM RESULTS

PROGRAM RESULTS

The results of ten executions of the program are presented and summarized in this appendix. These are only a small fraction of the test cases executed for various purposes during the course of program development. Briefly, these problems are:

Problem No.	
1	Uniform simple free-free beam
2	A non-symmetrical problem involving non-planar modes
3	SA-202D upper stages (free-free)
4	SA-D6 upper stages (cantilevered)
5	SA-501, free-free, 4-beam model
6	SA-501, free-free, 6-beam model
7	SA-501, free-free, S-II/S-IVB interstage constants evaluated using Timoshenko beam theory
8	SA-501, free-free, S-II/S-IVB interstage constants evaluated using shell theory
9	SA-501, cantilevered, S-II/S-IVB interstage constants evaluated using Timoshenko beam theory
10	SA-501, cantilevered, S-II/S-IVB interstage constants evaluated using shell theory

Problem Nos. 3 through 10 all involve rotationally symmetrical vehicles. Accordingly, the program (expecting a completely general non-symmetrical vehicle in each case) always calculated pairs of modes (one in the pitch plane, one in yaw) at identical frequencies. In presenting these solutions, one member of each such pair is deleted for brevity.

On the beam property plots in the first three problems, lb-sec-in. units, rather than the mks units indicated, apply.

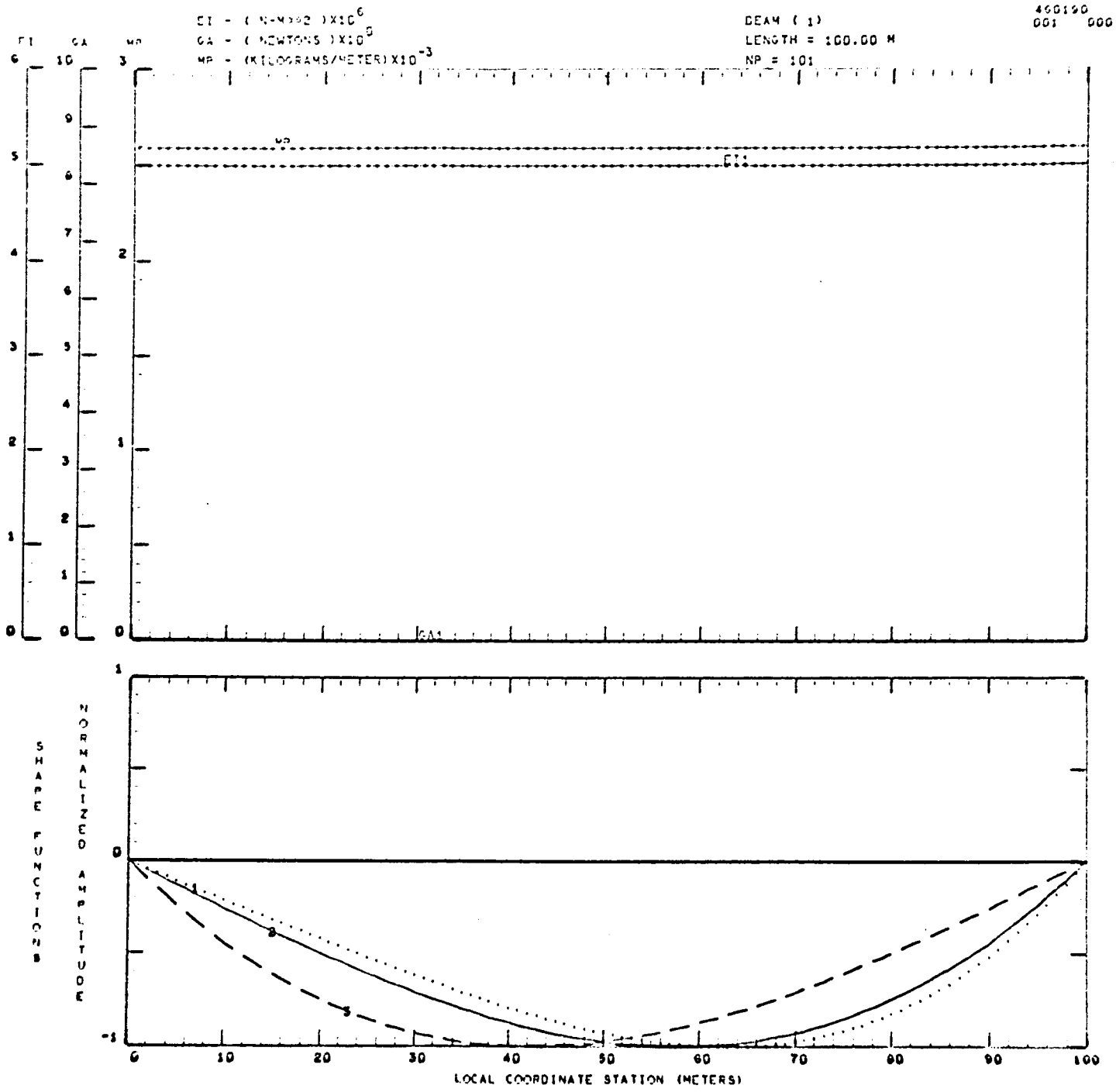
PROBLEM NO. 1

DESCRIPTION: A uniform dually-symmetrical free-free beam modeled as five beam segments, each of equal length. Three displacement functions (standard set discussed in Section 3.2.1) were used for each beam segment. Rotary inertia and shear were neglected. In the table below, the results of the analysis are summarized and compared with the exact free-free uniform beam solutions.

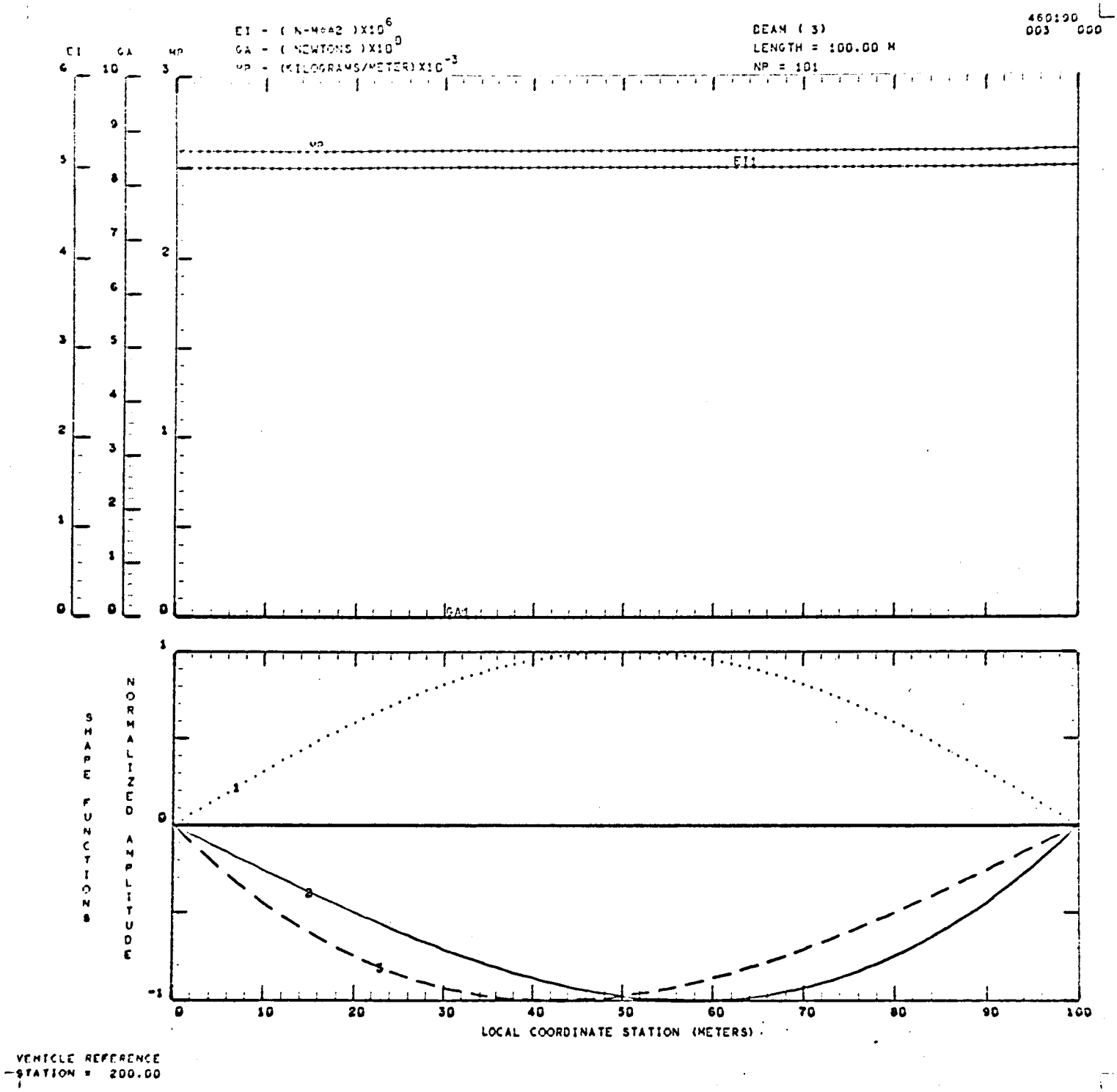
Since the beam is symmetrical with equal properties in both planes, only one set of solutions is shown. The beam is 500 inches long with $EI = 5 \times 10^6$ lb/in.^{2} and mass per unit length = .00259 lb-sec^2/in.^{2}

SUMMARY OF RESULTS:

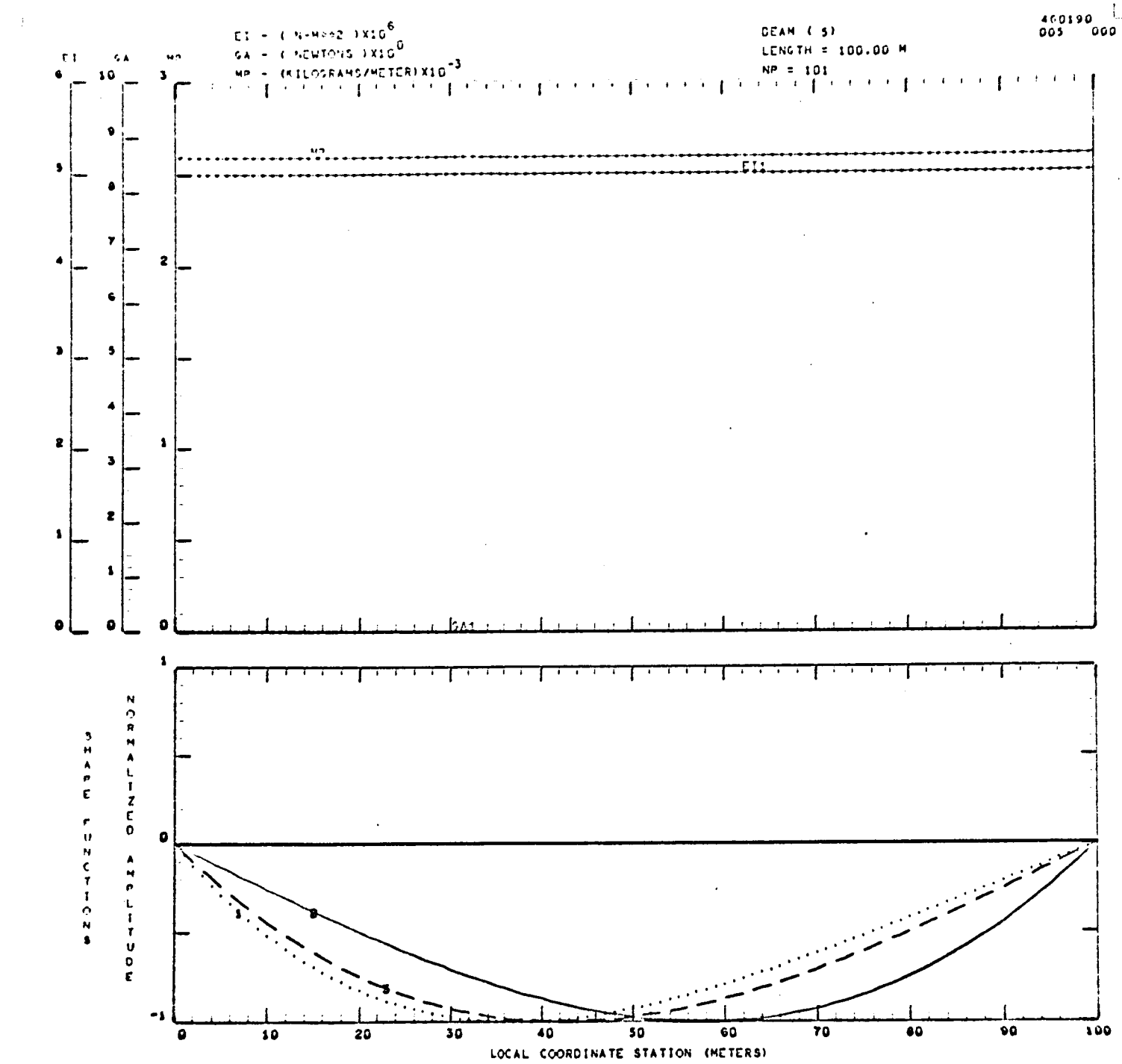
Mode	Calculated Frequency (cps)	Exact Frequency
1	.626	.626
2	1.725	1.725
3	3.384	3.382
4	5.611	5.590
5	8.382	8.351



VEHICLE REFERENCE
STATION = 0.00

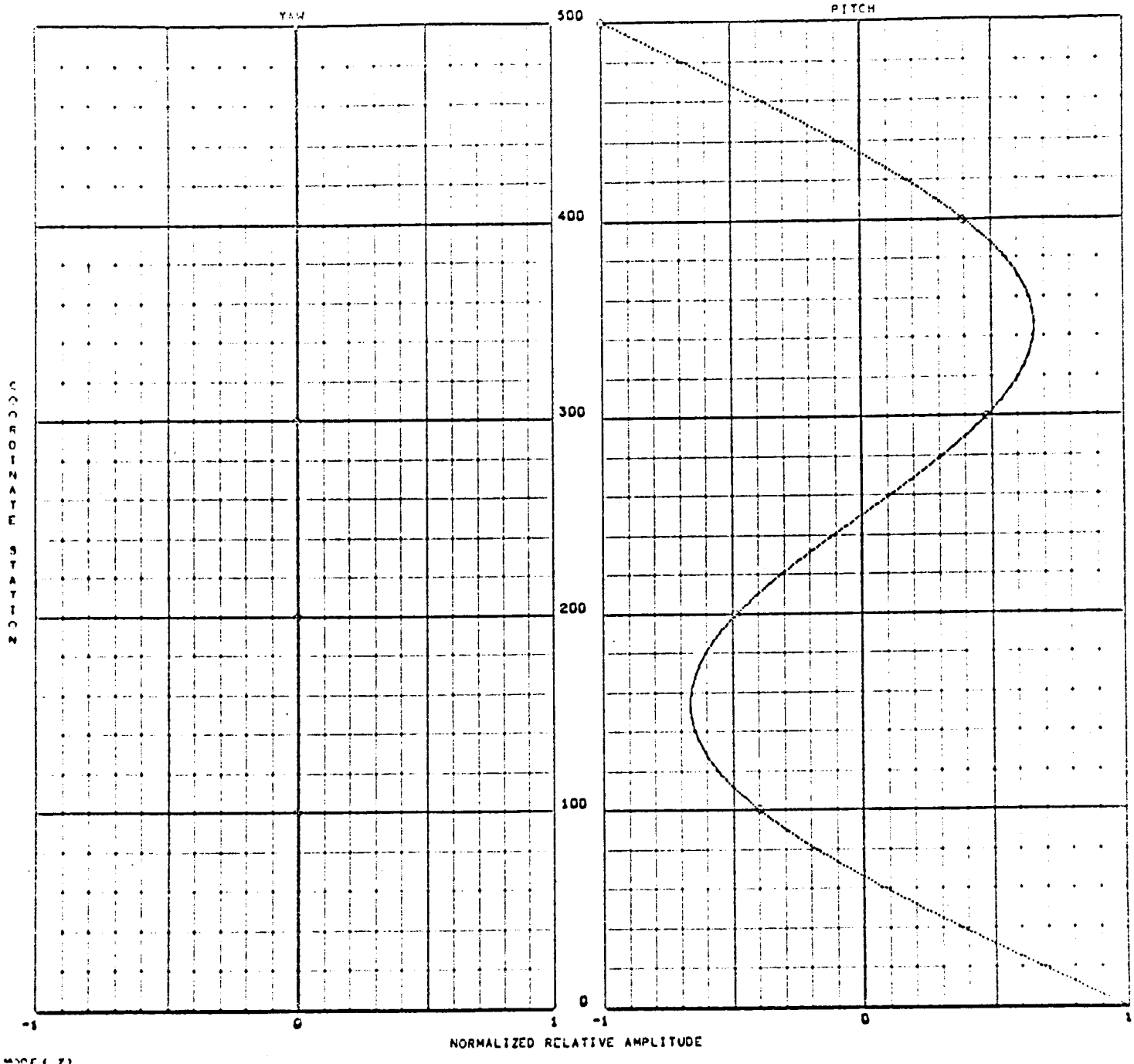


VEHICLE REFERENCE
STATION = 200.00



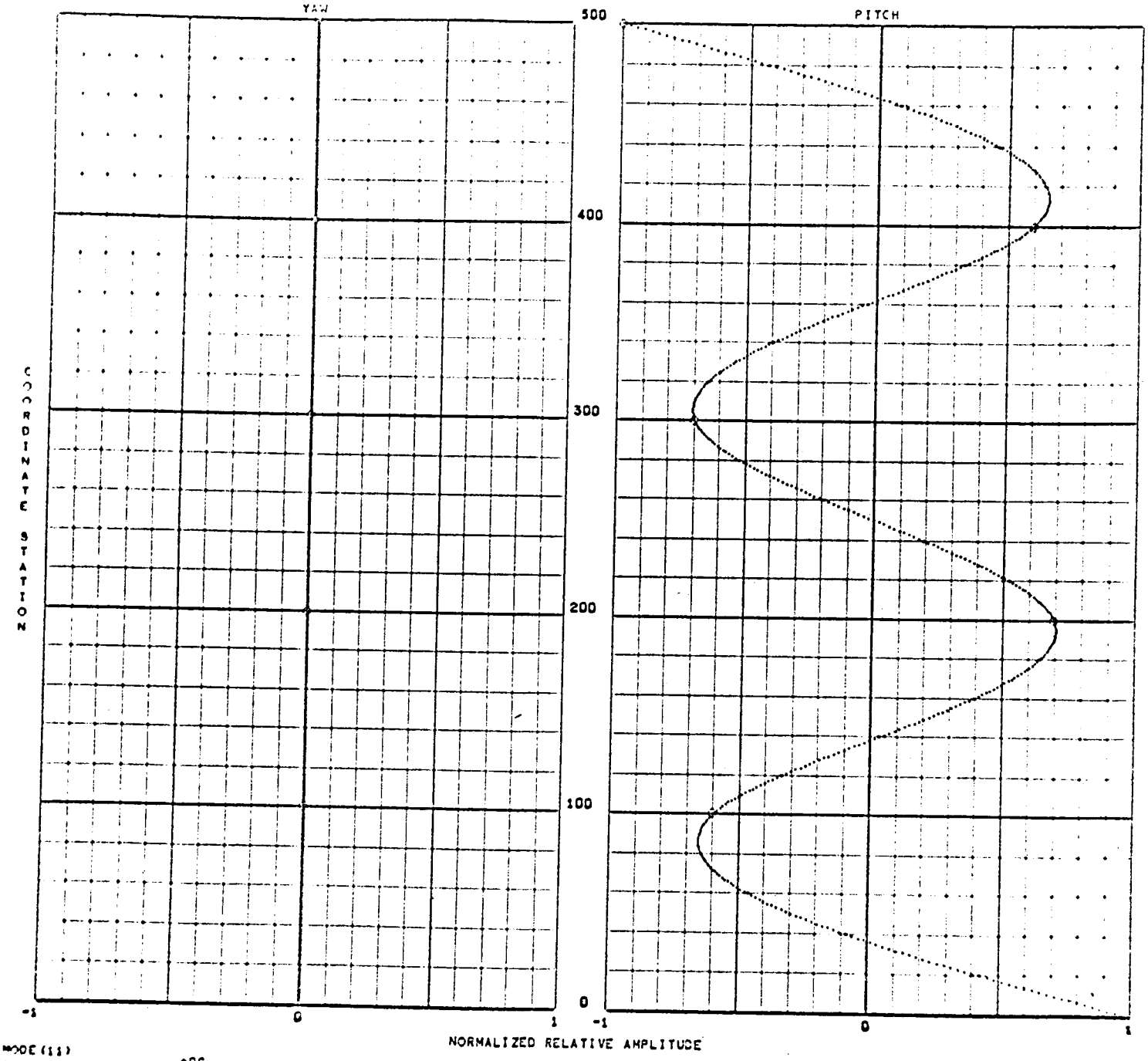
VEHICLE REFERENCE
STATION = 400.00

460190
012 000

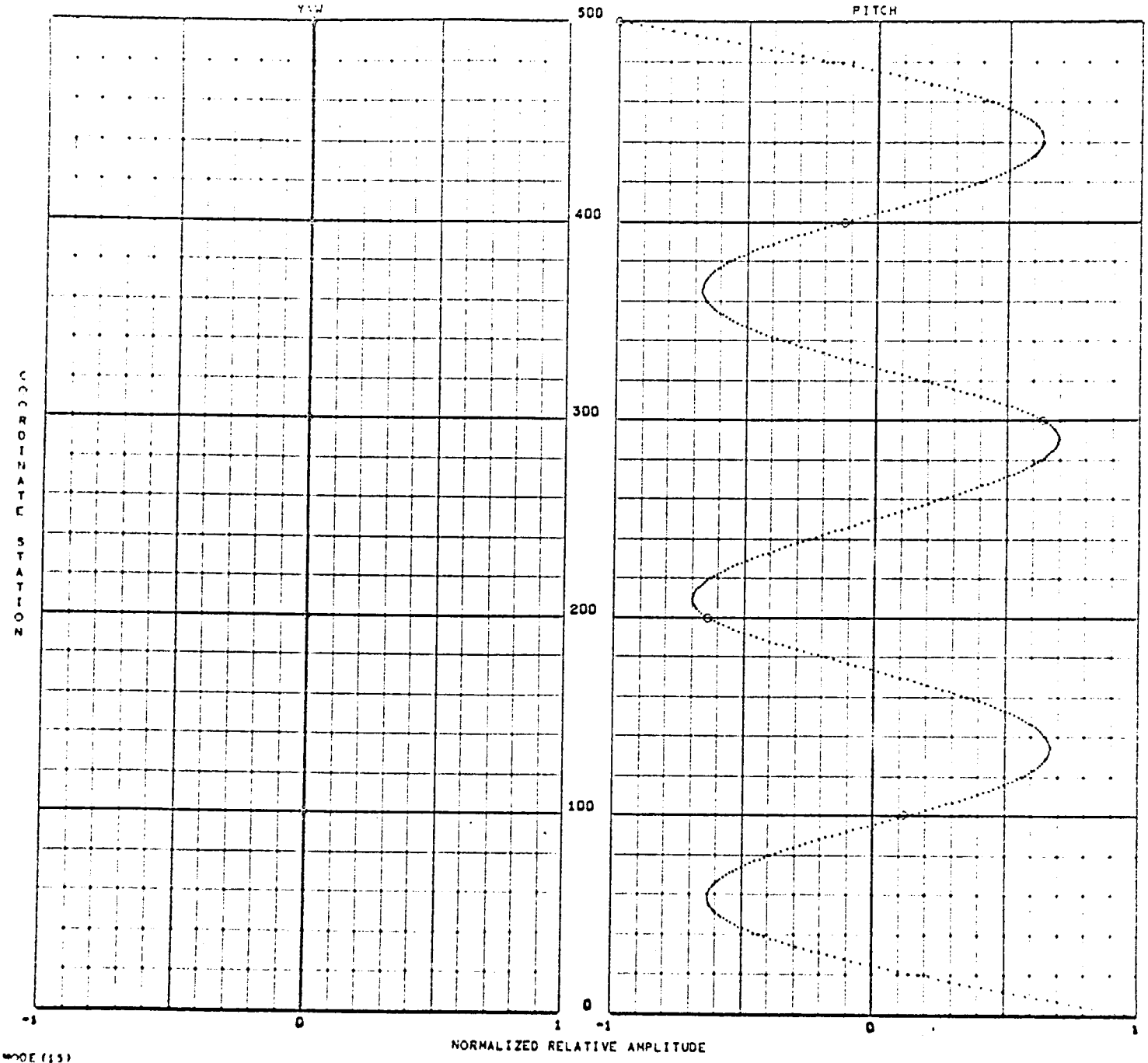


MODE (7)
FREQUENCY = 1.724X10^{+00}

460190
016 000

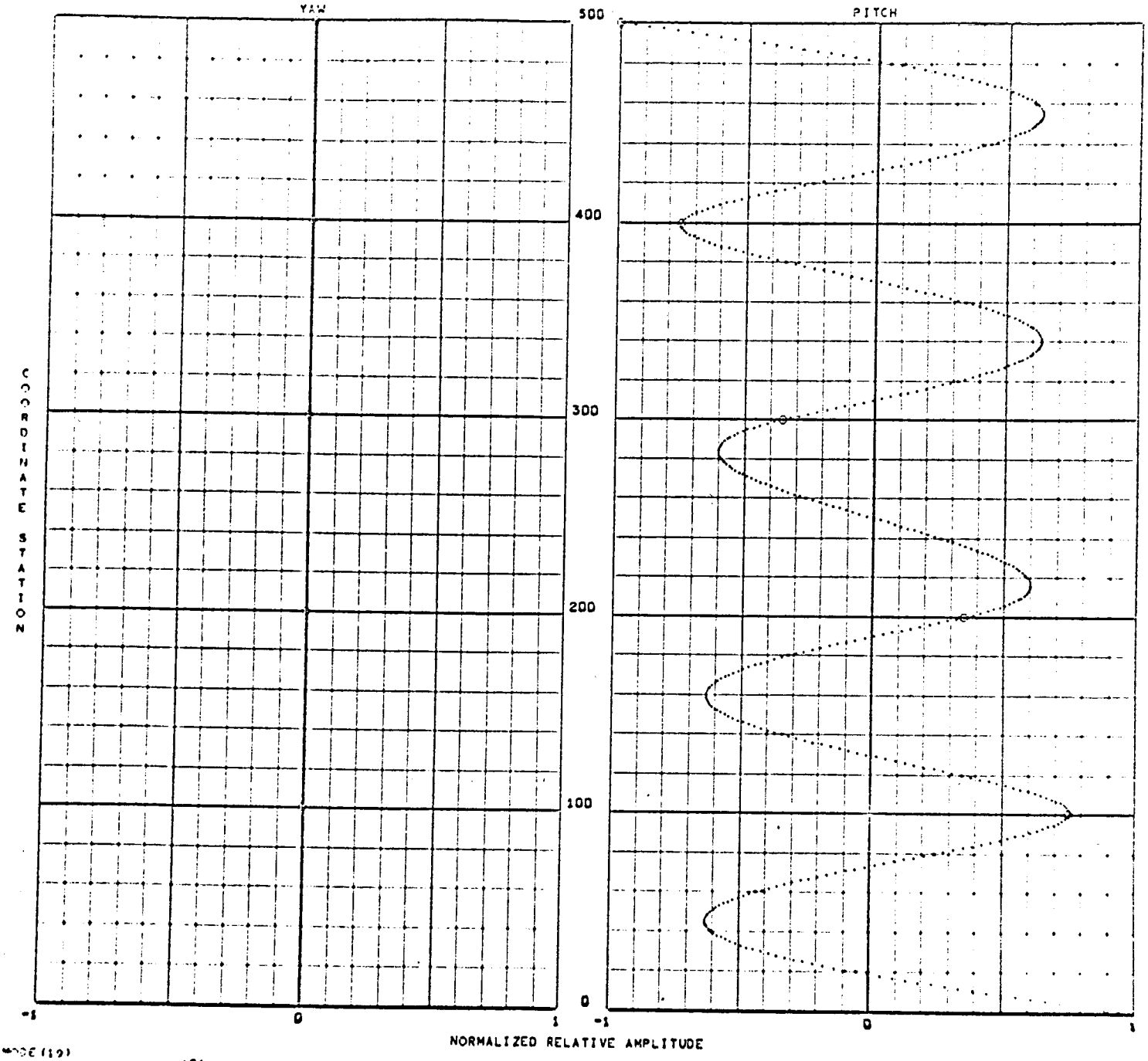


MODE (11)
FREQUENCY = 5.611X10^{+00}



MODE (15)
FREQUENCY = 1.102X10^-01

460190
024 000



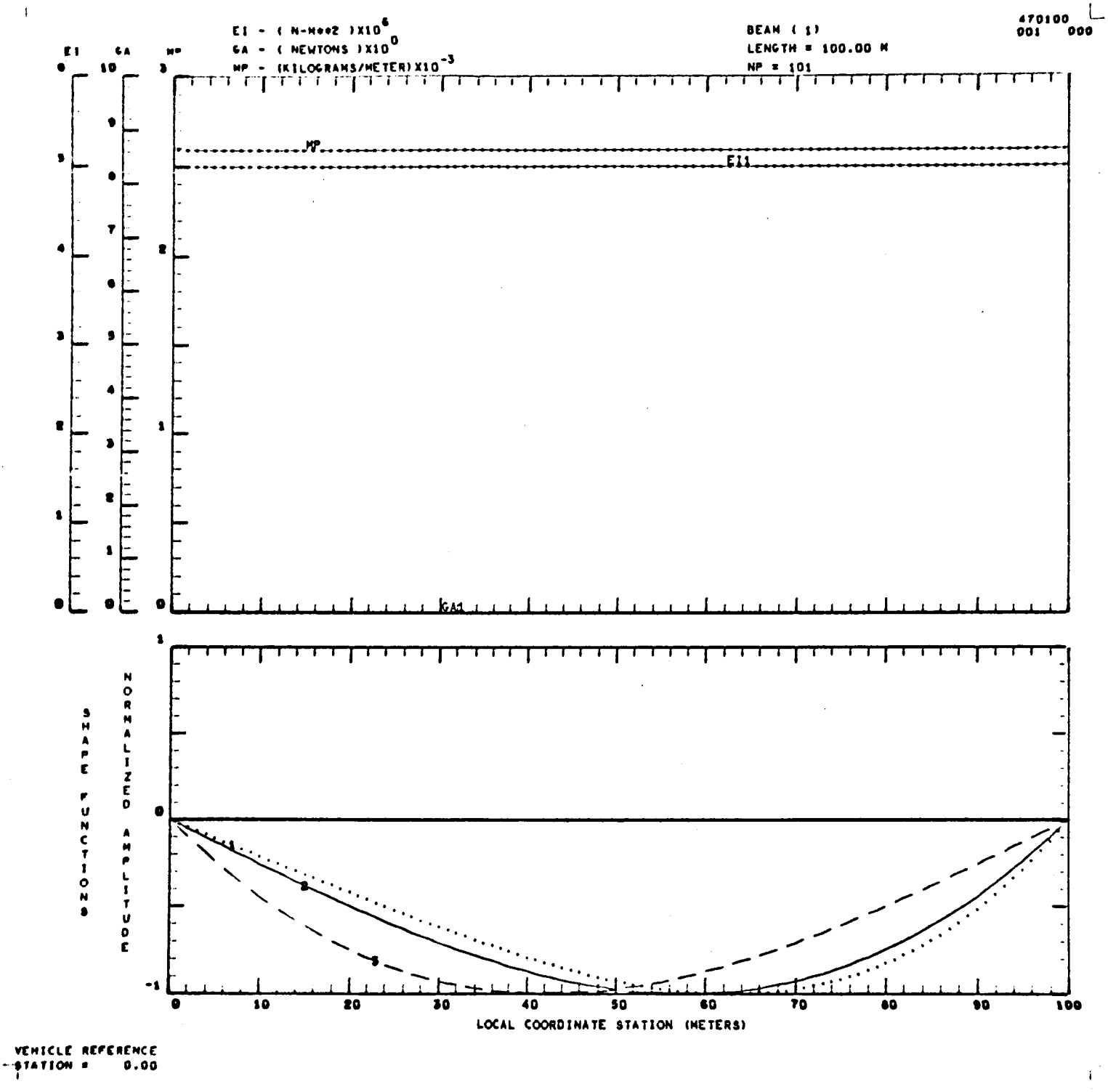
MODE (19)
FREQUENCY = 2.081X10^{+01}

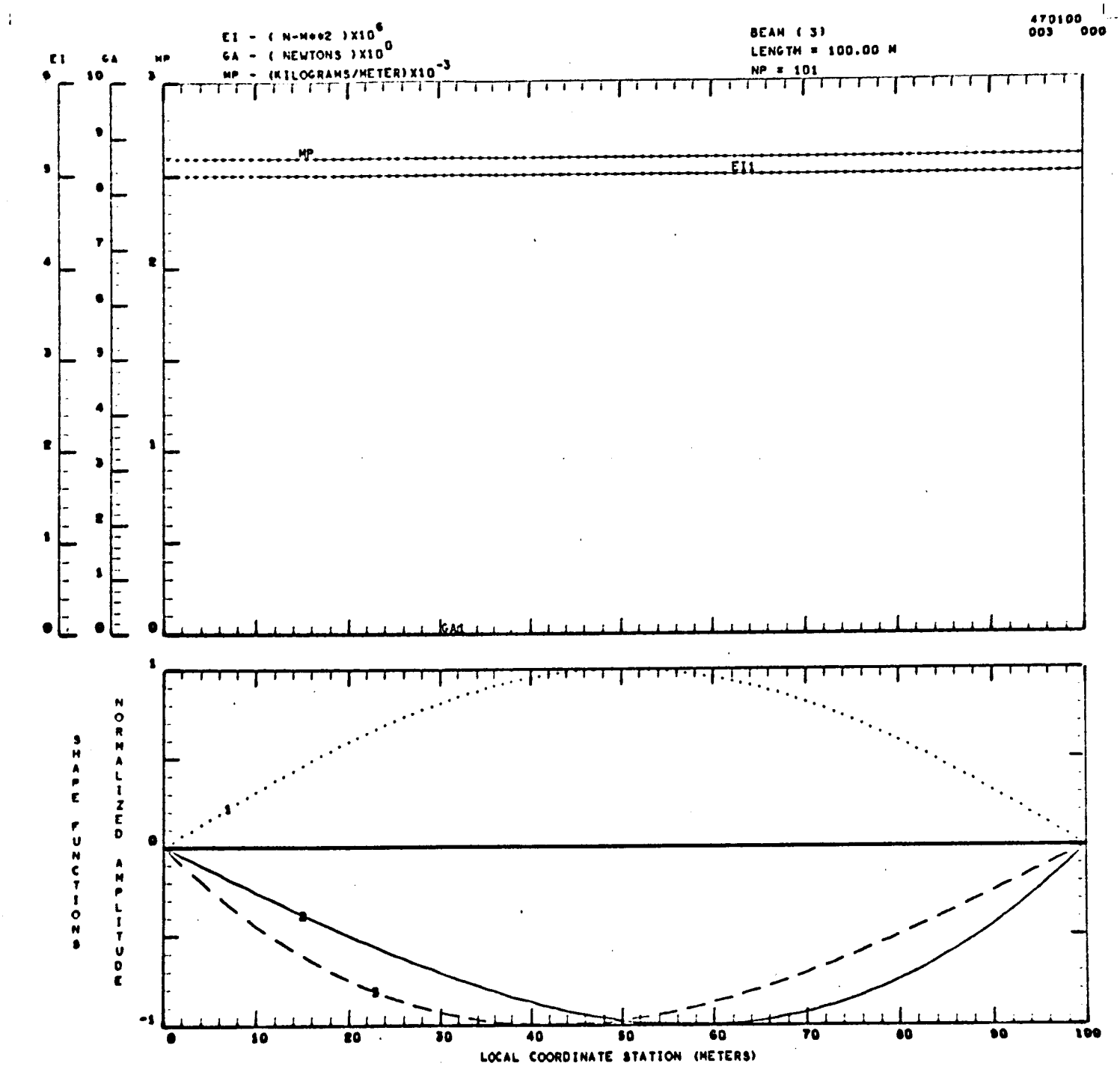
PROBLEM NO. 2

DESCRIPTION: Same as Problem No. 1, except that the bending stiffness in the second principal direction for each beam segment was doubled ($EI_2 = 10 \times 10^6$ lb/in.^{2}) and the first beam segment was rotated such that its principal axes were inclined at an angle of 30° with the principal axes of the other four beams. It is interesting to compare these results with those of Problem No. 1.

SUMMARY OF RESULTS:

Mode	Calculated Frequency (cps)
1	.626
2	.883
3	1.733
4	2.414
5	3.418
6	4.680
7	5.713
8	7.691
9	8.621
10	11.430


EI - (N-M**2)X10^6
GA - (NEWTONS)X10^0
MP - (KILOGRAMS/METER)X10^-3
BEAM (1)
LENGTH = 100.00 M
NP = 101
470100
001 000
EI
GA
MP
EI1
GA1
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 0.00



VEHICLE REFERENCE
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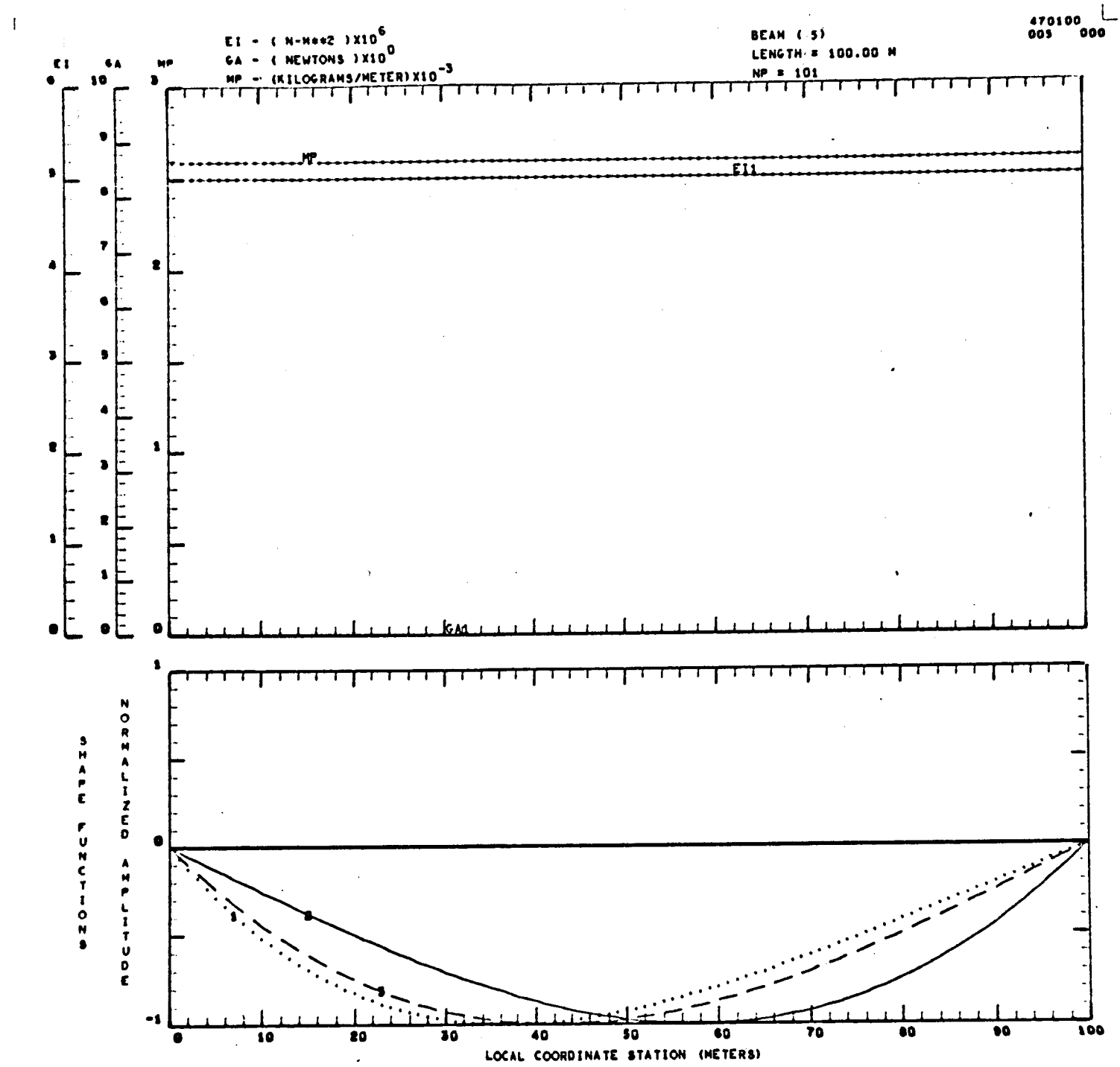
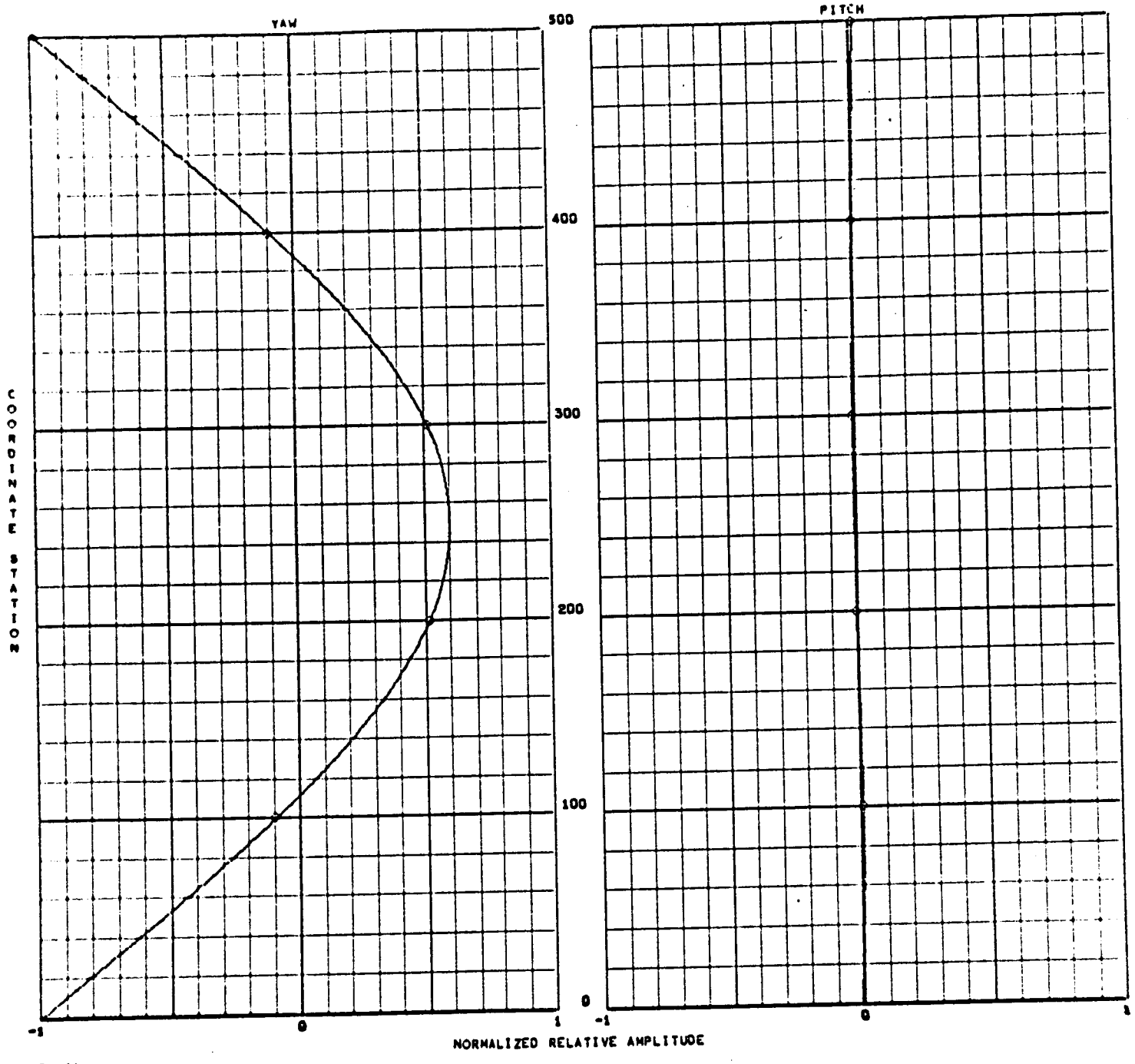
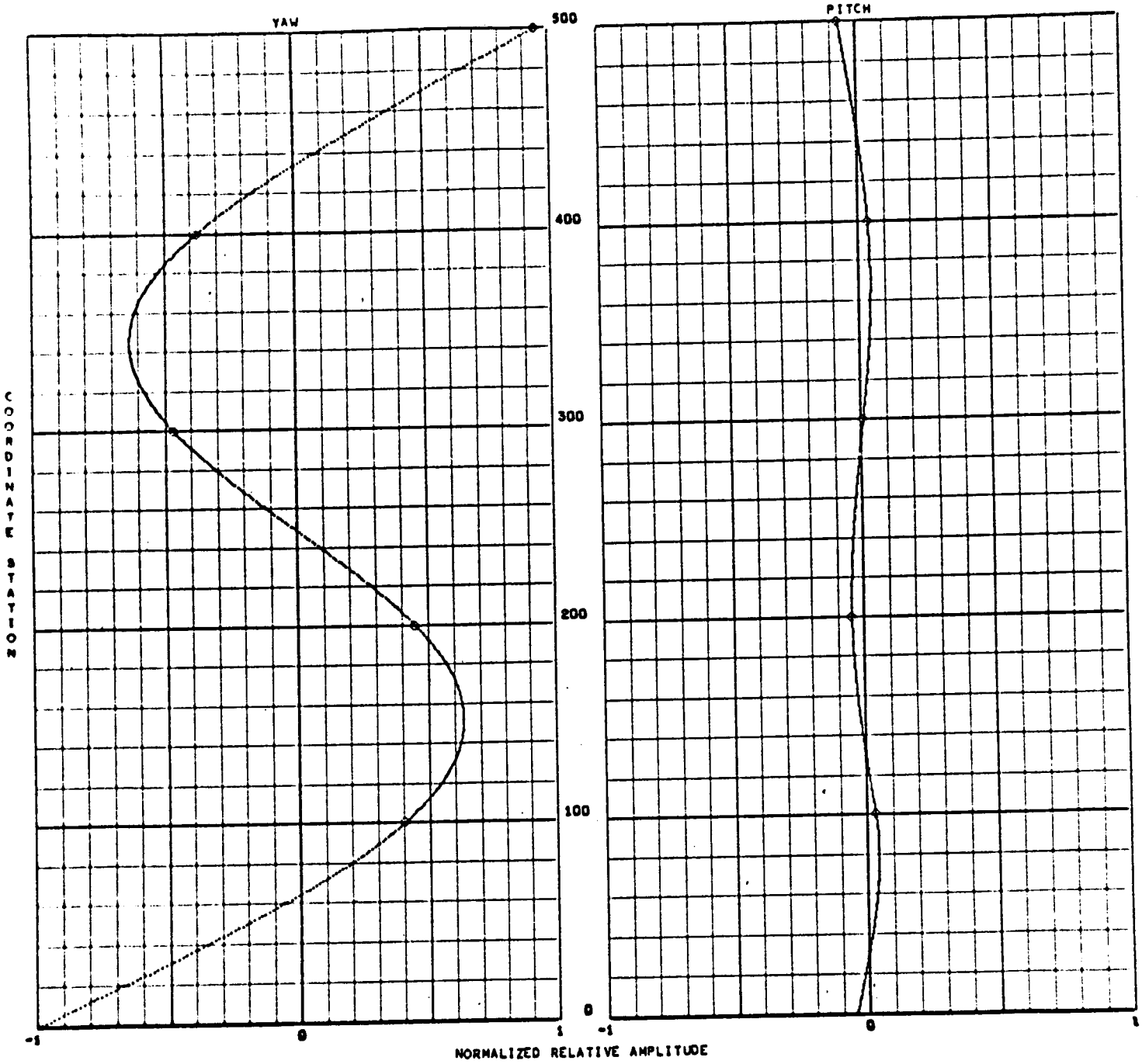

EI - (N-M**2)X10^6
GA - (NEWTONS)X10^0
MP - (KILOGRAMS/METER)X10^-3
BEAM (5)
LENGTH = 100.00 M
NP = 101
470100
005 000
EI
GA
MP
EI1
GA1
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 400.00

470100
011 000



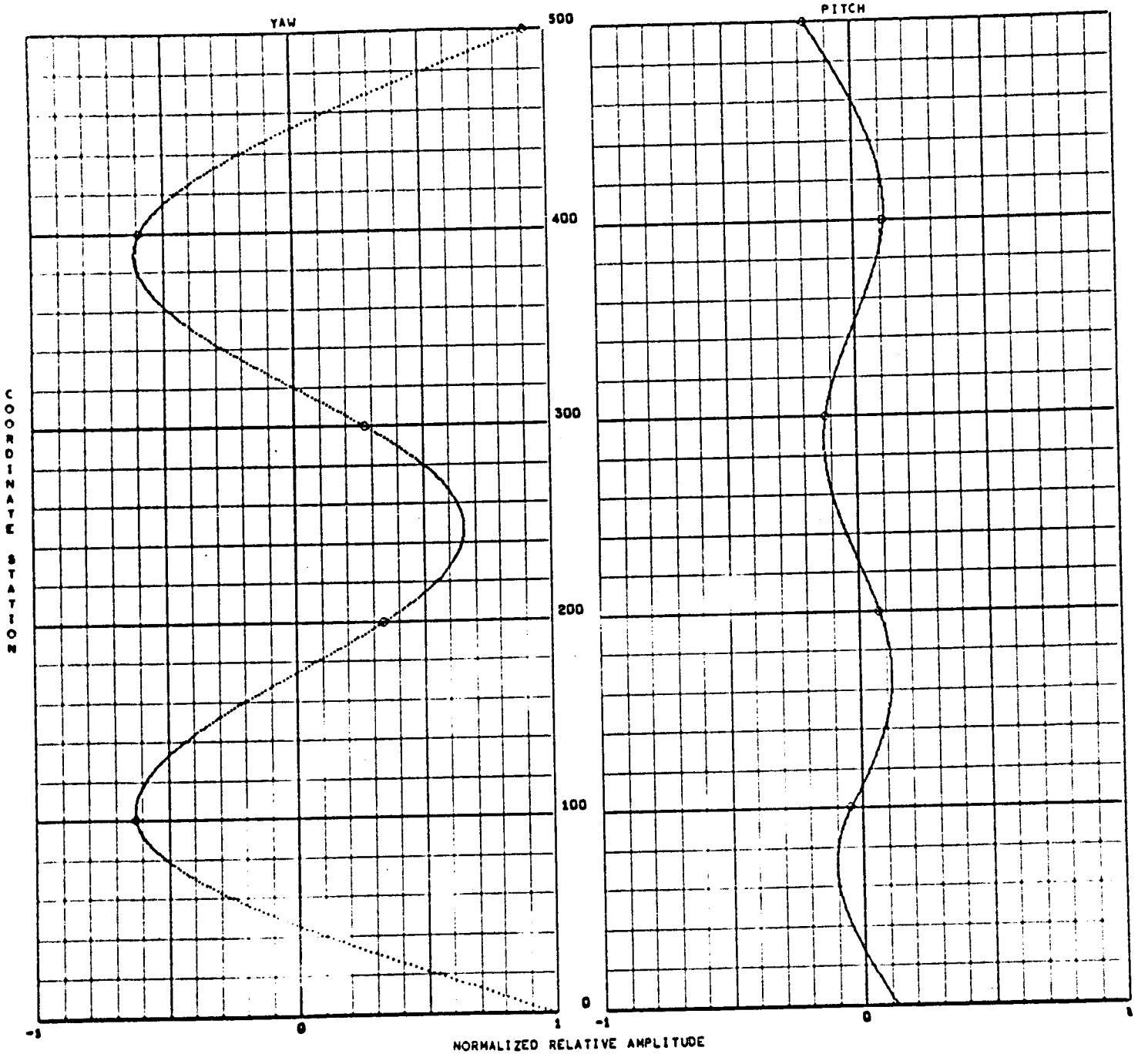
MODE (6)
FREQUENCY = 8.826X10^{-01}

470100
013 000



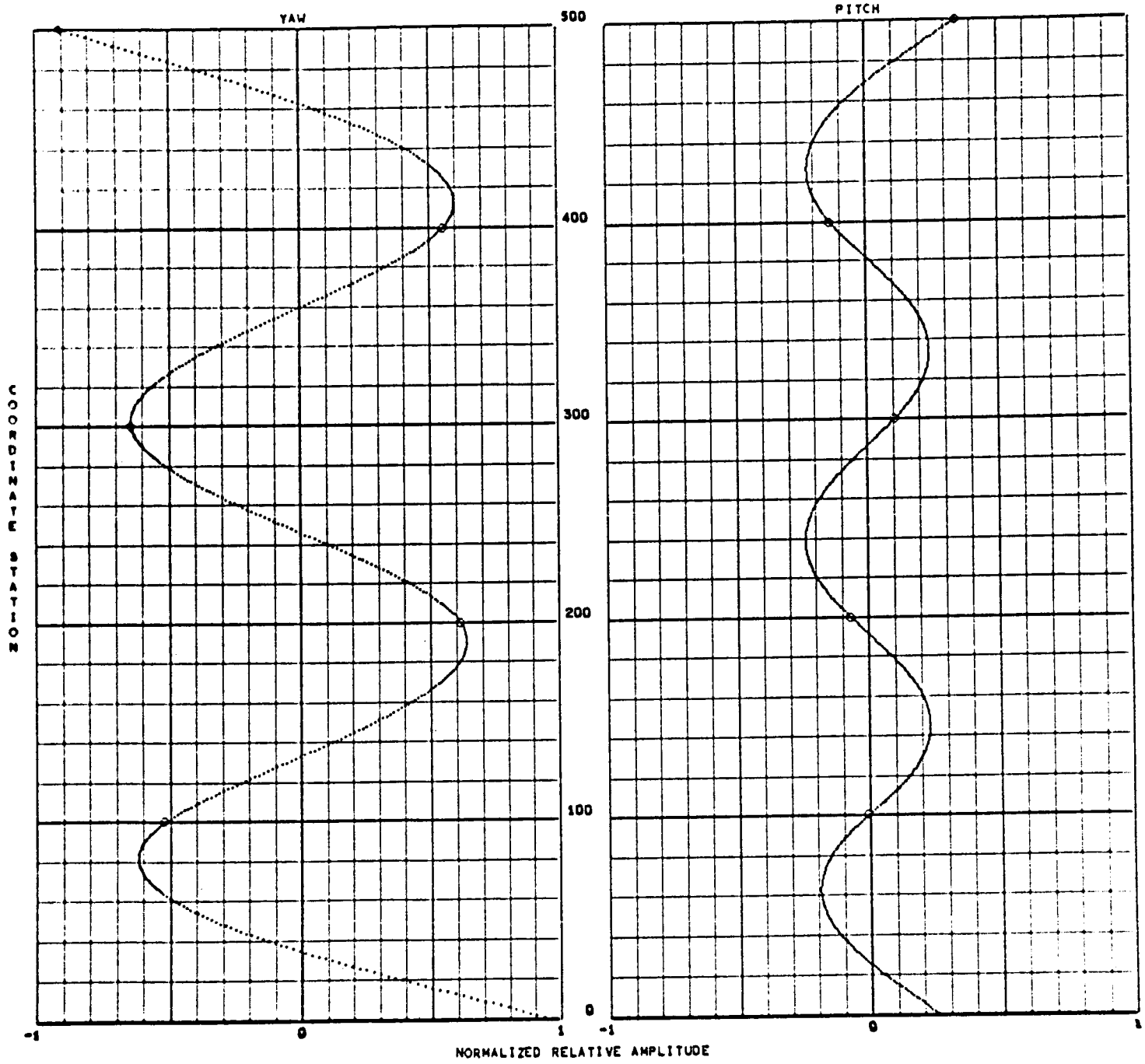
MODE (8)
FREQUENCY = 2.413X10^{+00}

470100
015 000



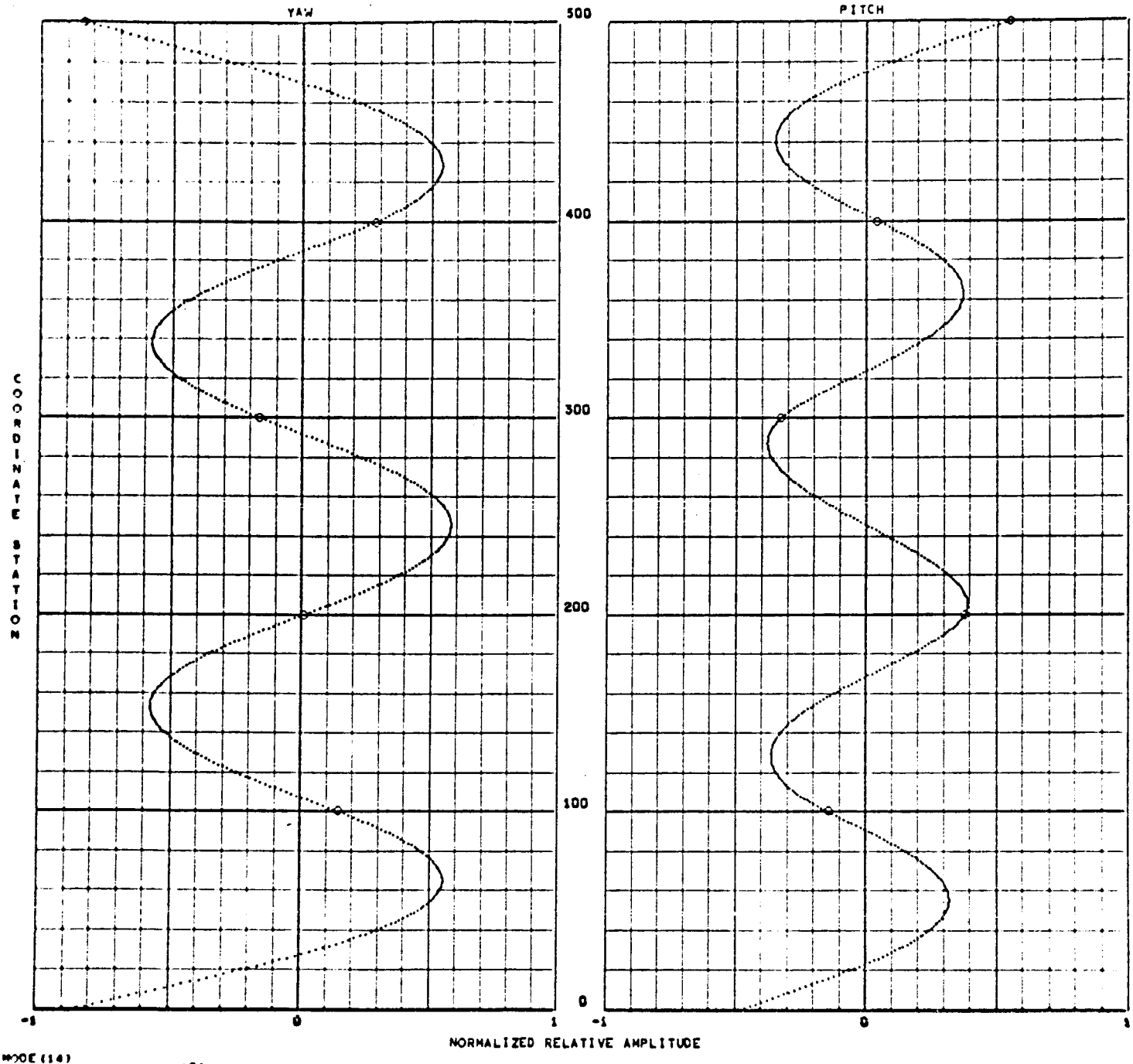
MODE (10)
FREQUENCY = 4.679X10^{+00}

470100
017 000



MODE (12)
FREQUENCY = 7.690X10^{+00}

470100
019 000



MODE (14)
FREQUENCY = $1.143 \times 10^{+01}$

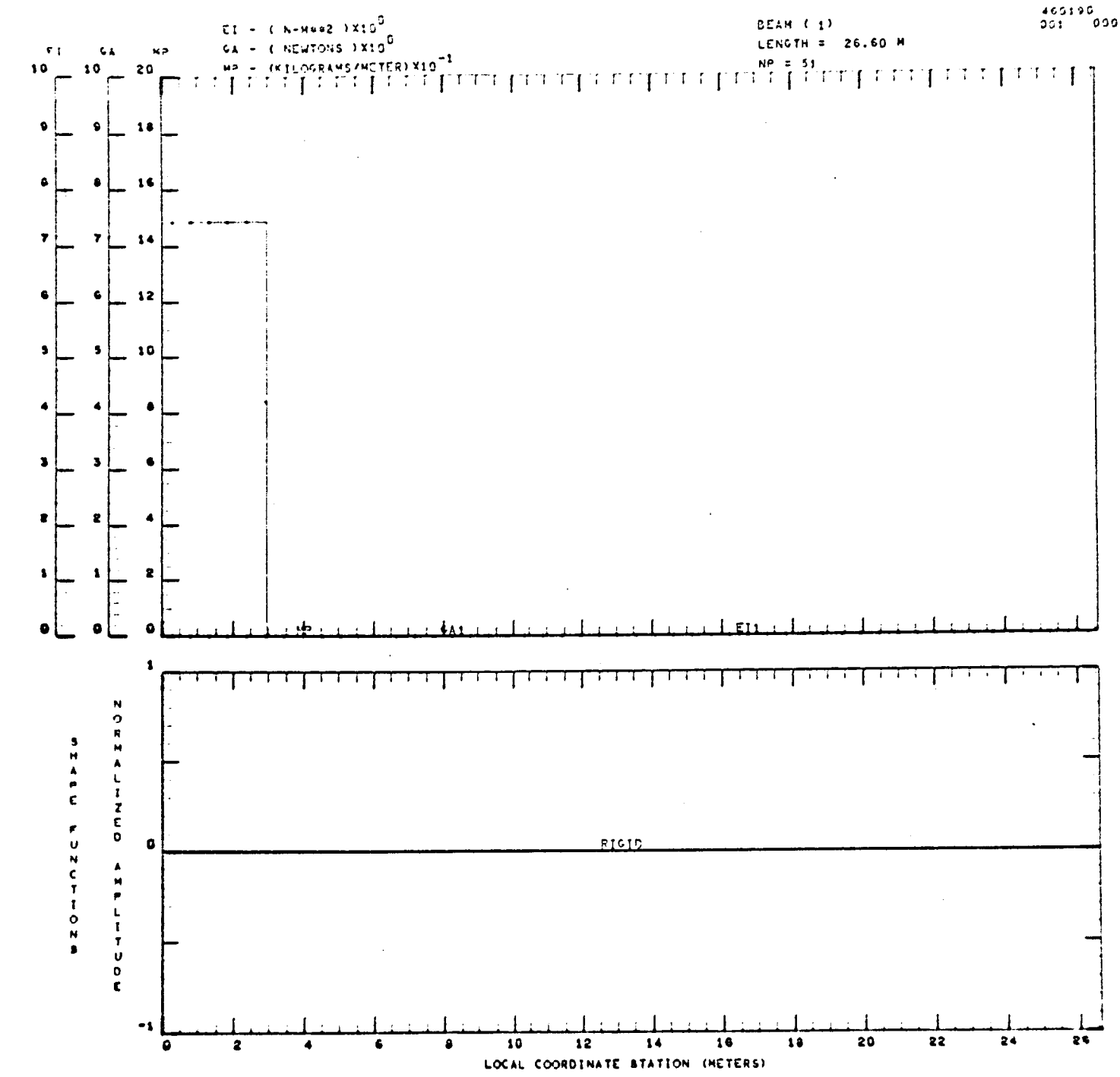
PROBLEM NO. 3

DESCRIPTION: SA-202D upper stages (free-free). This symmetrical vehicle was modeled as seven beams, each butted together with zero-length interstages. The interstage moment-rotation spring constants for the zero-length interstages were large (i.e., about 4 orders of magnitude larger than characteristic EI/L terms), so that the vehicle was in effect modeled as a continuous Timoshenko beam. The standard set of displacement functions, as described in Section 3.2.1, was used so that the model involved 56 degrees of freedom, 28 in each plane. Since the program computed a sequence of "identical" pairs of modes (one in the pitch plane, one in the yaw), only one member of each such pair is included here. The purpose of this analysis was to compare the solution obtained with this (in effect) 28-degree-of-freedom analysis with a very nearly exact* solution of the same Timoshenko beam analysis calculated by the NASA-Stodola program (Reference 2). The results are summarized below. The figures listed parenthetically are those calculated by the NASA-Stodola program.

SUMMARY OF RESULTS:

Mode	Frequency (cps)		Generalized Mass (lb-sec^2/in.)	
1	2.47	(2.44)	8.14	(8.18)
2	4.46	(4.35)	9.24	(9.68)
3	7.04	(6.92)	25.66	(22.06)
4	11.47	(11.26)	24.89	(27.85)
5	15.75	(- -)	8.42	(- -)

*By "exact," we mean here (and in similar cases discussed later) exact solutions to the finite representation of the Timoshenko beam problem, rather than the exact solution to the continuum problem approximated by the finite model.



VEHICLE REFERENCE
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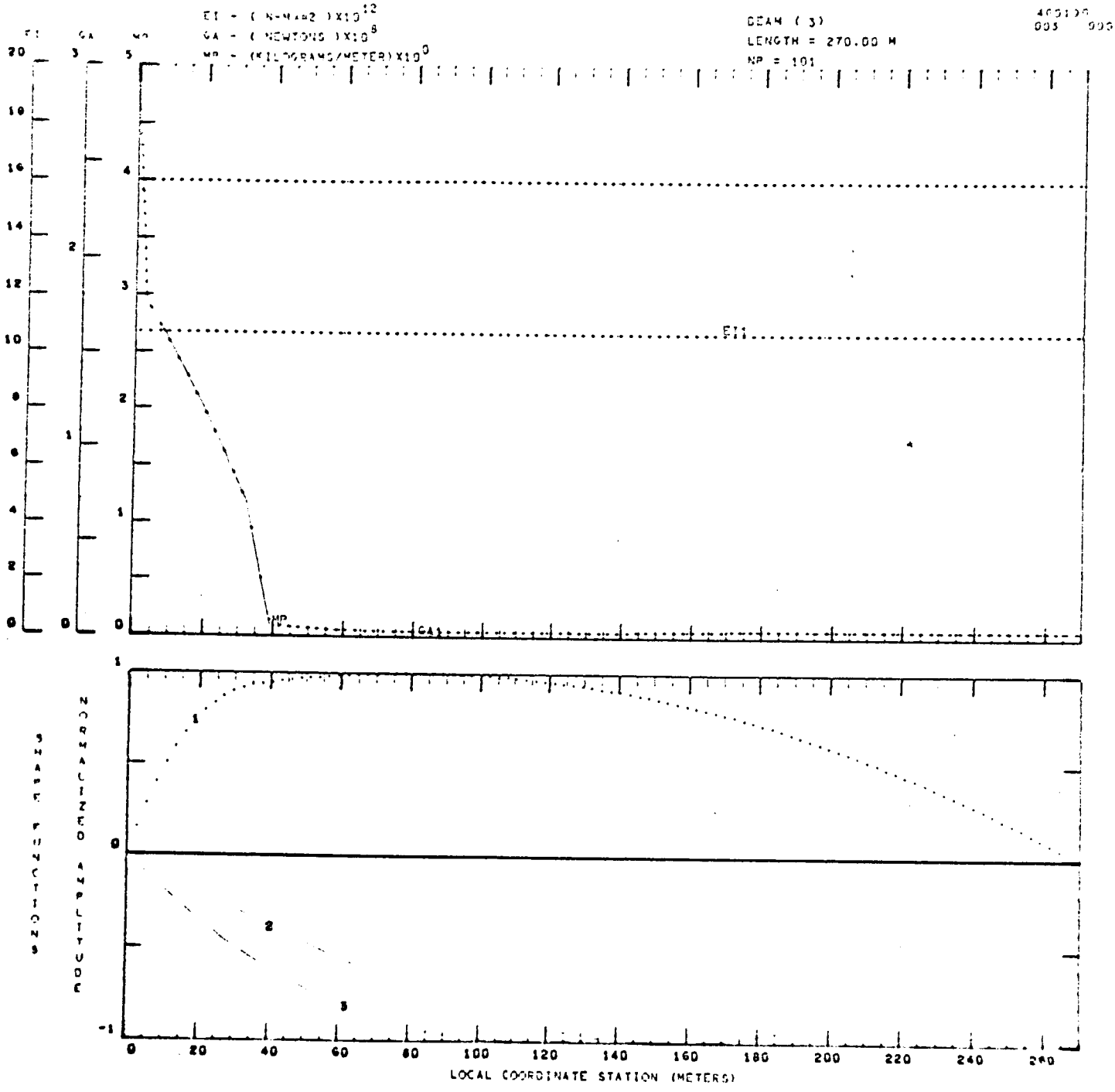

VEHICLE REFERENCE
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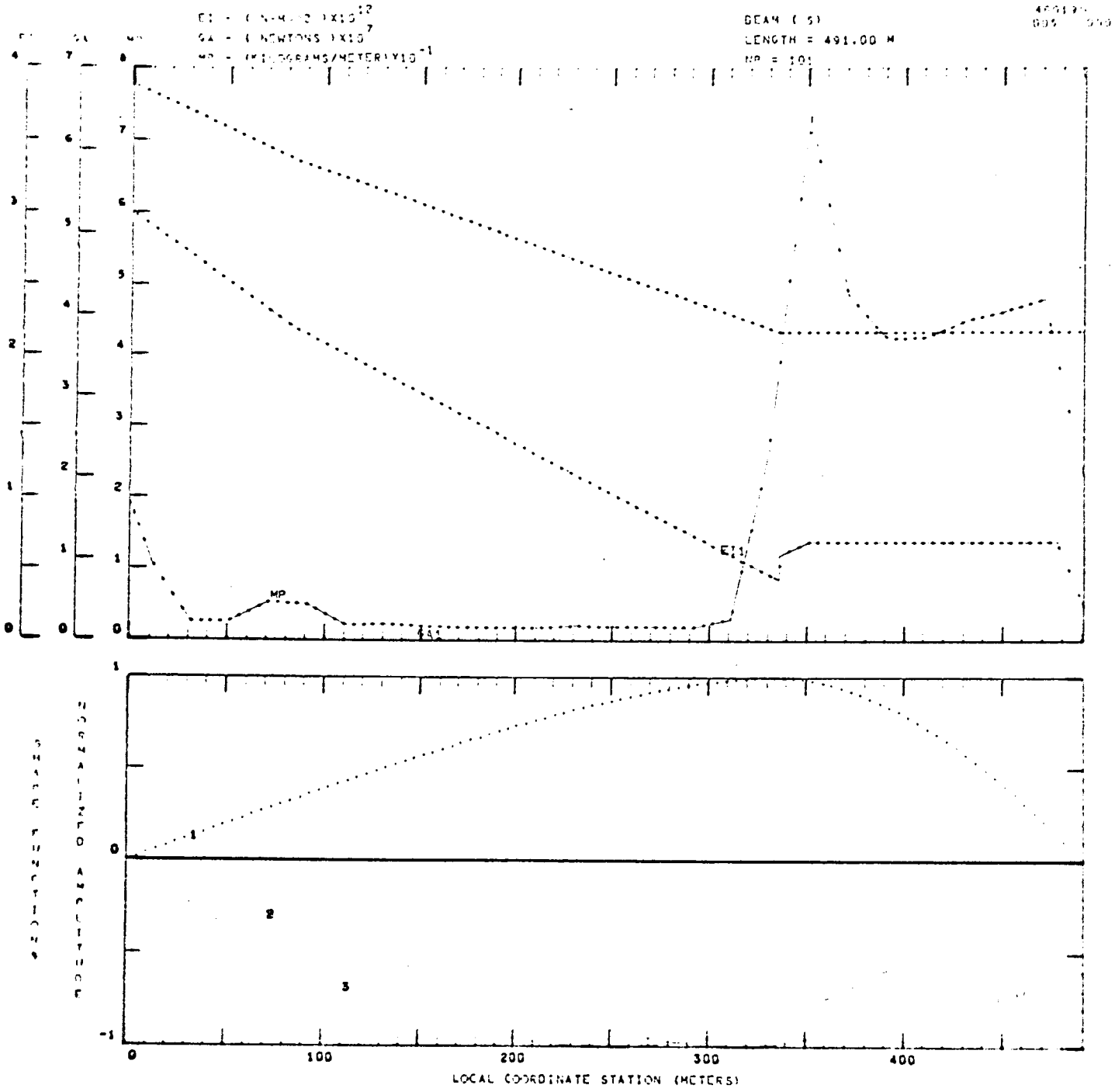

VEHICLE REFERENCE
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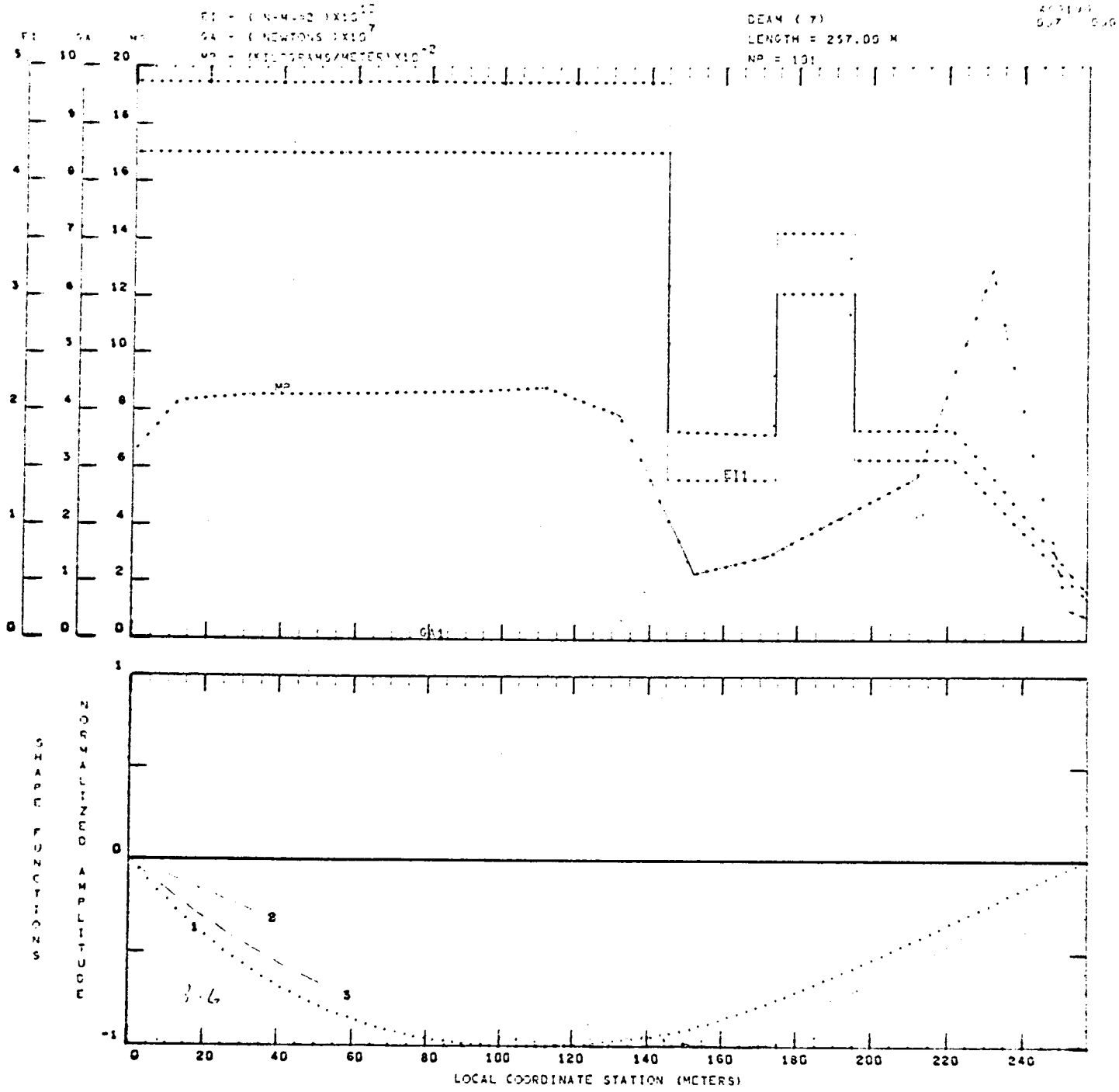

VEHICLE REFERENCE
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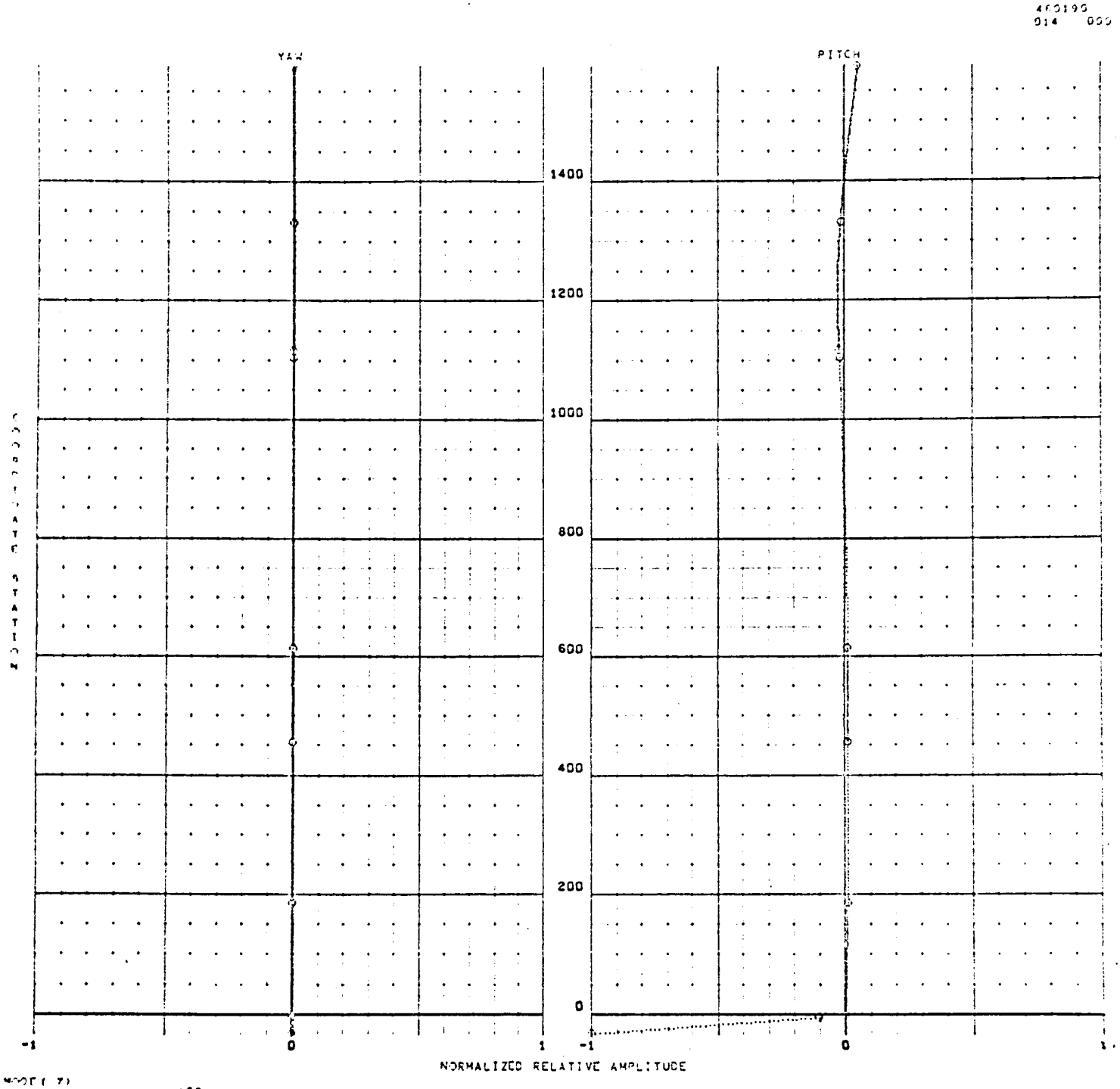
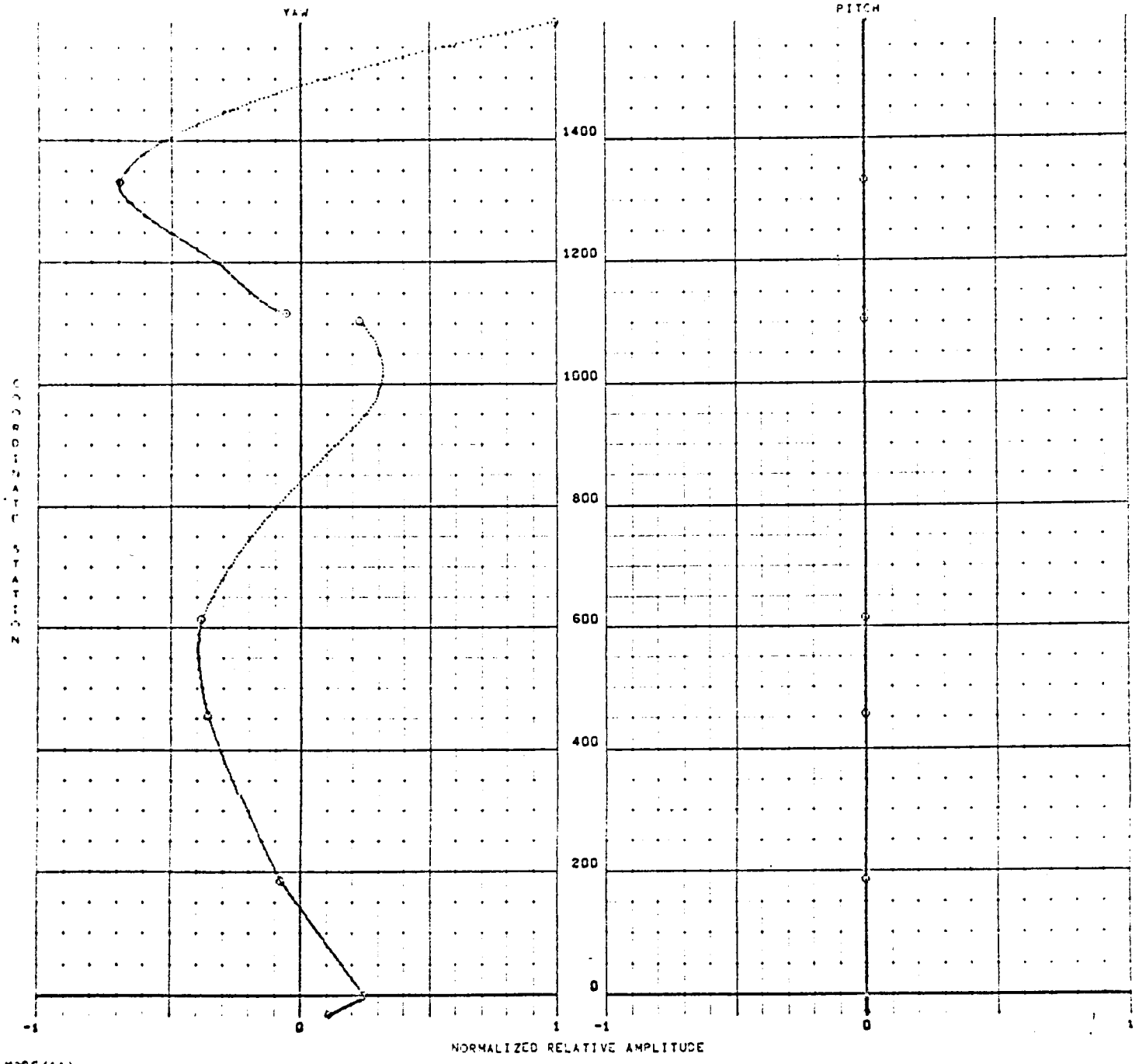


MODE (7)
FREQUENCY = 4.455X10^{+00}



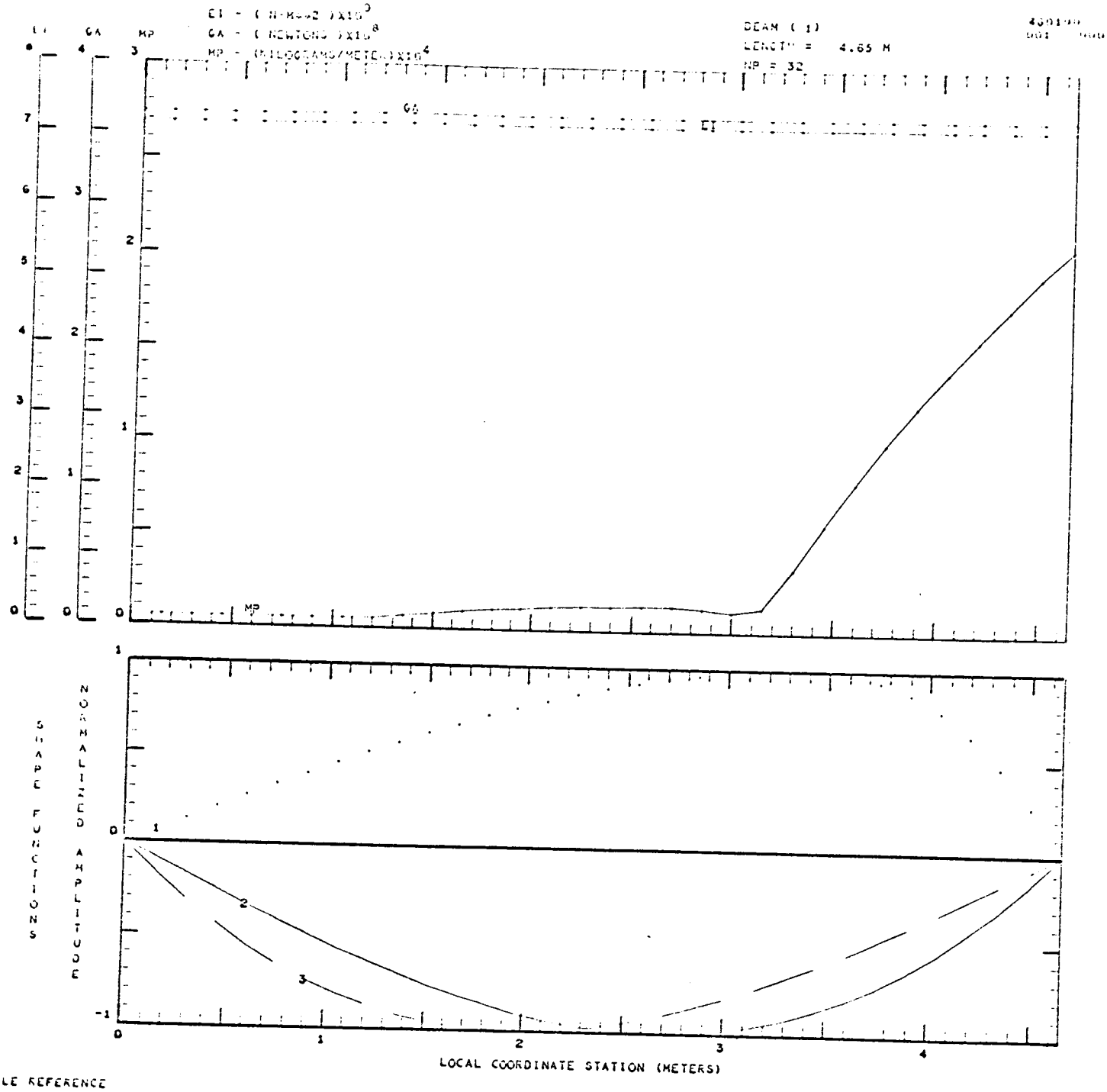
MODE (11)
FREQUENCY = 1.147X10^-01

PROBLEM NO. 4

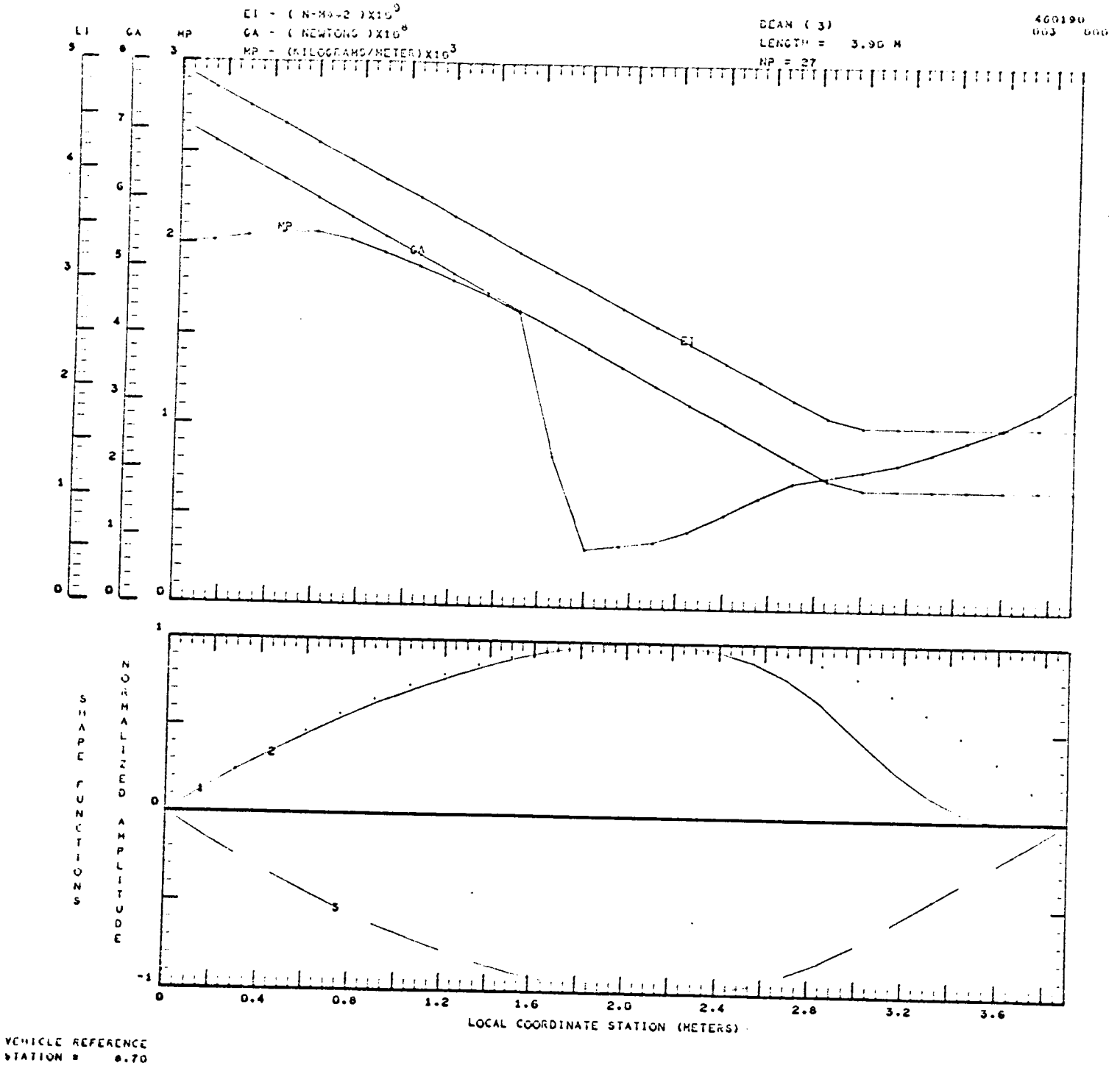
DESCRIPTION: SA-D6 upper stages (cantilevered). This symmetrical vehicle is modeled as five beams, each, in effect, butted rigidly together as described in Problem No. 3. As in Problem No. 3, the purpose of this analysis was to compare the results of the analysis of a highly non-uniform symmetrical beam with the nearly exact results of the same problem executed by the NASA-Stodola program. In both programs, the detailed mathematical models (e.g., the locations of the 227 "station" boundaries used in the numerical integrations, etc.) are essentially identical, so that the differences in the results are due to the fact that the present analysis involves only 21 degrees of freedom compared to 554 degrees of freedom (227 displacements and 227 rotations) in the Stodola program. In the table of results presented below, the results of the NASA-Stodola program are listed parenthetically. It is evident that the consequences of the artificial restraints introduced, in effect, by the reduction from 554 to 21 degrees of freedom is slight.

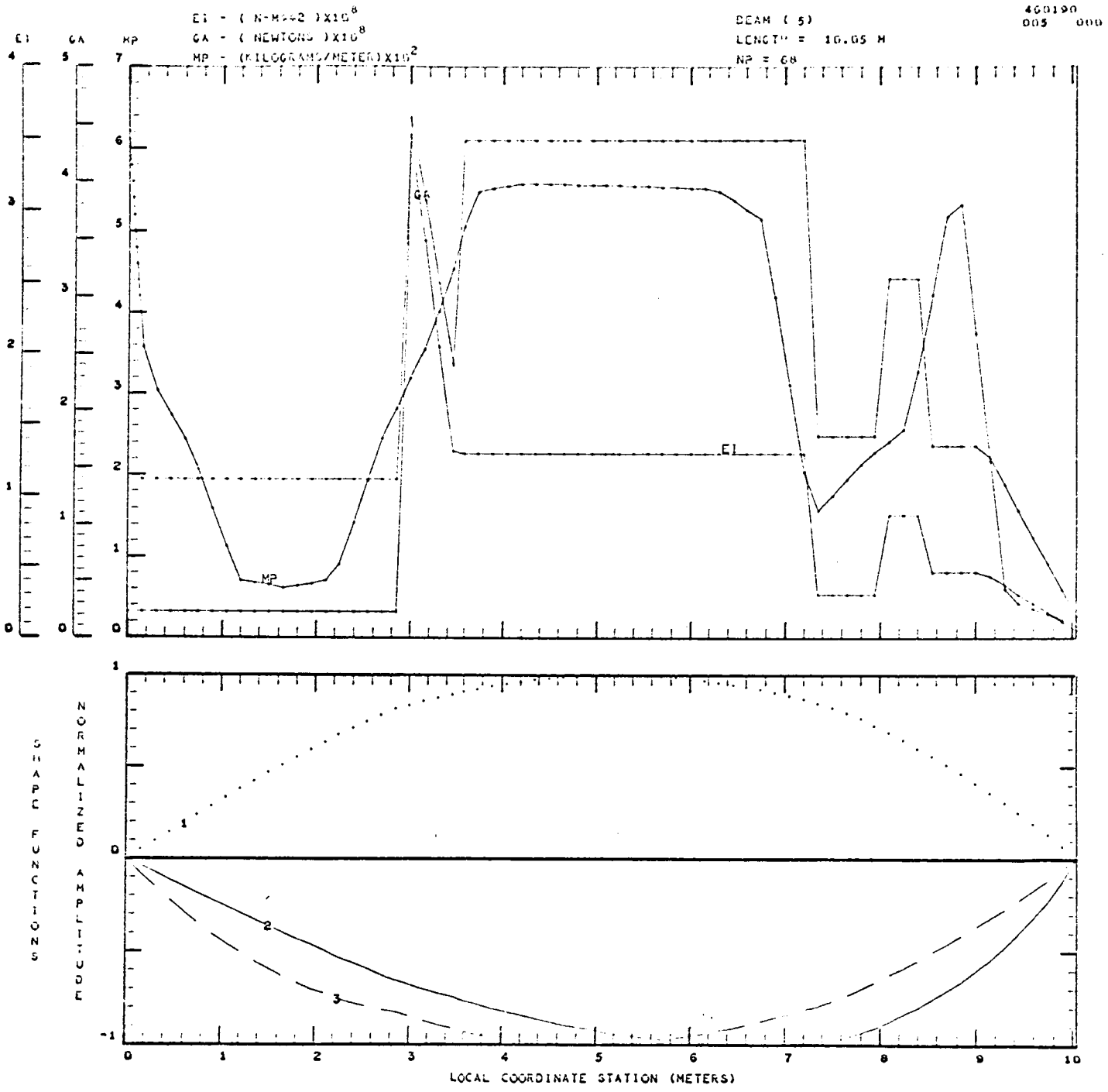
SUMMARY OF RESULTS:

Mode	Frequency (cps)		Generalized Mass (kg)	
1	1.588	(1.584)	2507	(2614)
2	3.93	(3.87)	1505	(1262)
3	6.45	(6.40)	4376	(4906)
4	14.56	(- -)		(- -)

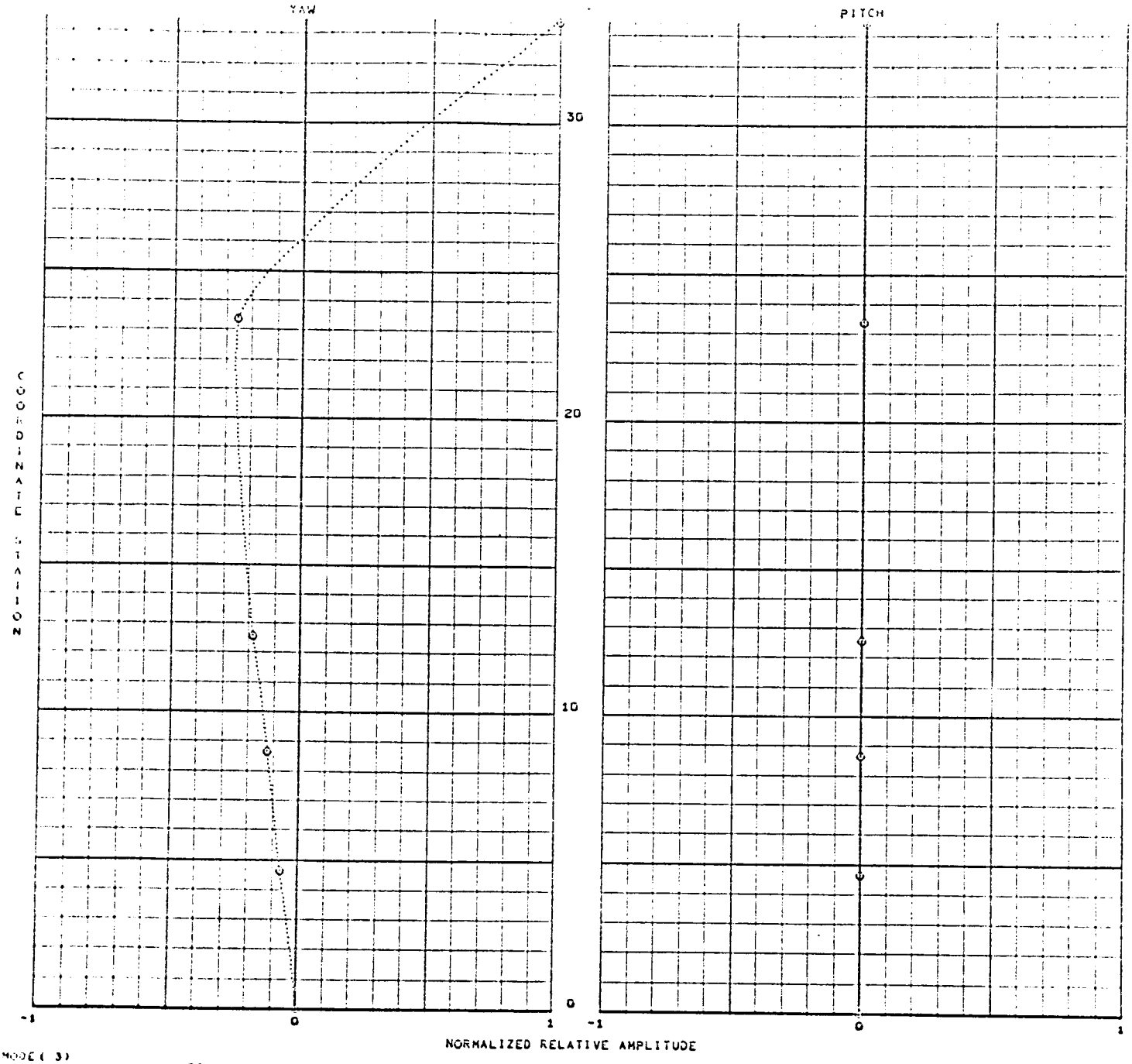


VEHICLE REFERENCE
STATION = 0.00


EI - (N-M**2)X10^9
GA - (NEWTONS)X10^8
MP - (KILOGRAMS/METER)X10^3
BEAM (3)
LENGTH = 3.96 M
NP = 27
EI
GA
MP
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 0.70

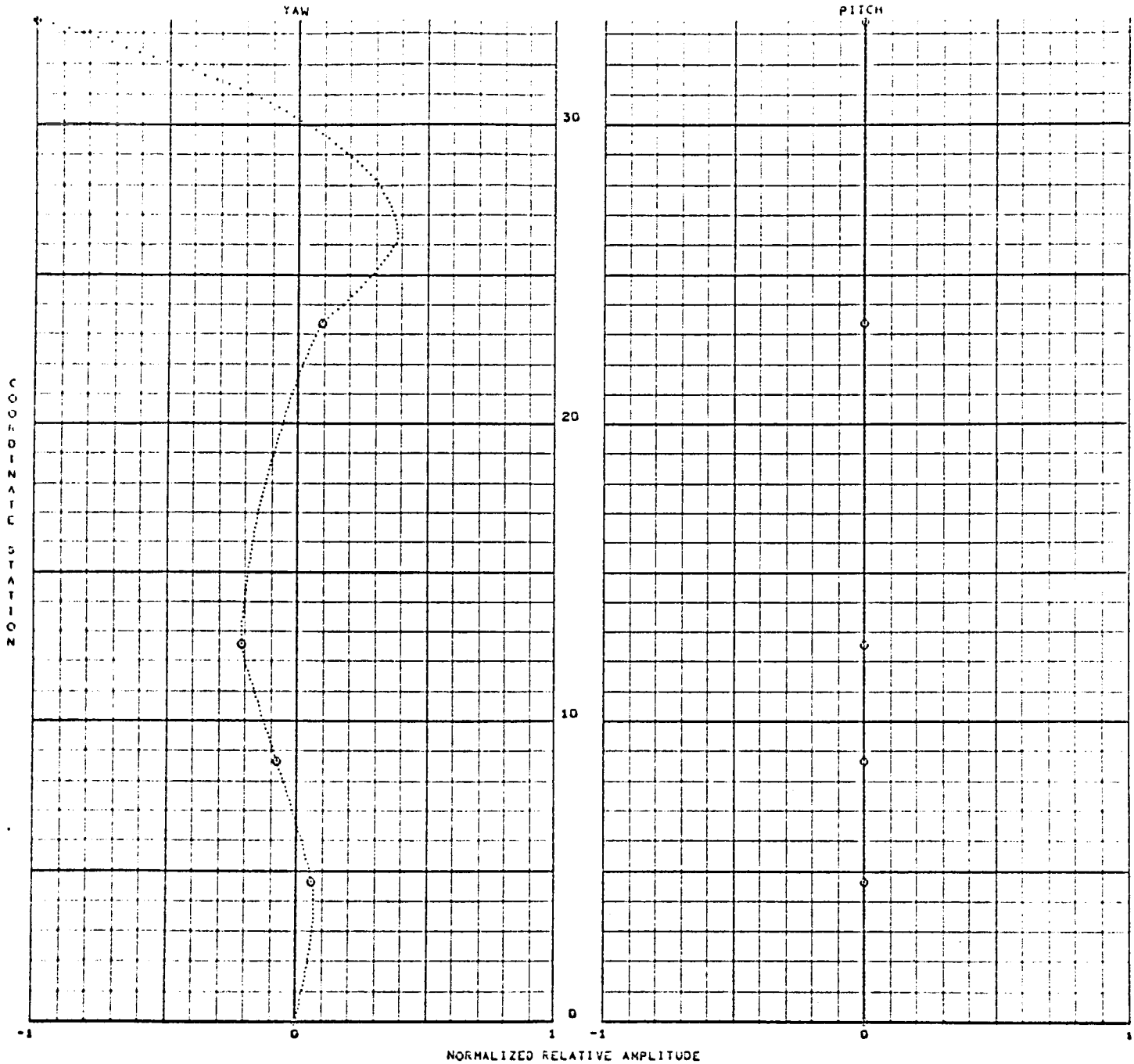


VEHICLE REFERENCE
STATION = 23.40



MODE (3)
FREQUENCY = 3.932X10^{+00}

460190
012 000



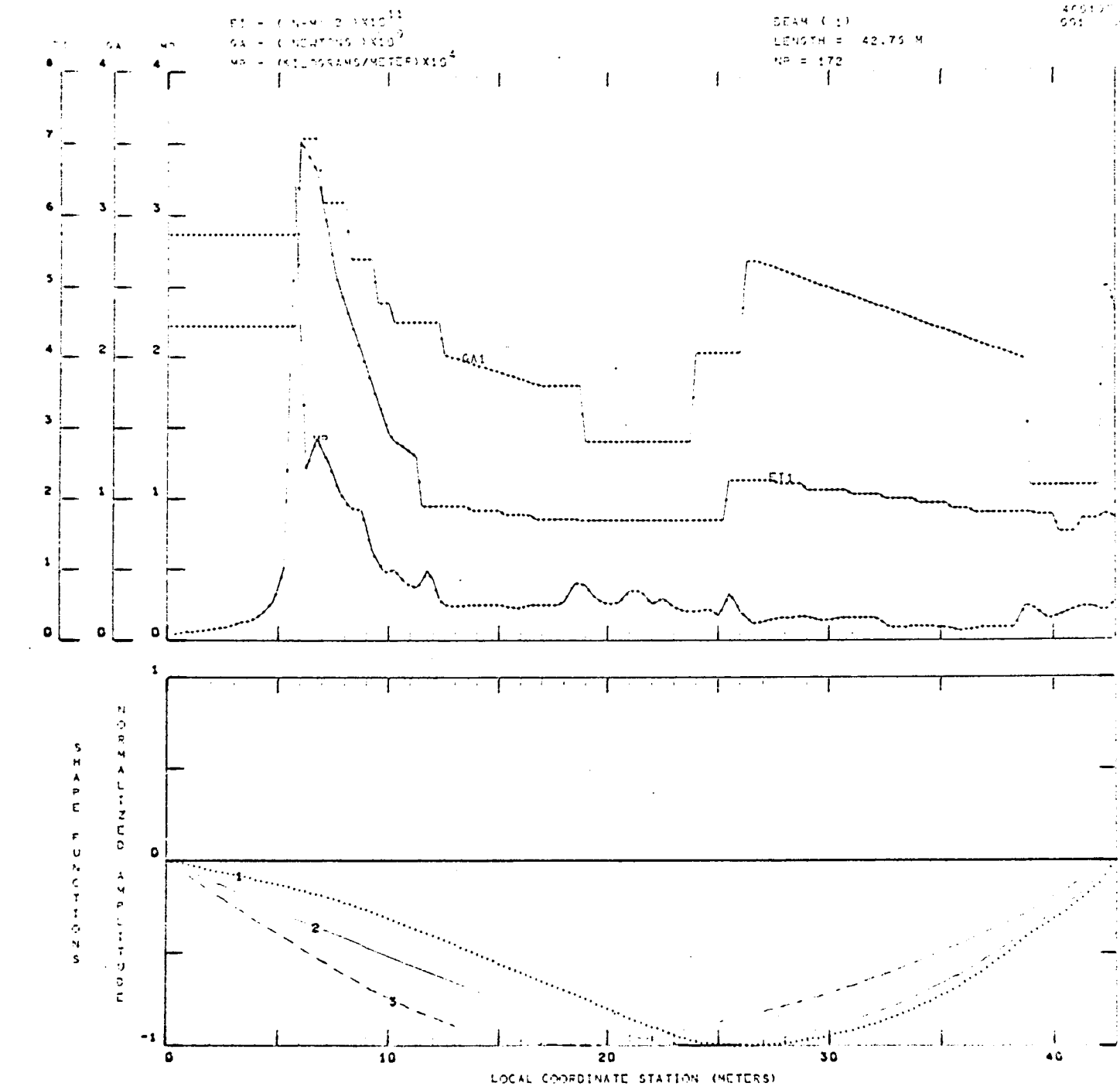
MODE(7)
FREQUENCY = 1.456X10^{+01}

PROBLEM NO. 5

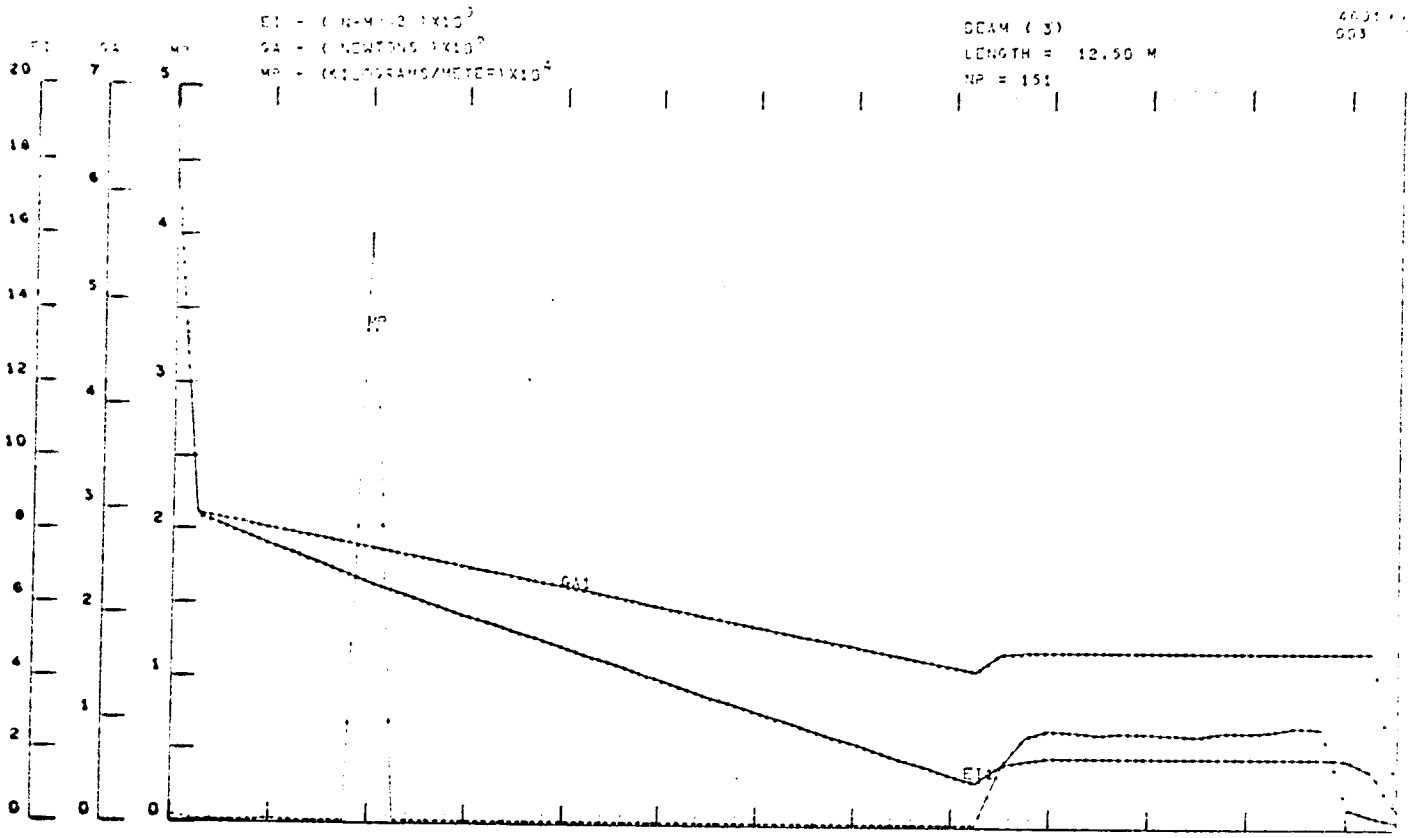
DESCRIPTION: Unfueled SA-501 (free-free). This rotationally symmetrical vehicle is modeled as four tandem Timoshenko beams rigidly butted together as in the two preceding problems. The results obtained in this analysis are shown below with the corresponding results of the NASA-Stodola program listed parenthetically.

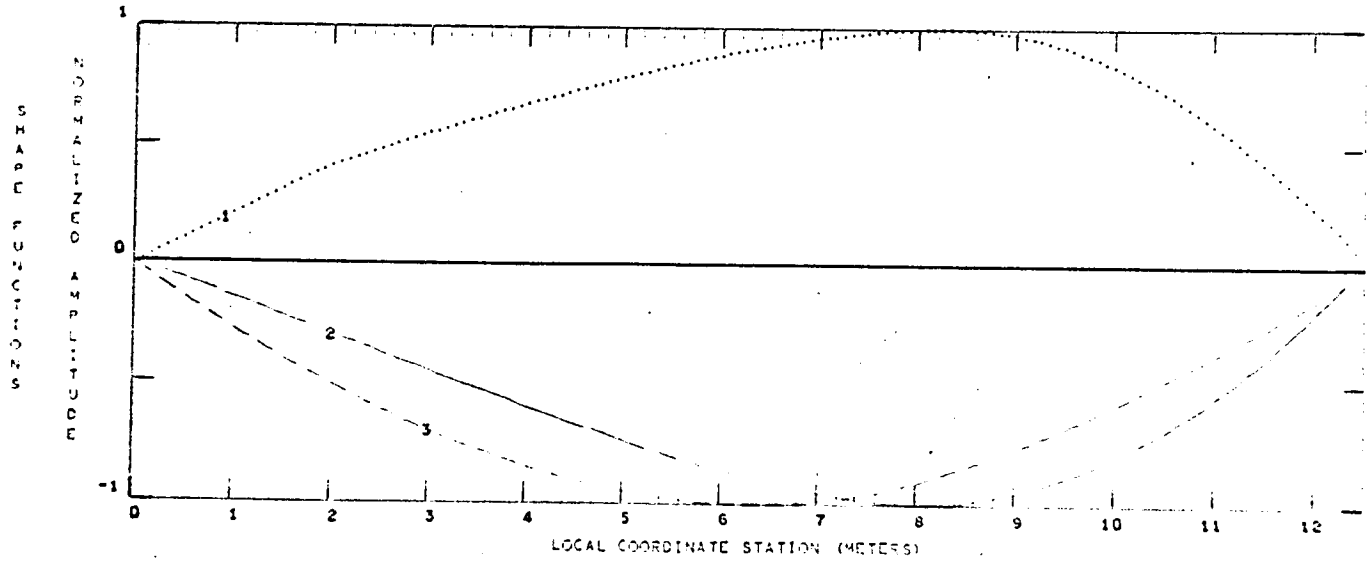
SUMMARY OF RESULTS:

Mode	Frequency (cps)		Generalized Mass (kg)	
1	1.583	(1.558)	4425	(4242)
2	2.65	(2.59)	2330	(2393)
3	5.04	(4.84)	8576	(10,027)
4	8.51	(7.99)	- - -	(9067)

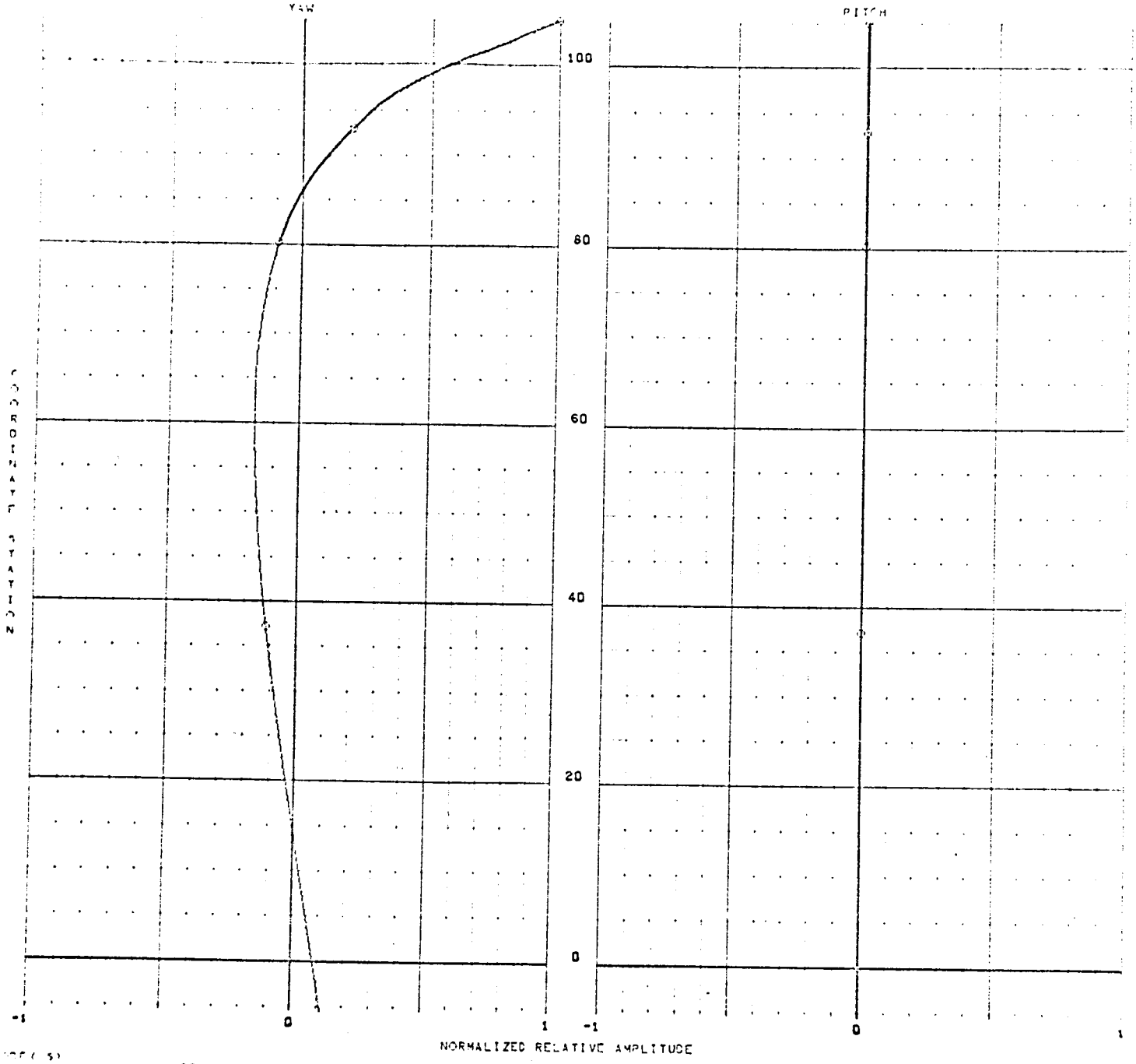


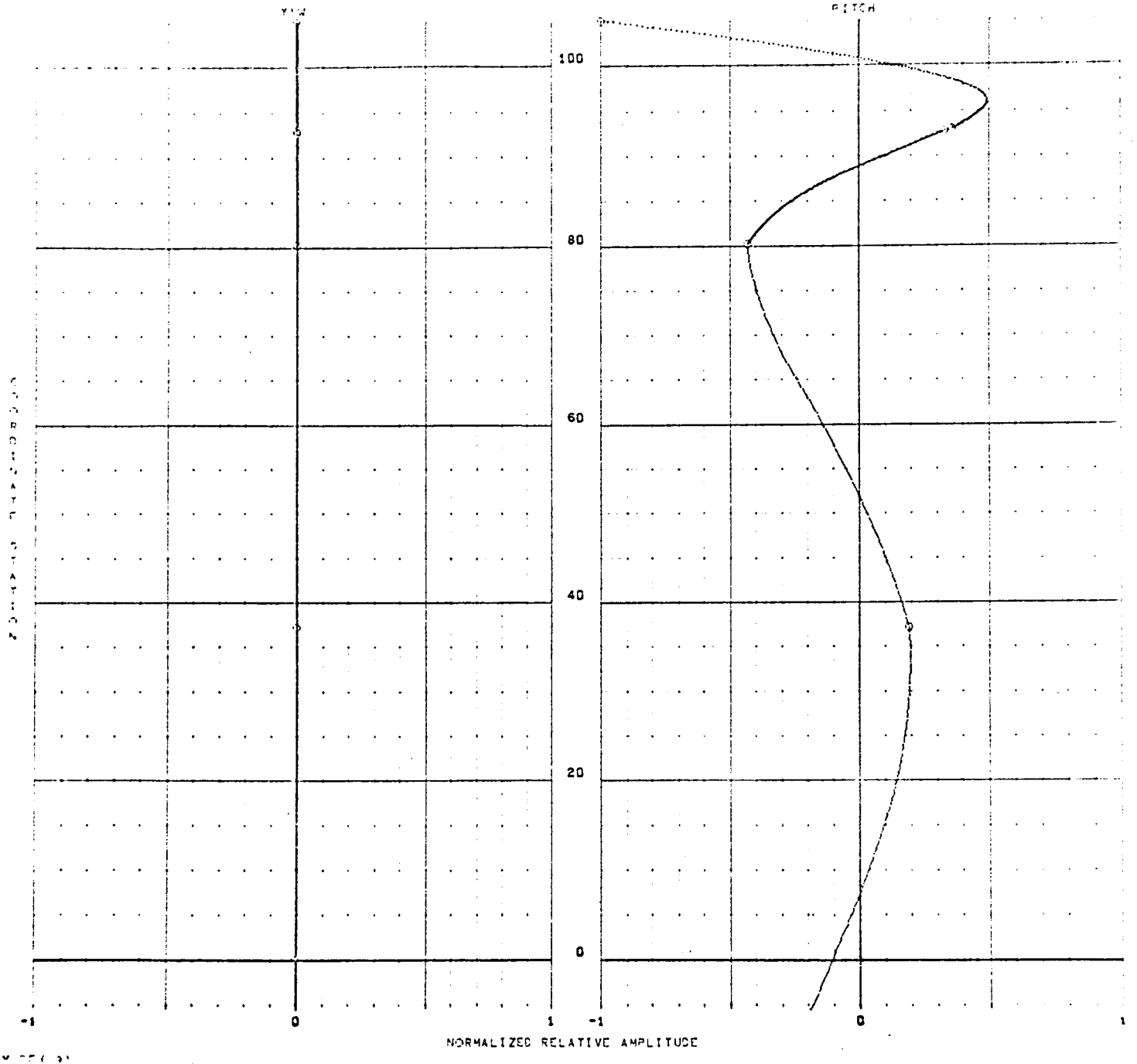
VEHICLE REFERENCE
STATION = 5.50

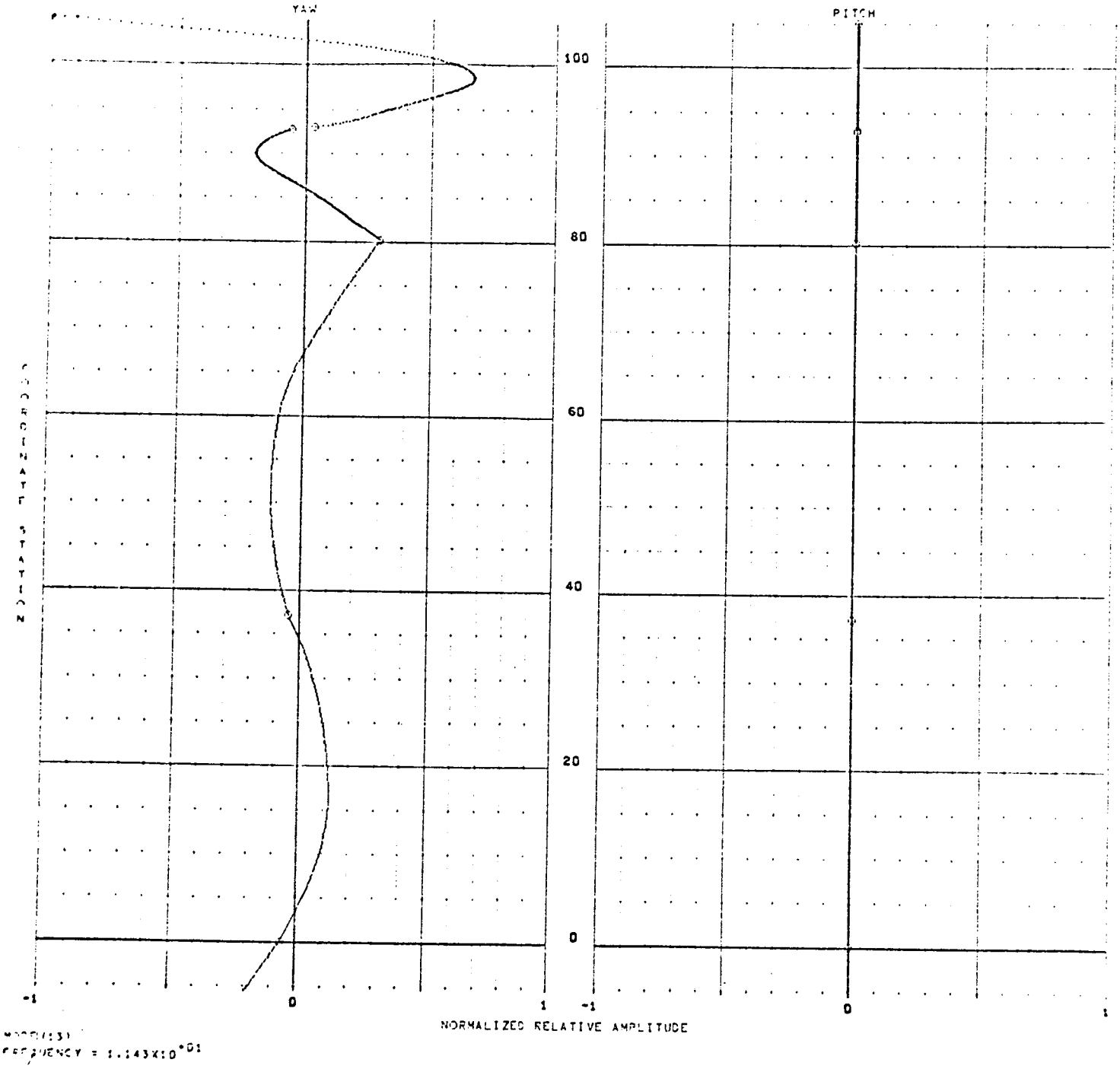




VEHICLE REFERENCE
STATION = 80.25


YAW
PITCH
100
80
60
40
20
0
COORDINATE STATION
-1
0
1
-1
0
1
NORMALIZED RELATIVE AMPLITUDE
FREQUENCY = 1.582X10+00


YAW
PITCH
100
80
60
40
20
0
-1
0
1
-1
0
1
NORMALIZED RELATIVE AMPLITUDE

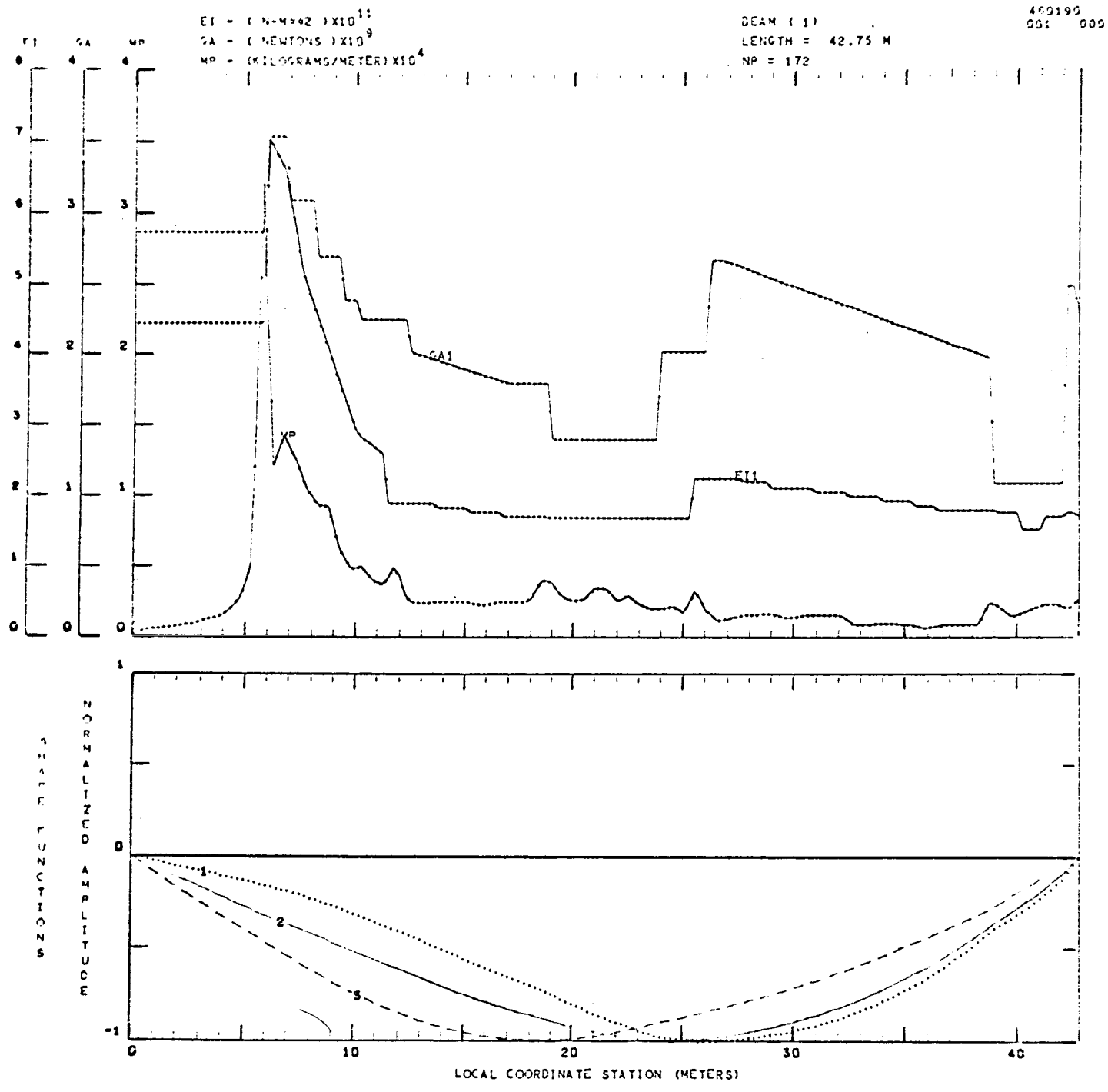

YAW
PITCH
100
80
60
40
20
0
-1
0
1
-1
0
1
NORMALIZED RELATIVE AMPLITUDE

PROBLEM NO. 6

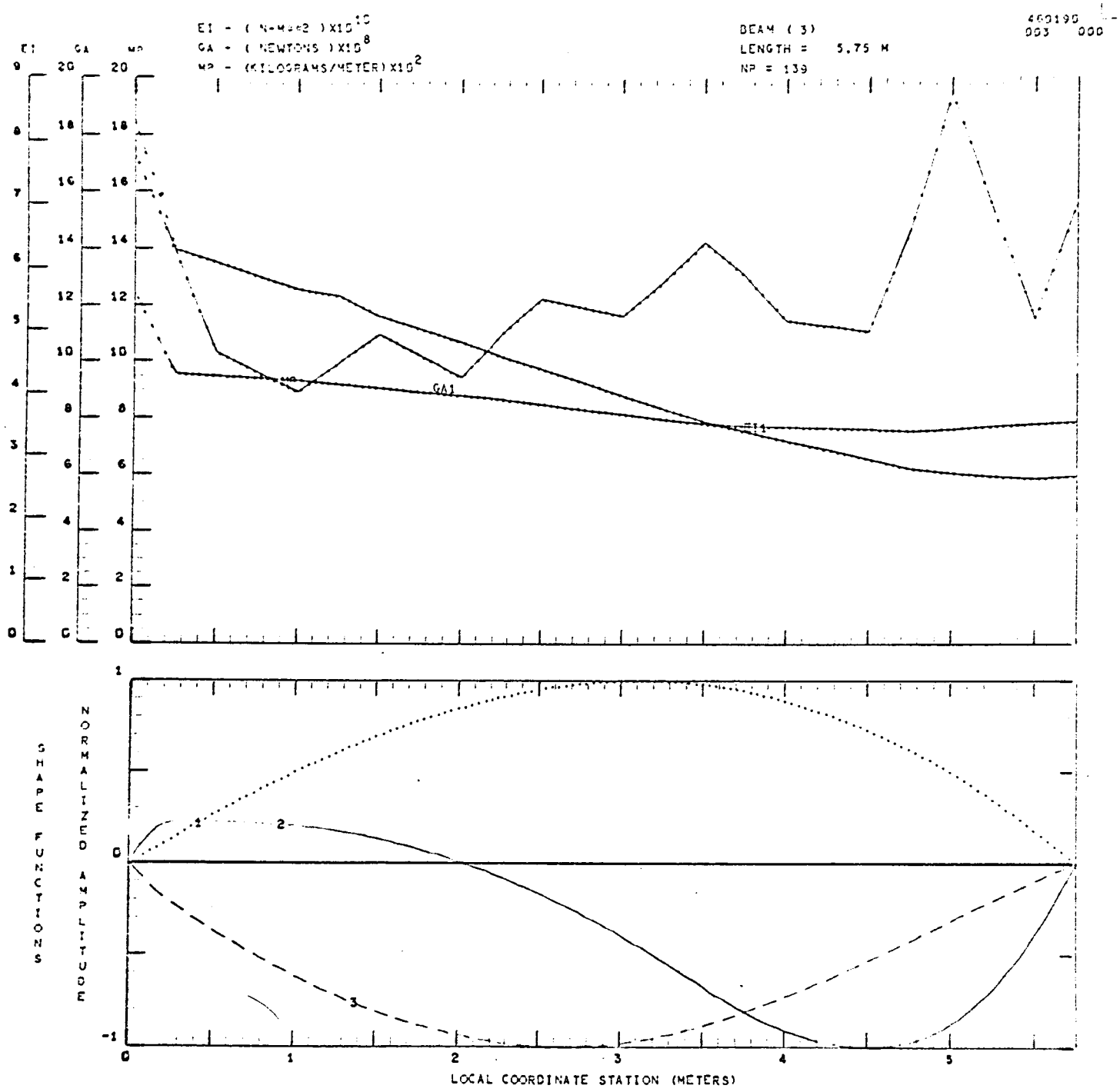
DESCRIPTION: Unfueled SA-501 (free-free). This is the same vehicle analyzed in Problem No. 5, except that in this case, it is modeled as six beams rather than four. As before, the NASA-Stodola program results are listed parenthetically in the summary of results presented below. Comparison of these results with those of Problem No. 5 indicates a typical improvement in solution accuracy associated with increasing the number of beams used in the model.

SUMMARY OF RESULTS:

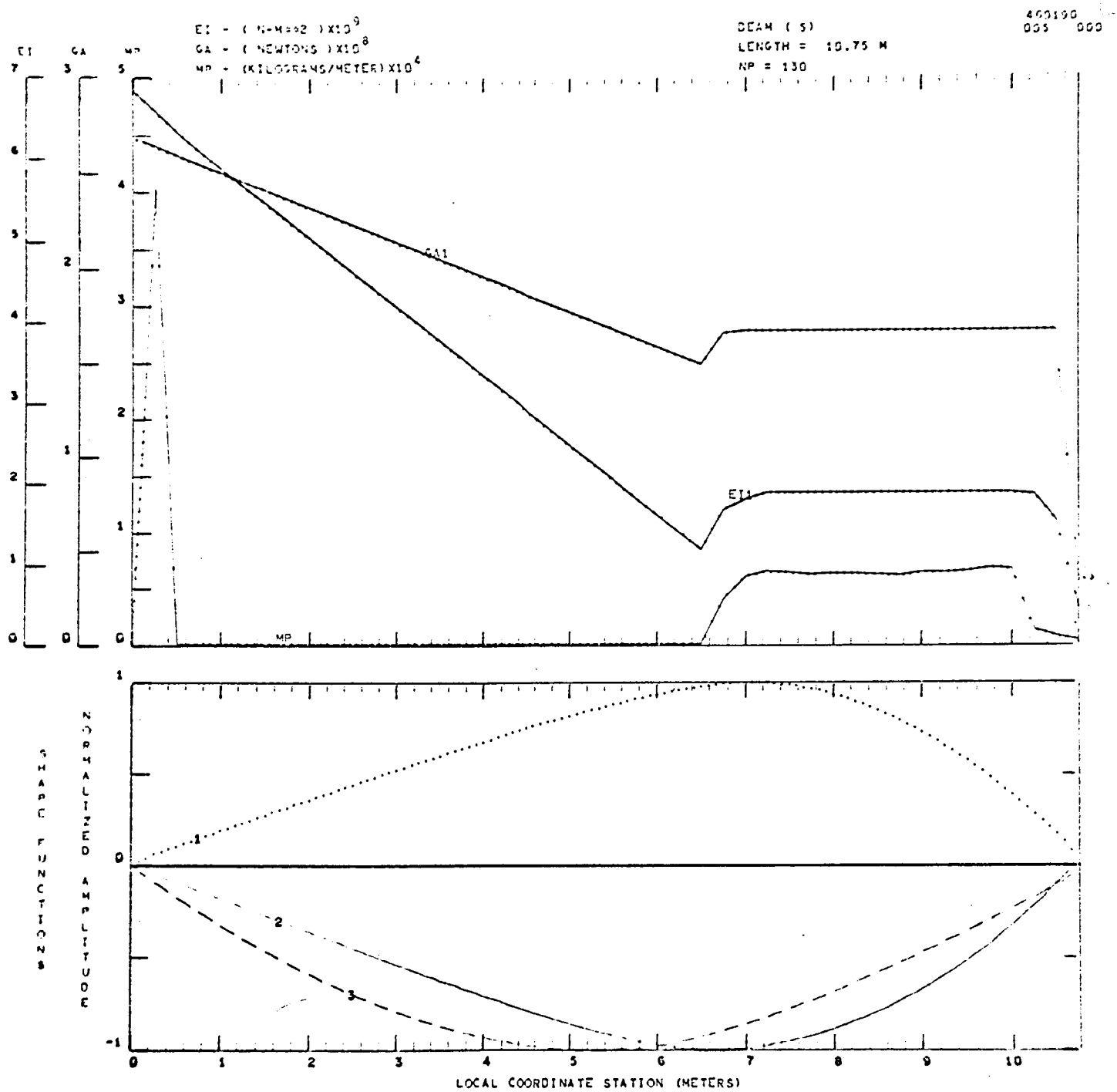
Mode	Frequency (cps)		Generalized Mass (kg)	
1	1.577	(1.558)	4471	(4242)
2	2.65	(2.59)	2320	(2393)
3	4.95	(4.84)	8999	(10,027)
4	8.41	(7.99)	- -	(9067)



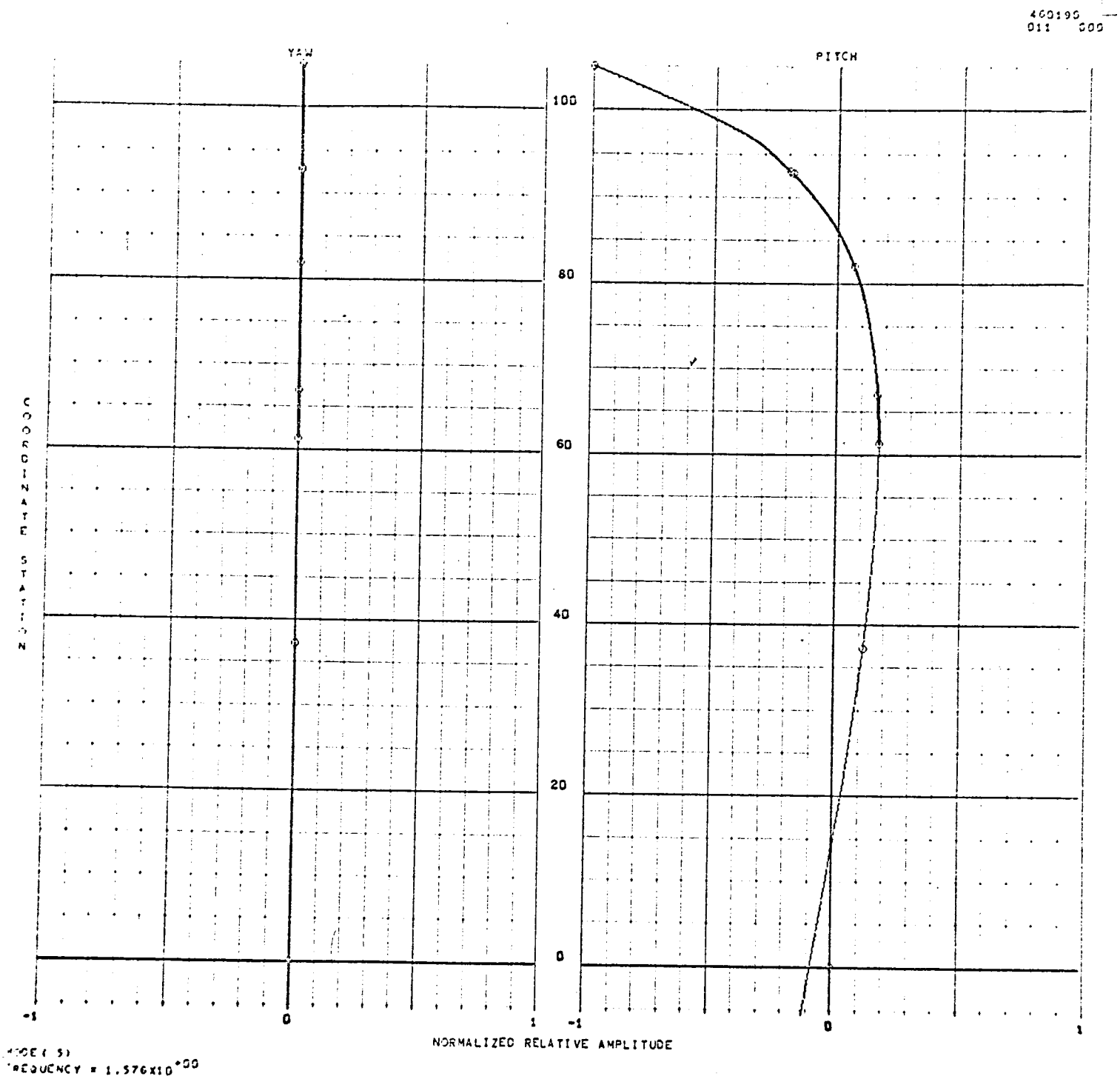
CLE REFERENCE
ION = 5.50



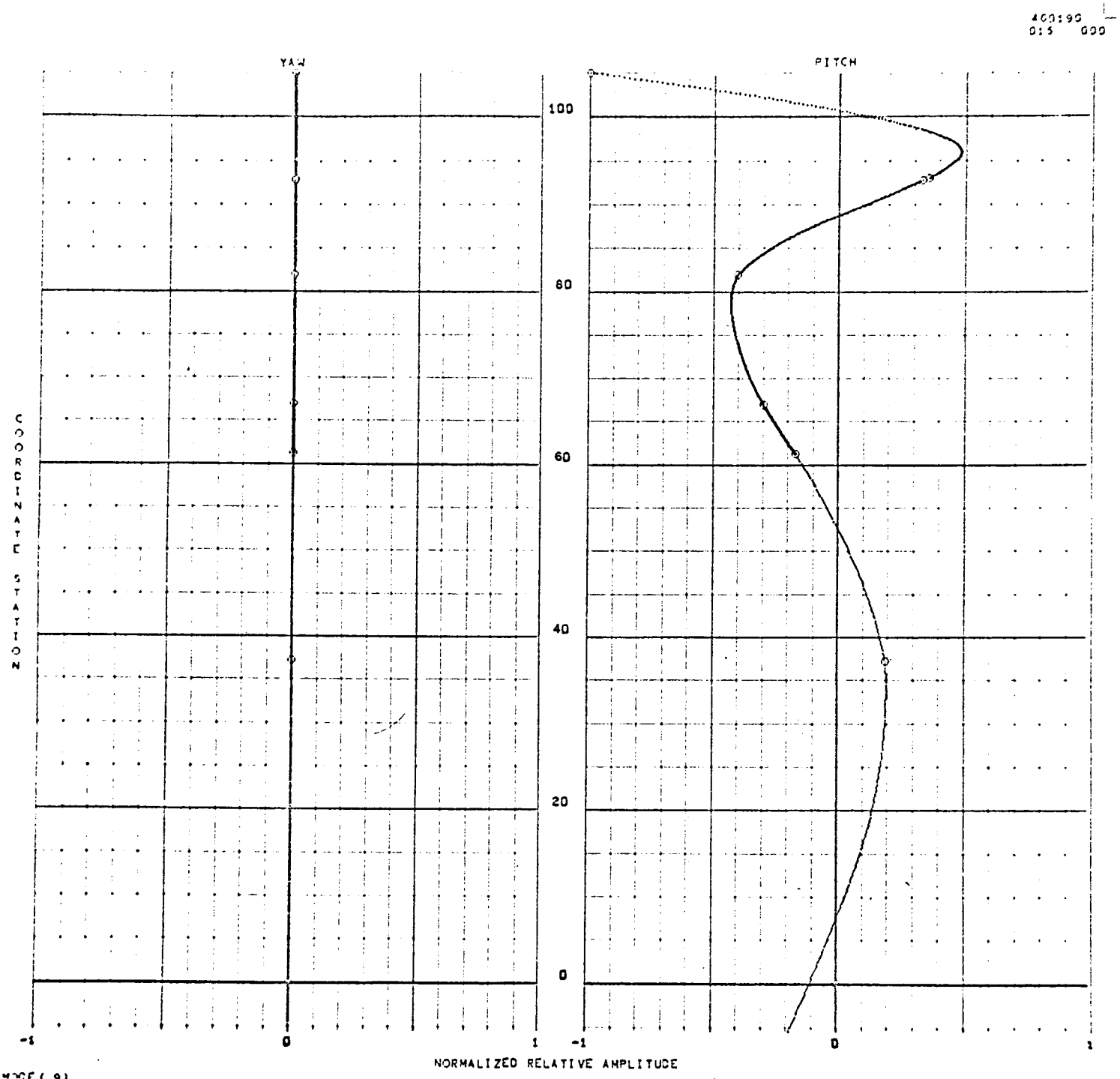
VEHICLE REFERENCE
STATION = 61.25



VEHICLE REFERENCE
STATION = 82.00



MODE (5)
FREQUENCY = 1.576X10^{+00}



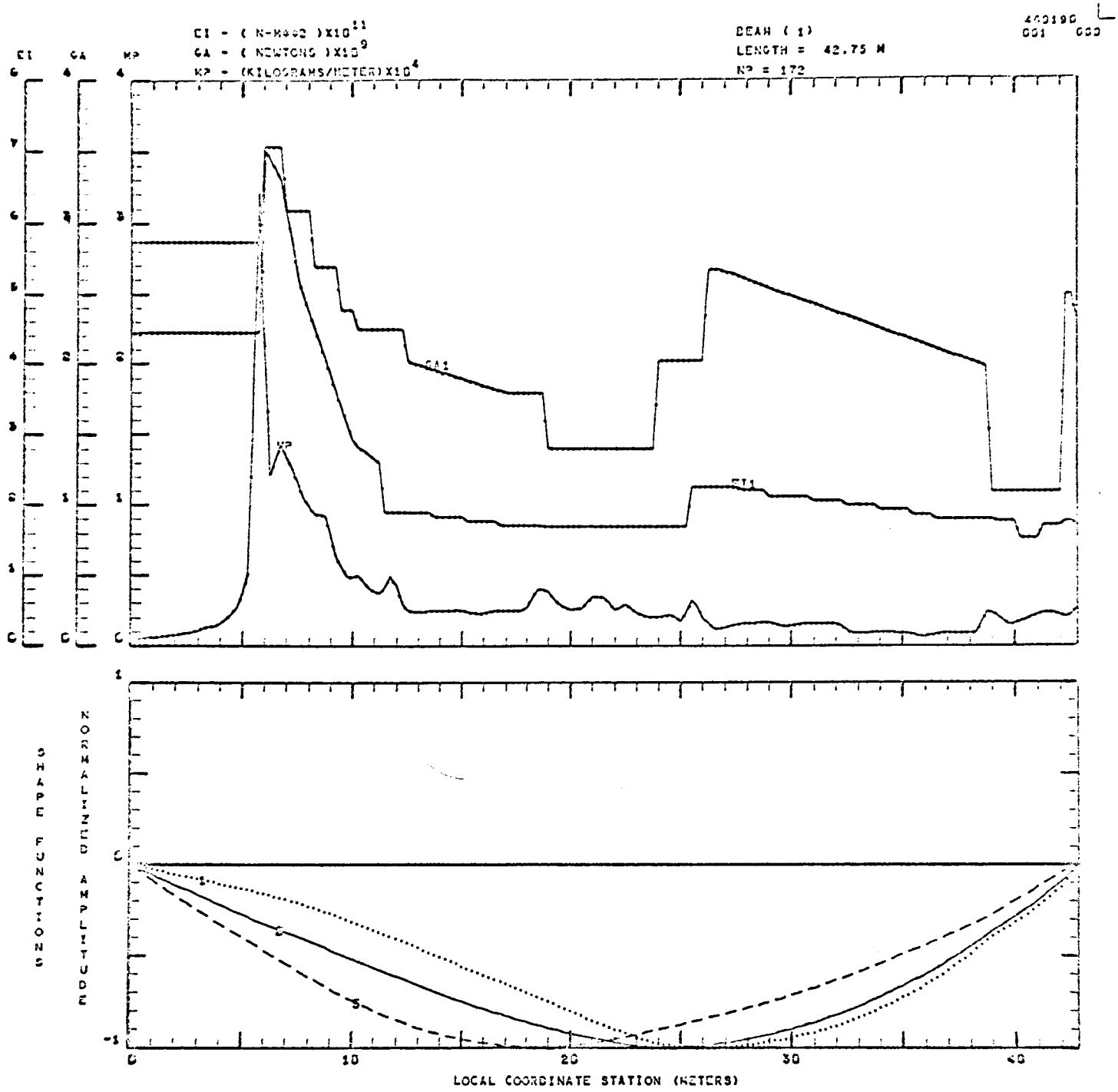
MODE (9)
FREQUENCY = 4.952X10^{+00}

PROBLEM NO. 7

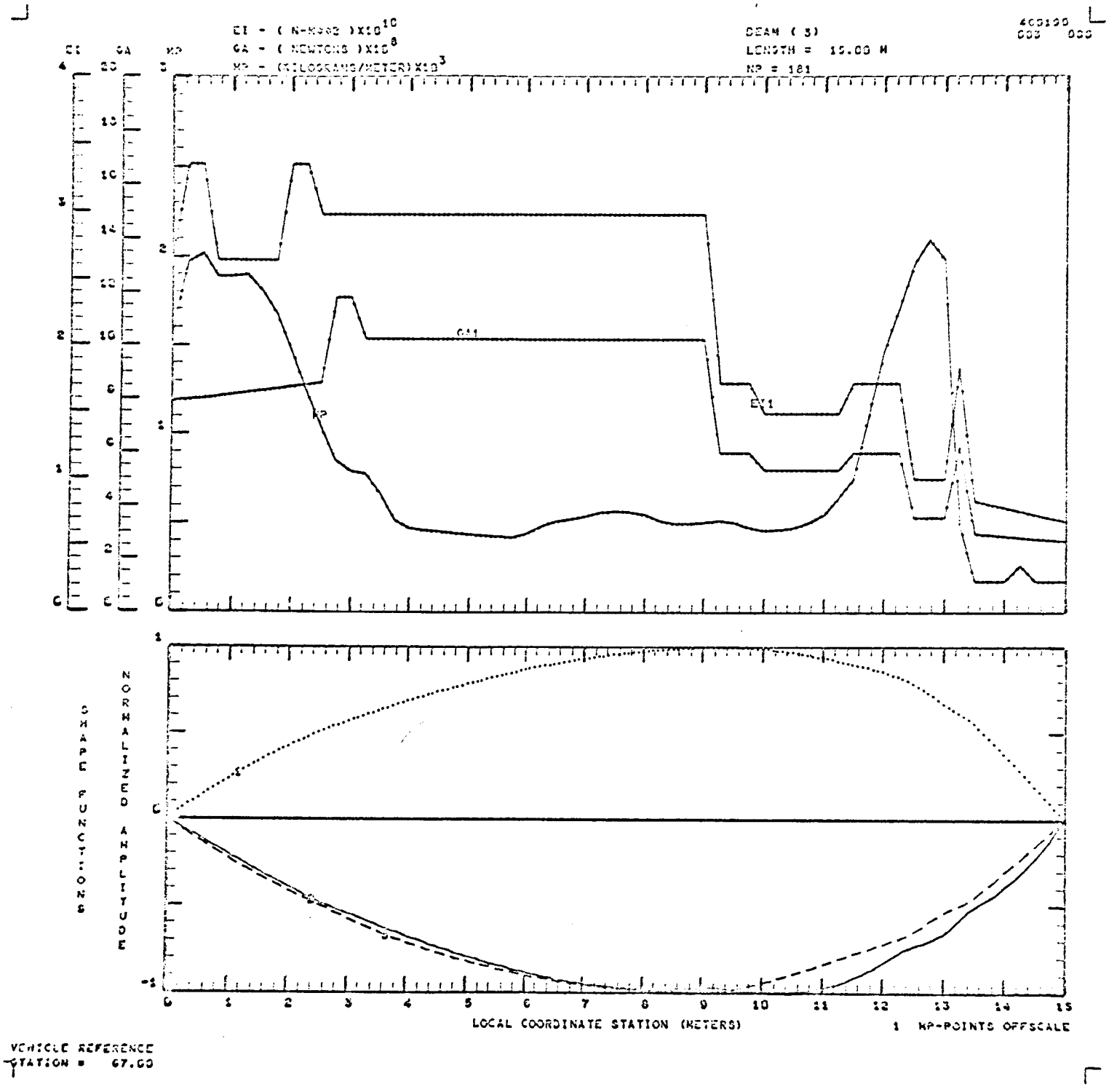
DESCRIPTION: Unfueled SA-501 (free-free). This analysis employs exactly the same mathematical model as Problem No. 6 except that the S-II/S-IVB interstage (which was modeled as one of the six Timoshenko beams in Problem No. 6) is, in this case, modeled as a massless interstage of the type discussed in Section 2.4.2. Accordingly, the present model contains only five beams. The (quasi-static) stiffness matrix characterizing the S-II/S-IVB interstage was calculated using Timoshenko beam theory. As before, the NASA-Stodola program results are listed parenthetically with the summary of results given below.

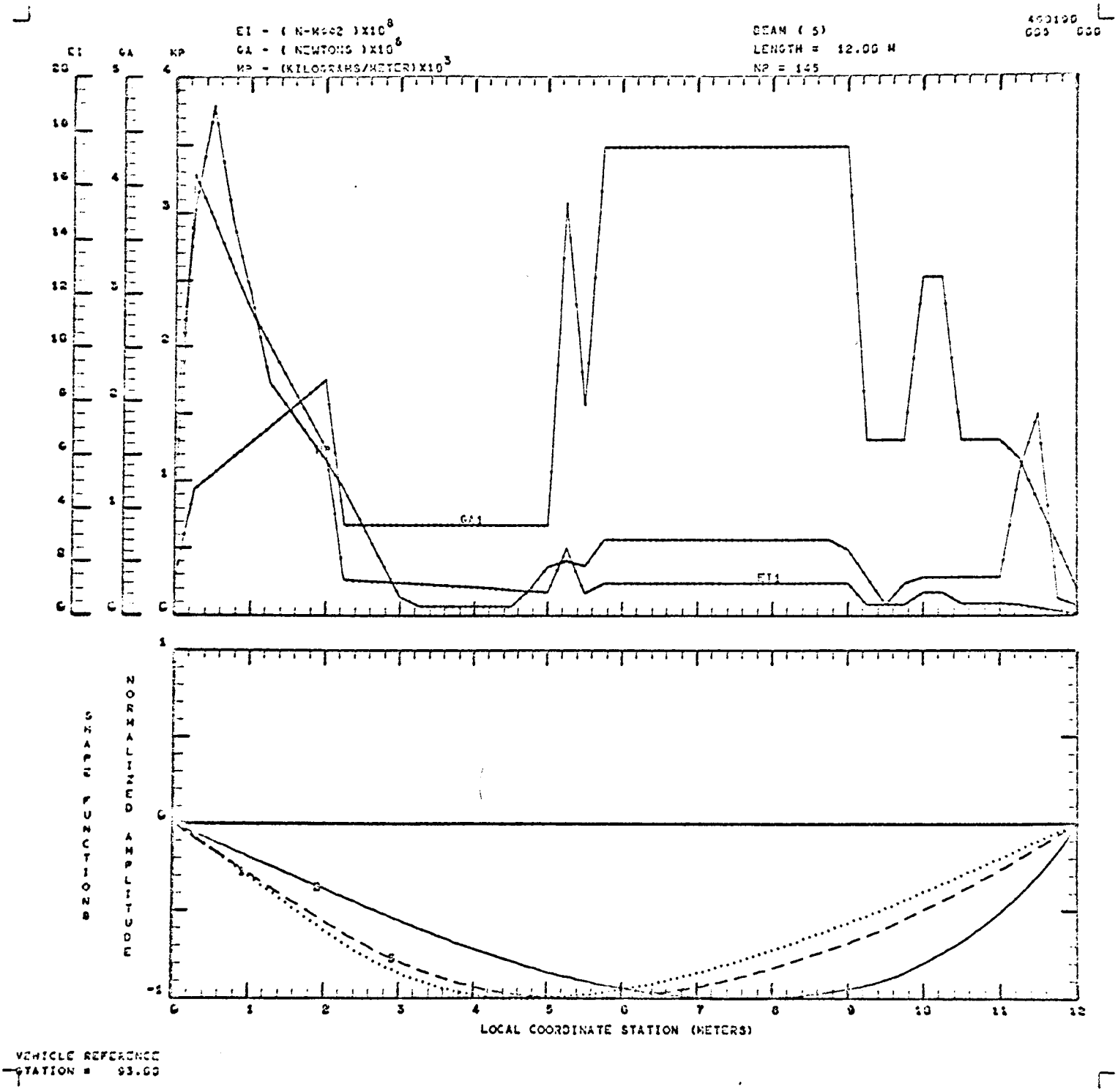
SUMMARY OF RESULTS:

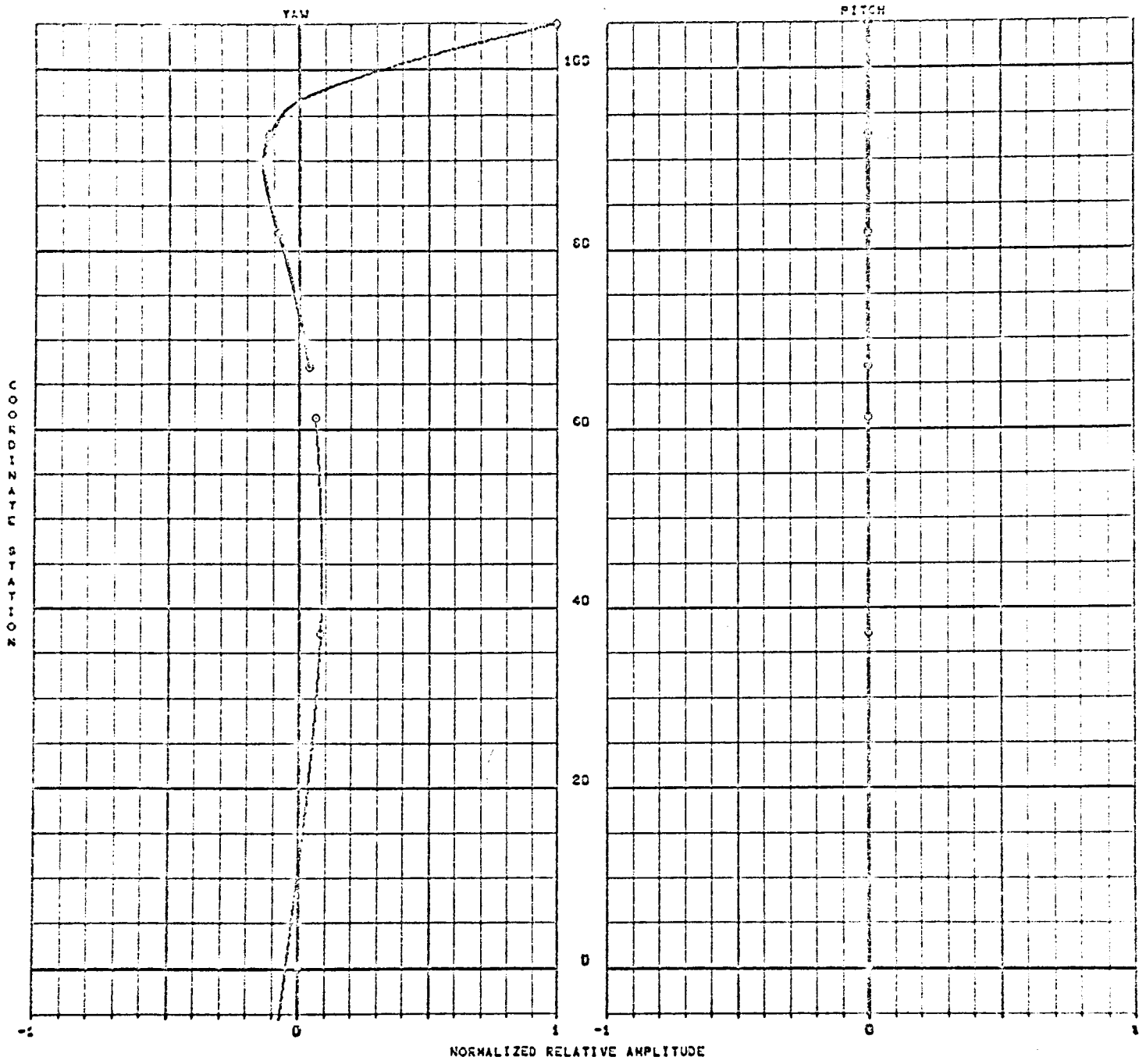
Mode	Frequency (cps)		Generalized Mass (kg)	
1	1.573	(1.558)	4506	(4242)
2	2.65	(2.59)	2310	(2393)
3	4.93	(4.84)	9255	(10,027)
4	8.21	(7.99)	- -	(9067)



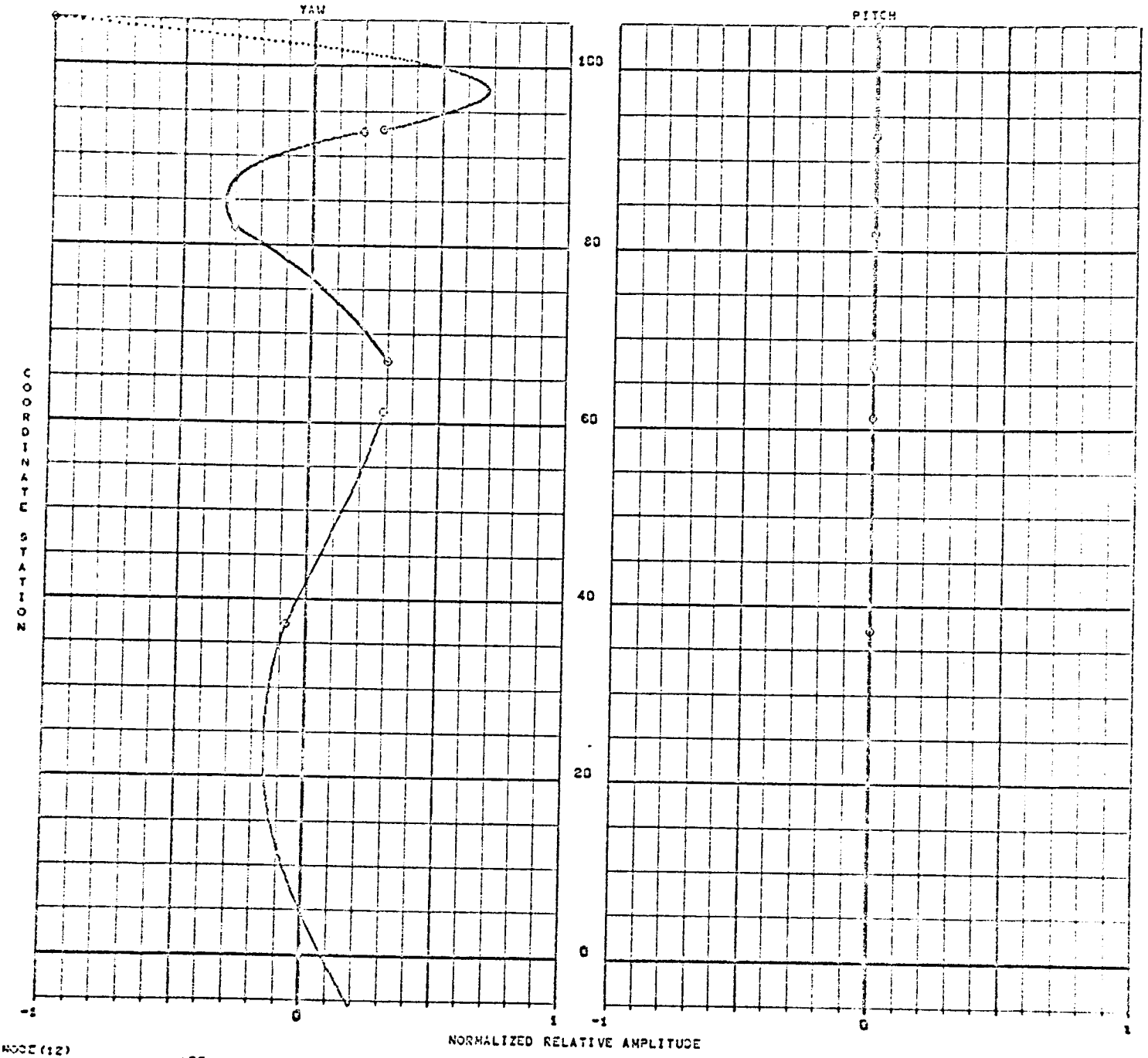
VEHICLE REFERENCE
STATION = 5.50


EI - (N-M**2)X10^10
GA - (NEWTONS)X10^8
MP - (KILOGRAMS/METER)X10^3
BEAM (3)
LENGTH = 15.00 M
NP = 181
EI
GA
MP
GA1
EY1
MP
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
1 MP-POINTS OFFSCALE
VEHICLE REFERENCE
STATION = 67.00


EI - (N-M**2)X10^8
GA - (NEWTONS)X10^6
MP - (KILOGRAMS/METER)X10^3
BEAM (5)
LENGTH = 12.00 M
NP = 145
EI
GA
MP
GA1
EI1
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 93.00



MODE(8)
FREQUENCY = 2.647X10^{+00}



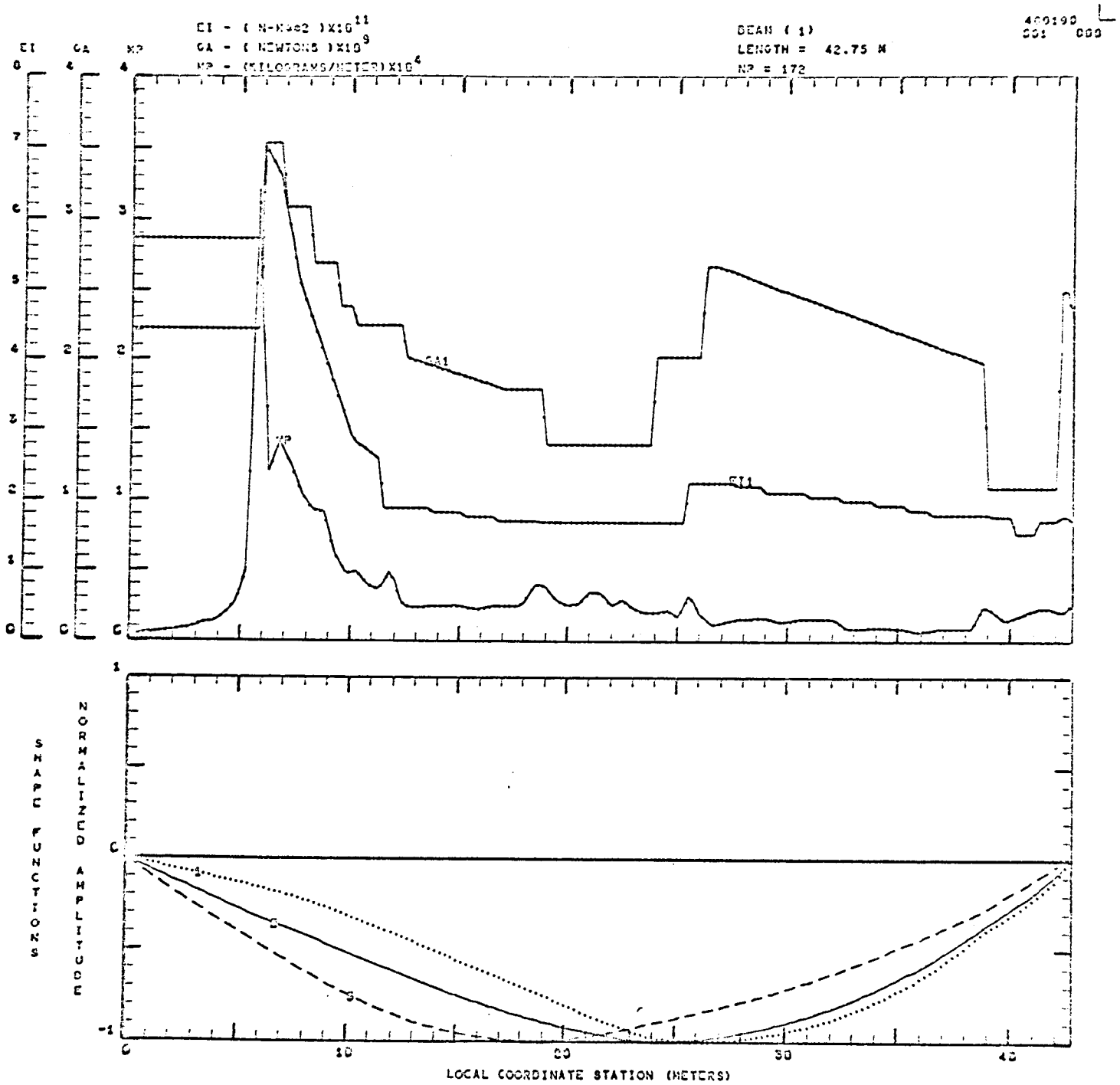
MODE(12)
FREQUENCY = 8.213X10^{+00}

PROBLEM NO. 8

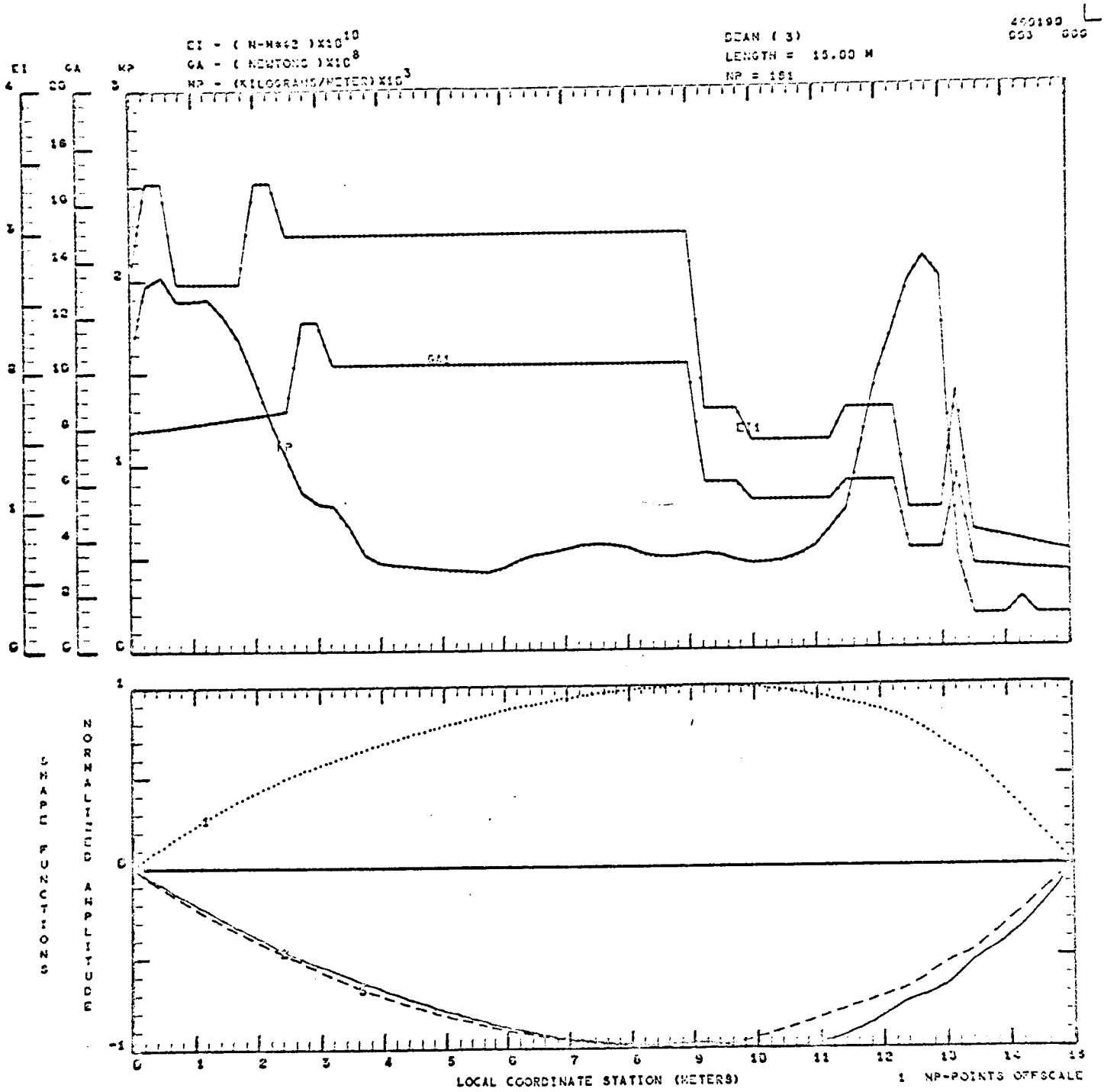
DESCRIPTION: Unfueled SA-501 (free-free). This analysis is identical to the five-beam analysis of Problem No. 7, except that the S-II/S-IVB interstage stiffness matrix was calculated using the Lockheed digital program for static analysis of arbitrary orthotropic linear shells (Reference 3). It is interesting to note that the proportions of this conical interstage are such that the sign of the moment-displacement (and force-rotation) stiffness constant is opposite from that of the corresponding quantity as computed using the Timoshenko beam postulates, and of similar magnitude in absolute value. Accordingly, it is not surprising to find that the results of this analysis differ appreciably from those of Problem No. 7. Again, the NASA-Stodola results for the empty SA-501 are listed parenthetically in the summary presented below.

SUMMARY OF RESULTS:

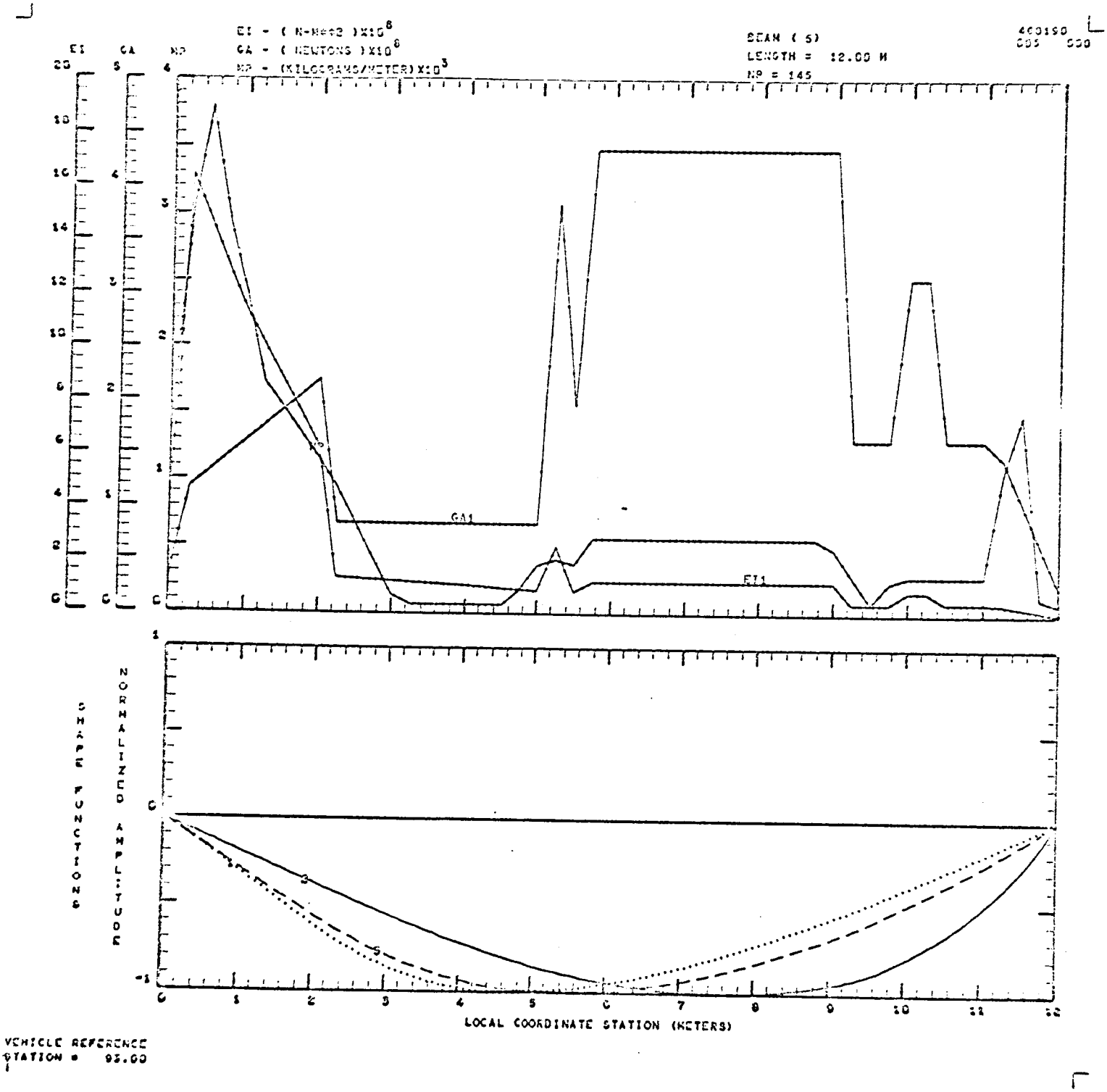
Mode	Frequency (cps)		Generalized Mass (kg)	
1	1.557	(1.558)	4546	(4242)
2	2.66	(2.59)	2285	(2393)
3	4.78	(4.84)	10,891	(10,027)
4	7.80	(7.99)	--	(9067)

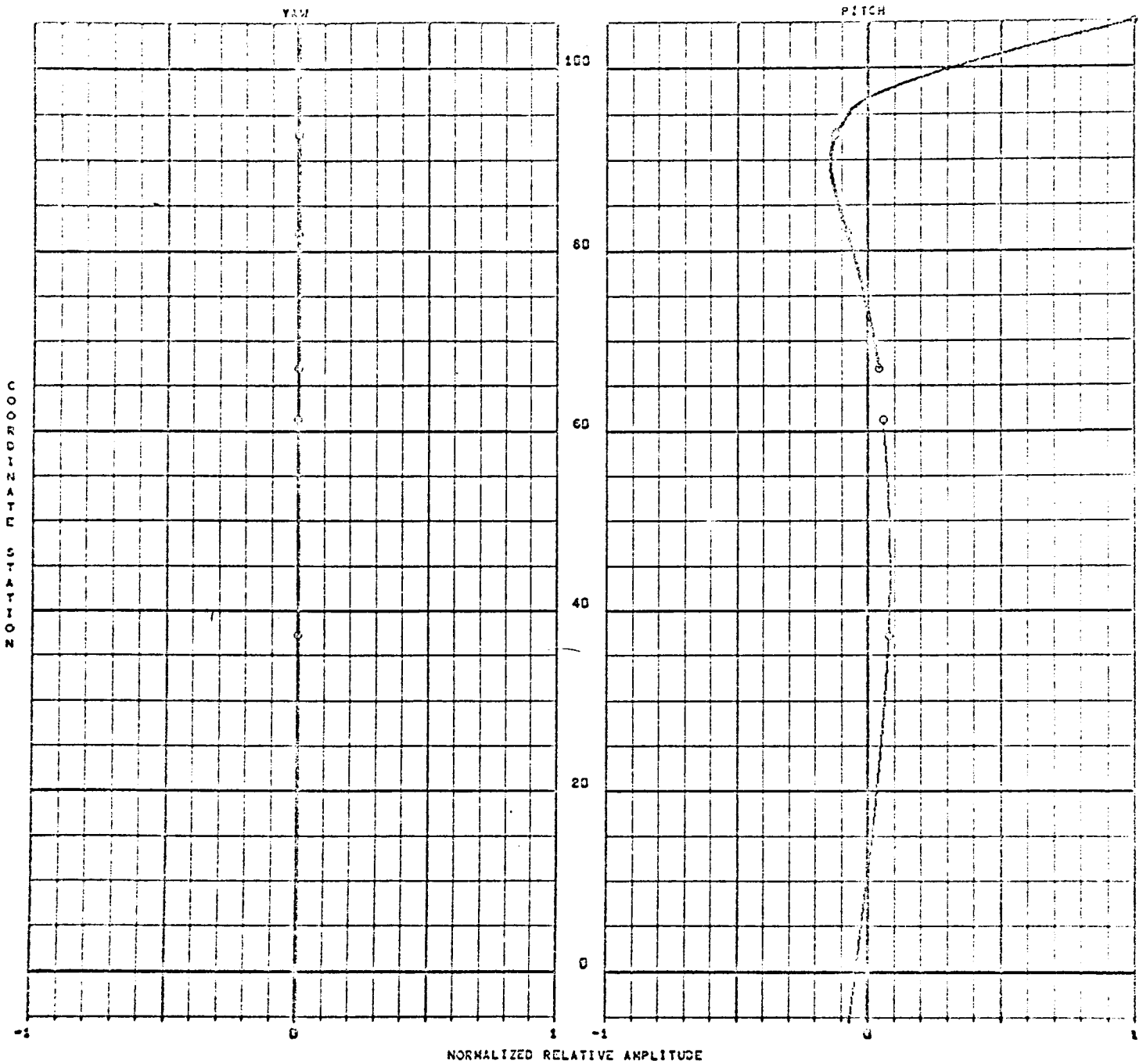


VEHICLE REFERENCE
STATION #- 5.50

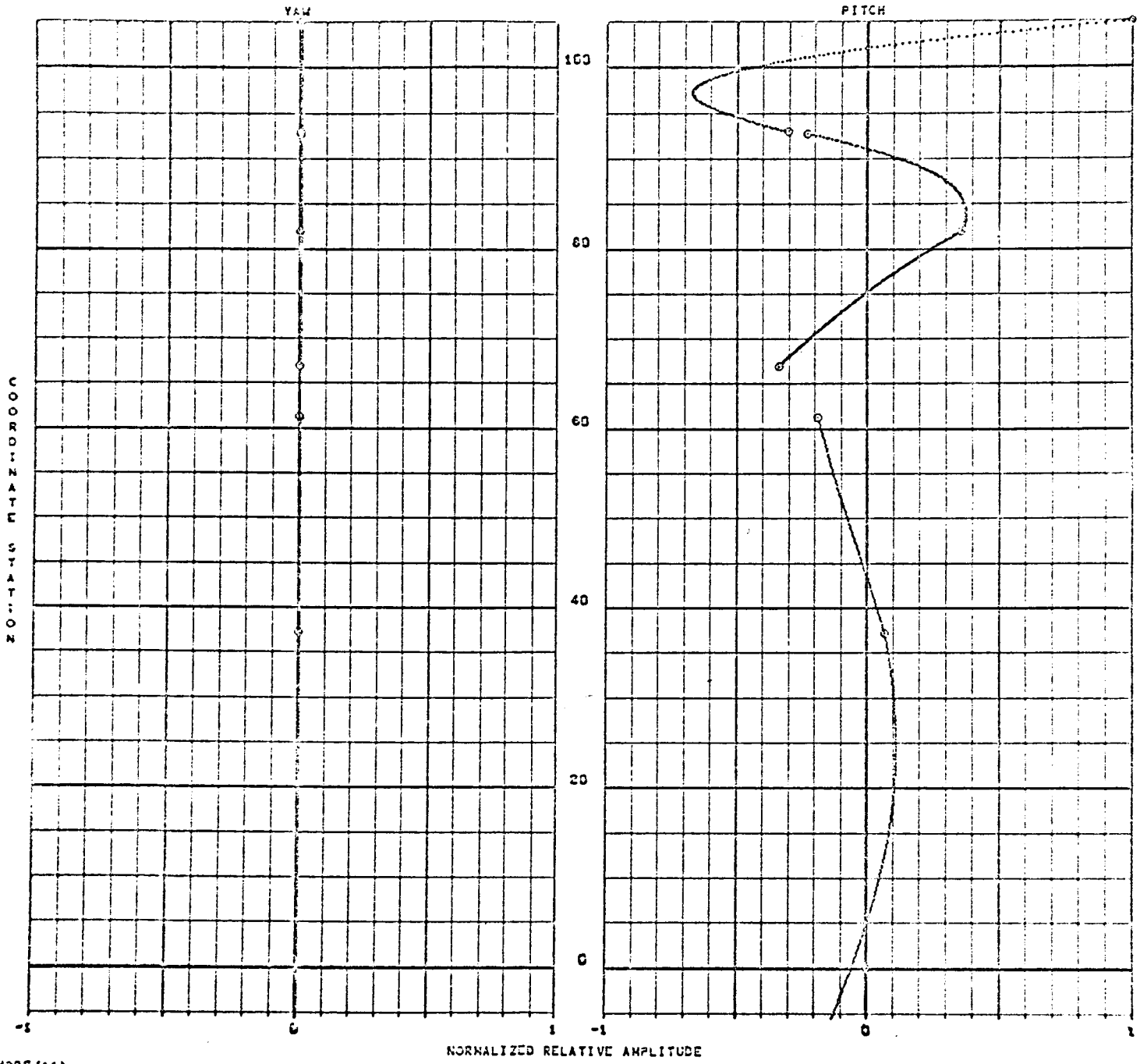


VEHICLE REFERENCE
STATION = 67.00


EI - (N-M**2)X10^6
GA - (NEWTONS)X10^6
MP - (KILOGRAMS/METER)X10^3
BEAM (5)
LENGTH = 12.00 M
NP = 145
EI
GA
MP
GA1
EI1
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 93.00



MODE (7)
FREQUENCY = 2.602X10^{+00}



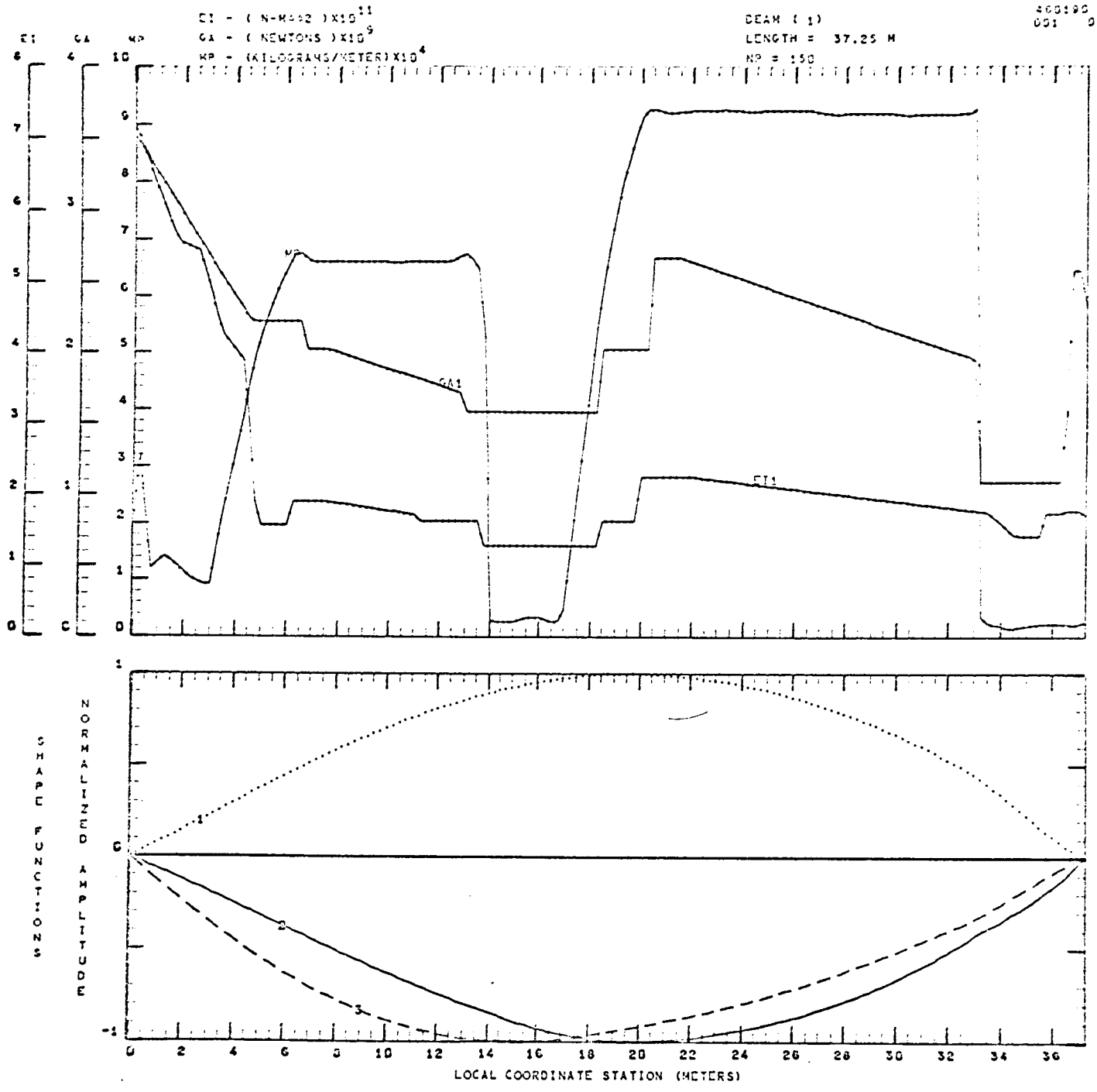
MODE (11)
FREQUENCY = 7.601X10^{+00}

PROBLEM NO. 9

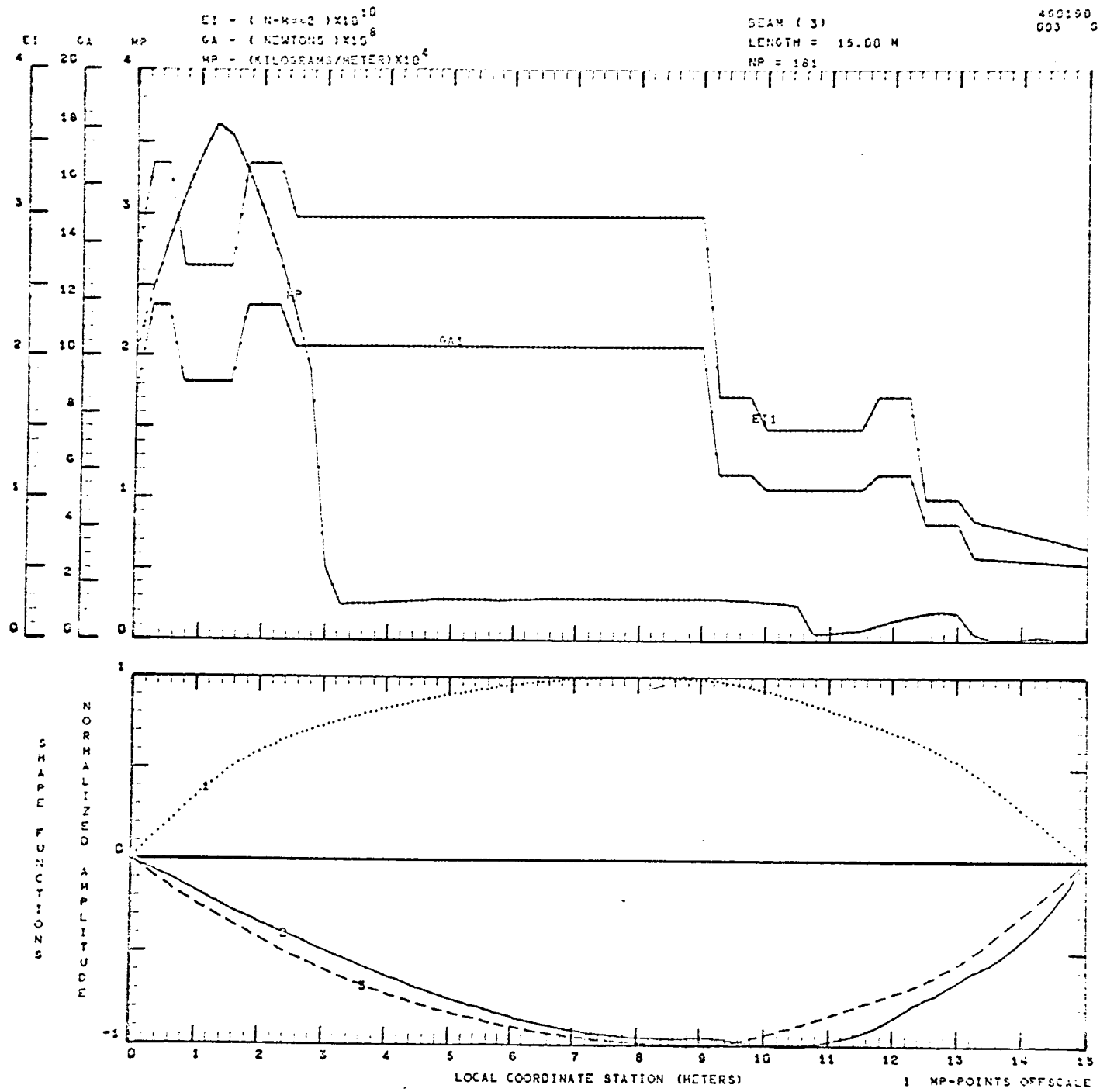
DESCRIPTION: Fully-fueled SA-501 (cantilevered). This rotationally symmetrical vehicle is modeled as six beams. All of the interstages are effectively rigid and of zero length, except for the one representing the conical interstage connecting the S-II and S-IVB. For this interstage, the same flexibility constants that were used in Problem No. 7 are used (i.e., those calculated using quasi-static Timoshenko beam theory). The data listed parenthetically in the solution summary is again the result of an execution of the NASA-Stodola program in which the vehicle was modeled as a single Timoshenko beam (no interstages). The remarkable agreement between the results reflects the validity of the "quasi-static" treatment of the interstage as well as the adequacy of the approximations of the energy method of solution.

SUMMARY OF RESULTS:

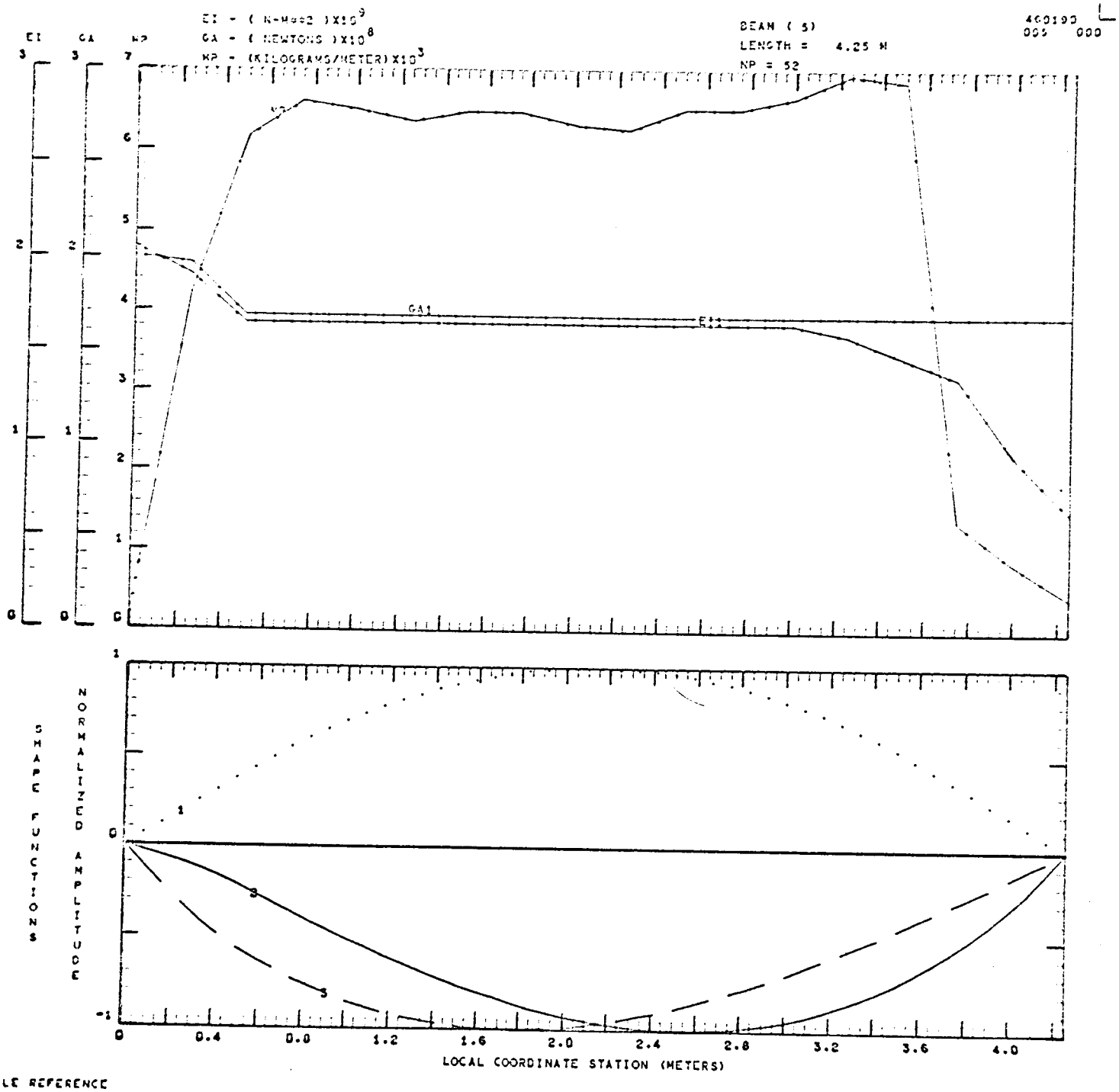
Mode	Frequency (cps)		Generalized Mass (kg)	
1	.323	(.321)	107,400	(107,839)
2	.907	(.901)	20,811	(20,409)
3	1.595	(1.583)	6,450	(6,201)
4	2.46	(2.42)	3,014	(3,042)



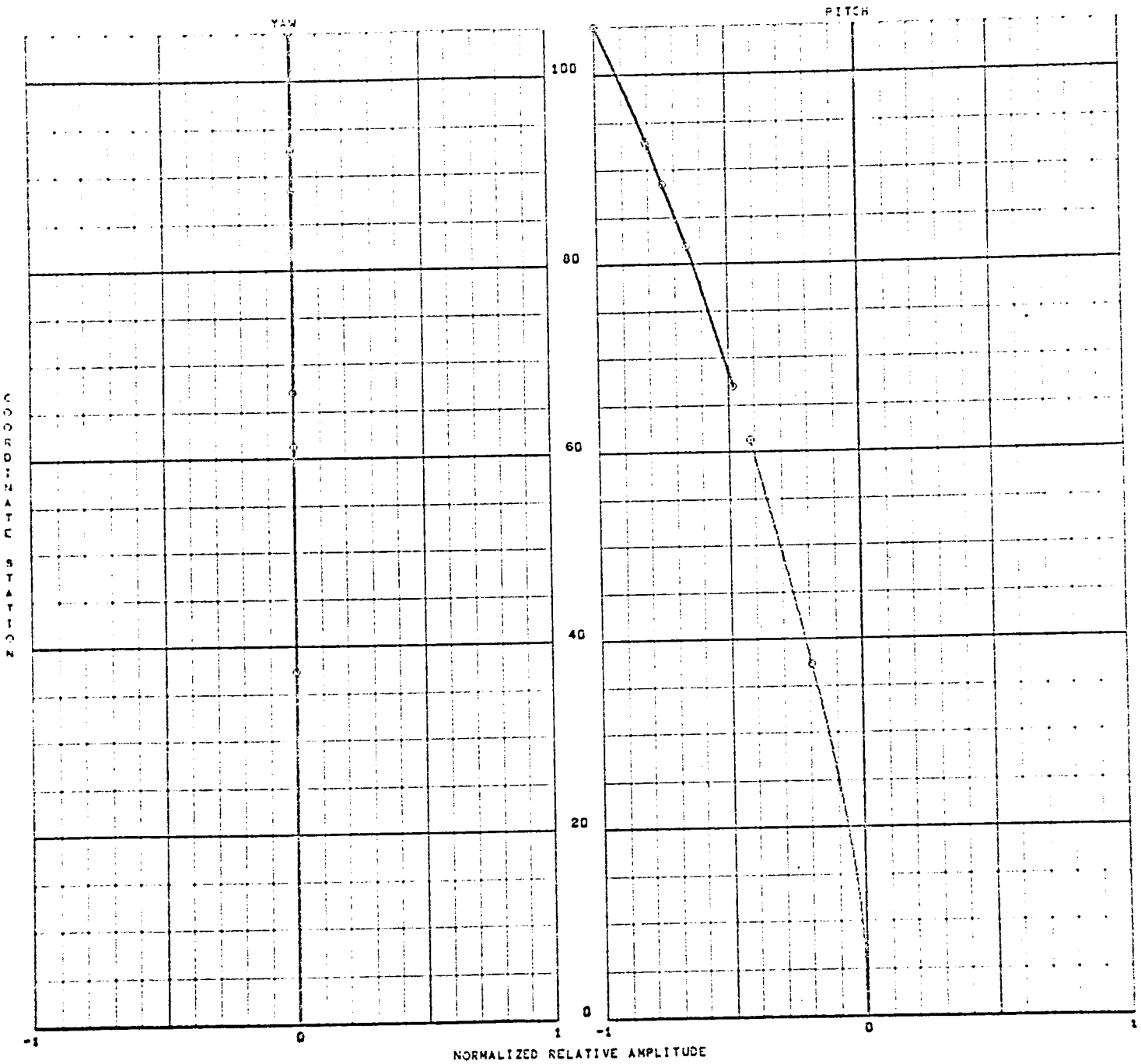
VEHICLE REFERENCE
STATION = 0.00



VEHICLE REFERENCE
STATION = 67.00

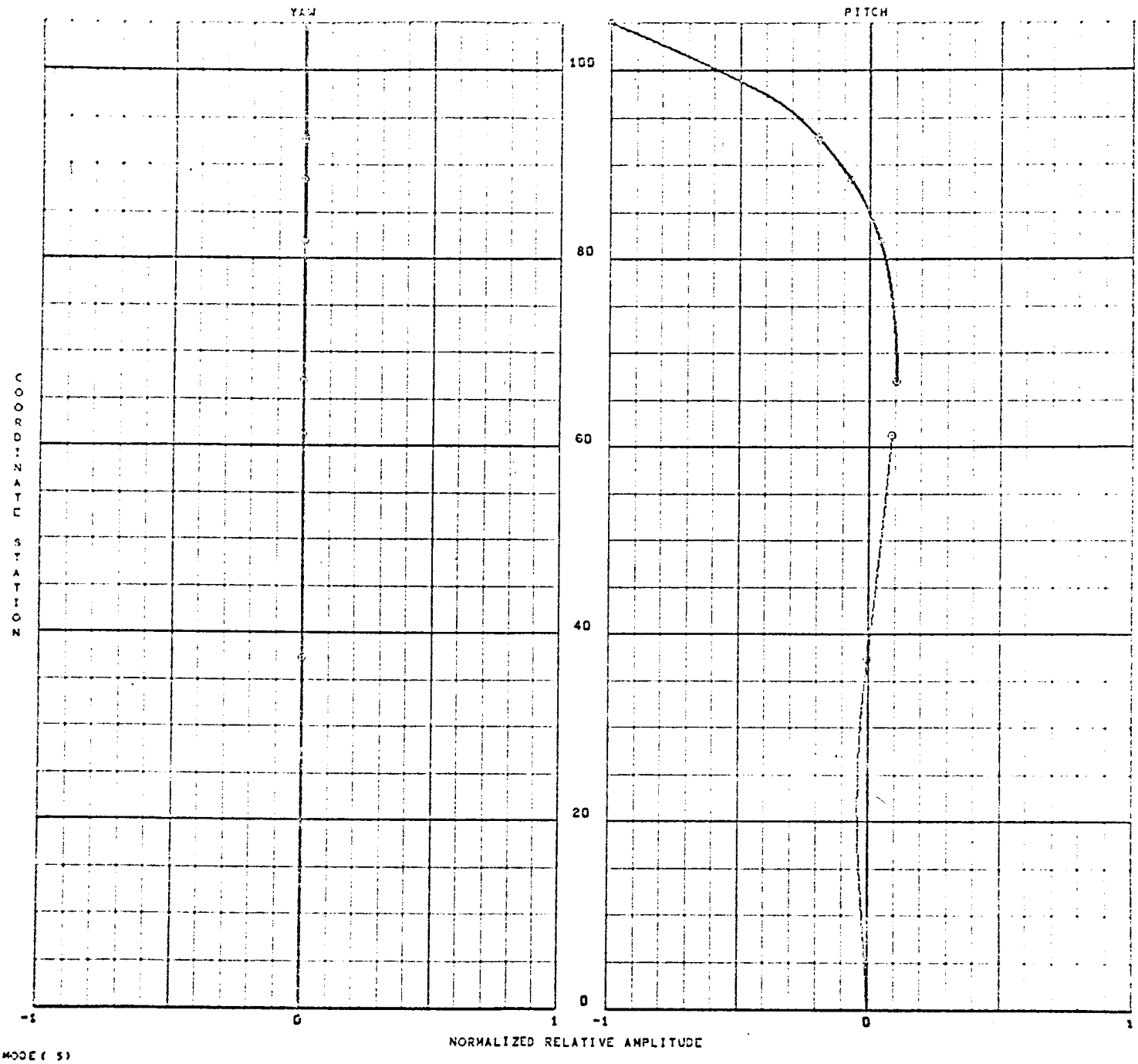


VEHICLE REFERENCE
STATION = 88.50



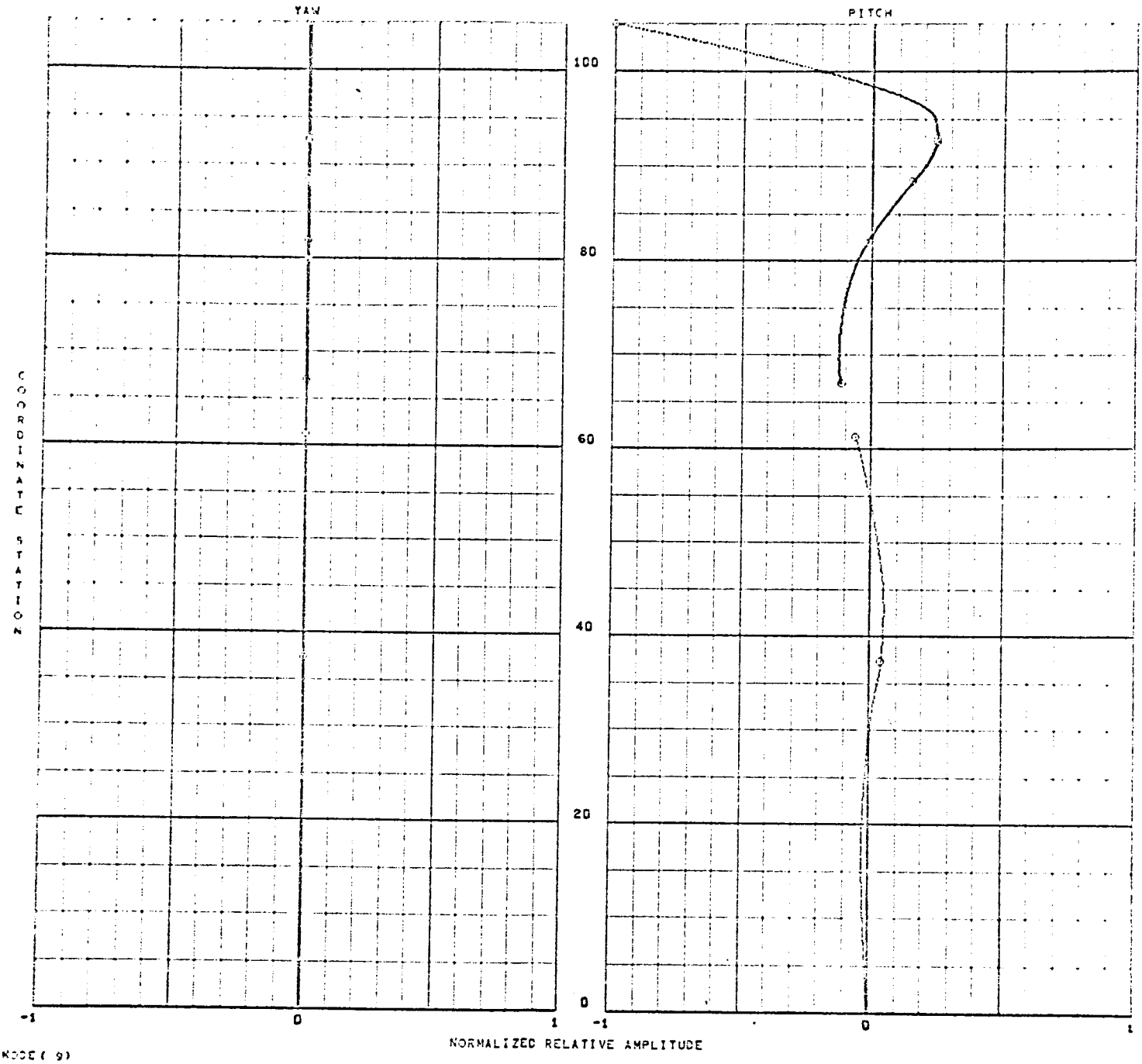
MODE(1)

Frequency = 0.323



MODE (5)

Frequency = 1.59



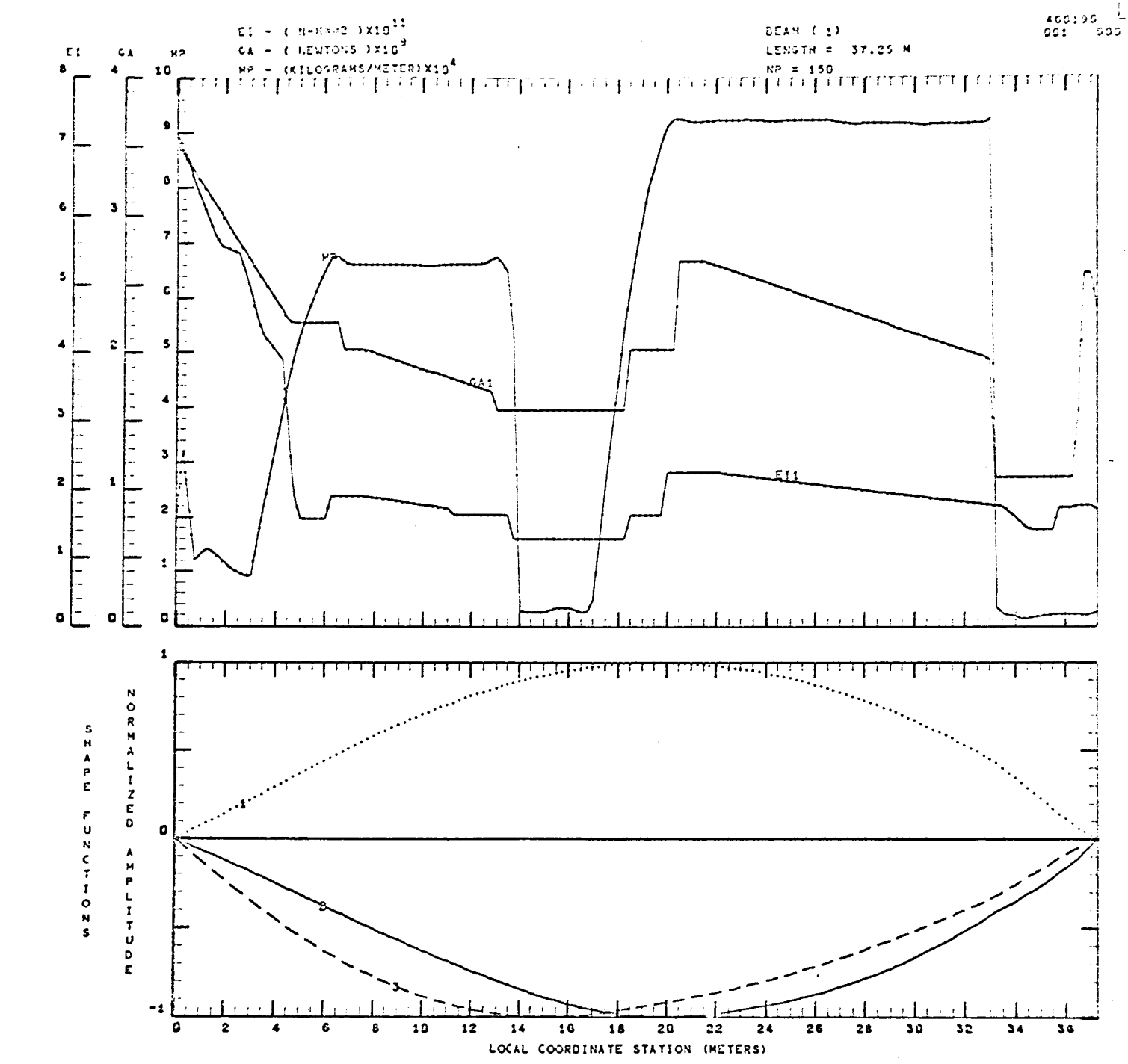
MODE (9)
Frequency = 3.30

PROBLEM NO. 10

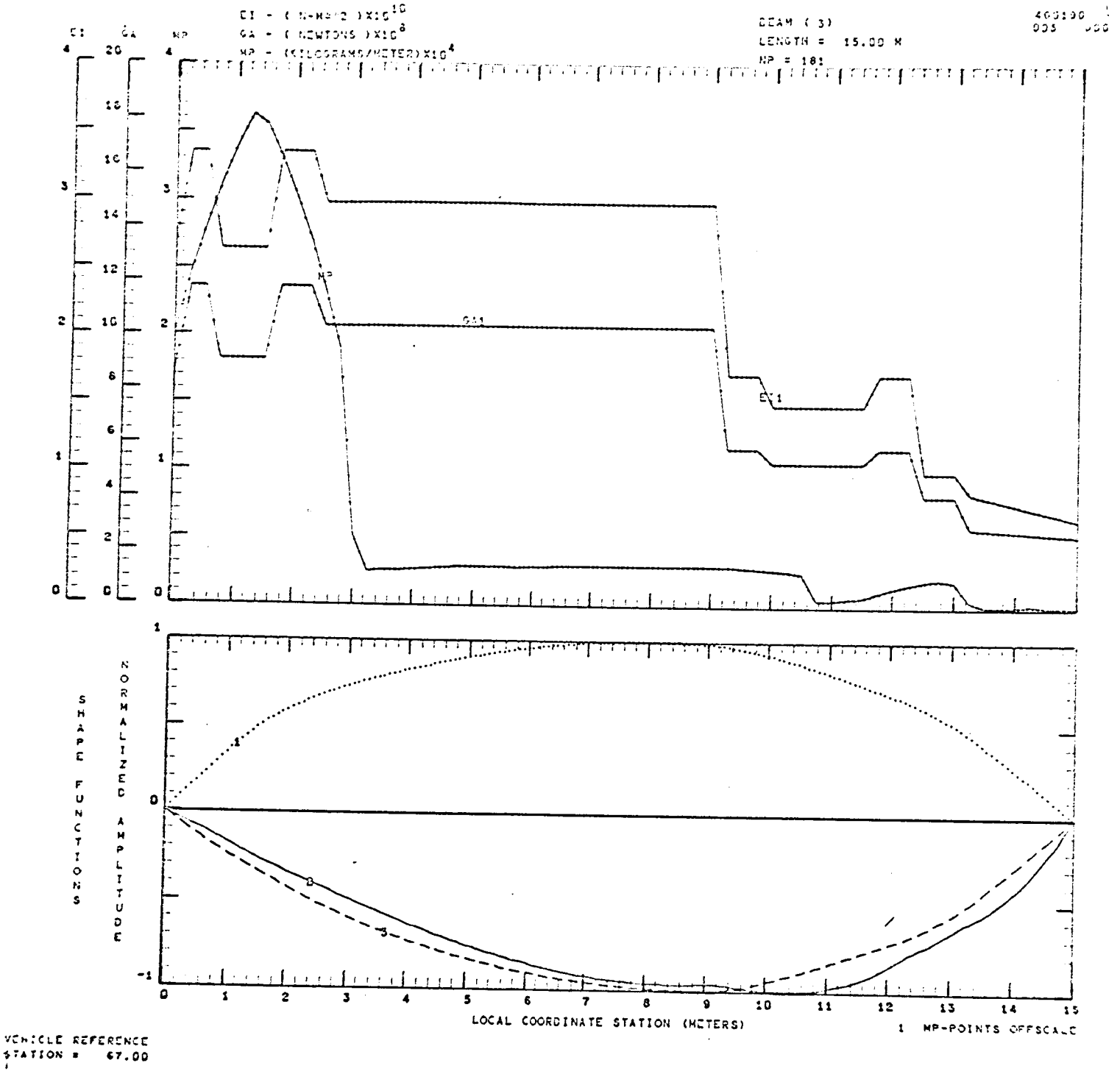
DESCRIPTION: Fully-fueled SA-501 (cantilevered). This problem is identical to Problem No. 9 except that the S-II/S-IVB interstage stiffness constants are the same as those used in Problem No. 8 (i.e., calculated using linear orthotropic shell theory). The same Stodola program results listed with the solution summary of Problem No. 9 are again given below parenthetically.

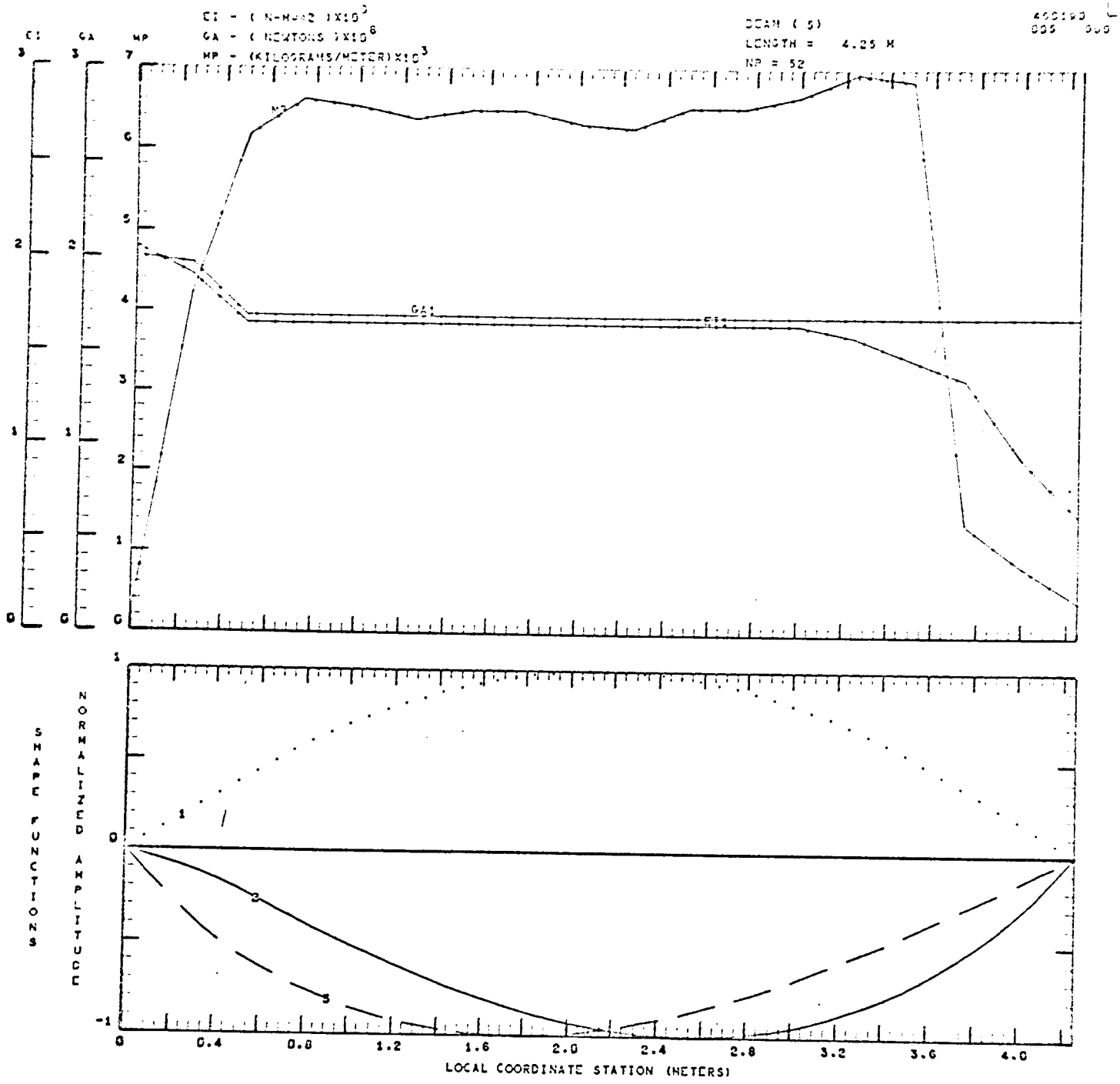
SUMMARY OF RESULTS:

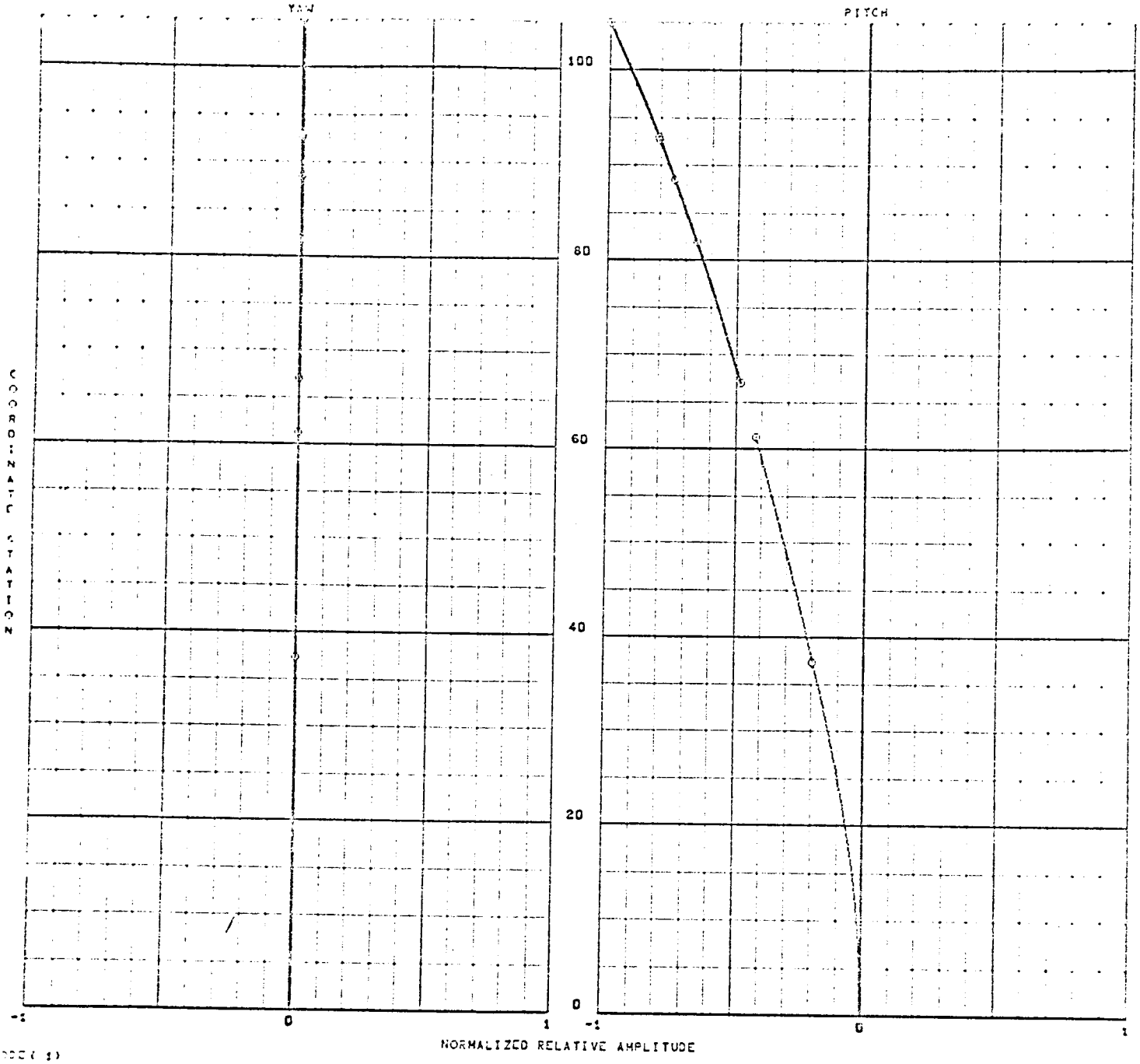
Mode	Frequency (cps)		Generalized Mass (kg)	
1	.324	(.321)	108,920	(107,839)
2	.915	(.901)	19,510	(20,409)
3	1.541	(1.583)	7,177	(6,201)
4	2.49	(2.42)	3,099	(3,042)



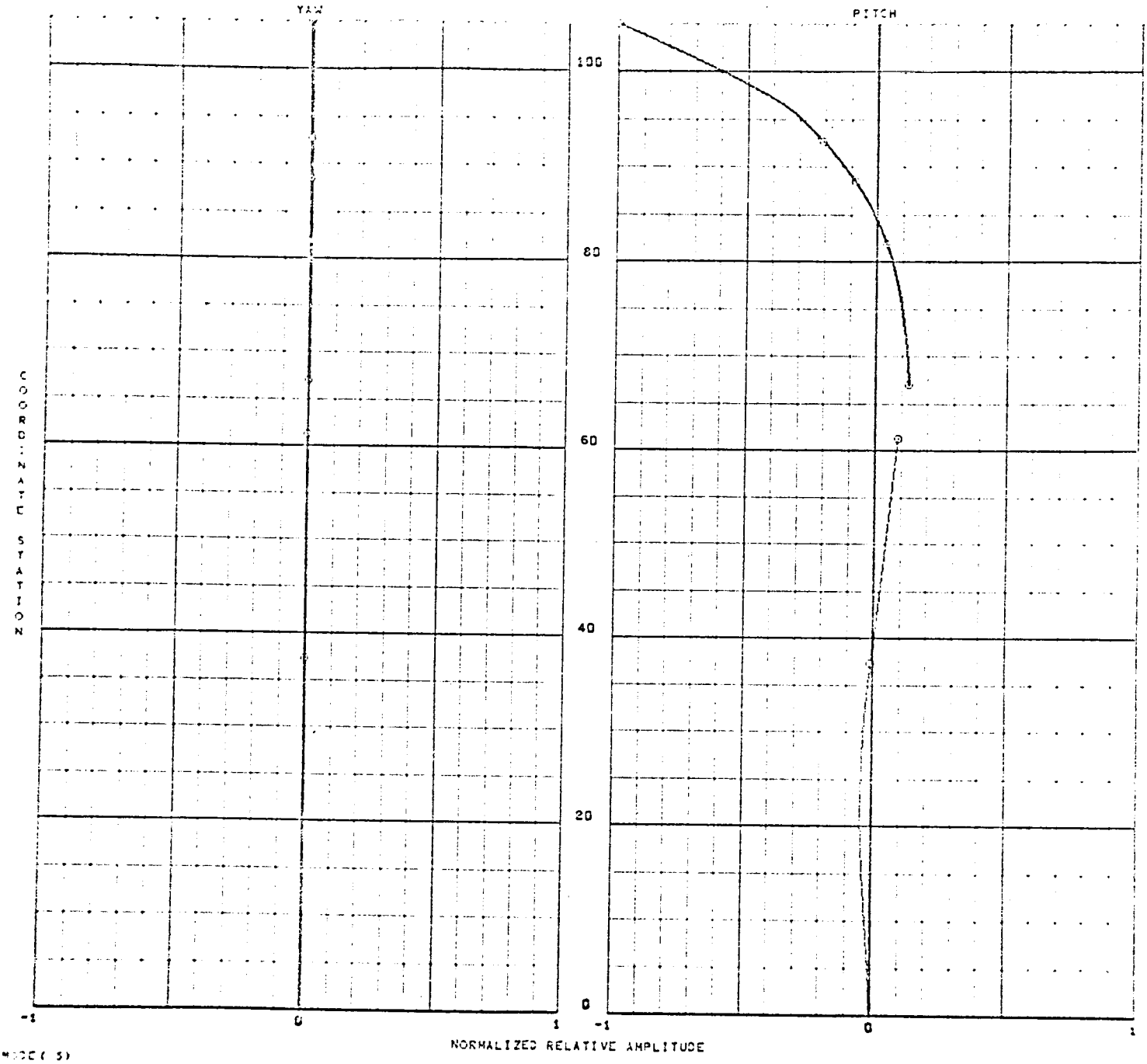
VEHICLE REFERENCE
STATION = 0.00


EI - (N-MM**2)X10^10
GA - (NEWTONS)X10^8
MP - (KILOGRAMS/METER)X10^4
BEAM (3)
LENGTH = 15.00 M
NP = 181
EI
GA
MP
GA1
EI1
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
1 MP-POINTS OFFSCALE
VEHICLE REFERENCE
STATION = 67.00

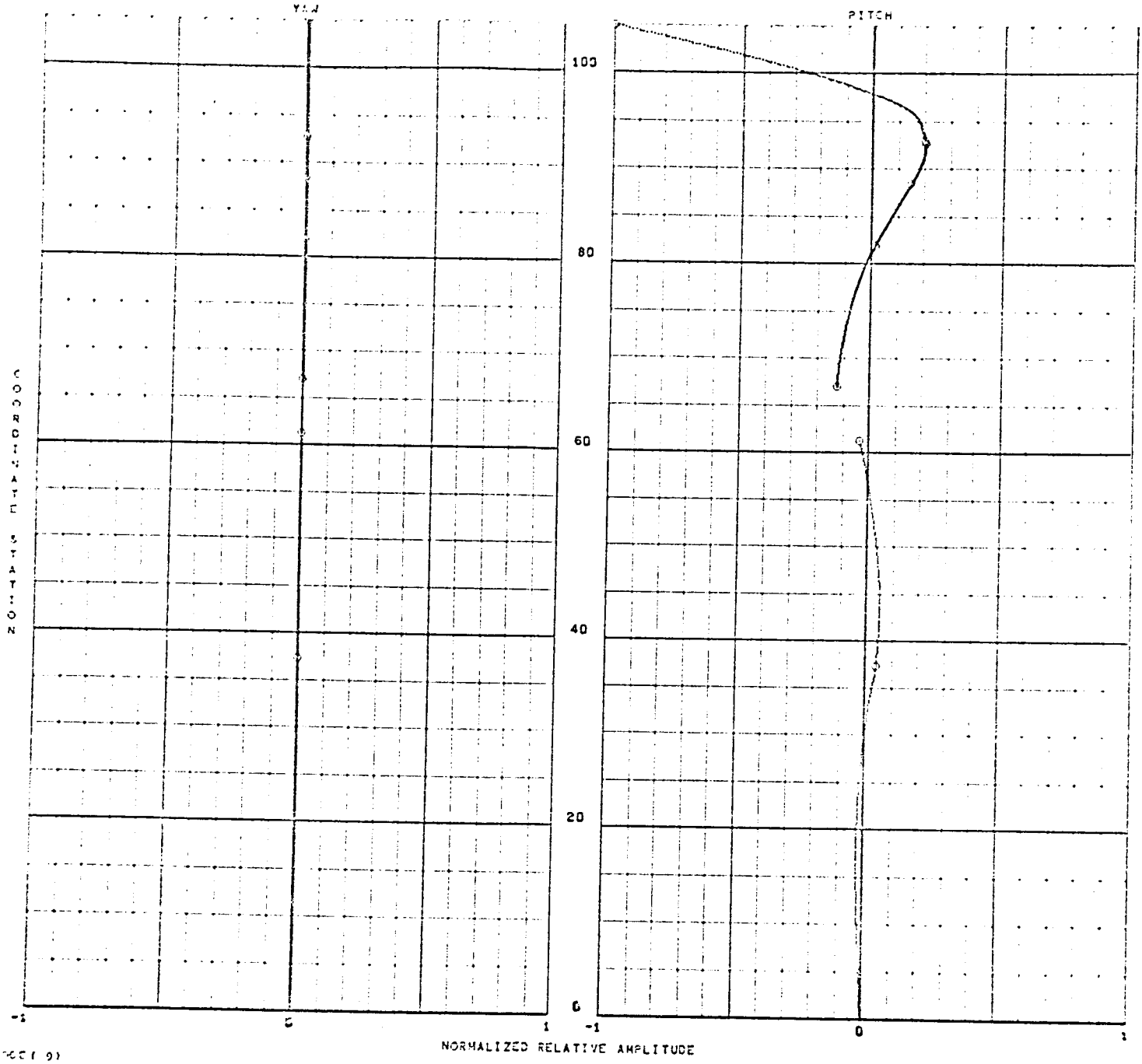

EI - (N-M**2)X10^3
GA - (NEWTONS)X10^6
MP - (KILOGRAMS/METER)X10^3
BEAM (5)
LENGTH = 4.25 M
NP = 52
EI
GA
MP
SHAPE FUNCTIONS
NORMALIZED AMPLITUDE
LOCAL COORDINATE STATION (METERS)
VEHICLE REFERENCE
STATION = 88.50



Frequency = 0.324



Frequency = 1.541



Frequency = 3.05

APPENDIX B

PROGRAM LISTING AND SAMPLE PRINTED OUTPUT

```
      CØMMØN/MISC/ N, BL(12), SL(12), NP(12), NF(12), N2(12), PNU(12),
     *             BM(12), BD(12), ØPTIØN(12), TITLE(12), REF(12),
     *             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     *             NT2P, NT4P, NTB1, NTB, NTT, NTP, TVM, XMC
      CØMMØN/INTGRL/ BW(12),BJ(12), R1(12), R2(12),Y1(12,4),Y2(12,4),
     *               YZ1(12,4),YZ2(12,4),BYZ1(12,4,4),BYZ2(12,4,4),
     *               G1(12,4,4),G2(12,4,4)
      CØMMØN/SLØPES/ Y1PL(12,4), Y1PR(12,4), Y2PL(12,4), Y2PR(12,4)
      CØMMØN/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     *               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     *               SK(12,4,4), SKB(12,2,2)
      INTEGER ØPTIØN
  100 REWIND 1                                                          1
      REWIND 3                                                          2
      CALL INPUT                                                        3
      CALL CØMP                                                         5
      CALL MATAB(IND)                                                   7
      IF(IND.EQ.1) GØ TØ 100
      CALL CLVT60(NTT,IND2)                                             12
   90 IF(ØPTIØN(6).EQ.0)  GØ TØ 100
      CALL GRAPH4(IND2,2)                                               16
      GØ TØ 100
      END
```



```
      SUBRØUTINE ØUTMAT(A,IMAX)                                         ØMAT0010
      DIMENSIØN A(60,60)                                                ØTMT0020
      L= IMAX/10                                                        ØMAT0030
      IF( (10*L).LT.IMAX)  L=L+1                                        ØMAT0040
      J1=-9                                                             ØMAT0050
      DØ 200   K=1,L                                                    ØMAT0060
      J1=J1+10                                                          ØMAT0070
      J2=J1+9                                                           ØMAT0080
      IF(K.EQ.L) J2=IMAX                                                ØMAT0090
      WRITE(6,100) (J,J=J1,J2)                                          ØMAT0100   12
  100 FØRMAT(1H0//     9X,10(2X,7HCØLUMN(I2,1H)))                       ØMAT0110
      WRITE(6,150)                                                      ØMAT0120   16
  150 FØRMAT(1H )                                                       ØMAT0130
      DØ 200  I=1,IMAX                                                  ØMAT0140
  200 WRITE(6,300)  I,(A(I,J),J=J1,J2)                                  ØMAT0150   19
  300 FØRMAT(5H RØW(I2,1H),1X,1P10E12.4)                                ØMAT0160
      RETURN                                                            ØMAT0170
      END                                                               ØMAT0180
```

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```
LMSC
    RMAT        - EFN   SOURCE STATEMENT  -  IFN(S)  -                    12/15/66

      SUBROUTINE RECMAT(A,IX,IY,IXX,IYY)                                  RMAT0010
      DIMENSION A(IXX,IYY)                                                RMAT0020
      L=IY/10                                                             RMAT0030
      IF((10*L).LT.IY) L=L+1                                              RMAT0040
      J1=-9                                                               RMAT0050
      DO 300 K=1,L                                                        RMAT0060
      J1=J1+10                                                            RMAT0070
      J2=J1+9                                                             RMAT0080
      IF(K.EQ.L) J2=IY                                                    RMAT0090
      WRITE(6,100) (J,J=J1,J2)                                            RMAT0100     12
  100 FORMAT(1H0//,9X,10(2X,7HCOLUMN(I2,1H)))                             RMAT0110
      WRITE(6,200)                                                        RMAT0120     16
  200 FORMAT(1H )                                                         RMAT0130
      DO 300 I=1,IX                                                       RMAT0140
  300 WRITE(6,400) I,(A(I,J),J=J1,J2)                                     RMAT0150     19
  400 FORMAT(5H ROW(I2,1H),1X,1P10E12.4)                                  RMAT0160
      RETURN                                                              RMAT0170
      END                                                                 RMAT0180
```

```
LMSC
    BDAT        - EFN   SOURCE STATEMENT  -  IFN(S)  -                    12/14/66

      BLOCK DATA
      COMMON/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     *               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     *               SK(12,4,4), SKB(12,2,2)
      COMMON/SHAPES/ MPI(900), IPI(900), EII(900), GAI(900),
     *               MP (900), IP(1000), EI(1000), GA(1000),
     *                Y(2600), YS(2600),  Z(2600), YY(2600),
     *               FMP, FIP, FEI, FGA
      DATA SK,SKB,SSL1,SSR1,SSL2,SSR2,RSL1,RSR1,RSL2,RSR2 /336*0.0/,
     *     SKB(3,1,1), SKB(3,2,2) /2*7.25E8/,
     *     SK(1,1,1), SK(1,2,2), SK(3,1,1), SK(3,2,2)/2*1.E13,2*1.E12/,
     *     SK(4,1,1), SK(4,1,2), SK(4,2,2)/.47115E9,-.58894E8,.24836E9/,
     *     SK(4,3,3), SK(4,3,4), SK(4,4,4)/.47115E9,-.58894E8,.24836E9/
      END
```

```
      SUBRØUTINE INPUT
      CØMMØN/MISC/ N, BL(12), SL(12), NP(12), NF(12), N2(12), PNU(12),
     *             BM(12), BD(12), ØPTIØN(12), TITLE(12), REF(12),
     *             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     *             NT2P, NT4P, NT31, NTB, NTT, NTP, TVM, XMC
      CØMMØN/SHAPES/ MPI(900), IPI(900), EII(900), GAI(900),
     *               MP (900), IP(1000), EI(1000), GA(1000),
     *                Y(2600), YS(2600),  Z(2600), YY(2600),
     *               FMP, FIP, FEI, FGA
      CØMMØN/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     *               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     *               SK(12,4,4), SKB(12,2,2)
      CØMMØN/SLØPES/ Y1PL(12,4), Y1PR(12,4), Y2PL(12,4), Y2PR(12,4)
      DIMENSIØN ILEFT(2), IRIGHT(2), VALUL(2), VALUR(2)
      INTEGER ØPTIØN, SHEAR
      REAL IP,MP,IPI,MPI,ML,MR
C
C  INPUT BEAM PROPERTIES
C
      READ(5,5) TITLE
      READ(5,10) OPTION
      READ(5,15) N,REF(1)
    5 FORMAT(12A6)
   10 FORMAT(12I6)
   15 FORMAT(I6,E12.8)
   20 FORMAT(6E12.8)
      J1=1
      K1=1
      L1=1
      M1=1
      DO 50 I=1,N
      READ(5,10) NP(I),NF(I),NMP(I),NIP(I),NEI(I),NGA(I)
      READ(5,20) BL(I),SL(I),SM(I),SS(I)
      J2=J1+NMP(I)-1
      K2=K1+NIP(I)-1
      L2=L1+NEI(I)-1
      M2=M1+NGA(I)-1
      READ(5,20) (MPI(J),J=J1,J2)
      READ(5,20) (IPI(K),K=K1,K2)
      READ(5,20) (EII(L),L=L1,L2)
      READ(5,20) (GAI(M),M=M1,M2)
      J1=J2+1
      K1=K2+1
      L1=L2+1
      M1=M2+1
   50 N2(I)=NF(I)
C
      DØ 100 I=1,N
      REF(I+1)=REF(I)+BL(I)+SL(I)
      IF(SL(I).LT.1.E-35)  GØ TØ 100
      SK(I,1,1)= SL(I)*(SL(I)*SK(I,1,1)+SK(I,1,2)) + SL(I)*SK(I,1,2)
     *                                                + SK(I,2,2)
      SK(I,1,2)= SL(I)*SK(I,1,2) + SK(I,2,2)
      SK(I,3,3)= SL(I)*(SL(I)*SK(I,3,3)+SK(I,3,4)) + SL(I)*SK(I,3,4)
     *                                                + SK(I,4,4)
      SK(I,3,4)= SL(I)*SK(I,3,4) + SK(I,4,4)
  100 CØNTINUE
C
      J1=1
      J2=1
      J3=1
      J4=1
      K1=1
      NTP=0
      DØ 200 I=1,N
      NSEG=NP(I)-1
      CALL INTERP(MPI(J1),MP(K1),NMP(I),NSEG,IER)                          143
      J1=J1+NMP(I)
C
      CALL INTERP(EII(J2),EI(K1),NEI(I),NSEG,IER)                          150
      J2=J2+NEI(I)
C
      CALL INTERP(GAI(J3),GA(K1),NGA(I),NSEG,IER)                          157
      J3=J3+NGA(I)
C
      CALL INTERP(IPI(J4),IP(K1),NIP(I),NSEG,IER)                          164
      J4=J4+NIP(I)
C
      K1=K1+NP(I)-1
  200 NTP=NTP+NSEG
C
      WRITE(3) MP                                                          196
      REWIND 3
C                                                                          198
      L=1
      I1=1
      J1=1
      SHEAR=1
      IF(ØPTIØN(3).EQ.0)  SHEAR=0
      IØUT=ØPTIØN(2)
      DØ 300  I=1,N
      IF(NF(I).EQ.0)  GØ TØ 290
      NSEG=NP(I)-1
      FCØEF=1.
      ILEFT(1)=1
      ILEFT(2)=3
      IRIGHT(1)=1
      IRIGHT(2)=3
      IF(I.NE.N)  GØ TØ 250
      ILEFT(2)=2
      IRIGHT(1)=4
  250 CØNTINUE
      IF(I.NE.1)  GØ TØ 260
      IF(RSL1.NE.0.)  GØ TØ 260
      IRIGHT(2)=2
      ILEFT(1)=4
  260 CØNTINUE
      VALUL(1)=0.
      VALUR(1)=0.
      VALUL(2)=0.
      VALUR(2)=0.
      J=1
      IF(IØUT.NE.0)  WRITE(6,350) I,J                                      227
      CALL NUB (BL(I),NP(I),ILEFT,VALUL,IRIGHT,VALUR,EI(L),GA(L),MP(L),
     *          Y(J1),Z(J1),YY(J1),YS(J1),SHEAR,FCØEF,IØUT)                231
      J1=J1+NP(I)
      ILEFT(1)=1
      ILEFT(2)=3
      IRIGHT(1)=1
      IRIGHT(2)=3
      VALUL(2)=0.
```

```
      VALUR(2)=1.
      FCØEF=0.
      J=2
      IF(IØUT.NE.0)  WRITE(6,350) I,J
      CALL NUB (BL(I),NP(I),ILEFT,VALUL,IRIGHT,VALUR,EI(L),GA(L),MP(L),
     *          Y(J1),Z(J1),YY(J1),YS(J1),SHEAR,FCØEF,IØUT)
      J1=J1+NP(I)
      VALUL(2)=1.
      VALUR(2)=0.
      J=3
      IF(IØUT.NE.0)  WRITE(6,350) I,J
      CALL NUB (BL(I),NP(I),ILEFT,VALUL,IRIGHT,VALUR,EI(L),GA(L),MP(L),
     *          Y(J1),Z(J1),YY(J1),YS(J1),SHEAR,FCØEF,IØUT)
      J1=J1+NP(I)
  290 L=L+NP(I)-1
  300 CØNTINUE
  350 FØRMAT(6H1BEAM(,I1,13H)   FJNCTIØN(,I1,1H))
      READ(3) MP
      REWIND 3
      RETURN
      END
```

```
      SUBROUTINE INTERP(P,R,NG,NSEG,IER)                                NTRP0010
C                                                                       NTRP0020
C     ROUTINE FOR GENERATING AN ARRAY OF ARBITRARY SIZE CONTAINING      NTRP0030
C     INTERPOLATED VALUES WHEN GIVEN THE INPUT IN THE FORM OF X,Y PAIRS NTRP0040
C     P ARRAY CONTAINS THE INPUT X,Y PAIRS -- P(1)=X(1), P(2)=Y(1), ETC.NTRP0050
C     R ARRAY CONTAINS THE INTERPOLATED VALUES                          NTRP0060
C     NG = NUMBER OF INPUT POINTS  2*(NO OF PAIRS)                      NTRP0070
C     NSEG=NUMBER OF INTERPOLATED VALUES REQUESTED                      NTRP0080
C     IER= ERROR INDICATOR                                              NTRP0090
C                                                                       NTRP0100
      DIMENSION P(1), PX(250), PY(250), R(1), A(500), ERROR(21)         NTRP0110
      DATA ERROR /                                                      NTRP0120
     * 6HNUMBER,6H OF IN,6HPUT PA,6HIRS IS,6H GREAT,6HER THA,6HN 250 , NTRP0130
     * 6HX VALU,6HES ARE,6H NOT I,6HN INCR,6HEASING,6H ORDER,6H       , NTRP0140
     * 6HINITIA,6HL X VA,6HLUE IS,6H NOT Z,6HERO   ,6H      ,6H       /NTRP0150
C                                                                       NTRP0160
C ERROR CHECK                                                           NTRP0170
C     IF THE INPUT DATA IS INVALID, A STATEMENT DESCRIBING THE ERROR IS NTRP0180
C     PRINTED AND A RETURN IS MADE TO THE CALLING PROGRAM WITH THE ERRORNTRP0190
C     INDICATOR SET (IER=1)  NO ARRAY WILL BE GENERATED                 NTRP0200
C                                                                       NTRP0210
      IER=0                                                             NTRP0220
      IND=0                                                             NTRP0230
      IF(NG.LT.500) GO TO 10                                            NTRP0240
      IND=1                                                             NTRP0250
      GO TO 300                                                         NTRP0260
   10 M=NG/2                                                            NTRP0270
      DO 20 I=1,M                                                       NTRP0280
      PY(I)=P(2*I)                                                      NTRP0290
   20 PX(I)=P(2*I-1)                                                    NTRP0300
      DO 30 I=2,M                                                       NTRP0310
   30 IF(PX(I).LT.PX(I-1)) GO TO 40                                     NTRP0320
      GO TO 50                                                          NTRP0330
   40 IND=2                                                             NTRP0340
   50 IF(P(1).GT.1.E-35) IND=3                                          NTRP0350
      IF(IND.NE.0)  GO TO 300                                           NTRP0360
C                                                                       NTRP0370
C CONSTRUCT ARRAY CONTAINING VALUES AT THE LEFT END OF EACH SEGMENT     NTRP0380
C                                                                       NTRP0390
      DX=PX(M)/FLOAT(NSEG)                                              NTRP0400
      DX2=DX*2.                                                         NTRP0410
      X=0.                                                              NTRP0420
      J=1                                                               NTRP0430
      DO 100 I=1,NSEG                                                   NTRP0440
   60 IF(PX(J+1).GT.X) GO TO 80                                         NTRP0450
      J=J+1                                                             NTRP0460
      GO TO 60                                                          NTRP0470
   80 A(I)=PY(J) + (PY(J+1)-PY(J))*(X-PX(J))/(PX(J+1)-PX(J))            NTRP0480
  100 X=DX+FLOAT(I)                                                     NTRP0490
      A(NSEG+1)=PY(M)                                                   NTRP0495
C                                                                       NTRP0500
C CONSTRUCT THE R ARRAY OF INTERPOLATED VALUES                          NTRP0510
C                                                                       NTRP0520
      X=0.                                                              NTRP0530
      J=2                                                               NTRP0540
```



```
      DO 200 I=1,NSEG                                                   NTRP0550
      IF(PX(J).GT.(X+DX)) GO TO 180                                     NTRP0560
      R(I)=(A(I)+PY(J))*(PX(J)-X)                                       NTRP0570
  120 J=J+1                                                             NTRP0580
      IF(J.LE.M) GO TO 140                                              NTRP0590
      IF(I.EQ.NSEG) GO TO 170                                           NTRP0600
      IER=1                                                             NTRP0610
      WRITE(6,130) I,J                                                  NTRP0620    81
  130 FORMAT(40HDERROR *** INTERP ROUTINE *** AT SEGMENT,I4,36H THE LASTNTRP0630
     * INPUT PAIR WAS REACHED (J=I3,1H))                                NTRP0640
      GO TO 310                                                         NTRP0650
  140 IF(PX(J).GT.(X+DX)) GO TO 160                                     NTRP0660
      R(I)=R(I)+(PY(J-1)+PY(J))*(PX(J)-PX(J-1))                         NTRP0670
      GO TO 120                                                         NTRP0680
  160 R(I)=R(I)+(PY(J-1)+A(I+1))*(X+DX-PX(J-1))                         NTRP0690
  170 R(I)=R(I)/DX2                                                     NTRP0700
      GO TO 200                                                         NTRP0710
  180 R(I)=(A(I)+A(I+1))/2.                                             NTRP0720
  200 X=DX+FLOAT(I)                                                     NTRP0730
      GO TO 310                                                         NTRP0740
  300 IER=1                                                             NTRP0750
      I1= 7*(IND-1) + 1                                                 NTRP0760
      I2=I1+6                                                           NTRP0770
      WRITE(6,305) (ERROR(I),I=I1,I2)                                   NTRP0780    115
  305 FORMAT(30HDERROR *** INTERP ROUTINE *** ,746,14H   NOT ALLOWED)   NTRP0790
  310 RETURN                                                            NTRP0800
      END                                                               NTRP0810
```

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```
      SUBKØUTINE   NUB (BL,NSTA,IDCX,XBAR1,IDCY,YBAR1,EI,GA,QQ,
     *                  Y,PSI,PSIPRM,ALPHA,SHEAR,FCØEF,IØUT)
C
C  STATIC DEFLECTIØN ANALYSIS -- ARBITRARY TIMØSHENKØ BEAMS
C  IDCX, IDCY  SPECIFY WHICH QUANTITIES ARE PRESCRIBED    1-Y   3-MØM
C     AS BØUNDARY CØNDITIØNS AT THE LEFT AND RIGHT ENDS   2-PSI 4-V
C  XBAR1, YBAR1  CØNTAIN THE VALUES ØF THESE QUANTITIES
C  SHEAR=1 IF DEFLECTIØNS DUE TØ SHEAR ARE TØ BE INCLUDED IN ANALYSIS
C  THE ELEMENTS ØF THE DISTRIBUTED LØAD ARRAY QQ ARE MULTIPLIED BY
C     FCØEF  (FCØEF=0. IF NØ DISTRIBUTED LØAD IS REQUIRED)
C
      DIMENSIØN IDCX(2), IDCY(2), XBAR1(2), XBAR2(2), YBAR1(2),
     *          C(4,4,2), E(4,2), S(4,2), T(4,4), R(4), PRØD(2),VECT(2),
     *          EI(1), GA(1), QQ(1), Y(1), PSI(1), ALPHA(1), PSIPRM(1),
     *          YPRIME(200), MØM(200), V(200), AG(200), NAME(12)
C
      DATA NAME /6H LEFT , 6H RIGHT, 6HCLAMPE, 6HPINNED, 6H      ,
     *           6HGUIDED, 6H FREE , 6HØ     , 4*6H      /
C
      INTEGER ØLD, P, Q, TEMP, SHEAR
      REAL MØM
C
C CHECK FØR VALIDITY ØF BØUNDARY CØNDITIØNS
C
      KL=0
      KR=0
      I=IDCX(1)
      J=IDCX(2)
      IF (((I.EQ.1.ØR.I.EQ.4).AND.(J.EQ.2.ØR.J.EQ.3)).ØR.
     *    ((J.EQ.1.ØR.J.EQ.4).AND.(I.EQ.2.ØR.I.EQ.3)))  KL=1
      I=IDCY(1)
      J=IDCY(2)
      IF (((I.EQ.1.ØR.I.EQ.4).AND.(J.EQ.2.ØR.J.EQ.3)).ØR.
     *    ((J.EQ.1.ØR.J.EQ.4).AND.(I.EQ.2.ØR.I.EQ.3)))  KR=1
C
      IF(KL.EQ.0)  WRITE(6,40) NAME(1)                                  18
      IF(KR.EQ.0)  WRITE(6,40) NAME(2)                                  20
   40 FØRMAT( 55HØ***ERRØR***  INVALID BØUNDARY CØNDITIØNS SPECIFIED FØR
     *,A6,12H END ØF BEAM/14X,25HNØ SØLUTIØN WILL BE FØUND)
      IF(KL.EQ.0.ØR.KR.EQ.0)  GØ TØ 400
C
C  PRINT END CØNDITIØN DESCRIPTIØNS
C
      IX=IDCX(1) + IDCX(2)
      IY=IDCY(1) + IDCY(2)
      WRITE(6,60) NAME(IX),NAME(IX+5),NAME(IY),NAME(IY+5)               26
   60 FØRMAT(1HØ,A6,A2,A6,A2,5H BEAM)
C
C  EVALUATE THE MATRIX C AND THE VECTØR E AT RIGHT END ØF BEAM
C
      DØ 110 I=1,4
      DØ 100 J=1,4
      VALUE=0.
      IF(I.EQ.J) VALUE=1.
      C(I,J,1)=VALUE
```



```
  100 C(I,J,2)=0.
      E(I,1)=0.
  110 T(I,I)=1.
C
      NSEG=NSTA-1
      DLT=BL/FLØAT(NSEG)
      DLT2=DLT**2/2.
      DLT3=DLT**3/6.
      DLT4=DLT**4/24.
      T(1,2)=DLT
      T(3,4)=DLT
      R(3)=DLT2
      R(4)=DLT
C
      ØLD=1
      NEW=2
      DØ 150 K=1,NSEG
      AG(K)=0.
      IF(SHEAR.EQ.1)  AG(K)=1./GA(K)
C
CØMMENT *** THE AG ARRAY CØNTAINS THE RECIPRØCAL VALUES ØF THE SHEAR
C           STIFFNESS GA WHEN THE DEFLECTIØNS DUE TØ SHEAR ARE TØ BE
C           INCLUDED IN THE ANALYSIS AND CØNTAINS ZERØS WHEN SHEAR
C           IS NEGLECTED
C
      QQ(K)=QQ(K)*FCØEF
      T(1,3)=DLT2/EI(K)
      T(1,4)=DLT3/EI(K) - DLT*AG(K)
      T(2,3)=DLT/EI(K)
      T(2,4)=T(1,3)
      R(1)=DLT4/EI(K) - DLT2*AG(K)
      R(2)=DLT3/EI(K)
C
      DØ 140 I=1,4
      E(I,NEW)=0.
      DØ 130 J=I,4
      C(I,J,NEW)=0.
      DØ 120 L=I,J
  120 C(I,J,NEW)=C(I,J,NEW) + T(I,L)*C(L,J,ØLD)
  130 E(I,NEW)=E(I,NEW) + T(I,J)*E(J,ØLD)
  140 E(I,NEW)=E(I,NEW) + QQ(K)*R(I)
      TEMP=ØLD
      ØLD=NEW
  150 NEW=TEMP
C
C  EVALUATE THE TWØ UNKNØWN ELEMENTS ØF THE STATE AT LEFT END ØF BEAM
C
      I=IDCY(1)
      J=IDCY(2)
      M=IDCX(1)
      N=IDCX(2)
C
      K=5-I
      L=5-J
      P=5-M
      Q=5-N
```

```
C
      PRØD(1)=C(I,M,ØLD)*XBAR1(1) + C(I,N,ØLD)*XBAR1(2)
      PRØD(2)=C(J,M,ØLD)*XBAR1(1) + C(J,N,ØLD)*XBAR1(2)
C
      VECT(1)=YBAR1(1) - E(I,ØLD) - PRØD(1)
      VECT(2)=YBAR1(2) - E(J,ØLD) - PRØD(2)
      DET=C(I,P,ØLD)*C(J,Q,ØLD) - C(I,Q,ØLD)*C(J,P,ØLD)
C
      XBAR2(1)=(C(J,Q,ØLD)*VECT(1) - C(I,Q,ØLD)*VECT(2))/DET
      XBAR2(2)=(C(I,P,ØLD)*VECT(2) - C(J,P,ØLD)*VECT(1))/DET
C
      S(M,1)=XBAR1(1)
      S(N,1)=XBAR1(2)
      S(P,1)=XBAR2(1)
      S(Q,1)=XBAR2(2)
C
C GENERATE THE FIELD SØLUTIØN
C
      ØLD=1
      NEW=2
      DØ 190 K=1,NSTA
      Y(K)=S(1,ØLD)
      PSI(K)=S(2,ØLD)
      MØM(K)=S(3,ØLD)
      V(K)=S(4,ØLD)
      ALPHA(K)=V(K)*AG(K)
      PSIPRM(K)=MØM(K)/EI(K)
      YPRIME(K)=PSI(K)-ALPHA(K)
C
      T(1,3)=DLT2/EI(K)
      T(1,4)=DLT3/EI(K) - DLT*AG(K)
      T(2,3)=DLT/EI(K)
      T(2,4)=T(1,3)
      R(1)=DLT4/EI(K) - DLT2*AG(K)
      R(2)=DLT3/EI(K)
      DØ 150 I=1,4
      S(I,NEW)=0..
      DØ 170 J=1,4
  170 S(I,NEW)=S(I,NEW) + T(I,J)*S(J,ØLD)
  180 S(I,NEW)=S(I,NEW) + QQ(K)*R(I)
C
C
      TEMP=ØLD
      ØLD=NEW
  190 NEW=TEMP
      ALPHA(NSEG+1)=V(NSEG+1)*AG(NSEG)
      PSIPRM(NSEG+1)=MØM(NSEG+1)/EI(NSEG)
      YPRIME(NSEG+1)=PSI(NSEG+1)-ALPHA(NSEG+1)
      IF(IØUT.EQ.0)  GØ TØ 191
      WRITE(6,300)  (I,Y(I),PSI(I),MØM(I),V(I),ALPHA(I),YPRIME(I),
     *              PSIPRM(I),EI(I),GA(I),QQ(I) ,I=1,NSTA)
C
C CØØRDINATE TRANSFØRMATIØN -- ZERØ END DISPLACEMENTS
C                                                                       186
  191 SLØPE=(Y(NSTA)-Y(1))/BL
      DLTY=SLØPE*DLT
```



```
      YLIN=Y(1)
      DØ 195  I=1,NSTA
      PSI(I)=PSI(I)-SLØPE
      Y(I)=Y(I)-YLIN
  195 YLIN=YLIN+DLTY
C
C NØRMALIZATIØN
C
      YMAX=ABS(Y(1))
      DØ 200 I=2,NSTA
  200 YMAX=AMAX1(ABS(Y(I)),YMAX)
      DØ 210 I=1,NSTA
      Y(I)=Y(I)/YMAX
      PSI(I)=PSI(I)/YMAX
      PSIPRM(I)=PSIPRM(I)/YMAX
      ALPHA(I)=ALPHA(I)/YMAX
  210 YPRIME(I)=PSI(I)-ALPHA(I)
C
      IF(IØUT.EQ.0)  GØ TØ 400
      WRITE(6,220)                                                      240
  220 FØRMAT( 77H1NØRMALIZED FUNCTIØN -- MAXIMUM DISPLACEMENT ØF UNITY,
     *ZERØ END DISPLACEMENTS)
C
      WRITE(6,300)  (I,Y(I),PSI(I),MØM(I),V(I),ALPHA(I),YPRIME(I),
     *              PSIPRM(I),EI(I),GA(I),QQ(I) ,I=1,NSTA)            241
  300 FØRMAT(1H0/
     *20X10HCRØSS SECT,14X,21SHSHEAR,7X),5HTØTAL,7X,3HPSI,33X,4HLØAD/
     *5H STA.,3X,10HDEFLECTIØN,2X,8HRØTATIØN,4X,6HMØMENT,6X,5HFØRCE,7X,
     *5HANGLE,7X,5HSLØPE,7X,5HPRIME,7X,2HEI,10X,2HGA,13X,9HINTENSITY//
     *(I4,2X,1P10E12.4))
  400 RETURN
      END
```

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```
      SUBROUTINE COMP
C
      COMMON/MISC/ N, BL(12), SL(12), NP(12), NF(12), N2(12), PNU(12),
     *             BM(12), BD(12), OPTION(12), TITLE(12), REF(12),
     *             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     *             NT2P, NT4P, NTR1, NTB, NTT, NTP, TVM, XMC
C
      COMMON/SHAPES/ MPI(900), IPI(900), EII(900), GAI(900),
     *               MP (900), IP(1000), EI(1000), GA(1000),
     *                Y(2600), YS(2600),  Z(2600), YY(2600),
     *               FMP, FIP, FEI, FGA
C
      COMMON/INTGRL/ BW(12),BJ(12), R1(12), R2(12),Y1(12,4),Y2(12,4),
     *               YZ1(12,4),YZ2(12,4),BYZ1(12,4,4),BYZ2(12,4,4),
     *               G1(12,4,4),G2(12,4,4)
C
      COMMON/SLOPES/ Y1PL(12,4), Y1PR(12,4), Y2PL(12,4), Y2PR(12,4)
      COMMON/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     *               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     *               SK(12,4,4), SKB(12,2,2)
C
      INTEGER OPTION
      REAL IP,MP,IPI,MPI
C
COMPUTATION OF INTEGRALS INVOLVED IN THE KINETIC AND POTENTIAL ENERGY MATRICES
C
      NTP=0
      NBINT=0
      DO 50 I=1,N
      NBINT=NBINT + NP(I)-1
   50 NTP=NTP+NP(I)
      LL1=0
      LL3=0
      LL4=0
      RR=1.0
      IF(OPTION(1).EQ.0)  RR=0.0
      RS=1.0
      IF(OPTION(3).EQ.0)  RS=0.0
C
      DO 600 I=1,N
C
      NPI=NP(I)
      NPI1=NPI-1
      NFI=NF(I)
      NPF=NPI*NFI
      DX=BL(I)/FLOAT(NPI1)
      DX2=DX/2.0
      DX4=DX/4.0
C
      BW(I)=0.0
      BJ(I)=0.0
      BJX=0.0
      RI1=0.0
      RI2=0.0
C
```



```
      DO 95 L=1,NPI1
C
      L1=L+LL1
      L2=L1
      X=DX*FLOAT(L)-DX2
C
      BW(I)=BW(I) + MP(L1)*DX
      BJ(I)=BJ(I) + MP(L1)*X*DX
      BJX=BJX + MP(L1)*X**2*DX
      RI1=RI1 + IP(L1)*DX
   95 RI2=RI2 + IP(L2)*DX
C
      R1(I)=BJX+RI1*RR
      R2(I)=BJX+RI2*RR
C
      IF(NFI.EQ.0)  GO TO 550
      DO 500 J=1,NFI
C
      Y1(I,J)=0.0
      Y1X=0.0
      RZ1=0.0
      RZ2=0.0
C
      DO 200 L=1,NPI1
      L1=L+LL1
      L2=L1
      L3=L+LL3
      X=DX*FLOAT(L)-DX2
C
      Y1(I,J)=Y1(I,J) + MP(L1)*(Y(L3)+Y(L3+1))*DX2
      Y1X=Y1X + MP(L1)*(Y(L3)+Y(L3+1))*X*DX2
      RZ1=RZ1 + IP(L1)*(Z(L3)+Z(L3+1))*DX2
  200 RZ2=RZ2 + IP(L2)*(Z(L3)+Z(L3+1))*DX2
      YZ(I,J)=Y1(I,J)
C
      YZ1(I,J)=Y1X + RZ1*RR
      YZ2(I,J)=Y1X + RZ2*RR
      Y1PL(I,J)=Z(LL3+1)
      Y1PR(I,J)=Z(L3+1)
      Y2PL(I,J)=Y1PL(I,J)
      Y2PR(I,J)=Y1PR(I,J)
C
      LL5=0
      DO 400 K=1,NFI
      YY1=0.0
      RZZ1=0.0
      RZZ2=0.0
      G1BND=0.
      G2BND=0.
      G1SHR=0.
      G2SHR=0.
C
      DO 300 L=1,NPI1
      L1=L+LL1
      L2=L1
      L3=L+LL3
```

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```
      L4=L+LL4+LL5
C
      G1BND  =  G1BND     + EI(L1)*(YY(L3)*YY(L4)+YY(L3+1)*YY(L4+1))*DX2
      G2BND  =  G2BND     + EI(L2)*(YY(L3)*YY(L4)+YY(L3+1)*YY(L4+1))*DX2
      G1SHR  =  G1SHR     + GA(L1)*(YS(L3)*YS(L4)+YS(L3+1)*YS(L4+1))*DX2
      G2SHR  =  G2SHR     + GA(L2)*(YS(L3)*YS(L4)+YS(L3+1)*YS(L4+1))*DX2
      YY1=YY1 + MP(L1)*(Y(L3)*Y(L4)+Y(L3+1)*Y(L4+1))*DX2
      RZZ1=RZZ1+IP(L1)*(Z(L3)*Z(L4)+Z(L3+1)*Z(L4+1))*DX2
  300 RZZ2=RZZ2+IP(L2)*(Z(L3)*Z(L4)+Z(L3+1)*Z(L4+1))*DX2
C
      G1(I,J,K) = G1BND + G1SHR*RS
      G2(I,J,K) = G2BND + G2SHR*RS
      BYZ1(I,J,K)=YY1 + RZZ1*RR
      BYZ2(I,J,K)=YY1 + RZZ2*RR
C
  400 LL5=LL5+NPI
C
  500 LL3=LL3+NPI
C
  550 LL1=LL1+NPI1
  600 LL4=LL4+NPF
C
      TVM=0.
      VMO=0.
      VNO=0.
      DO 700 I=1,N
      TVM=TVM + BW(I) + BM(I)
      VMO=VMO + BJ(I) + REF(I)*BW(I) + BM(I)*(REF(I)-BD(I))
      XCI=BJ(I)/BW(I)
  700 VNO=VNO + R1(I) + BW(I)*((REF(I)+XCI)**2 - XCI**2)
     1        + BM(I)*(REF(I)-BD(I))**2
C
      WRITE(1) MPI,IPI,EII,GAI,MP,IP,EI,GA                                170
      WRITE(1) Y                                                          179
      WRITE(1) YY                                                         181
      WRITE(1) Z                                                          183
      WRITE(1) YS                                                         185
      REWIND 1                                                      CLVT2160
C OUTPUT STATEMENTS FOR DATA INPUT AND COMPUTED TERMS                     187
      NM1=N-1
   99 FORMAT(1H1)
  100 FORMAT(1H0)
      WRITE (6,101) TITLE                                                 188
  101 FORMAT (25H1INPUT DATA FOLLOW * * * ,12A6)
      WRITE (6,102) N                                                     190
  102 FORMAT (//5HON = I2)
      WRITE (6,103) OPTION                                                191
  103 FORMAT(8HOOPTIONS,2X,1216)
      WRITE (6,105)                                                       193
  105 FORMAT(5HOBEAM,9X,2HBL,15X,2HSL,15X,2HBM,15X,2HBD,15X,3HPNU,8X,2HN
     11,3X,2HN2,3X,2HNP,2X,3HNMP,2X,3HNIP,2X,3HNEI,2X,3HNGA)
      WRITE(6,100)                                                        194
      DO 10 I=1,N
   10 WRITE(6,107)I,BL(I),SL(I),BM(I),BD(I),PNU(I),NF(I),N2(I),NP(I),NMP
     1(I),NIP(I),NEI(I),NGA(I)                                            198
  107 FORMAT(I4,1X,5(2X,E15.8),7I5)
```



```
      WRITE(6,99)                                                         212
      J2=0
      DO 184 J=1,N
      WRITE(6,100)                                                        216
      WRITE(6,182) J                                                      217
  182 FORMAT(7HOBEAM (,I2,1H))
      WRITE(6,183) J,NP(J)                                                218
  183 FORMAT(4HONP(,I3,4H) = I3///8H STATION,12X,2HMP,18X,2HIP,18X,2HEI,
     *18X,2HGA)
      I=0
      J2=J2+NP(J)-1
      J1=J2-NP(J)+2
      DO 184 I1=J1,J2
      I=I+1
  184 WRITE(6,185) I,MP(I1),IP(I1),EI(I1),GA(I1)                          227
  185 FORMAT(2X,I3,2X,4(5X,E15.8))
      WRITE(6,100)                                                        234
      WRITE (6,110)                                                       235
  110 FORMAT(/28H1COMPUTED TERMS FOLLOW * * *//5HOBEAM,11X,2HBW,17X,2HBJ
     1,17X,2HR1,17X,2HR2)
      WRITE(6,100)                                                        236
      DO 15 I=1,N
   15 WRITE(6,112)I,BW(I),BJ(I),R1(I),R2(I)                               240
  112 FORMAT(I4,1X,4(4X,E15.8))
      WRITE(6,100)                                                        246
      WRITE(6,710) REF(1)                                                 247
  710 FORMAT(27HOVEHICLE REFERENCE LOCATION/6HOREF =,E15.8//)
      XMC=VMO/TVM
      WRITE(6,720) TVM,XMC,VMO,VNO                                        248
  720 FORMAT(19HOTOTAL VEHICLE MASS/6HOTVM =,E15.8//38HODISTANCE TO CG F
     *ROM VEHICLE REFERENCE/6HOXMC =,E15.8//37HOFIRST MOMENT ABOUT VEHIC
     *LE REFERENCE/6HOVMO =,E15.8//42HOMOMENT OF INERTIA ABOUT VEHICLE R
     *EFERENCE/6HOVNO =,E15.8)
      WRITE(6,100)                                                        249
      WRITE(6,113) FMP,FIP,FEI,FGA                                        250
  113 FORMAT(34HOCONVERSION FACTORS FOR INPUT DATA//6H FMP =,E15.8/6HOFI
     *P =,E15.8/6HOFEI =,E15.8/6HOFGA =,E15.8)
      WRITE(6,115)                                                        251
  115 FORMAT(33H1LATERAL SUPPORT SPRING CONSTANTS/
     *5HOBEAM,10X,4HSSL1,15X,4HSSL2,15X,4HSSR1,15X,4HSSR2)
      WRITE(6,100)                                                        252
      DO 20 I=1,N
   20 WRITE (6,112)I,SSL1(I),SSL2(I),SSR1(I),SSR2(I)                      256
      WRITE(6,100)                                                        262
      WRITE(6,116)                                                        263
  116 FORMAT(36H ROTATIONAL SUPPORT SPRING CONSTANTS/
     *5HOBEAM,10X,4HRSL1,15X,4HRSL2,15X,4HRSR1,15X,4HRSR2)
      WRITE(6,100)                                                        264
      DO 21 I=1,N
   21 WRITE (6,112)I,RSL1(I),RSL2(I),RSR1(I),RSR2(I)                      268
      WRITE(6,100)                                                        274
      WRITE(6,118)                                                        275
  118 FORMAT(/29H BRANCH BEAM SPRING CONSTANTS,/11HOSKB(I,J,K),18X,20HI
     1=INTERSTAGE NUMBER)
      WRITE(6,100)                                                        276
      WRITE(6,119)                                                        277
```

```
119 FORMAT(3X,1HI,10X,7H(I,1,1),12X,7H(I,1,2),12X,7H(I,2,1),12X,7H(I,2
   1,2))
    WRITE(6,100)
    DO 25 I=1,N
 25 WRITE(6,112)I,SKB(I,1,1),SKB(I,1,2),SKB(I,2,1),SKB(I,2,2)
    IF(N.LE.5) GO TO 27
    WRITE(6,99)
 27 WRITE(6,100)
    WRITE(6,123)
123 FORMAT(//28H0INTERSTAGE SPRING CONSTANTS,/10H0SK(I,J,K),19X,21HI =
   1INTERSTAGE NUMBER)
    WRITE(6,100)
    WRITE(6,151)
    DO 33 I=1,NM1
    WRITE(6,154) I
    DO 33 J=1,4
 33 WRITE(6,155)J,SK(I,J,1),SK(I,J,2),SK(I,J,3),SK(I,J,4)
    WRITE(6,117)
117 FORMAT(5H1BEAM,3X,7HSHP FCN,8X,2HY1,17X,2HY2,17X,3HYZ1,17X,3HYZ2)
    WRITE(6,100)
    DO 30 I=1,N
    WRITE (6,120) I
    DO 30 J=1,4
 30 WRITE (6,125) J,Y1(I,J),Y2(I,J),YZ1(I,J),YZ2(I,J)
120 FORMAT (1H ,I3)
125 FORMAT (11X,I1,4(4X,E15.8))
    IF(N.LE.5) GO TO 31
    WRITE(6,99)
 31 WRITE(6,100)
    WRITE(6,127)
127 FORMAT(5H0BEAM,3X,7HSHP FCN,7X,4HY1PL,15X,4HY2PL,15X,4HY1PR,15X,4H
   1Y2PR)
    WRITE(6,100)
    DO 40 I=1,N
    WRITE (6,120) I
    DO 40 J=1,4
 40 WRITE (6,125) J,Y1PL(I,J),Y2PL(I,J),Y1PR(I,J),Y2PR(I,J)
    WRITE (6,150)
150 FORMAT(10H1G1(I,J,K),27X,15HI = BEAM NUMBER,8X,28HJ,K = SHAPE FUNC
   1TION NUMBERS)
    WRITE(6,100)
    WRITE (6,151)
151 FORMAT(2X,1HI,3X,1HJ,4X,14HK =          1,18X,1H2,18X,1H3,18X,1H4)
    DO 45 I=1,N
    WRITE(6,154) I
154 FORMAT(1H ,I2)
    DO 45 J=1,4
 45 WRITE(6,155) J,G1(I,J,1),G1(I,J,2),G1(I,J,3),G1(I,J,4)
155 FORMAT(6X,I1,5X,4(4X,E15.8))
    IF(N.LE.5) GO TO 51
    WRITE(6,99)
 51 WRITE(6,100)
    WRITE(6,160)
160 FORMAT(10H0G2(I,J,K),27X,15HI = BEAM NUMBER,8X,28HJ,K = SHAPE FUNC
   1TION NUMBERS)
    WRITE(6,100)
```



```
    WRITE (6,151)
    DO 60 I=1,N
    WRITE(6,154) I
    DO 60 J=1,4
 60 WRITE(6,155) J,G2(I,J,1),G2(I,J,2),G2(I,J,3),G2(I,J,4)
    WRITE(6,170)
170 FORMAT(12H1BYZ1(I,J,K),25X,15HI = BEAM NUMBER,8X,28HJ,K = SHAPE FU
   1NCTION NUMBERS)
    WRITE(6,100)
    DO 70 I=1,N
    WRITE(6,154) I
    DO 70 J=1,4
 70 WRITE(6,155) J,BYZ1(I,J,1),BYZ1(I,J,2),BYZ1(I,J,3),BYZ1(I,J,4)
    IF (N.LE.5) GO TO 71
    WRITE(6,99)
 71 WRITE(6,100)
    WRITE(6,180)
180 FORMAT(12H0BYZ2(I,J,K),25X,15HI = BEAM NUMBER,8X,28HJ,K = SHAPE FU
   1NCTION NUMBERS)
    WRITE(6,100)
    WRITE(6,151)
    DO 80 I=1,N
    WRITE(6,154) I
    DO 80 J=1,4
 80 WRITE(6,155) J,BYZ2(I,J,1),BYZ2(I,J,2),BYZ2(I,J,3),BYZ2(I,J,4)
    RETURN
    END
```

```
      SUBROUTINE MATAB(IND)                                             C56D0010
C                                                                       C56D0020
CONSTRUCTION OF KINETIC AND POTENTIAL ENERGY COEFFICIENT MATRICES       C56D0030
C                                                                       C56D0040
      COMMON/MISC/ N, BL(12), SL(12), NP(12), N1(12), N2(12), PNU(12),   C56D0050
     *             BM(12), BD(12), OPTION(12), TITLE(12), REF(12),
     *             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     *             NT2P, NT4P, NTB1, NTB, NTT, NTP, TVM, XMC
C                                                                       C56D0070
      COMMON/SLOPES/ Y1PL(12,4), Y1PR(12,4), Y2PL(12,4), Y2PR(12,4)
C                                                                       C56D0090
      COMMON/INTGRL/ BW(12),BJ(12), R1(12), R2(12),Y1(12,4),Y2(12,4),
     *               YZ1(12,4),YZ2(12,4),BYZ1(12,4,4),BYZ2(12,4,4),
     *               G1(12,4,4),G2(12,4,4)
C                                                                       C56D0130
      COMMON/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     *               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     *               SK(12,4,4), SKB(12,2,2)
C                                                                       C56D0160
      DIMENSION A(60,60), B(60,60)                                      C56D0170
C                                                                       C56D0180
      DIMENSION C(44,60), PNUT(12),CNU(12), SNU(12), S(44,44),Q(60,60)  C56D0190
      DIMENSION BI1(12), BI2(12)
      INTEGER OPTION                                                    C56D0200
C                                                                       C56D0210
      NU1=N-1                                                           C56D0220
      DO 100  I=1,NU1                                                   C56D0230
      PNUT(I)=ABS(PNU(I)-PNU(I+1))                                      C56D0240
      CNU(I)=COS(PNUT(I))                                               C56D0390   10
  100 SNU(I)=SIN(PNUT(I))                                               C56D0400
C                                                                       C56D0270   14
      WRITE(6,200) PNUT, CNU, SNU                                       C56D0280   17
  200 FORMAT(8H1PNUT(I),5X,6E18.8/13X,6E18.8/7HOCNU(I),6X,6E18.8/13X,   C56D0290
     *       6E18.8/7HOSNU(I),6X,5E18.8/13X,6E18.8)                     C56D0300
C
C     DEFINITIONS
C
      IND=0                                                             C56D0310
      NTR=0
      KT1=0
      IF(NU1.EQ.0)  GO TO 1010
      DO 1000 I=1,NU1
      ISL(I)=0
      NN=4
      IF((SL(I)/BL(I)).GT.1.E-10) GO TO 1000
      ISL(I)=1
      KT1=KT1+1
      NN=2
 1000 NTR=NTR+NN
C
 1010 NB1=0
      NB2=0
      KT2=0
      DO 1050 I=1,N
      BI1(I)=0.
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```
      BI2(I)=0.
      NB1=NB1+N1(I)
      NB2=NB2+N2(I)
      IBB(I)=0
      IF(BM(I).LT.1.E-35) GO TO 1050
      IBB(I)=1
      KT2=KT2+1
 1050 CONTINUE
C
      NT2P=2*N-KT1
      NT4P=2*NT2P
      NTB1=NT4P+NB1
      NTB=NTB1+NB2
      NTT=NTB+2*KT2
      IF(NTT.GT.60) GO TO 2300
C
C     CONSTRUCTION OF THE KINETIC ENERGY MATRIX, A
C     TERMS IN THE POTENTIAL ENERGY MATRIX, B, DUE TO SUPPORT SPRINGS,
C          BRANCH BEAMS, AND BEAM BENDING WILL BE INSERTED AT THIS TIME
C
      DO 1100 J=1,NTT
      DO 1100 I=1,NTT
      A(I,J)=0.0
 1100 B(I,J)=0.0
      I1=1
      I2=NT2P+1
      I3=NTB+1
      J1C=NT4P
      J2C=NT4P+NB1
C
      DO 1200 I=1,N
      R1BL=R1(I)/BL(I)**2
      R2BL=R2(I)/BL(I)**2
      BJBL=2.0*BJ(I)/BL(I)
      RSLR1=(RSL1(I)+RSR1(I))/BL(I)**2
      RSLR2=(RSL2(I)+RSR2(I))/BL(I)**2
      BMDI1=BM(I)*BD(I)**2 + BI1(I)
      BMDI2=BM(I)*BD(I)**2 + BI2(I)
      BMBDL=  BM(I)*BD(I)/BL(I)
      BLSQ =BL(I)**2
C
      A(I1,I1)=A(I1,I1) + BW(I) + R1BL - BJBL
      A(I1+1,I1+1)=R1BL
      A(I2,I2)=A(I2,I2) + BW(I) + R2BL - BJBL
      A(I2+1,I2+1)=R2BL
      A(I1,I1+1)=-R1BL + BJBL/2.0
      A(I2,I2+1)=-R2BL + BJBL/2.0
C
      B(I1,I1)=B(I1,I1) + RSLR1 + SSL1(I)
      B(I1+1,I1+1)=B(I1+1,I1+1) + RSLR1 + SSR1(I)
      B(I1,I1+1)=B(I1,I1+1) - RSLR1
      B(I2,I2)=B(I2,I2) + RSLR2 + SSL2(I)
      B(I2+1,I2+1)=B(I2+1,I2+1) + RSLR2 + SSR2(I)
      B(I2,I2+1)=B(I2,I2+1) - RSLR2
C
C BRANCH BEAM TERMS
```

```
C
      IF(IBB(I).EQ.0)  GØ TØ 1110
      A(I1,I1)=A(I1,I1) + BM(I) + BMDI1/BLSQ + BMBDL*2.
      A(I2,I2)=A(I2,I2) + BM(I) + BMDI2/BLSQ + BMBDL*2.
      A(I1+1,I1+1)=A(I1+1,I1+1) + BMDI1/BLSQ
      A(I2+1,I2+1)=A(I2+1,I2+1) + BMDI2/BLSQ
      A(I1,I1+1)=A(I1,I1+1) - BMDI1/BLSQ - BMBDL
      A(I2,I2+1)=A(I2,I2+1) - BMDI2/BLSQ - BMBDL
      A(I3,I3)=BMDI1
      A(I3+1,I3+1)=BMDI2
      A(I1,I3)=BMDI1/BL(I) + BM(I)*BD(I)
      A(I2,I3+1)=BMDI2/BL(I) + BM(I)*BD(I)
      A(I1+1,I3)=-BMDI1/BL(I)
      A(I2+1,I3+1)=-BMDI2/BL(I)
C
      B(I3,I3)=SKB(I,1,1)
      B(I3,I3+1)=SKB(I,1,2)
      B(I3+1,I3+1)=SKB(I,2,2)
C
 1110 N1I=N1(I)
      N2I=N2(I)
      IF(N1I.EQ.0) GØ TØ 1140
      DØ 1130 J=1,N1I
      J1=J1C+J
      A(I1,J1)=Y1(I,J)- YZ1(I,J)/BL(I)
      A(I1+1,J1)=YZ1(I,J)/BL(I)
      TRM1=Y1PL(I,J)*RSL1(I) + Y1PR(I,J)*RSR1(I)
      B(I1,J1)=B(I1,J1) - TRM1/BL(I)
      B(I1+1,J1)=B(I1+1,J1) + TRM1/BL(I)
      IF(IBB(I).EQ.0)  GØ TØ 1120
      A(I1,J1)=A(I1,J1) - Y1PL(I,J)*(BMDI1/BL(I) + BM(I)*BD(I))
      A(I1+1,J1)=A(I1+1,J1) + Y1PL(I,J)*BMDI1/BL(I)
      A(J1,I3)=-Y1PL(I,J)*BMDI1
 1120 DØ 1130 K=J,N1I
      K1=J1C+K
      B(J1,K1)=B(J1,K1) + Y1PL(I,J)*Y1PL(I,K)*RSL1(I)
     *                  + Y1PR(I,J)*Y1PR(I,K)*RSR1(I) + G1(I,J,K)
 1130 A(J1,K1)= BYZ1(I,J,K) + Y1PL(I,J)*Y1PL(I,K)*BMDI1
      J1C=J1C+N1(I)
C
 1140 IF(N2I.EQ.0)  GØ TØ 1170
      DØ 1160 J=1,N2I
      J2=J2C+J
      A(I2,J2)=Y2(I,J) - YZ2(I,J)/BL(I)
      A(I2+1,J2)=YZ2(I,J)/BL(I)
      TRM2=Y2PL(I,J)*RSL2(I) + Y2PR(I,J)*RSR2(I)
      B(I2,J2)=B(I2,J2) - TRM2/BL(I)
      B(I2+1,J2)=B(I2+1,J2) + TRM2/BL(I)
      IF(IBB(I).EQ.0)  GØ TØ 1150
      A(I2,J2)=A(I2,J2) - Y2PL(I,J)*(BMDI2/BL(I) + BM(I)*BD(I))
      A(I2+1,J2)=A(I2+1,J2) + Y2PL(I,J)*BMDI2/BL(I)
      A(J2,I3+1)=-Y2PL(I,J)*BMDI2
 1150 DØ 1160 K=J,N2I
      K2=J2C+K
      B(J2,K2)=B(J2,K2) + Y2PL(I,J)*Y2PL(I,K)*RSL2(I)
     *                  + Y2PR(I,J)*Y2PR(I,K)*RSR2(I) + G2(I,J,K)
```



```
 1160 A(J2,K2)= BYZ2(I,J,K) + Y2PL(I,J)*Y2PL(I,K)*BMDI2
 1170 J2C=J2C+N2I
      IF(ISL(I).EQ.1) GØ TØ 1180
      I1=I1+2
      I2=I2+2
      GØ TØ 1200
 1180 I1=I1+1
      I2=I2+1
 1200 IF(IBB(I).EQ.1) I3=I3+2
C
      DØ 1300 I=1,NTT
      DØ 1300 J=1,I
      B(I,J)=B(J,I)
 1300 A(I,J)=A(J,I)
C
C     CØNSTRUCTIØN ØF THE ANGULAR DISPLACEMENT CØEFFICIENT MATRIX, C
C
      DØ 1400 J=1,NTT
      DØ 1400 I=1,NTR
 1400 C(I,J)=0.0
C
C     RIGID BØDY RØTATIØN TERMS
C
      I1=1
      J1=1
      J2=NT2P+1
      J1K=NT4P
      J2K=NTØ1
      IF(NU1.EQ.0)  GØ TØ 2000
C
      DØ 1600 K=1,NU1
      CBL=CNU(K)/BL(K+1)
      SBL=SNU(K)/BL(K+1)
      TERM=(1./SL(K)+1./BL(K+1))
      IF(ISL(K).EQ.1) GØ TØ 1450
C
      I=I1
      C(I,J1)=1./BL(K)
      C(I,J1+1)=-1./BL(K)-1./SL(K)
      C(I,J1+2)=CNU(K)/SL(K)
      C(I,J2+2)=SNU(K)/SL(K)
C
      I=I1+1
      C(I,J1+1)=1./SL(K)
      C(I,J1+2)=-TERM*CNU(K)
      C(I,J1+3)=CBL
      C(I,J2+2)=-TERM*SNU(K)
      C(I,J2+3)=SBL
C
      I=I1+2
      C(I,J1+2)=-SNU(K)/SL(K)
      C(I,J2)=1./BL(K)
      C(I,J2+1)=-1./BL(K)-1./SL(K)
      C(I,J2+2)=CNU(K)/SL(K)
C
      I=I1+3
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```
      C(I,J1+2)=TERM*SNU(K)
      C(I,J1+3)=-SBL
      C(I,J2+1)=1./SL(K)
      C(I,J2+2)=-TERM*CNU(K)
      C(I,J2+3)=CBL
      GØ TØ 1500
C
 1450 I=I1
C
      C(I,J1)=1./BL(K)
      C(I,J1+1)=-1./BL(K) - CBL
      C(I,J1+2)=CBL
      C(I,J2+1)=-SBL
      C(I,J2+2)=SBL
C
      I=I1+1
      C(I,J1+1)=SBL
      C(I,J1+2)=-SBL
      C(I,J2)=1./BL(K)
      C(I,J2+1)=-1./BL(K) - CBL
      C(I,J2+2)=CBL
C
C     TERMS DUE TØ BENDING
C
 1500 I=I1
      N1K=N1(K)
      IF(N1(K).EQ.0) GØ TØ 1520
      DØ 1510 L=1,N1K
      J=J1K+L
 1510 C(I,J)=-Y1PR(K,L)
C
 1520 I=I1+2
      IF(ISL(K).EQ.1)  I=I1+1
      N2K=N2(K)
      IF(N2(K).EQ.0) GØ TØ 1540
      DØ 1530 L=1,N2K
      J=J2K+L
 1530 C(I,J)=-Y2PR(K,L)
C
 1540 I=I1+1
      III=I+2
      IF(ISL(K).EQ.0) GØ TØ 1550
      I=I1
      III=I+1
 1550 IF(N1(K+1).EQ.0) GØ TØ 1570
      N1K1=N1(K+1)
      DØ 1560 L=1,N1K1
      J=J1K+N1K+L
      C(I,J)=   CNU(K)*Y1PL(K+1,L)
 1560 C(III,J)=-SNU(K)*Y1PL(K+1,L)
C
 1570 IF(N2(K+1).EQ.0) GØ TØ 1590
      N2K1=N2(K+1)
      DØ 1580 L=1,N2K1
      J=J2K+N2K+L
      C(I,J)=   SNU(K)*Y2PL(K+1,L)
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```
 1580 C(III,J)= CNU(K)*Y2PL(K+1,L)
C
 1590 J1K=J1K+N1(K)
      J2K=J2K+N2(K)
      I1=I1+2
      J1=J1+1
      J2=J2+1
      IF(ISL(K).EQ.1) GØ TØ 1600
      I1=I1+2
      J1=J1+1
      J2=J2+1
 1600 CØNTINUE
C
C
      WRITE(6,1610)                                                     518
 1610 FØRMAT(55H1THE ANGULAR DISPLACEMENT CØEFFICIENT MATRIX, C FØLLØWS)
      CALL RECMAT(C,NTR,NTT,44,60)
C
C     CØNSTRUCTIØN ØF STIFFNESS MATRIX, S
C                                                                       519
      JSK=0
      DØ 1620  J=1,NTR
      DØ 1620  I=1,NTR
 1620 S(I,J)=0.0
      DØ 1660  I=1,NU1
      L=4
      IF(ISL(I).EQ.1) L=2
      DØ 1650 J=1,L
      DØ 1650 K=J,L
      JS=JSK+J
      KS=JSK+K
 1650 S(JS,KS)=SK(I,J,K)
      JSK=JSK+4
      IF(ISL(I).EQ.1) JSK=JSK-2
 1660 CØNTINUE
      DØ 1700 I=1,JS
      DØ 1700 J=1,I
 1700 S(I,J)=S(J,I)
C
      WRITE(6,1710)                                                     566
 1710 FØRMAT(32H1THE STIFFNESS MATRIX, S FØLLØWS)
      CALL RECMAT(S,JS,JS,44,44)
C
C     CØNSTRUCTIØN ØF THE PØTENTIAL ENERGY MATRIX, B
C
C     TERMS DUE TØ SPRINGS
C                                                                       567
      DØ 1800 J=1,NTB
      DØ 1800 I=1,NTR
      Q(I,J)=0.0
      DØ 1800 K=1,NTR
 1800 Q(I,J)=Q(I,J) + S(I,K)*C(K,J)
C
      DØ 1850 J=1,NTB
      DØ 1850 I=1,NTB
      DØ 1850 K=1,NTR
```

```
 1850 B(I,J)=B(I,J) + C(K,I)*Q(K,J)
C
C
C ØNSTRUCTIØN ØF A AND B IS CØMPLETE                                    C56D3200
C                                                                       C56D3210
 2000 WRITE(6,2250)                                                              602
 2250 FØRMAT(27H1THE K.E. MATRIX, A FØLLØWS)                            C56D3230
      CALL ØUTMAT(A,NTT)                                                C56D3240   603
      WRITE(6,2200)                                                     C56D3250   604
 2200 FØRMAT(27H1THE P.E. MATRIX, B FØLLØWS)                            C56D3260
      CALL ØUTMAT(B,NTT)                                                C56D3270
C                                                                       C56D3280   605
      WRITE(3) ((A(I,J),J=1,I),I=1,NTT), ((B(I,J),J=1,I),I=1,NTT)                   606
      REWIND 3
C                                                                       C56D3300   625
      GØ TØ 2500                                                        C56D3310
 2300 IND=1                                                             C56D3320
      WRITE(6,2400)                                                     C56D3330   628
 2400 FØRMAT(61HOMATRIX DIMENSIØN IS GREATER THAN 60, EXECUTIØN IS TERMIC56D3340
     *NATED)                                                            C56D3350
 2500 RETURN                                                            C56D3360
      END                                                               C56D3370
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C SOLUTION OF THE SYSTEM   -OMEGA**2*A*X + B*X = 0  BY CHOLESKI TRANS.   CLVT0010
C INPUT -- A AND B MATRICES                                              CLVT0020
C OUTPUT-- NORMALIZED SYSTEM EIGENVECTORS, SYSTEM FREQUENCIES IN CPS,    CLVT0030
C          AND GENERALIZED MASS FOR EACH MODE                            CLVT0040
      SUBROUTINE CLVT60(N,IND)                                           CLVT0050
      DOUBLE PRECISION AA, DD, DW, EV, CLM, DCC                          CLVT0060
      INTEGER OPTION                                                     CLVT0070
      COMMON/MISC/ NB,BL(12), SL(12), NP(12), N1(12), N2(12), PNU(12),   CLVT0080
     *             BM(12), BO(12), OPTION(12), TITLE(12), REF(12),
     *             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     *             NT2P, NT4P, NT31, NT6, NTT, NTP, TVM, XMC
      COMMON/TRANS/ DD(60,60), DW(60), AA(60,60), DUM1(120), CLM(60),    CLVT0110
     *              DUM2(540)                                            CLVT0120
      DIMENSION E(60,60), W(60), DMV(60)                                 CLVT0130
      DIMENSION A(60,60), B(60,60), EV(60,60), QU(60,60), QL(60,60)      CLVT0140
      EQUIVALENCE (DD,A), (A,QL), (A(3601),B), (AA(1,2),EV), (AA,E),
     *            (E(3601),QU), (W,DUM2), (DMV,DUM2(61))
      DIMENSION NAME(4)                                                  CLVT0170
      DATA(NAME(I),I=1,4)/4HUL1(, 4HUR1(, 4HUL2(, 4HUR2(/                CLVT0180
C                                                                        CLVT0190
      IND=0
C                                                                        CLVT0220
      READ (3) ((A(I,J),J=1,I),I=1,N), ((B(I,J),J=1,I),I=1,N)            CLVT0230
C                                                                        CLVT0240   2
      NN=N
      DO 100 I=1,N                                                       CLVT0250
      DO 100 J=1,I                                                       CLVT0260
  100 B(J,I)=B(I,J)
C                                                                        CLVT0290
C COMPUTE P INVERSE (A=PP*)                                              CLVT0300
C                                                                        CLVT0310
  105 DO 106  J=1,NN
      DO 106  I=J,NN
  106 AA(I,J)=A(I,J)
      CALL DPCHOL(AA,NN,IN,60)                                                45
      IF(IN.EQ.0)  GO TO 115                                             CLVT0330
      IND=1
      INN=IN+N-NN
      WRITE(6,110) INN,AA(IN,IN)                                              51
  110 FORMAT(59H0**ERROR**  MATRIX A IS NOT POSITIVE DEFINITE. DIAGONAL CLVT0350
     1N0.,I3,53H IS NEGATIVE WHICH INDICATES NEGATIVE KINETIC ENERGY./   CLVT0360
     212X,24HEXECUTION IS SUPPRESSED./,1H0,11X, 8HDIAG  = ,D15.8)
C
      RAT=AA(IN,IN)/A(IN,IN)
      IF(ABS(RAT).LT.1.E-6)  WRITE(6,111)  RAT,INN                            55
  111 FORMAT(1H0,11X,8HRATIO = ,E15.8,38H   THIS INDICATES THAT COORDINA
     *TE NO.  I3,14H  IS REDUNDANT//)
C
C IF IN IS NOT ZERO DELETE THE ROW AND COLUMN OF MATRIX A CORRESPONDING
C TO IN AND ATTEMPT THE CHOLESKY TRANSFORMATION AGAIN.  REPEAT THIS
C PROCESS UNTIL A SUCCESSFUL TRANSFORMATION IS MADE.  AT THIS POINT
C EXIT FROM THE ROUTINE WITH THE ERROR INDICATOR SET EQUAL TO ONE.
C
      LIM=NN-1
      DO 113  I=IN,LIM
```



```
      IP1=I+1
      DO 112  J=IP1,NN
  112 A(J,I)=A(J,I+1)
      DO 113  J=1,I
  113 A(I,J)=A(I+1,J)
      NN=NN-1
      GO TO 105
  115 IF(IND.EQ.1)  GO TO 5100
C                                                                        CLVT0390
C COMPUTE P(-1) B P*(-1) = F       (PP*=A)                               CLVT0400
C                                                                        CLVT0410
      DO 120 I=1,N
      DO 120 J=1,I                                                       CLVT0430
      EV(J,I)=0.0                                                        CLVT0440
      DO 120 K=1,I                                                       CLVT0450
  120 EV(J,I)=EV(J,I)+AA(I,K)*B(K,J)                                     CLVT0460
      DO 130 I=1,N                                                       CLVT0470
      DO 130 J=1,I                                                       CLVT0480
      DD(I,J)=0.0D0                                                      CLVT0490
      DO 125 K=1,J                                                       CLVT0500
  125 DD(I,J)=DD(I,J)+EV(K,I)*AA(J,K)                                    CLVT0510
  130 DD(J,I)=DD(I,J)                                                    CLVT0520
      WRITE(6,135)                                                       CLVT0530   116
  135 FORMAT(32H1P(-1) B P*(-1) = F       (PP*=A))                       CLVT0540
      CALL OUT2(DD,N)                                                    CLVT0550
C                                                                        CLVT0560   117
      WRITE (3) ((AA(I,J),J=1,I),I=1,N)                                  CLVT0570   118
      REWIND 3                                                                      129
      READ(3) DUM
C                                                                        CLVT0590
C COMPUTE EIGEN-SYSTEM OF F MATRIX. VECTORS IN DD                        CLVT0600
C                                                                        CLVT0610   130
      CALL SCLOCK(D1,TIME1,ESEC1,D2)                                             131
      CALL DEIGEN(N)                                                     CLVT0570   133
      CALL SCLOCK(D1,TIME2,ESEC2,D2)                                             135
      NSEC=ESEC2-ESEC1
      WRITE(6,137) TIME1,TIME2,NSEC                                              137
  137 FORMAT(///35H0TIME CHECK FOR EIGENVALUE SOLUTION/10H0TIME IN  A6/
     *      10H0TIME OUT A6/14H0ELAPSED TIME I3,8H SECONDS)
      WRITE(6,140)                                                       CLVT0630   138
  140 FORMAT(24H1EIGENVALUES OF F MATRIX//)                              CLVT0640
      WRITE(6,145)(I,DW(I),I=1,N)                                        CLVT0650   139
  145 FORMAT(4H DW(I2,4H) = D23.16)                                      CLVT0660
      IND=0                                                              CLVT0710
      DO 160 I=1,N                                                       CLVT0720
      IF(DW(I).GE.0.) GO TO 160                                          CLVT0730
      WRITE(6,155) I, DW(I)                                              CLVT0740   153
  155 FORMAT (12H ERROR-  DW(,I2,2H)=,1PE15.7,49H, ABSOLUTE VALUE OF DW CLVT0750
     1USED CALCULATIONS CONTINUE)                                        CLVT0760
      DW(I)=DABS(DW(I))                                                  CLVT0770
      IND=1                                                              CLVT0780
  160 W(I)=DSQRT(DW(I))/6.2831853                                        CLVT0790   159
      WRITE(6,150)                                                       CLVT0670   162
  150 FORMAT(25H1EIGENVECTORS OF F MATRIX)
      CALL OUT2(DD,N)                                                    CLVT0690   163
      CALL ORTHO(DD,N)                                                   CLVT0700
```

```
C
C COMPUTE SYSTEM EIGENVECTØRS - P*(-1) TIMES VECTØRS ØF F
C
C READ P*(-1) AND STØRE IN AA
      READ (3) ((AA(J,I),J=1,I),I=1,N)                                  165
      REWIND 3                                                          166
C
      DØ 170 I=1,N                                                      176
      DØ 165 J=1,N
      CLM(J)=0.D0
      DØ 165 K=I,N
  165 CLM(J)=CLM(J) + AA(I,K)*DD(K,J)
      DØ 170 J=1,N
  170 AA(I,J)=CLM(J)
C
C NØRMALIZE VECTØRS
C
      DØ 200 J=1,N
      DCC=ABS(AA(1,J))
      DØ 190  I=2,N
  190 DCC=AMAX1(DCC,ABS(AA(I,J)))
      DCC=1./DCC
      GMV(J)=DCC**2
      DØ 200 I=1,N
  200 E(I,J)=AA(I,J)*DCC
C
C REVERSE ØRDER ØF MØDES
C
      ND2=N/2
      DØ 205  J=1,ND2
      NJ=N-J+1
      DCC=W(J)
      W(J)=W(NJ)
      W(NJ)=DCC
      DCC=GMV(J)
      GMV(J)=GMV(NJ)
      GMV(NJ)=DCC
      DCC=DW(J)
      DW(J)=DW(NJ)
      DW(NJ)=DCC
      DØ 205  I=1,N
      CLM(I)=E(I,J)
      E(I,J)=E(I,NJ)
  205 E(I,NJ)=CLM(I)
C
      J6=NTT
      WRITE(6,3400)                                                     248
 3400 FØRMAT(36H1SYSTEM EIGENVALUES AND EIGENVECTØRS)
      NBLØK= J6/9
      IF((9*NBLØK).LT.J6)  NBLØK=NBLØK+1
      M1=1
      DØ 4300  MBLØK=1,NBLØK
      M2=M1+8
      IF(MBLØK.EQ.NBLØK)  M2=J6
      WRITE(6,3700)  (I,I=M1,M2)                                        258
 3700 FØRMAT(2(1H0/)/5HØMØDE,1X,9I12)
```



```
      WRITE(6,3800) (W(I),I=M1,M2)                                      262
 3800 FØRMAT(6HØFREQ.,6X,9F12.6)
      WRITE(6,3850) (GMV(I),I=M1,M2)                                    267
 3850 FØRMAT(10H GEN. MASS,2X,1P9E12.4)
C
      WRITE(6,1265)                                                     272
 1265 FØRMAT(1H )
      MN=0
      IR=1
      DØ 4020 L=1,2
      DØ 4010 I=1,NB
      DØ 4000 J=1,2
      JMN=J+MN
      WRITE(6,4030)NAME(JMN),I,(E(IR,K),K=M1,M2)                        281
 4000 IR=IR+1
      IF(ISL(I).EQ.1) IR=IR-1
 4010 WRITE(6,1265)                                                     293
 4030 FØRMAT(1H ,A4,I1,1H),5X,9F12.6)
      MN=2
 4020 IR=NT2P+1
C
      I3=NT4P+1
      I4=NTB1+1
      I5=NTB+1
      DØ 4110  I=1,NB
      K1=N1(I)
      IF(K1.EQ.0) GØ TØ 4110
      DØ 4100 K=1,K1
      WRITE(6,3910) I,K,(E(I3,J),J=M1,M2)                               339
 4100 I3=I3+1
      WRITE(6,1265)                                                     316
 4110 CØNTINUE
 3910 FØRMAT(7H BLMD1(,I1,1H,,I1,1H),1X,9F12.6)
      DØ 4210  I=1,NB
      L1=N2(I)
      IF(L1.EQ.0) GØ TØ 4210
      DØ 4200 L=1,L1
      WRITE(6,3920) I,L,(E(I4,J),J=M1,M2)                               327
 4200 I4=I4+1
      WRITE(6,1265)                                                     334
 4210 CØNTINUE
 3920 FØRMAT(7H BLMD2(,I1,1H,,I1,1H),1X,9F12.6)
      DØ 4250  I=1,NB
      IF(IBB(I).EQ.0)  GØ TØ 4250
      WRITE(6,3930) I,(E(I5,J),J=M1,M2)                                 342
      WRITE(6,3940) I,(E(I5+1,J),J=M1,M2)                               347
      WRITE(6,1265)                                                     352
      I5=I5+2
 4250 CØNTINUE
 3930 FØRMAT(7H BETA1(,I1,1H),3X,9F12.6)
 3940 FØRMAT(7H BETA2(,I1,1H),3X,9F12.6)
 4300 M1=M2+1
C
CALCULATIØN ØF CHECK MATRICES
C
      READ (3) ((A(I,J),J=1,I),I=1,N), ((B(I,J),J=1,I),I=1,N)           358
```

```
      REWIND 3                                                          CLVT1830    378
      WRITE(3) E,W,GMV                                                                379
      REWIND 3                                                                        383
      DØ 4350  I=1,N                                                    CLVT1840
      DØ 4350  J=1,I                                                    CLVT1850
      A(J,I)=A(I,J)                                                     CLVT1860
 4350 B(J,I)=B(I,J)                                                     CLVT1870
 4390 DØ 4500  J=1,J6                                                   CLVT1880
      DØ 4500  I=1,J6                                                   CLVT1890
      QU(I,J)=.0                                                        CLVT1900
      DØ 4400  K=1,J6                                                   CLVT1910
 4400 QU(I,J)=QU(I,J)+ A(I,K)*E(K,J)                                    CLVT1920
 4500 QU(I,J)=QU(I,J)*DW(J)                                             CLVT1930
      DØ 4550 J=1,J6                                                    CLVT1940
      DØ 4550 I=1,J6                                                    CLVT1950
      QL(I,J)=.0                                                        CLVT1960
      DØ 4550 K=1,J6                                                    CLVT1970
 4550 QL(I,J)=QL(I,J)+ B(I,K)*E(K,J)                                    CLVT1980
      DØ 4600  I=1,J6                                                   CLVT1990
      DØ 4600  J=1,J6                                                   CLVT2000
      E(I,J)=ABS(QU(I,J)-QL(I,J))                                       CLVT2010
 4600 B(I,J)=E(I,J)/AMIN1( ABS(QU(I,J)), ABS(QL(I,J) ) )                CLVT2020
      WRITE(6,4700)                                                     CLVT2030    452
 4700 FØRMAT(31H1ACCURACY CHECK MATRICES FØLLØW/13HØØMEGA**2*A*X)       CLVT2040
      CALL ØUTMAT(QU,J6)                                                CLVT2050    453
      WRITE(6,4800)                                                     CLVT2060    454
 4800 FØRMAT(12H1B*X VECTØRS)                                           CLVT2070
      CALL ØUTMAT(QL,J6)                                                CLVT2080    455
      WRITE(6,4900)                                                     CLVT2090    456
 4900 FØRMAT(27H1ØMEGA**2*A*X - B*X VECTØRS)                            CLVT2100
      CALL ØUTMAT(E,J6)                                                 CLVT2110    457
      WRITE(6,5000)                                                     CLVT2120    458
 5000 FØRMAT(24H1NØRMALIZED ERRØR MATRIX)                               CLVT2130
      CALL ØUTMAT(B,J6)                                                 CLVT2140    459
 5100 RETURN                                                            CLVT2170
      END                                                               CLVT2180
```



```
C     CHØLESKI REDUCTIØN AND TRIANGULAR INVERSIØN                       CHØT0010
C     INPUT IS LØWER TRIANGULAR PART ØF SYMMETRIC MATRIX B              CHØT0020
C     CØMPUTATIØN IS B*PP*                                              CHØT0030
C     ØUTPUT IS LØWER TRIANGULAR MATRIX P INVERSE                       CHØT0040
      SUBRØUTINE DPCHØL(A,IX,IS,IXX)
      DIMENSIØN A(IXX,IXX)
      DØUBLE PRECISIØN A,DSQRT
      IS=0                                                              CHØT0070
      DØ 40 ID=1,IX                                                     CHØT0080
      IDM1=ID-1                                                         CHØT0090
      IDP1=ID+1                                                         CHØT0100
      IF (IDM1) 10,20,10                                                CHØT0110
   10 DØ 15 I=ID,IX                                                     CHØT0120
      DØ 15 K=1,IDM1                                                    CHØT0130
   15 A(I,ID)=A(I,ID)-A(ID,K)*A(I,K)                                    CHØT0140
   20 IF (SNGL(A(ID,ID))) 25,25,30                                      CHØT0150
   25 IS=ID                                                             CHØT0160
      GØ TØ 75                                                          CHØT0170
   30 A(ID,ID)=DSQRT(A(ID,ID))                                                         28
      IF (IDP1-IX) 35,35,45                                             CHØT0190
   35 DØ 40 I=IDP1,IX                                                   CHØT0200
   40 A(I,ID)=A(I,ID)/A(ID,ID)                                          CHØT0210
   45 DØ 55 ID=2,IX                                                     CHØT0220
      IDM1=ID-1                                                         CHØT0230
      DØ 50 J=1,IDM1                                                    CHØT0240
   50 A(ID,J)=A(ID,J)/A(ID,ID)                                          CHØT0250
   55 A(ID,ID)=1.D0/A(ID,ID)
      A(1,1)=1.D0/A(1,1)
      IXM1=IX-1                                                         CHØT0280
      DØ 70 I=1,IXM1                                                    CHØT0290
      IP1=I+1                                                           CHØT0300
      IM1=I-1                                                           CHØT0310
      DØ 70 L=IP1,IX                                                    CHØT0320
      IF (IM1) 70,70,60                                                 CHØT0330
   60 DØ 65 J=1,IM1                                                     CHØT0340
   65 A(L,J)=A(L,J)-A(L,I)*A(I,J)                                       CHØT0350
   70 A(L,I)=-A(L,I)*A(I,I)                                             CHØT0360
   75 RETURN                                                            CHØT0370
      END                                                               CHØT0380
```

```
C     EIGENVALUES AND EIGENVECTØRS ØF A REAL SYMMETRIC MATRIX
C     GIVENS METHØD, DECK MØDIFIED BY IRA HANSØN AT LØCKHEED MISSILES
C     USE AS... CALL EIGEN(A,VALUE,N,M) WHERE A(N,N) AND VALUE(N) AND
C     A IS DESTRØYED.  IF M=0, IT WØNT CØMPUTE EIGENMATRIX
C
      SUBRØUTINE DEIGEN (N)
      DØUBLE PRECISIØN DSQRT
      DØUBLE PRECISIØN A,B,VALU,DIAG,SUPERD,Q,VALL,S,C,D,U,PRØDS
     1 ,T,SMALLD,ANØRM,ANØRM2,T1,T2,CØS,SIN,TAU,BETA,P
      CØMMØN/TRANS/ A(60,60), VALU(60), B(60,60), DIAG(60), SUPERD(60),
     *              Q(60), VALL(60), C(60), IND(60), DM(120)
C
      DIMENSIØN S(60), D(60), U(60)
      EQUIVALENCE (VALL,D),(Q,S),(IND,U),(II,MATCH),(TAU,BETA),(P,PRØDS)
     1,(T,SMALLD),(ANØRM,ANØRM2)
      ABSF(X)=DABS(X)
      SQRTF(X)=DSQRT(X)
C
      MDUM=1
      M=1
C
C NPBV MØDIFICATIØN
C
C     CALCULATE NØRM ØF MATRIX
C
    3 ANØRM2=0.0
    4 DØ 6 I=1,N
    5 DØ 6 J=1,N
    6 ANØRM2=ANØRM2+A(I,J)**2
    7 ANØRM=SQRTF(ANØRM2)
C
C     GENERATE IDENTITY MATRIX
C
    9 IF (M) 10, 45, 10
   10 DØ 40 I=1,N
   12 DØ 40 J=1,N
   20 IF(I-J) 35, 25, 35
   25 B(I,J)=1.0
   30 GØ TØ 40
   35 B(I,J)=0.0
   40 CØNTINUE
C
C     PERFØRM RØTATIØNS TØ REDUCE MATRIX TØ JACØBI FØRM
C
   45 IEXIT=1
   50 NN=N-2
   52 IF (NN) 890, 170, 55
   55 DØ 160 I=1,NN
   60 II=I+2
   65 DØ 160 J=II,N
   70 T1=A(I,I+1)
   75 T2=A(I,J)
   80 GØ TØ 900
   90 DØ 105 K=I,N
   95 T2=CØS*A(K,I+1)+SIN*A(K,J)
```



```
  100 A(K,J)=CØS*A(K,J)-SIN*A(K,I+1)
  105 A(K,I+1)=T2
  110 DØ 125 K=I,N
  115 T2=CØS*A(I+1,K)+SIN*A(J,K)
  120 A(J,K)=CØS*A(J,K)-SIN*A(I+1,K)
  125 A(I+1,K)=T2
  128 IF (M) 130, 160, 130
  130 DØ 150 K=1,N
  135 T2=CØS*B(K,I+1)+SIN*B(K,J)
  140 B(K,J)=CØS*B(K,J)-SIN*B(K,I+1)
  150 B(K,I+1)=T2
  160 CØNTINUE
C
C     MØVE JACØBI FØRM ELEMENTS AND INITIALIZE EIGENVALUE BØUNDS
C
  170 DØ 200 I=1,N
  180 DIAG(I)=A(I,I)
  190 VALU(I)=ANØRM
  200 VALL(I)=-ANØRM
  210 DØ 230 I=2,N
  220 SUPERD(I-1)=A(I-1,I)
  230 Q(I-1)=(SUPERD(I-1))**2
C
C     DETERMINE SIGNS ØF PRINCIPAL MINØRS
C
  235 TAU=0.0
  240 I=1
  260 MATCH=0
  270 T2=0.0
  275 T1=1.0
  277 DØ 450 J=1,N
  280 P=DIAG(J)-TAU
  290 IF(T2) 300, 330, 300
  300 IF(T1) 310, 370, 310
  310 T=P*T1-Q(J-1)*T2
  320 GØ TØ 410
  330 IF(T1) 335, 350, 350
  335 T1=-1.0
  340 T=-P
  345 GØ TØ 410
  350 T1=1.0
  355 T=P
  360 GØ TØ 410
  370 IF(Q(J-1)) 380, 350, 380
  380 IF(T2) 400, 390, 390
  390 T=-1.0
  395 GØ TØ 410
  400 T=1.0
C
C     CØUNT AGREEMENTS IN SIGN
C
  410 IF(T1) 425, 420, 420
  420 IF(T) 440, 430, 430
  425 IF(T) 430, 440, 440
  430 MATCH=MATCH+1
  440 T2=T1/ABSF(T1)
```

```
450 T1=T/ABSF(T1)
C
C     ESTABLISH TIGHTER BØUNDS ØN EIGENVALUES
C
460 DØ 530 K=1,N
465 IF (K-MATCH) 470, 470, 520
470 IF(TAU-VALL(K)) 530, 530, 480
480 VALL(K)=TAU
490 GØ TØ 530
520 IF(TAU-VALU(K)) 525, 530, 530
525 VALU(K)=TAU
530 CØNTINUE
540 IF(VALU(I)-VALL(I)-5.D-16) 570, 570, 550
550 IF(VALU(I)) 560, 580, 560
560 IF(ABSF(VALL(I)/VALU(I)-1.D)-5.D-16) 570, 570, 580
570 I=I+1
575 IF(I-N) 540, 540, 590
580 TAU=(VALL(I)+VALU(I))/2.D
585 GØ TØ 260
C
C     JACØBI EIGENVECTØRS BY RØTATIØNAL TRIANGULARIZATIØN
C
590 IF (M) 593, 890, 593
593 IEXIT=2
595 DØ 610 I=1,N
600 DØ 610 J=1,N
610 A(I,J)=0.D
615 DØ 850 I=1,N
620 IF (I-1) 625, 625, 621
621 IF (VALU(I-1)-VALU(I)-5.D-15) 730, 730, 622
622 IF (VALU(I-1)) 623, 625, 623
623 IF (ABSF(VALU(I)/VALU(I-1)-1.D)-5.D-15) 730, 730, 625
625 CØS=1.D
628 SIN=0.D
630 DØ 700 J=1,N
635 IF(J-1) 680, 680, 640
640 GØ TØ 900
650 S(J-1)=SIN
660 C(J-1)=CØS
670 D(J-1)=T1*CØS+T2*SIN
680 T1=(DIAG(J)-VALU(I))*CØS-BETA*SIN
690 T2=SUPERD(J)
700 BETA=SUPERD(J)*CØS
710 D(N)=T1
720 DØ 725 J=1,N
725 IND(J)=0
730 SMALLD=ANØRM
735 DØ 790 J=1,N
740 IF (IND(J)-1) 750, 780, 780
750 IF (ABSF(SMALLD)-ABSF(D(J)))780, 780, 760
760 SMALLD=D(J)
770 NN=J
780 CØNTINUE
790 IND(NN)=1
800 PRØDS=1.D
835 IF (NN-1) 810, 850, 810
```



```
810 DØ 840 K=2,NN
820 II=NN+1-K
830 A(II+1,I)=C(II)*PRØDS
840 PRØDS=-PRØDS*S(II)
850 A(1,I)=PRØDS
C
C     FØRM MATRIX PRØDUCT ØF RØTATIØN MATRIX WITH JACØBI VECTØR MATRIX
C
855 DØ 885 J=1,N
860 DØ 865 K=1,N
865 U(K)=A(K,J)
870 DØ 885 I=1,N
875 A(I,J)=0.D
880 DØ 885 K=1,N
885 A(I,J)=B(I,K)*U(K)+A(I,J)
890 RETURN
C
C     CALCULATE SINE AND CØSINE ØF ANGLE ØF RØTATIØN
C
900 IF (T2) 910, 940, 910
910 T=SQRTF(T1**2+T2**2)
920 CØS=T1/T
925 SIN=T2/T
930 GØ TØ (90,650), IEXIT
940 GØ TØ (160,910), IEXIT
    END
```

```
      SUBRØUTINE ØUT2(A,IMAX)                                           DMAT0010
      DIMENSIØN A(60,60)                                                DMAT0020
      DØUBLE PRECISIØN A                                                DMAT0030
      L= IMAX/10                                                        DMAT0040
      IF( (10*L).LT.IMAX)  L=L+1                                        DMAT0050
      J1=-9                                                             DMAT0060
      DØ 200   K=1,L                                                    DMAT0070
      J1=J1+10                                                          DMAT0080
      J2=J1+9                                                           DMAT0090
      IF(K.EQ.L) J2=IMAX                                                DMAT0100
      WRITE(6,100) (J,J=J1,J2)                                          DMAT0110    12
  100 FØRMAT(1H0//     9X,10(2X,7HCØLUMN(I2,1H)))                       DMAT0120
      WRITE(6,150)                                                      DMAT0130    16
  150 FØRMAT(1H )                                                       DMAT0140
      DØ 200  I=1,IMAX                                                  DMAT0150
  200 WRITE(6,300)  I,(A(I,J),J=J1,J2)                                  DMAT0160    19
  300 FØRMAT(5H KØW(I2,1H),1X,1P10E12.4)                                DMAT0170
      RETURN                                                            DMAT0180
      END                                                               DMAT0190
```



```
      SUBRØUTINE ØRTHØ (R,N)
      DØUBLE PRECISIØN R
      CØMMØN/TRANS/ DUMI 7320), S(60,60)
      DIMENSIØN R(60,60)
      DØ 10 I=1,N
      DØ 10 J=1,N
      S(I,J)=0.
      DØ 10 K=1,N
   10 S(I,J)=S(I,J)+R(K,I)*R(K,J)
      WRITE(6,20)                                                       18
   20 FØRMAT(13H1 ØRTHØ CHECK)
      CALL ØUTMAT(S,N)                                                  19
      RETURN
      END
```

```
      SUBRØUTINE GRAPH4(IND,NDATA)
      CØMMØN/MISC/ N, BL(12), SL(12), NP(12), NF(12), N2(12), PNU(12),  GRPH0020
     •             BM(12), BD(12), ØPTIØN(12), TITLE(12), REF(12),
     •             NMP(12), NIP(24), NEI(24), NGA(24), ISL(12), IBB(12),
     •             NT2P, NT4P, NT81, NTB, NTT, NTP, TVM, XMC
      CØMMØN/SPRING/ SSL1(12), SSR1(12), SSL2(12), SSR2(12),
     •               RSL1(12), RSR1(12), RSL2(12), RSR2(12),
     •               SK(12,4,4), SKB(12,2,2)
      CØMMØN/SHAPE1/ MPI(900), IPI(900), EII(900), GAI(900),
     •               MP (900), IP(1000), EI(1000), GA(1000),
     •               F(2600)
      DIMENSIØN A1(1000), A2(1000), AP(1000), AY(1000), B(1000)
      DIMENSIØN        E(60,60), W(60), GMV(60)
      DIMENSIØN X(300), Y(300)
      DIMENSIØN ZP(1000), YSP(1000), YYP(1000)
      EQUIVALENCE (E,MPI), (A1,MP), (A2,MP(501)), (AP,EI), (AY,GA),
     •            (ZP,IP), (YSP,GA)
      DIMENSIØN TPWØRD(2)
      DATA TPWØRD /6HIS NØT,6H  IS  /
      REAL MP,IP,MPI,IPI                                                GRPH0090
      INTEGER ØPTIØN
C                                                                       GRPH0100
      CALL SCLØCK(D1,TIME,ESEC,D2)                                              2
      WRITE(6,1) TIME                                                           3
    1 FØRMAT(14H1BEGIN GRAPH  ,A6)
      NCAM=9                                                            GRPH0110
      CALL CAMRAV(NCAM)                                                 GRPH0120   5
      REWIND 1                                                          GRPH0130   6
      READ (1) MPI,IPI,EII,GAI,MP,IP,EI,GA                                      7
      READ(1) F
C                                                                       GRPH0160
C     INITIALIZE VALUES                                                 GRPH0170
C                                                                       GRPH0180  16
      XL=0.0                                                            GRPH0190
      YB=0.0                                                            GRPH0200
      KMP=0                                                             GRPH0210
      KIP1=0                                                            GRPH0220
      KIP2=0                                                            GRPH0230
      NBINT=0                                                           GRPH0240
      KEI1=0                                                            GRPH0250
      KEI2=0                                                            GRPH0260
      KGA1=0
      KGA2=0
      DØ 5 I=1,N                                                        GRPH0270
      NBINT=NBINT+NP(I)-1                                               GRPH0280
      KIP2=KIP2+NIP(I)                                                  GRPH0290
      KGA2=KGA2+NGA(I)
    5 KEI2=KEI2+NEI(I)                                                  GRPH0300
      K1=0                                                              GRPH0310
      K2=0                                                              GRPH0320
C                                                                       GRPH0330
C                                                                       GRPH0340
      DØ 150 I=1,N                                                      GRPH0350
C                                                                       GRPH0360
      NPI=NP(I)                                                         GRPH0370
```



```
      NPI1=NPI-1                                                        GRPH0380
      NFI=NF(I)                                                         GRPH0390
      NPF=NPI*NFI                                                       GRPH0400
      NPI6=NPI/6                                                        GRPH0410
      IF(NPI-100) 10,10,20                                              GRPH0420
   10 NPP=1                                                             GRPH0430
      GØ TØ 50                                                          GRPH0440
   20 IF(NPI-200) 30,30,40                                              GRPH0450
   30 NPP=2                                                             GRPH0460
      GØ TØ 50                                                          GRPH0470
   40 NPP=3                                                             GRPH0480
   50 NPP1=NPP+1                                                        GRPH0490
      XINC=BL(I)/FLØAT(NPI1)                                            GRPH0500
      X(1)=0.0
      DØ 60 K=2,NPI                                                     GRPH0520
   60 X(K)=X(K-1)+XINC                                                  GRPH0530
      XR=BL(I)                                                          GRPH0540
C                                                                       GRPH0550
C     CØNSTRUCT LØWER GRID                                              GRPH0560
C                                                                        RPH0570
      CALL FRAMEV                                                       GRPH0580  69
      CALL DXDYV(1,XL,XR,DX,NL,IL,NX,10.,IERR)                                  71
      CALL XSCALV(XL,XR,140, 19)                                        GRPH0600  73
      CALL YSCALV(-1.0,1.0,70,613)                                      GRPH0610  75
      IF(IERR.NE.0)  CALL PRINTV(-27,27HERRØR ENCØUNTERED IN DXDYV1,0,0)GRPH0620  78
      DXX=DX*FLØAT(NL)
      CALL LINRV(1, 0 ,  70, 410, XL , XR , XR, 1, 0, 1, 8)             GRPH0640  80
      CALL LINRV(2, 0 , 140,1004,-1.0, 1.0,1.0, 1, 0, 1,10)             GRPH0650  82
      CALL LINRV(1, 60,  70,  80, XL , XR , DX, 0,IL,NX, 8)             GRPH0660  84
      CALL LINRV(1, 0 , 400, 410, XL , XR , DX, 0, 0,NX, 8)             GRPH0670  86
      CALL LINRV(1, 0 ,  70,  86, XL , XR ,DXX, 1, 0,NX, 8)             GRPH0680  88
      CALL LINRV(1, 0 , 394, 410, XL , XR ,DXX, 1, 0,NX, 8)             GRPH0690  90
      CALL LINRV(2,130, 140, 150,-1.0, 1.0,0.1, 0,10, 1,10)             GRPH0700  92
      CALL LINRV(2, 0 , 994,1004,-1.0, 1.0,0.1, 0, 0, 1,10)             GRPH0710  94
      CALL LINRV(2, 0 , 140, 156,-1.0, 1.0,0.5, 1, 0, 1,10)             GRPH0720  96
      CALL LINRV(2, 0 , 988,1004,-1.0, 1.0,0.5, 1, 0, 1,10)             GRPH0730
C                                                                       GRPH0740
C     CØNSTRUCT UPPER GRID                                              GRPH0750
C                                                                       GRPH0760  98
      CALL LINRV(1, 0 , 444, 454, XL , XR , DX, 0, 0, 1, 8)             GRPH0770  100
      CALL LINRV(1, 0 , 444, 460, XL , XR ,DXX, 1, 0, 1, 8)             GRPH0780  102
      CALL LINRV(1, 0 , 961, 971, XL , XR , DX, 0, 0, 1, 8)             GRPH0790  104
      CALL LINRV(1, 0 , 955, 971, XL , XR ,DXX, 1, 0, 1, 8)             GRPH0800  106
      CALL PRINTV(-14,14HEI     GA     MP,40,994)                               108
      CALL PRINTV(-18,18HEI - ( N-M**2 )X10,200,1015)                            110
      CALL PRINTV(-19,19HGA - ( NEWTØNS )X10,200, 997)                           112
      CALL PRINTV(-25,25HMP - (KILØGRAMS/METER)X10,200,979)                      114
      CALL PRINTV(- 9, 9HBEAM (  ),700,1015)                                     116
      CALL PRINTV(-18,18HLENGTH =        M ,700,997)                             118
      CALL PRINTV(-5,5HNP = ,700,979)                                            120
      CALL PRINTV(-33,33HLØCAL CØØRDINATE STATIØN (METERS),440,40)               122
      CALL APRNTV(C,-14,-15,15HSHAPE FUNCTIØNS,60,345)                  GRPH0890  124
      CALL APRNTV(C,-14,-20,20HNØRMALIZED AMPLITUDE,100,380)            GRPH0900  126
      CALL PRINTV(-17,17HVEHICLE REFERENCE,0,14)                                 128
      CALL PRINTV(-10,10HSTATIØN = ,0,0)                                         130
      CALL LABLV(REF(I),80,0,7,1,4)
```

```
C                                                                       GRPH0910   133
      NCHAR=1                                                           GRPH0920
      NXO=756                                                           GRPH0930
      NYO=1015                                                          GRPH0940
      IF(I.LT.10) GO TO 70                                              GRPH0950
      NCHAR=2                                                           GRPH0960
      NXO=748                                                           GRPH0970
   70 FLI=FLOAT(I)                                                      GRPH0980
      CALL LABLV(FLI,NXO,NYO,NCHAR,1,NCHAR)                             GRPH0990   143
      CALL LABLV(BL(I),764,997,7,1,4)                                   GRPH1000   146
      FLNPI=FLOAT(NPI)                                                  GRPH1010
      NCHP=3                                                            GRPH1020
      IF(FLNPI/10.0.LT.10.0)  NCHP=2                                    GRPH1030
      CALL LABLV(FLNPI,740,979,NCHP,1,NCHP)                             GRPH1040
C                                                                       GRPH1050
C     PLOT SHAPE FUNCTIONS                                              GRPH1060
C                                                                       GRPH1070   151
      IF(NFI.EQ.0) GO TO 120                                            GRPH1080
      DO 110 J=1,NFI                                                    GRPH1090
      YT=0.0                                                            GRPH1100
      DO 80 K=1,NPI                                                     GRPH1110
      KK=K+K2                                                           GRPH1120
      Y(K)=F(KK)                                                        GRPH1130
   80 YT=AMAX1(YT,ABS(Y(K)))
      DO 90 K=1,NPI                                                     GRPH1150
   90 Y(K)=Y(K)/YT                                                      GRPH1160
C
      GO TO (91,92,93,94),J
   91 CALL APLOTV(NPI,X,Y,1,1,1,42,IER)                                 174
      GO TO 105
   92 CALL LINEIL(NPI,X,Y,1)                                            177
      GO TO 105
   93 NSPACE=3
      GO TO 96
   94 NSPACE=9
   96 DO 100 K=1,NPI,NSPACE
      NXO=NXV(X(K))                                                     186
      NYO=NYV(Y(K))                                                     189
      NLIM=NSPACE-1
      IF((K+NLIM).GT.NPI) NLIM=NPI-K
      IF(NLIM.EQ.0) GO TO 100
      DO 98 L=1,NLIM
      LL=L+K
      NX1=NXV(X(LL))                                                    200
      NY1=NYV(Y(LL))                                                    203
      CALL LINEV(NXO,NYO,NX1,NY1)                                       206
      NXO=NX1
   98 NYO=NY1
  100 CONTINUE
  105 KJ=J*NPI6/2                                                       GRPH1290
      NXO=NXV(X(KJ))                                                    GRPH1300   215
      NYO=NYV(Y(KJ))                                                    GRPH1310   218
      CALL LABLV(FLOAT(J),NXO,NYO,1,2,1)                                GRPH1320   221
  110 K2=K2+NPI                                                         GRPH1330
      GO TO 123
  120 CALL PRINTV(-5,5HRIGID,550,246)                                   GRPH1350
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C                                                                       GRPH1360   227
  123 X(1)=XINC/2.                                                      GRPH1370
      DO 125  K=2,NPI1                                                  GRPH1380
  125 X(K)=X(K-1)+XINC                                                  GRPH1390
C                                                                       GRPH1400
C     PLOT MASS DISTRIBUTION                                            GRPH1410
C                                                                       GRPH1420
  130 CALL LABMAX(MPI(KMP+1),MPI(KMP+1),NMP(I),NMP(I),1,YT,N10,NCHAR,NC,GRPH1430
     *            ISIGN)                                                GRPH1440   238
      FN10=FLOAT(N10)                                                   GRPH1450
      LSP=400
      LST=130                                                           GRPH1470
      IF(NC.EQ.2)  LST=122                                              GRPH1480
      IF(ISIGN.EQ.0) GO TO 135                                          GRPH1490
      FN10=-FN10                                                        GRPH1500
      LSP=LSP+8                                                         GRPH1510
  135 CALL LABLV(FN10,LSP,987,NCHAR,1,NCHAR)                            GRPH1520   250
      CALL YSCALV(YB,YT,444,52)                                         GRPH1530   252
      CALL DXDYV(2,YB,YT,DY,M,J,NY,15.,IERR)                            GRPH1540   254
      IF(IERR.NE.0)  CALL PRINTV(-19,19HERROR ** (MP) SCALE,200,470)    GRPH1550   257
      DDY=DY*FLOAT(M)                                                   GRPH1560
      CALL LINRV(1, 0, 444, 971, XL , XR , XR, 0, 0, 1, 8)              GRPH1570   259
      CALL LINEV(1004,444,1004,971)                                     GRPH1580   261
      CALL LINRV(2, 0 , 140,1004, YB , YT , YT, 0, 0, 1,10)             GRPH1590   263
      CALL LINRV(2,LST, 140, 150, YB , YT , DY, 0, J,NC,10)             GRPH1600   265
      CALL LINRV(2, 0 , 140, 156, YB , YT ,DDY, 1, 0, 1,10)             GRPH1610   267
      YT=YT*10.**FN10                                                   GRPH1620   269
      CALL YSCALV(YB,YT,444,52)                                         GRPH1630   270
      CALL APLOTV(NPI1,X,MP(K1+1),1,1,1,42,IER)                         GRPH1640   272
      IF(NDATA.EQ.1)  CALL LINEIL(NPI1,X,MP(K1+1),1)                    276
      WRITE(6,137)  IER                                                 278
  137 FORMAT(5HOIER=,I2)
      IF(IER.EQ.0)  GO TO 136
      CALL LABLV(FLOAT(IER),830,40,3,1,3)                               282
      CALL PRINTV(-19,19H MP-POINTS OFFSCALE,862,40)                    284
  136 NXO=NXV(X(NPI6))-4                                                GRPH1650   286
      IYO=K1+NPI6                                                       GRPH1660
      NYO=NYV(MP(IYO))+6                                                GRPH1670   290
      CALL PRINTV(-2,2HMP,NXO,NYO)                                      GRPH1680   293
      CALL PLOT2L(MPI(KMP+1),NMP(I))                                    GRPH1690   296
      KMP=KMP+NMP(I)                                                    GRPH1700
      NK1=NBINT+K1                                                      GRPH1710
C                                                                       GRPH1720
C     PLOT SHEAR STIFFNESS (GA) DISTRIBUTION
C                                                                       GRPH1740
      CALL LABMAX(GAI(KGA1+1),GAI(KGA2+1),NGA(I),NGA(IPN),1,YT,N10,NCHAR
     *            ,NC,ISIGN)                                            GRPH1760   333
      FN10=FLOAT(N10)                                                   GRPH1770
      LSP=352                                                           GRPH1780
      LST=82                                                            GRPH1790
      IF(NC.EQ.2)  LST=74                                               GRPH1800
      IF(ISIGN.EQ.0) GO TO 140                                          GRPH1810
      FN10=-FN10                                                        GRPH1820
      LSP=LSP+8                                                         GRPH1830
  140 CALL LABLV(FN10,LSP,1005,NCHAR,1,NCHAR)                           GRPH1840   316
      CALL YSCALV(YB,YT,444,52)                                         GRPH1850   318
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      CALL DXDYV(2,YB,YT,DY,M,J,NY,15.,IERR)                            GRPH1860   320
      IF(IERR.NE.0)  CALL PRINTV(-19,19HERROR ** (GA) SCALE,200,486)    GRPH1870   323
      DDY=DY*FLOAT(M)                                                   GRPH1880
      CALL LINEV(92,444,92,971)                                         GRPH1890   325
      CALL LINEV(92,444,92,971)                                         GRPH1900   327
      CALL LINRV(2,LST,  92, 102, YB , YT , DY, 0, J,NC,10)             GRPH1910   329
      CALL LINRV(2, 0 ,  92, 108, YB , YT ,DDY, 1, 0, 1,10)             GRPH1920   331
      YT=YT+10.**FN10                                                   GRPH1930   333
      CALL YSCALV(YB,YT,444,52)                                         GRPH1940   334
      CALL APLOTV(NPI1,X,GA(K1+1),1,1,1,42,IER)                         GRPH2330   336
      IF(NDATA.EQ.1)  CALL LINE1L(NPI1,X,GA(K1+1),1)                                340
      IF(IER.EQ.0)  GO TO 141
      CALL LABLV(FLOAT(IER),830,30,3,1,3)                                          346
      CALL PRINTV(-19,19HGA1-POINTS OFFSCALE,862,30)                               348
  141 IYO=K1+2*NPI6                                                     GRPH1960
      NXO=NXV(X(2*NPI6))-8                                              GRPH1970   351
      NYO=NYV(GA(IYO))+6                                                           354
      CALL PRINTV(-3,3HGA1,NXO,NYO)                                                357
      CALL PLOT2L(GA(KGA1+1),NGA(I))                                               360
      IF(OPTION(4).EQ.0)  GO TO 143
      CALL APLOTV(NPI1,X,GA(NK1+1),1,1,1,42,IER)                        GRPH2380   366
      IF(IER.EQ.0)  GO TO 142
      CALL LABLV(FLOAT(IER),830,20,3,1,3)                                          372
      CALL PRINTV(-19,19HGA2-POINTS OFFSCALE,862,20)                               374
  142 IYO=NK1+3*NPI6                                                    GRPH2010
      NXO=NXV(X(3*NPI6))-8                                              GRPH2020   377
      NYO=NYV(GA(IYO))+6                                                           380
      CALL PRINTV(-3,3HGA2,NXO,NYO)                                                383
      IPN=I+N                                                           GRPH2060
      CALL PLOT2L(GA(KGA2+1),NGA(IPN))                                             386
  143 KGA1=KGA1+NGA(I)
      KGA2=KGA2+NGA(IPN)
C                                                                       GRPH2100
C     PLOT STIFFNESS (EI) DISTRIBUTION                                  GRPH2110
C                                                                       GRPH2120
      CALL LABMAX(EI(KEI1+1),EI(KEI2+1),NEI(I),NEI(IPN),1,YT,N10,NCHARGRPH2130
     *            ,NC,ISIGN)                                            GRPH2140   395
      FN10=FLOAT(N10)                                                   GRPH2150
      LSP=344                                                           GRPH2160
      LST=34                                                            GRPH2170
      IF(NC.EQ.2)  LST=26                                               GRPH2180
      IF(ISIGN.EQ.0) GO TO 145                                          GRPH2190
      FN10=-FN10                                                        GRPH2200
      LSP=LSP+8                                                         GRPH2210
  145 CALL LABLV(FN10,LSP,1023,NCHAR,1,NCHAR)                           GRPH2220   408
      CALL YSCALV(YB,YT,444,52)                                         GRPH2230   410
      CALL DXDYV(2,YB,YT,DY,M,J,NY,15.,IERR)                            GRPH2240   412
      IF(IERR.NE.0)  CALL PRINTV(-19,19HERROR ** (EI) SCALE,200,502)    GRPH2250   415
      DDY=DY*FLOAT(M)                                                   GRPH2260
      CALL LINEV(44,444,44,971)                                         GRPH2270   417
      CALL LINEV(44,444,44,971)                                         GRPH2280   419
      CALL LINRV(2,LST, 44 , 54 , YB , YT , DY, 0, J,NC,10)             GRPH2290   421
      CALL LINRV(2,  0, 44 , 60 , YB , YT ,DDY, 1, 0, 1,10)             GRPH2300   423
      YT=YT+10.**FN10                                                   GRPH2310   425
      CALL YSCALV(YB,YT,444,52)                                         GRPH2320   426
      CALL APLOTV(NPI1,X,EI(K1+1),1,1,1,42,IER)                         GRPH2330   428
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      IF(NDATA.EQ.1)  CALL LINE1L(NPI1,X,EI(K1+1),1)                               432
      IF(IER.EQ.0)  GO TO 146
      CALL LABLV(FLOAT(IER),830,10,3,1,3)                                          438
      CALL PRINTV(-19,19HEI1-POINTS OFFSCALE,862,10)                               440
  146 IYO=K1+4*NPI6                                                     GRPH2340
      NXO=NXV(X(4*NPI6))-8                                              GRPH2350   443
      NYO=NYV(EI(IYO))+6                                                GRPH2360   446
      CALL PRINTV(-3,3HEI1,NXO,NYO)                                     GRPH2370   449
      CALL PLOT2L(EI(KEI1+1),NEI(I))                                    GRPH2430   452
      IF(OPTION(4).EQ.0)  GO TO 148
      CALL APLOTV(NPI1,X,EI(NK1+1),1,1,1,42,IER)                        GRPH2380   458
      IF(IER.EQ.0)  GO TO 147
      CALL LABLV(FLOAT(IER),830, 0,3,1,3)                                          464
      CALL PRINTV(-19,19HEI2-POINTS OFFSCALE,862, 0)                               466
  147 IYO=NK1+5*NPI6                                                    GRPH2390
      NXO=NXV(X(5*NPI6))-8                                              GRPH2400   469
      NYO=NYV(EI(IYO))+6                                                GRPH2410   472
      CALL PRINTV(-3,3HEI2,NXO,NYO)                                     GRPH2420   475
      CALL PLOT2L(EI(KEI2+1),NEI(IPN))                                  GRPH2440   477
  148 KEI1=KEI1+NEI(I)
      KEI2=KEI2+NEI(IPN)                                                GRPH2460
  150 K1=K1+NPI1                                                        GRPH2470
C                                                                       GRPH2480
      IF(IND.EQ.1) GO TO 810
C
C PLOT MODAL DISPLACEMENT FUNCTIONS
C
      READ(3) E,W,GMV                                                              490
      WRITE(3) EI                                                                  494
      REWIND 3
C                                                                                  496
      DO 190 J=1,NTT,2
      IF(ABS(E(NT2P,J)).GT.1.E-35)  GO TO 190
      DO 180 I=1,NTT
      TEMP=E(I,J)
      E(I,J)=E(I,J+1)
  180 E(I,J+1)=TEMP
  190 CONTINUE
C
      TL=0.0
      DO 200 I=1,N
  200 TL=TL+BL(I)+SL(I)
      YB=REF(1)
      YT=YB+TL
      DC=20.
C
      CALL DXDYV(2,YB,YT,DY,MG,JG,NYC,DC,IER)                                      523
      CALL YSCALV(YB,YT,60,50)
C                                                                                  525
      NMODES=OPTION(6)
      MKOUNT=0
      INDOUT=0
      NMOUT=IABS(OPTION(7))
      IF(NMOUT.EQ.0)  REWIND 1                                                     531
      MTAPE=0
      IF(OPTION(7).GT.0)  MTAPE=1
```

```
      BLNGTH=TL
      IF(NMØUT.GT.0)  WRITE(6,203) TPWØRD(MTAPE+1),BLNGTH,NMØUT,REF(1),
     *                                XMC,TVM
  203 FØRMAT(21H1SPECIAL ØUTPUT TAPE ,A6,10H GENERATED//9H BLNGTH =E15.8
     */9H NMØUT  =I5/9H REF    =E15.8/9H XMC    =E15.8/9H TVM    =E15.8)
      IF(MTAPE.EQ.0)  GØ TØ 205
      REWIND 10
      WRITE(10)BLNGTH,NMØUT,REF(1),XMC,TVM
C
  205 DØ 800 M=1,NMØDES
      IF(INDØUT.EQ.1)  READ(1) F
      INDØUT=0
      J1=0
      K1=0
      I1=1
      I2=NT2P+1
      I3=NT4P+1
      I4=NT81+1
      AA=0.0
C
      DØ 300 I=1,N
      NPI=NP(I)
      NFI=NF(I)
      XINC=BL(I)/FLØAT(NPI-1)
      CPNU=CØS(PNU(I))
      SPNU=SIN(PNU(I))
C
      DØ 210 K=1,NPI
      KK=K1+K
      X=XINC*FLØAT(K-1)
      B(KK)=REF(I)+X
      A1(K)=E(I1,M)+(E(I1+1,M)-E(I1,M))*X/BL(I)
  210 A2(K)=E(I2,M)+(E(I2+1,M)-E(I2,M))*X/BL(I)
C
      IF(NFI.EQ.0) GØ TØ 240
      DØ 230 J=1,NFI
      DØ 220 K=1,NPI
      JJ=J1+K
      A1(K)=A1(K) + F(JJ)*E(I3,M)
      A2(K)=A2(K) + F(JJ)*E(I4,M)
  220 CØNTINUE
C
      J1=J1+NPI
      I3=I3+1
  230 I4=I4+1
C
  240 DØ 250 K=1,NPI
      KK=K1+K
      AP(KK)=A1(K)*CPNU      - A2(K)*SPNU
      AY(KK)=A1(K)*SPNU      + A2(K)*CPNU
  250 AA=AMAX1(ABS(A1(K)),ABS(A2(K)),AA)
      I1=I1+1
      I2=I2+1
      IF(ISL(I).EQ.1) GØ TØ 300
      K1=K1+1
      I1=I1+1
```



```
      I2=I2+1
  300 K1=K1+NPI-1
C
      K1=K1+1
      DØ 310 K=1,K1
      AP(K)=AP(K)/AA
  310 AY(K)=AY(K)/AA
C
C
      CALL FRAMEV
      CALL XSCALV(-1.0,1.0,30,523)
      CALL LINRV(1,50,60,973,-1.0,1.0,0.1,5,10,1,8)
      CALL LINRV(2,510,30,500,YB,YT,DY,MG,JG,NYC,10)
      CALL APLØTV(K1,AY,B,1,1,1,42,IER)
      I1=1
      DØ 330 I=1,N
      I1=I1+NP(I)-1
      CALL PØINTV(AY(I1),B(I1),-1)
      IF(ISL(I).EQ.1)  GØ TØ 330
      I1=I1+1
      CALL PØINTV(AY(I1),B(I1),-1)
  330 CØNTINUE
C
      CALL XSCALV(-1.0,1.0,545,8)
      CALL LINRV(1,50,60,973,-1.0,1.0,0.1,5,10,1,8)
      CALL LINRV(2,0,545,1015,YB,YT,DY,MG,0,NYC,10)
      CALL APLØTV(K1,AP,B,1,1,1,42,IER)
      I1=1
      DØ 350 I=1,N
      I1=I1+NP(I)-1
      CALL PØINTV(AP(I1),B(I1),-1)
      IF(ISL(I).EQ.1)  GØ TØ 350
      I1=I1+1
      CALL PØINTV(AP(I1),B(I1),-1)
  350 CØNTINUE
C
      CALL PRINTV(-29,29HNØRMALIZED RELATIVE AMPLITUDE,406,30)
      CALL APRNTV(0,-14,-18,18HCØØRDINATE STATIØN,10,643)
      CALL PRINTV(-3,3HYAW,253,983)
      CALL PRINTV(-5,5HPITCH,760,983)
      CALL PRINTV(-8,8HMØDE(  ),6,15)
      BMØDE=M
      CALL LABLV(BMØDE,46,15,2,1,2)
      CALL PRINTV(-12,12HFREQUENCY = ,6,0)
      FREQ=W(M)
      CALL LABLV(FREQ,100,0,-4,1,1)
C
      IF(M.GT.2*NMØUT)  GØ TØ 800
      IF((M/2)*2.EQ.M) GØ TØ 800
      IF(RSL1.NE.0.)  GØ TØ 360
      IF(M.LE.4) GØ TØ 800
  360 MKØUNT=MKØUNT+1
      INDØUT=1
C
C CØNSTRUCT THE PSIPRM ARRAY
C
```

```
      READ(1) F
C                                                                       728
      J1=0
      K1=0
      I3=NT4P+1
C
      DØ 700 I=1,N
      NPI=NP(I)
      NFI=NF(I)
      DØ 610 K=1,NPI
  610 A1(K)=0.
      IF(NFI.EQ.0) GØ TØ 640
C
      DØ 630 J=1,NFI
      DØ 620 K=1,NPI
      JJ=J1+K
  620 A1(K)=A1(K) + F(JJ)*E(I3,M)
      J1=J1+NPI
  630 I3=I3+1
C
  640 DØ 650 K=1,NPI
      KK=K1+K
  650 YYP(KK)=A1(K)/AA
C
      IF(ISL(I).EQ.0) K1=K1+1
  700 K1=K1+NPI-1
C
C CØNSTRUCT THE CRØSS SECTIØN RØTATIØN (PSI) ARRAY
C
      READ(1) F
C                                                                       772
      J1=0
      K1=0
      I1=1
      I3=NT4P+1
C
      DØ 500 I=1,N
      NPI=NP(I)
      NFI=NF(I)
      DØ 410 K=1,NPI
  410 A1(K)=(E(I1+1,M)-E(I1,M))/B_(I)
C
      IF(NFI.EQ.0) GØ TØ 440
      DØ 430 J=1,NFI
      DØ 420 K=1,NPI
      JJ=J1+K
  420 A1(K)=A1(K) + F(JJ)*E(I3,M)
      J1=J1+NPI
  430 I3=I3+1
C
  440 DØ 450 K=1,NPI
      KK=K1+K
  450 ZP(KK)=A1(K)/AA
C
      I1=I1+1
      I2=I2+1
```



```
      IF(ISL(I).EQ.1) GØ TØ 500
      I1=I1+1
      I2=I2+1
      K1=K1+1
  500 K1=K1+NPI-1
C
C CØNSTRUCT THE SHEAR ANGLE ARRAY
C
      READ(1) F                                                         825
      REWIND 1                                                          827
      READ(1) DUMREC
C                                                                       828
      J1=0
      K1=0
      I3=NT4P+1
C
      DØ 600 I=1,N
      NPI=NP(I)
      NFI=NF(I)
      DØ 510 K=1,NPI
  510 A1(K)=0.
      IF(NFI.EQ.0) GØ TØ 540
C
      DØ 530 J=1,NFI
      DØ 520 K=1,NPI
      JJ=J1+K
  520 A1(K)=A1(K) + F(JJ)*E(I3,M)
      J1=J1+NPI
  530 I3=I3+1
C
  540 DØ 550 K=1,NPI
      KK=K1+K
  550 YSP(KK)=A1(K)/AA
C
      IF(ISL(I).EQ.0) K1=K1+1
  600 K1=K1+NPI-1
      K1=K1+1
C
      WRITE(6,710) M,(I,B(I),AP(I),ZP(I),YSP(I),YYP(I),I=1,K1)          872
  710 FØRMAT(6H1MØDE I2,7H ******//1H0,36X,10HCRØSS SECT,3X,5HSHEAR,8X,
     *3HPSI/6H  STA.,3X,8HLØCATIØN,7X,10HDEFLECTIØN,3X,8HRØTATIØN,5X,5HA
     *NGLE,8X,5HPRIME//(I5,1PE14.4,2X,4E13.4))
C
      IF(MTAPE.EQ.0)  GØ TØ 800
      WFREQ=W(M)*6.2831853
      GMASS=GMV(M)
      WRITE(10) MKØUNT,WFREQ,GMASS,K1                                   886
      WRITE(10) (AP(I),I=1,K1)                                          887
      WRITE(10) (YSP(I),I=1,K1)                                         892
      WRITE(10) (YYP(I),I=1,K1)                                         897
      WRITE(10) (ZP(I),I=1,K1)                                          902
  800 CØNTINUE
  810 CALL CLEAN                                                        911
      IF(MTAPE.EQ.0)  GØ TØ 820
      END FILE 10                                                       915
      REWIND 10                                                         916
  820 RETURN
      END
```

```
      SUBROUTINE LABMAX(A,B,NXA,NXB,K,AMAX,N,NCHAR,NC,ISIGN)
      DIMENSION A(NXA),B(NXB)
      ISIGN=0
      NCHAR=1
      NC=1
      AMAX=A(2)
      IF(NXA.LT.4)  GO TO 15
      DO 10 I=4,NXA,2
   10 AMAX=AMAX1(AMAX,A(I))
   15 IF(K.EQ.1) GO TO 30
      BMAX=B(2)
      DO 20 I=4,NXB,2
   20 BMAX=AMAX1(BMAX,B(I))
      AMAX=AMAX1(AMAX,BMAX)
   30 IF(AMAX.LT.1.E-35)  GO TO 120
      IF(AMAX.LE.2.) GO TO 60
      N=0
      A1=10.
   40 IF(AMAX.LE.A1) GO TO 50
      N=N+1
      A1=A1*10.
      GO TO 40
   50 A1=A1/10.
      GO TO 80
   60 ISIGN=1
      N=1
      A1=.1
   70 IF(AMAX.GT.A1) GO TO 80
      N=N+1
      A1=A1/10.
      GO TO 70
   80 AMAX=AMAX/A1
      IF(AMAX.GE.10.) GO TO 90
      IF(AMAX.EQ.2.0) GO TO 100
      AMAX=FLOAT(IFIX(AMAX)+1)
      IF(AMAX.EQ.10.) NC=2
      IF(AMAX.EQ.2.0) GO TO 100
      GO TO 130
   90 NC=2
      IF(AMAX.GT.10.) AMAX=20.
      GO TO 130
  100 NC=2
      AMAX=20.
      IF(ISIGN.EQ.0) GO TO 110
      N=N+1
      GO TO 130
  110 N=N-1
      GO TO 130
  120 AMAX=10.0
      N=0
      NC=2
      GO TO 140
  130 IF(N.GE.10) NCHAR=2
  140 RETURN
      END
```



```
      SUBROUTINE LINE1L(NP,X,Y,J)
      DIMENSION X(NP),Y(NP)
      NXO=NXV(X(1))                                          2
      NYO=NYV(Y(1))                                          4
      DO 10 I=2,NP,J
      NX1=NXV(X(I))                                          10
      NY1=NYV(Y(I))                                          13
      CALL LINEV(NXO,NYO,NX1,NY1)                            15
      NXO=NX1
   10 NYO=NY1
      RETURN
      END
```

```
      SUBROUTINE PLOT1L(NP,X,Y,J,ISYM)                                  GRPH3210
      DIMENSION X(NP),Y(NP)                                             GRPH3220
      NXO=NXV(X(1))                                                     GRPH3230    2
      NYO=NYV(Y(1))                                                     GRPH3240    4
      CALL PLOTV(NXO,NYO,ISYM)                                          GRPH3250    6
      DO 10 I=2,NP,J                                                    GRPH3260
      NX1=NXV(X(I))                                                     GRPH3270   12
      NY1=NYV(Y(I))                                                     GRPH3280   15
      CALL LINEV(NXO,NYO,NX1,NY1)                                       GRPH3290   17
      CALL PLOTV(NX1,NY1,ISYM)                                          GRPH3300   19
      NXO=NX1                                                           GRPH3310
   10 NYO=NY1                                                           GRPH3320
      RETURN                                                            GRPH3330
      END                                                               GRPH3340
```



```
      SUBROUTINE PLOT2L(A,N)                                            GRPH3080
      DIMENSION A(N)                                                    GRPH3090
      NXO=NXV(A(1))                                                     GRPH3100    2
      NYO=NYV(A(2))                                                     GRPH3110    4
      IF(N.LT.3)  GO TO 20
      DO 10 I=3,N,2                                                     GRPH3120
      NX1=NXV(A(I))                                                     GRPH3130   13
      NY1=NYV(A(I+1))                                                   GRPH3140   16
      CALL LINEV(NXO,NYO,NX1,NY1)                                       GRPH3150   18
      NXO=NX1                                                           GRPH3160
   10 NYO=NY1                                                           GRPH3170
   20 RETURN
      END                                                               GRPH3190
```

INPUT DATA FOLLOW * * * SA-501 STODOLA COMPARISON WITH ROTARY INERTIA MODIFIED/SHAPES/ 11/3

N = 4

OPTIONS 1 -0 1 -0 -0 14 -4 -0 -0 -0 -0 -0

BEAM	BL	SL	BM	BC	PNU	N1	N2	NP	NMP	NIP	NEI	NGA
1	0.42750000E 02	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	3	3	172	344	344	344	344
2	0.43000000E 02	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	3	3	173	346	346	346	346
3	0.12500000E 02	0.25000000E 00	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	3	3	151	102	102	102	102
4	0.12000000E 02	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	-0.00000000E-38	3	3	145	98	98	98	98

BEAM (1)

NP(1) = 172

STATION	MP	IP	EI	GA
1	0.28229850E 03	0.10156120E 04	0.57380000E 12	0.22242500E 10
2	0.44970250E 03	0.16169150E 04	0.57380000E 12	0.22242500E 10
3	0.54564250E 03	0.19598350E 04	0.57380000E 12	0.22242500E 10
4	0.60040600E 03	0.21546050E 04	0.57380000E 12	0.22242500E 10
5	0.62724450E 03	0.22493100E 04	0.57380000E 12	0.22242500E 10
6	0.65981850E 03	0.23651700E 04	0.57380000E 12	0.22242500E 10
7	0.70554250E 03	0.25289000E 04	0.57380000E 12	0.22242500E 10
8	0.75064000E 03	0.27257650E 04	0.57380000E 12	0.22242500E 10
9	0.82478200E 03	0.29542400E 04	0.57380000E 12	0.22242500E 10
10	0.88473600E 03	0.31676150E 04	0.57380000E 12	0.22242500E 10
11	0.93629449E 03	0.33511200E 04	0.57380000E 12	0.22242500E 10
12	0.10305850E 04	0.35960500E 04	0.57380000E 12	0.22242500E 10
13	0.11873450E 04	0.39373450E 04	0.57380000E 12	0.22242500E 10
14	0.13133250E 04	0.43323000E 04	0.57380000E 12	0.22242500E 10
15	0.13727300E 04	0.47633500E 04	0.57380000E 12	0.22242500E 10
16	0.14951450E 04	0.57066650E 04	0.57380000E 12	0.22242500E 10
17	0.17326100E 04	0.73523450E 04	0.57380000E 12	0.22242500E 10
18	0.20668000E 04	0.96340349E 04	0.57380000E 12	0.22242500E 10
19	0.24901200E 04	0.12510050E 05	0.57380000E 12	0.22242500E 10
20	0.32722850E 04	0.16371350E 05	0.57380000E 12	0.22242500E 10
21	0.45007150E 04	0.21313600E 05	0.57380000E 12	0.22242500E 10
22	0.12050315E 05	0.92443250E 05	0.57380000E 12	0.22242500E 10
23	0.25499700E 05	0.23004850E 06	0.57380000E 12	0.22242500E 10
24	0.26665400E 05	0.25261800E 06	0.63863299E 12	0.28804037E 10
25	0.16720150E 05	0.16903100E 06	0.69638849E 12	0.35365575E 10
26	0.12744600E 05	0.15056100E 06	0.68223400E 12	0.35365575E 10
27	0.13781400E 05	0.18429300E 06	0.66807950E 12	0.35365575E 10
28	0.13826250E 05	0.18059550E 06	0.63878650E 12	0.33141325E 10
29	0.12964400E 05	0.14421150E 06	0.59303950E 12	0.30917075E 10
30	0.12016600E 05	0.12353400E 06	0.54597600E 12	0.30917075E 10
31	0.11003600E 05	0.11742250E 06	0.50958250E 12	0.30917075E 10
32	0.10222865E 05	0.11355400E 06	0.48542550E 12	0.30917075E 10
33	0.96606200E 04	0.11179550E 06	0.46283500E 12	0.28915250E 10
34	0.93387550E 04	0.10320085E 04	0.44024450E 12	0.26913425E 10
35	0.92884850E 04	0.86881350E 05	0.41765400E 12	0.26913425E 10
36	0.85900800E 04	0.72945600E 05	0.39506350E 12	0.26913425E 10
37	0.71483100E 04	0.62591100E 05	0.37247250E 12	0.26913425E 10
38	0.60167000E 04	0.54073450E 05	0.34988200E 12	0.25356450E 10
39	0.52862300E 04	0.47194600E 05	0.32729150E 12	0.23799475E 10
40	0.48955150E 04	0.46840800E 05	0.30470100E 12	0.23799475E 10
41	0.49250300E 04	0.54995650E 05	0.28814250E 12	0.23132200E 10
42	0.47713500E 04	0.55862600E 05	0.28005500E 12	0.22464925E 10
43	0.43261100E 04	0.47347650E 05	0.27440750E 12	0.22464925E 10
44	0.39740000E 04	0.40720750E 05	0.26876000E 12	0.22464925E 10
45	0.37758300E 04	0.37223700E 05	0.26311200E 12	0.22464925E 10
46	0.39291650E 04	0.38749500E 05	0.22482100E 12	0.22464925E 10
47	0.45347150E 04	0.46163650E 05	0.18935400E 12	0.22464925E 10
48	0.45717550E 04	0.46631450E 05	0.18935400E 12	0.22464925E 10
49	0.35828300E 04	0.34380550E 05	0.18935400E 12	0.22464925E 10
50	0.27195550E 04	0.24013350E 05	0.18935400E 12	0.21318858E 10
51	0.24672750E 04	0.21650150E 05	0.18935400E 12	0.20111945E 10
52	0.24298800E 04	0.22007450E 05	0.18935400E 12	0.19990254E 10

53	0.24391650E 04	0.22592500E 05	0.18935400E 12	0.19866562E 10
54	0.24633850E 04	0.23128850E 05	0.18935400E 12	0.19746872E 10
55	0.24756800E 04	0.23340550E 05	0.18648500E 12	0.19625180E 10
56	0.24835100E 04	0.23402550E 05	0.18361600E 12	0.19503489E 10
57	0.24937400E 04	0.23473400E 05	0.18361600E 12	0.19381798E 10
58	0.25088150E 04	0.23597150E 05	0.18361600E 12	0.19260108E 10
59	0.25316450E 04	0.23820850E 05	0.18361600E 12	0.19138416E 10
60	0.25310250E 04	0.23799850E 05	0.18361600E 12	0.19016725E 10
61	0.24689800E 04	0.23114700E 05	0.18074700E 12	0.18895034E 10
62	0.23845350E 04	0.22249750E 05	0.17787800E 12	0.18773344E 10
63	0.23257550E 04	0.21801800E 05	0.17787800E 12	0.18651652E 10
64	0.23104900E 04	0.21897150E 05	0.17787800E 12	0.18529961E 10
65	0.23676450E 04	0.22764800E 05	0.17787800E 12	0.18408270E 10
66	0.24485200E 04	0.23863250E 05	0.17787800E 12	0.18286578E 10
67	0.24788350E 04	0.24364600E 05	0.17500900E 12	0.18164888E 10
68	0.24834100E 04	0.24459350E 05	0.17214000E 12	0.18060233E 10
69	0.25035050E 04	0.24445050E 05	0.17214000E 12	0.18016425E 10
70	0.25282650E 04	0.24235150E 05	0.17214000E 12	0.18016425E 10
71	0.25355250E 04	0.23621250E 05	0.17214000E 12	0.18016425E 10
72	0.26284550E 04	0.24086050E 05	0.17214000E 12	0.18016425E 10
73	0.30745800E 04	0.29453600E 05	0.17214000E 12	0.18016425E 10
74	0.37243950E 04	0.37691550E 05	0.17214000E 12	0.18016425E 10
75	0.40143750E 04	0.41228600E 05	0.17142250E 12	0.18016425E 10
76	0.39203250E 04	0.40021500E 05	0.17070500E 12	0.16014600E 10
77	0.35999750E 04	0.36676050E 05	0.17070500E 12	0.14012775E 10
78	0.31462700E 04	0.31976300E 05	0.17070500E 12	0.14012775E 10
79	0.28356100E 04	0.27843150E 05	0.17070500E 12	0.14012775E 10
80	0.26659050E 04	0.24484600E 05	0.17070500E 12	0.14012775E 10
81	0.26048500E 04	0.23114300E 05	0.17070500E 12	0.14012775E 10
82	0.26575250E 04	0.23497900E 05	0.17070500E 12	0.14012775E 10
83	0.28589300E 04	0.24271050E 05	0.17070500E 12	0.14012775E 10
84	0.32935150E 04	0.25287750E 05	0.17070500E 12	0.14012775E 10
85	0.34822200E 04	0.24909000E 05	0.17070500E 12	0.14012775E 10
86	0.34663700E 04	0.23316800E 05	0.17070500E 12	0.14012775E 10
87	0.32275200E 04	0.22953750E 05	0.17070500E 12	0.14012775E 10
88	0.27897200E 04	0.23692550E 05	0.17070500E 12	0.14012775E 10
89	0.26725250E 04	0.22834000E 05	0.17070500E 12	0.14012775E 10
90	0.28659550E 04	0.20427800E 05	0.17070500E 12	0.14012775E 10
91	0.28185400E 04	0.18757750E 05	0.17070500E 12	0.14012775E 10
92	0.25002350E 04	0.18082700E 05	0.17070500E 12	0.14012775E 10
93	0.22560450E 04	0.19056500E 05	0.17070500E 12	0.14012775E 10
94	0.21160150E 04	0.21420250E 05	0.17070500E 12	0.14012775E 10
95	0.20446650E 04	0.22990250E 05	0.17070500E 12	0.14012775E 10
96	0.20444400E 04	0.23738300E 05	0.17070500E 12	0.17126725E 10
97	0.20803400E 04	0.24584700E 05	0.17070500E 12	0.20240675E 1
98	0.21515450E 04	0.25563800E 05	0.17070500E 12	0.20240675E 1
99	0.21033250E 04	0.25182550E 05	0.17070500E 12	0.20240675E 10
100	0.18957000E 04	0.23003200E 05	0.17070500E 12	0.20240675E 10
101	0.21088850E 04	0.26066300E 05	0.17070500E 12	0.20240675E 10
102	0.28380300E 04	0.35507200E 05	0.19867800E 12	0.20240675E 10
103	0.30195300E 04	0.38127500E 05	0.22665100E 12	0.20240675E 10
104	0.24018400E 04	0.30802650E 05	0.22665100E 12	0.20240675E 10
105	0.18021700E 04	0.23577050E 05	0.22665100E 12	0.23465837E 10
106	0.14222600E 04	0.18557800E 05	0.22665100E 12	0.26691000E 10
107	0.12209450E 04	0.16538350E 05	0.22665100E 12	0.26691000E 10
108	0.12604350E 04	0.17089200E 05	0.22665100E 12	0.26643638E 10
109	0.13679200E 04	0.18347650E 05	0.22665100E 12	0.26524078E 10
110	0.14734250E 04	0.19366600E 05	0.22665100E 12	0.26375683E 10
111	0.15467450E 04	0.20010300E 05	0.22378200E 12	0.26235287E 10
112	0.15716300E 04	0.20219650E 05	0.22091300E 12	0.26090892E 10
113	0.15909000E 04	0.20322200E 05	0.22091300E 12	0.25946497E 10
114	0.16289750E 04	0.20500400E 05	0.22091300E 12	0.25802101E 10
115	0.16608450E 04	0.20649700E 05	0.22091300E 12	0.25657706E 10
116	0.16686150E 04	0.20695000E 05	0.21660950E 12	0.25513310E 10
117	0.16252250E 04	0.20232400E 05	0.21230600E 12	0.25368914E 10
118	0.15144600E 04	0.19003150E 05	0.21230600E 12	0.25224518E 10
119	0.14246000E 04	0.17995050E 05	0.21230600E 12	0.25080123E 10
120	0.14211450E 04	0.17939900E 05	0.21230600E 12	0.24935727E 10
121	0.14643500E 04	0.18371050E 05	0.21230600E 12	0.24791332E 10
122	0.15240150E 04	0.18924500E 05	0.21230600E 12	0.24646936E 10
123	0.15763100E 04	0.19396850E 05	0.21230600E 12	0.24502541E 10
124	0.15951400E 04	0.19565350E 05	0.20943700E 12	0.24358146E 10
125	0.15948600E 04	0.19577050E 05	0.20656800E 12	0.24213750E 10
126	0.15910650E 04	0.19593500E 05	0.20656800E 12	0.24069355E 10
127	0.15826900E 04	0.19569700E 05	0.20656800E 12	0.23924959E 10
128	0.15680250E 04	0.19444750E 05	0.20656800E 12	0.23780564E 10
129	0.14876550E 04	0.18585300E 05	0.20656800E 12	0.23636168E 10
130	0.12600400E 04	0.16122000E 05	0.20369900E 12	0.23491772E 10
131	0.10130825E 04	0.13393650E 05	0.20083000E 12	0.23347377E 10
132	0.91557650E 03	0.12169500E 05	0.20083000E 12	0.23202981E 10
133	0.90865650E 03	0.11838150E 05	0.20083000E 12	0.23058586E 10
134	0.92368500E 03	0.11664350E 05	0.20083000E 12	0.22914190E 10
135	0.94944050E 03	0.11493500E 05	0.20083000E 12	0.22769795E 10
136	0.95908199E 03	0.10925500E 05	0.19724350E 12	0.22625399E 10
137	0.95665950E 03	0.10165100E 05	0.19365700E 12	0.22481004E 10
138	0.95335350E 03	0.98101300E 04	0.19365700E 12	0.22336608E 10
139	0.94889100E 03	0.97592250E 04	0.19365700E 12	0.22192212E 10
140	0.94222050E 03	0.96940000E 04	0.19365700E 12	0.22047817E 10
141	0.92402750E 03	0.98459050E 04	0.19365700E 12	0.21903421E 10
142	0.85661000E 03	0.11144400E 05	0.19007100E 12	0.21759026E 10
143	0.75688550E 03	0.13067600E 05	0.18648500E 12	0.21614630E 10
144	0.71345550E 03	0.12669800E 05	0.18648500E 12	0.21470235E 10
145	0.72352150E 03	0.10419450E 05	0.18648500E 12	0.21325840E 10
146	0.77487400E 03	0.98401499E 04	0.18361600E 12	0.21181444E 10
147	0.86039550E 03	0.10718300E 05	0.18074700E 12	0.21037048E 10
148	0.90109350E 03	0.10975700E 05	0.18074700E 12	0.20892653E 10
149	0.89986650E 03	0.10653650E 05	0.18074700E 12	0.20748257E 10
150	0.90105100E 03	0.10394600E 05	0.18074700E 12	0.20603862E 10
151	0.90454500E 03	0.10196050E 05	0.18074700E 12	0.20459466E 10
152	0.91463699E 03	0.10191500E 05	0.18074700E 12	0.20315071E 10
153	0.93132500E 03	0.10381250E 05	0.18074700E 12	0.20170676E 10
154	0.13146620E 04	0.15294600E 05	0.18074700E 12	0.20026280E 10
155	0.20773500E 04	0.25095000E 05	0.18074700E 12	0.19881884E 10
156	0.24263950E 04	0.29517550E 05	0.18074700E 12	0.15354256E 10
157	0.22665100E 04	0.27334150E 05	0.17931250E 12	0.10898825E 10
158	0.19937550E 04	0.23764350E 05	0.17787800E 12	0.10898825E 10
159	0.16907050E 04	0.19874050E 05	0.17787800E 12	0.10898825E 10
160	0.15557600E 04	0.17483850E 05	0.17787800E 12	0.10898825E 10
161	0.16484800E 04	0.17125150E 05	0.16568450E 12	0.10898825E 10
162	0.18140900E 04	0.18262450E 05	0.15349100E 12	0.10898825E 10
163	0.19956000E 04	0.20550200E 05	0.15349100E 12	0.10898825E 10
164	0.21609600E 04	0.21588100E 05	0.15349100E 12	0.10898825E 10
165	0.22942000E 04	0.21649400E 05	0.16281550E 12	0.10898825E 10
166	0.23626250E 04	0.21016650E 05	0.17214000E 12	0.10898825E 10
167	0.23663650E 04	0.20946100E 05	0.17214000E 12	0.10898825E 10
168	0.22942250E 04	0.20263550E 05	0.17214000E 12	0.10898825E 10
169	0.21243950E 04	0.18446100E 05	0.17500900E 12	0.17905212E 10
170	0.21486650E 04	0.18162050E 05	0.17787800E 12	0.24911600E 10
171	0.25099650E 04	0.20732250E 05	0.17500900E 12	0.24021900E 10

BEAM (2)

NP(2) = 173

STATION	EP	IP	EI	GA
1	0.28710550E 04	0.23152650E 05	0.17214000E 12	0.23132200E 10
2	0.30543750E 04	0.23822650E 05	0.17214000E 12	0.23132200E 10
3	0.32433950E 04	0.24679800E 05	0.17214000E 12	0.23132200E 10
4	0.36354550E 04	0.27886650E 05	0.17214000E 12	0.23132200E 10

5	0.39834100E 04	0.30998100E 05	0.17214000E 12	0.23132200E 10
6	0.40095750E 04	0.31163900E 05	0.17214000E 12	0.23132200E 10
7	0.40013400E 04	0.29875050E 05	0.17214000E 12	0.23132200E 10
8	0.42757450E 04	0.28391800E 05	0.17214000E 12	0.23132200E 10
9	0.49222250E 04	0.27545200E 05	0.17214000E 12	0.23132200E 10
10	0.60476400E 04	0.28451850E 05	0.17214000E 12	0.23132200E 10
11	0.71748650E 04	0.29893950E 05	0.17214000E 12	0.23132200E 10
12	0.65219000E 04	0.28281650E 05	0.17214000E 12	0.23132200E 10
13	0.50322400E 04	0.25376100E 05	0.17214000E 12	0.23132200E 10
14	0.46464850E 04	0.24598650E 05	0.17214000E 12	0.23132200E 10
15	0.46373100E 04	0.25966650E 05	0.17214000E 12	0.23132200E 10
16	0.45241550E 04	0.29783600E 05	0.17214000E 12	0.23132200E 10
17	0.42023150E 04	0.32291150E 05	0.17214000E 12	0.23132200E 10
18	0.35858100E 04	0.30305150E 05	0.17214000E 12	0.23132200E 10
19	0.30024450E 04	0.27704600E 05	0.17214000E 12	0.23132200E 10
20	0.28477500E 04	0.28773200E 05	0.16353300E 12	0.22242500E 10
21	0.28642350E 04	0.30823300E 05	0.15492600E 12	0.21352800E 10
22	0.26931700E 04	0.30261300E 05	0.15492600E 12	0.21352800E 10
23	0.24298600E 04	0.28182600E 05	0.15492600E 12	0.21352800E 10
24	0.21779000E 04	0.25756000E 05	0.15492600E 12	0.21352800E 10
25	0.19516100E 04	0.23302800E 05	0.17644350E 12	0.25245237E 10
26	0.17733800E 04	0.21247950E 05	0.19796100E 12	0.29137675E 10
27	0.17028200E 04	0.20485900E 05	0.19796100E 12	0.29137675E 10
28	0.19121000E 04	0.23458700E 05	0.19796100E 12	0.29137675E 10
29	0.22980800E 04	0.28472400E 05	0.20513350E 12	0.30361012E 10
30	0.26070850E 04	0.31440800E 05	0.21230600E 12	0.31584350E 10
31	0.28180050E 04	0.32767100E 05	0.21087150E 12	0.31361925E 10
32	0.28881300E 04	0.33361450E 05	0.20943700E 12	0.31139500E 10
33	0.28114450E 04	0.32624850E 05	0.17644350E 12	0.26246150E 10
34	0.25793750E 04	0.25355050E 05	0.14345000E 12	0.21352800E 10
35	0.22624800E 04	0.24739000E 05	0.14345000E 12	0.21352800E 10
36	0.20356550E 04	0.21761100E 05	0.14345000E 12	0.21352800E 10
37	0.18806800E 04	0.20052550E 05	0.14345000E 12	0.21352800E 10
38	0.17331450E 04	0.18249850E 05	0.14345000E 12	0.21352800E 10
39	0.15994600E 04	0.16441850E 05	0.14345000E 12	0.21352800E 10
40	0.15497000E 04	0.15442900E 05	0.14345000E 12	0.21352800E 10
41	0.15690450E 04	0.15142650E 05	0.14345000E 12	0.21352800E 10
42	0.14014500E 04	0.13885400E 05	0.14345000E 12	0.21352800E 10
43	0.10721125E 04	0.11836350E 05	0.14345000E 12	0.21352800E 10
44	0.85529550E 03	0.10595000E 05	0.14345000E 12	0.21352800E 10
45	0.73316850E 03	0.10032995E 05	0.14345000E 12	0.21352800E 10
46	0.68341399E 03	0.98669249E 04	0.14345000E 12	0.21352800E 10
47	0.70641399E 03	0.10098830E 05	0.14345000E 12	0.21352800E 10
48	0.70635249E 03	0.10042580E 05	0.14345000E 12	0.21352800E 10
49	0.68115050E 03	0.96762750E 04	0.14345000E 12	0.21352800E 10
50	0.67739600E 03	0.95821300E 04	0.14345000E 12	0.21352800E 10
51	0.69824250E 03	0.98000399E 04	0.14345000E 12	0.21352800E 10
52	0.70238300E 03	0.98143099E 04	0.14345000E 12	0.21352800E 10
53	0.68632050E 03	0.95815050E 04	0.14345000E 12	0.21352800E 10
54	0.69027050E 03	0.96182250E 04	0.14345000E 12	0.21352800E 10
55	0.71937150E 03	0.99907749E 04	0.14345000E 12	0.21352800E 10
56	0.72529800E 03	0.10059900E 05	0.14345000E 12	0.21352800E 10
57	0.69937000E 03	0.97109800E 04	0.14345000E 12	0.21352800E 10
58	0.68646850E 03	0.94956549E 04	0.14345000E 12	0.21352800E 10
59	0.69646200E 03	0.95348550E 04	0.14345000E 12	0.21352800E 10
60	0.70282750E 03	0.95559149E 04	0.14345000E 12	0.21352800E 10
61	0.69944450E 03	0.94959449E 04	0.14345000E 12	0.21352800E 10
62	0.70304800E 03	0.95306200E 04	0.14345000E 12	0.21352800E 10
63	0.71827550E 03	0.97101050E 04	0.14345000E 12	0.21352800E 10
64	0.72226250E 03	0.97305800E 04	0.14345000E 12	0.21352800E 10
65	0.70820100E 03	0.95018649E 04	0.14345000E 12	0.21352800E 10
66	0.68798650E 03	0.91988900E 04	0.14345000E 12	0.21352800E 10
67	0.66421899E 03	0.88646500E 04	0.14345000E 12	0.21352800E 10
68	0.65464500E 03	0.87188900E 04	0.14345000E 12	0.21352800E 10
69	0.66896449E 03	0.88798650E 04	0.14345000E 12	0.21352800E 10
70	0.67797700E 03	0.89787300E 04	0.14345000E 12	0.21352800E 10
71	0.66270599E 03	0.87764850E 04	0.14345000E 12	0.21352800E 10
72	0.65249950E 03	0.86323350E 04	0.14345000E 12	0.21352800E 10
73	0.66858050E 03	0.88062800E 04	0.14345000E 12	0.21352800E 10
74	0.68118550E 03	0.89412600E 04	0.14345000E 12	0.21352800E 10
75	0.66494600E 03	0.87335800E 04	0.14345000E 12	0.21352800E 10
76	0.64872650E 03	0.85281949E 04	0.14345000E 12	0.21352800E 10
77	0.66382700E 03	0.86992200E 04	0.14345000E 12	0.21352800E 10
78	0.68730750E 03	0.89698500E 04	0.14345000E 12	0.21352800E 10
79	0.68956699E 03	0.89825399E 04	0.14345000E 12	0.21352800E 10
80	0.70668449E 03	0.91895550E 04	0.14345000E 12	0.21352800E 10
81	0.79204150E 03	0.10259655E 05	0.14345000E 12	0.21352800E 10
82	0.91234400E 03	0.11718700E 05	0.14345000E 12	0.21352800E 10
83	0.10039915E 04	0.12529350E 05	0.14345000E 12	0.21352800E 10
84	0.10439000E 04	0.12531550E 05	0.14201550E 12	0.21130375E 10
85	0.10149780E 04	0.11845700E 05	0.14058100E 12	0.20907950E 10
86	0.94704600E 03	0.10789000E 05	0.13049200E 12	0.19414718E 10
87	0.89275450E 03	0.98465099E 04	0.10797820E 12	0.16082540E 10
88	0.85964800E 03	0.91813700E 04	0.86508200E 11	0.12904847E 10
89	0.87277850E 03	0.92524100E 04	0.77463000E 11	0.11566100E 10
90	0.93126500E 03	0.99856500E 04	0.77463000E 11	0.11566100E 10
91	0.11407780E 04	0.12349450E 05	0.77463000E 11	0.11566100E 10
92	0.14724250E 04	0.15565400E 05	0.77463000E 11	0.11566100E 10
93	0.16042450E 04	0.16652700E 05	0.77463000E 11	0.11566100E 10
94	0.15636600E 04	0.14808150E 05	0.77463000E 11	0.11566100E 10
95	0.15986100E 04	0.14032000E 05	0.80332000E 11	0.12010950E 10
96	0.16893250E 04	0.14118950E 05	0.83201000E 11	0.12455800E 10
97	0.15550150E 04	0.12775550E 05	0.73035250E 11	0.11005723E 10
98	0.12052600E 04	0.10062605E 05	0.61815150E 11	0.95190374E 09
99	0.99497099E 03	0.79186000E 04	0.59706500E 11	0.94458194E 09
100	0.92559000E 03	0.63894200E 04	0.57597900E 11	0.93702758E 09
101	0.94352950E 03	0.60297800E 04	0.55989300E 11	0.92656645E 09
102	0.10457405E 04	0.67780850E 04	0.53880700E 11	0.91343111E 09
103	0.10582350E 04	0.66387100E 04	0.51272100E 11	0.90025577E 09
104	0.98259300E 03	0.56272100E 04	0.49163450E 11	0.88716043E 09
105	0.10184930E 04	0.55468700E 04	0.47054800E 11	0.87402507E 09
106	0.11572100E 04	0.63002400E 04	0.44946200E 11	0.85870050E 09
107	0.12073650E 04	0.61189350E 04	0.42837550E 11	0.84118673E 09
108	0.11776750E 04	0.51004050E 04	0.40728900E 11	0.82367294E 09
109	0.12221700E 04	0.41275950E 04	0.38620300E 11	0.80615917E 09
110	0.13518600E 04	0.32072950E 04	0.36511700E 11	0.78864538E 09
111	0.13633250E 04	0.29923150E 04	0.34697599E 11	0.77717390E 09
112	0.12260800E 04	0.35775500E 04	0.33203600E 11	0.77227007E 09
113	0.11374150E 04	0.38859050E 04	0.31735200E 11	0.76789162E 09
114	0.11168000E 04	0.38155300E 04	0.30266800E 11	0.76351318E 09
115	0.12883050E 04	0.40855350E 04	0.28798400E 11	0.75913473E 09
116	0.17077550E 04	0.47948950E 04	0.27709550E 11	0.76027318E 09
117	0.17369500E 04	0.50412550E 04	0.27072500E 11	0.76797930E 09
118	0.13413300E 04	0.49358550E 04	0.26630950E 11	0.77651726E 09
119	0.13583650E 04	0.69159650E 04	0.26600150E 11	0.78432546E 09
120	0.17667500E 04	0.10771335E 05	0.30147900E 11	0.79162287E 09
121	0.19954000E 04	0.13236450E 05	0.33567300E 11	0.79892028E 09
122	0.19550550E 04	0.13622100E 05	0.29981050E 11	0.80621769E 09
123	0.18911450E 04	0.13454750E 05	0.26394800E 11	0.81351510E 09
124	0.18961550E 04	0.13430600E 05	0.26394800E 11	0.82081250E 09
125	0.18544400E 04	0.13160350E 05	0.26394800E 11	0.82810991E 09
126	0.17418200E 04	0.12531750E 05	0.26394800E 11	0.83540732E 09
127	0.15706600E 04	0.11270650E 05	0.29981050E 11	0.84270473E 09
128	0.13515300E 04	0.93387849E 04	0.33567300E 11	0.85000214E 09
129	0.11390700E 04	0.76307950E 04	0.31702450E 11	0.85729954E 09
130	0.94767000E 03	0.63794200E 04	0.29837600E 11	0.10195004E 10
131	0.82266299E 03	0.55782750E 04	0.29837600E 11	0.11788525E 10
132	0.78514850E 03	0.52843900E 04	0.29837600E 11	0.11010037E 10
133	0.72242150E 03	0.45770650E 04	0.29837600E 11	0.10231550E 10
134	0.59253100E 03	0.44571300E 04	0.29837600E 11	0.10231550E 10
135	0.49570850E 03	0.40450650E 04	0.29837600E 11	0.10231550E 10
136	0.46719350E 03	0.38536050E 04	0.29837600E 11	0.10231550E 10

137	0.45788300E 03	0.37277C50E 04	0.29837600E 11	C.10231550E 10
138	0.44960100E 03	0.361C3600E 04	0.29837600E 11	0.10231550E 10
139	0.44194C50E 03	0.34989C50E 04	0.29837600E 11	0.10231550E 10
140	0.43472200E 03	0.33922250E 04	0.29837600E 11	C.10231550E 10
141	0.42850200E 03	0.32933750E 04	0.29837600E 11	0.10231550E 10
142	0.42361750E 03	0.32042850E 04	0.29837600E 11	0.10231550E 10
143	0.43252E50E 03	0.31471200E 04	0.29837600E 11	0.10231550E 10
144	0.46357C00E 03	0.313711C0E 04	0.29837600E 11	C.10231550E 10
145	0.49811E00E 03	0.31312450E 04	0.29837600E 11	0.10231550E 10
146	0.51956450E 03	0.30893100E 04	0.29837600E 11	0.10231550E 10
147	0.53466400E 03	0.30361550E 04	0.29837600E 11	C.10231550E 10
148	0.55223E00E 03	0.3C006300E 04	0.29837600E 11	0.10231550E 10
149	0.56529E00E 03	0.29657350E 04	0.29837600E 11	0.10231550E 10
150	0.56758C50E 03	0.29176C50E 04	0.29837600E 11	0.10231550E 10
151	0.55875E00E 03	0.28495450E 04	0.29837600E 11	0.10231550E 10
152	0.53492E50E 03	0.2747C100E 04	0.29837600E 11	0.10231550E 10
153	0.50859500E 03	0.26419650E 04	0.29837600E 11	0.10231550E 10
154	0.50067150E 03	0.25882300E 04	0.29837600E 11	0.10231550E 10
155	0.50595250E 03	0.25924850E 04	0.29837600E 11	C.10231550E 10
156	0.51400599E 03	0.26459550E 04	0.23525800E 11	0.81185125E C9
157	0.51362749E 03	0.26519350E 04	0.17214000E 11	0.60054750E C9
158	0.49437550E 03	0.2520C800E 04	0.17214000E 11	0.60054750E C9
159	C.47192E50E 03	0.23109CC0E 04	0.16066400E 11	0.56718375E C9
160	0.46512500E 03	0.2C722700E 04	0.14918800E 11	0.53382000E C9
161	0.47174750E 03	0.18874200E 04	0.14918800E 11	C.53382000E C9
162	0.49175300E 03	0.19675C00E 04	0.14918800E 11	0.53382000E C9
163	0.53077100E 03	0.22591E50E 04	0.14918800E 11	0.53382000E C9
164	C.60162550E 03	0.26155850E 04	0.14918800E 11	0.53382000E C9
165	0.69993350E 03	0.3C420200E 04	0.16066400E 11	0.56718375E 09
166	0.93489200E 03	0.41454E00E 04	0.17214000E 11	0.60054750E C9
167	0.12925150E 04	0.59C75800E 04	0.17214000E 11	0.60054750E C9
168	0.15917450E 04	0.77067C50E 04	0.17214000E 11	0.60096486E C9
169	0.18416550E 04	0.95370449E 04	0.13627750E 11	0.47863111E 09
170	0.20318700E 04	0.10727C50E 05	0.10041500E 11	0.35558000E C9
171	0.20412E50E 04	0.10649250E 05	0.10041500E 11	0.35558000E C9
172	0.12427645E 04	0.65367850E 04	0.14201550E 11	0.48933500E C9

BEAM (3)

NP(3) = 151

STATION	MP	IP	EI	GA
1	0.44645450E 03	0.24713C65E 04	0.16696140E 11	0.56832296E C9
2	0.33930550E 03	0.18599795E 04	0.13365220E 11	0.45938890E C9
3	0.23215650E 03	0.12486525E 04	0.10034300E 11	0.35045484E C9
4	0.17858199E 03	0.94063361E 03	0.83263329E 10	0.29522286E C9
5	0.17858200E 03	0.93592300E 03	0.82413199E 10	0.29369302E C9
6	0.17858200E 03	0.93121233E 03	0.81563066E 10	0.29216316E C9
7	0.17858200E 03	0.92545181E 03	0.80712897E 10	C.29063330E C9
8	0.17858200E 03	0.91864150E 03	0.79862700E 10	0.28910346E C9
9	0.17858200E 03	0.91183117E 03	0.79012500E 10	0.28757360E C9
10	0.19346382E 03	0.97680492E 03	0.78162378E 10	0.28604372E C9
11	0.22322750E 03	0.11135E30E 04	0.77312349E 10	0.28451389E C9
12	0.25299116E 03	0.12503210E 04	0.76462316E 10	0.28298404E C9
13	0.25299113E 03	0.12414C93E 04	0.75612238E 10	0.28145414E C9
14	0.22322750E 03	0.10868285E 04	0.74762150E 10	0.27992432E C9
15	0.19346384E 03	0.93224752E 03	0.73912050E 10	0.27839447E C9
16	0.17858199E 03	0.85215427E 03	0.73061928E 10	0.27686459E C9
17	0.17858200E 03	0.84654900E 03	0.72211800E 10	0.27533476E C9
18	0.17858200E 03	0.84094366E 03	0.71361667E 10	0.27380490E C9
19	0.17858199E 03	0.83533E43E 03	0.70511545E 10	0.27227504E C9
20	0.17858200E 03	0.82973349E 03	0.69661450E 10	0.27074520E C9
21	0.17858200E 03	0.82412849E 03	0.68811350E 10	0.26921534E C9
22	0.66769150E 04	0.28835757E 05	0.67961228E 10	0.26768547E C9
23	0.20273588E 05	0.84864651E 05	0.67111100E 10	0.26615563E C9
24	0.33670261E 05	0.14089354E 06	0.66260966E 10	0.26462578E C9
25	0.33670758E 05	0.14085512E 06	0.65410845E 10	0.26309590E C9
26	0.20275C78E 05	0.84749367E 05	0.6456C749E 10	C.26156606E C9
27	0.66793553E 04	0.28643610E 05	0.63710650E 10	0.26003621E C9
28	0.18700795E 03	0.60478249E 03	0.62902368E 10	0.2585C629E C9
29	0.19792400E 03	0.63291998E 03	0.62135950E 10	0.25697650E C9
30	0.20884C00E 03	0.66105732E 03	0.61369517E 10	0.25544665E C9
31	0.21429795E 03	0.67481C66E 03	0.60631352E 10	0.25391673E C9
32	0.21429800E 03	0.67418C50E 03	0.59921500E 10	0.25238694E C9
33	0.21429800E 03	0.67355016E 03	0.59211633E 10	0.25085709E 09
34	0.21429795E 03	0.67291584E 03	0.58501735E 10	0.24932717E C9
35	0.21429800E 03	0.67228599E 03	0.57791850E 10	0.24779737E C9
36	0.21429800E 03	0.67166000E 03	0.57081950E 10	0.24626752E C9
37	0.21429795E 03	0.67102966E 03	0.56372053E 10	0.24473760E C9
38	0.21429800E 03	0.67039950E 03	0.55662200E 10	0.2432C781E C9
39	0.21429800E 03	0.66976917E 03	0.54952333E 10	0.24167796E C9
40	0.21429795E 03	0.66913866E 03	0.54242453E 10	0.24014804E C9
41	0.21429800E 03	0.66850850E 03	0.53532600E 10	C.23861824E C9
42	0.21429800E 03	0.66787817E 03	0.52822733E 10	0.23708839E C9
43	0.21429795E 03	0.66724783E 03	0.52112854E 10	0.23555847E 09
44	0.21429800E 03	0.66661800E 03	0.51403000E 10	C.23402868E C9
45	0.21429800E 03	0.66598799E 03	0.50693133E 10	C.23249883E C9
46	0.21429795E 03	0.66535766E 03	0.49983238E 10	0.23096891E 09
47	0.21429800E 03	0.66472749E 03	0.49273350E 10	0.22943911E C9
48	0.21429800E 03	0.66409716E 03	0.48563450E 10	0.2279C926E C9
49	0.21429787E 03	0.66346642E 03	0.47853537E 10	0.22637926E C9
50	0.21429800E 03	0.66283649E 03	0.47143700E 10	0.22484955E C9
51	0.21429800E 03	0.66220616E 03	0.46433833E 10	0.22331970E C9
52	0.21429795E 03	0.66157584E 03	0.45723955E 10	0.22178979E C9
53	0.21429800E 03	0.66094599E 03	0.45014100E 10	C.22025998E C9
54	0.21429800E 03	0.66031599E 03	0.44304233E 10	0.21873013E C9
55	0.21429795E 03	0.65968566E 03	0.43594339E 10	0.2172C022E C9
56	0.21429800E 03	0.65905550E 03	0.42884450E 10	0.21567042E C9
57	0.21429800E 03	0.65842516E 03	0.42174550E 10	0.21414057E C9
58	0.20653562E 03	0.63508320E 03	0.41464656E 10	0.21261066E C9
59	0.19102300E 03	0.58903001E 03	0.40754800E 10	0.21108085E C9
60	0.17550634E 03	0.54297668E 03	0.40044933E 10	0.20955100E C9
61	0.16746862E 03	0.51693103E 03	0.39335057E 10	0.20802109E C9
62	0.16691C00E 03	0.51089350E 03	0.38625200E 10	0.20649129E C9
63	0.16635133E 03	0.50485583E 03	0.37915333E 10	0.20496144E 09
64	0.16579263E 03	0.49881787E 03	0.37205457E 10	0.20343153E C9
65	0.16523400E 03	0.49278C00E 03	0.36495600E 10	0.2019C172E C9
66	0.16467533E 03	0.48674200E 03	0.35785733E 10	0.20037187E C9
67	0.16411679E 03	0.48070404E 03	0.35075842E 10	0.19884197E C9
68	0.16355850E 03	0.47466650E 03	0.34365995E 10	0.19731216E C9
69	0.16300C17E 03	0.46862883E 03	0.33656050E 10	0.19578231E C9
70	0.16244163E 03	0.46259C89E 03	0.32946159E 10	0.19425240E 09
71	0.16188300E 03	0.45655300E 03	0.32236300E 10	0.19272259E C9
72	0.16132433E 03	0.45051500E 03	0.31526434E 10	0.19119274E C9
73	0.16076579E 03	0.44447705E 03	0.30816566E 10	0.18966284E C9
74	0.16020750E 03	0.43843950E 03	0.30106700E 10	0.18813303E C9
75	0.15964917E 03	0.43240183E 03	0.29396834E 10	0.18660318E C9
76	0.15909C63E 03	0.42636389E 03	0.28686944E 10	0.18507328E C9
77	0.15853200E 03	0.42032600E 03	0.27977050E 10	0.18354346E C9
78	0.15797333E 03	0.41428800E 03	0.27267150E 10	0.18201361E C9
79	0.15741463E 03	0.40825C06E 03	0.26557261E 10	0.18048371E C9
80	0.15685600E 03	0.4C221250E 03	0.25847400E 10	0.17895390E C9
81	0.15629733E 03	0.39617484E 03	0.25137533E 10	0.17742405E C9
82	0.15573879E 03	0.39013691E 03	0.24427661E 10	0.17589415E 09
83	0.15518C50E 03	0.38409900E 03	0.23717800E 10	0.17436434E C9
84	0.15462217E 03	0.37806100E 03	0.23007933E 10	0.17283449E C9
85	0.15406363E 03	0.37202308E 03	0.22298045E 10	0.17130459E C9
86	0.15350500E 03	0.36598550E 03	0.21588150E 10	0.16977478E C9
87	0.15294633E 03	0.35994783E 03	0.20878250E 10	0.16824493E C9

88	0.15238779E 03	0.35390592E 03	0.20168362E 10	0.16671503E 09
89	0.15182550E 03	0.34787200E 03	0.19458500E 10	0.16518521E 09
90	0.15127117E 03	0.34183400E 03	0.18748634E 10	0.16365536E 09
91	0.15856661E 03	0.35184172E 03	0.18038762E 10	0.16212546E 09
92	0.17371599E 03	0.37789548E 03	0.17328900E 10	0.16059564E 09
93	0.18886532E 03	0.40394915E 03	0.16619034E 10	0.15906579E 09
94	0.18805097E 03	0.39807826E 03	0.15909163E 10	0.15753589E 09
95	0.17127301E 03	0.36028302E 03	0.15199300E 10	0.15600608E 09
96	0.15449501E 03	0.32248769E 03	0.14489434E 10	0.15447623E 09
97	0.14557513E 03	0.30131159E 03	0.13779547E 10	0.15294633E 09
98	0.14452550E 03	0.29675500E 03	0.13069650E 10	0.15141651E 09
99	0.14347183E 03	0.29219833E 03	0.12359751E 10	0.14988666E 09
100	0.82122507E 03	0.66955844E 03	0.12819969E 10	0.15186923E 09
101	0.21777515E 04	0.14288394E 04	0.14450349E 10	0.15736468E 09
102	0.35343561E 04	0.21881192E 04	0.16080715E 10	0.16285999E 09
103	0.45400599E 04	0.23621216E 04	0.17106233E 10	0.16580934E 09
104	0.51949145E 04	0.19508503E 04	0.17526950E 10	0.16621320E 09
105	0.58497643E 04	0.15395771E 04	0.17947649E 10	0.16661690E 09
106	0.62490488E 04	0.12873239E 04	0.18287548E 10	0.16681859E 09
107	0.63927849E 04	0.11940951E 04	0.18546700E 10	0.16681875E 09
108	0.65365148E 04	0.11008651E 04	0.18805833E 10	0.16681875E 09
109	0.65923719E 04	0.10287061E 04	0.18935381E 10	0.16681859E 09
110	0.65603749E 04	0.97762103E 03	0.18935400E 10	0.16681875E 09
111	0.65283716E 04	0.92653504E 03	0.18935400E 10	0.16681875E 09
112	0.64874637E 04	0.87407304E 03	0.18935381E 10	0.16681859E 09
113	0.64376700E 04	0.82023753E 03	0.18935400E 10	0.16681875E 09
114	0.63878700E 04	0.76640121E 03	0.18935400E 10	0.16681875E 09
115	0.63828904E 04	0.76102221E 03	0.18935381E 10	0.16681859E 09
116	0.64227499E 04	0.80410596E 03	0.18935400E 10	0.16681875E 09
117	0.64626033E 04	0.84718795E 03	0.18935400E 10	0.16681875E 09
118	0.64825237E 04	0.86872816E 03	0.18935381E 10	0.16681859E 09
119	0.64825300E 04	0.86872500E 03	0.18935400E 10	0.16681875E 09
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121	0.64557704E 04	0.83980825E 03	0.18935381E 10	0.16681859E 09
122	0.64022700E 04	0.78196903E 03	0.18935400E 10	0.16681875E 09
123	0.63487634E 04	0.72412505E 03	0.18935400E 10	0.16681875E 09
124	0.63127405E 04	0.68519502E 03	0.18935381E 10	0.16681859E 09
125	0.62942200E 04	0.66516901E 03	0.18935400E 10	0.16681875E 09
126	0.62756533E 04	0.64514234E 03	0.18935400E 10	0.16681875E 09
127	0.63083521E 04	0.68045656E 03	0.18935381E 10	0.16681859E 09
128	0.63923349E 04	0.77123392E 03	0.18935400E 10	0.16681875E 09
129	0.64762715E 04	0.86197057E 03	0.18935400E 10	0.16681875E 09
130	0.65182336E 04	0.90733812E 03	0.18935381E 10	0.16681859E 09
131	0.65182400E 04	0.90733500E 03	0.18935400E 10	0.16681875E 09
132	0.65182400E 04	0.90733500E 03	0.18935400E 10	0.16681875E 09
133	0.65431718E 04	0.93429486E 03	0.18935381E 10	0.16681859E 09
134	0.65930549E 04	0.98820942E 03	0.18935400E 10	0.16681875E 09
135	0.66429315E 04	0.10421231E 04	0.18935400E 10	0.16681875E 09
136	0.67136367E 04	0.11185621E 04	0.18935381E 10	0.16681859E 09
137	0.68051898E 04	0.12175298E 04	0.18935400E 10	0.16681875E 09
138	0.68967365E 04	0.13164565E 04	0.18935400E 10	0.16681875E 09
139	0.69267016E 04	0.13699753E 04	0.18935381E 10	0.16681859E 09
140	0.68951050E 04	0.13779700E 04	0.18935400E 10	0.16681875E 09
141	0.68635016E 04	0.13859633E 04	0.18935400E 10	0.16681875E 09
142	0.59377865E 04	0.13895587E 04	0.18899232E 10	0.16681859E 09
143	0.41179727E 04	0.13895600E 04	0.18826950E 10	0.16681875E 09
144	0.22981531E 04	0.13895600E 04	0.18754650E 10	0.16681875E 09
145	0.13023523E 04	0.13899587E 04	0.18158234E 10	0.16681859E 09
146	0.11305802E 04	0.13895600E 04	0.17037752E 10	0.16681875E 09
147	0.95880695E 03	0.13895600E 04	0.15917252E 10	0.16681875E 09
148	0.80031889E 03	0.15059399E 04	0.13562558E 10	0.14457616E 09
149	0.65511871E 03	0.17379047E 04	0.99737050E 09	0.10009131E 09
150	0.18641829E 04	0.19698681E 04	0.63848367E 09	0.55606292E 08

BEAM (4)

NP(4) = 145

STATION	MP	IP	EI	GA
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2	0.21985999E 04	0.26194950E 04	0.10506850E 10	0.75446484E 08
3	0.27520866E 04	0.29752583E 04	0.14451150E 10	0.10350164E 09
4	0.31568781E 04	0.31960681E 04	0.16140916E 10	0.11996168E 09
5	0.34129750E 04	0.32819250E 04	0.15576150E 10	0.12482663E 09
6	0.36693716E 04	0.33677816E 04	0.15011383E 10	0.12965157E 09
7	0.36570232E 04	0.32229966E 04	0.14446616E 10	0.13455650E 09
8	0.33768300E 04	0.28475700E 04	0.13881850E 10	0.13942144E 09
9	0.30966367E 04	0.24721433E 04	0.13317083E 10	0.14428638E 09
10	0.28637215E 04	0.21840482E 04	0.12757882E 10	0.14915131E 09
11	0.26780850E 04	0.19832850E 04	0.12204250E 10	0.15401626E 09
12	0.24924483E 04	0.17825217E 04	0.11650617E 10	0.15888120E 09
13	0.22897580E 04	0.15831531E 04	0.11160898E 10	0.16374611E 09
14	0.20700150E 04	0.13853000E 04	0.10735100E 10	0.16861107E 09
15	0.18502717E 04	0.11874067E 04	0.10309300E 10	0.17347601E 09
16	0.17081765E 04	0.10607188E 04	0.98834844E 09	0.17834093E 09
17	0.16437300E 04	0.10052365E 04	0.94576550E 09	0.18320589E 09
18	0.15792833E 04	0.94975417E 03	0.90318250E 09	0.18807083E 09
19	0.15148349E 04	0.89427128E 03	0.86060028E 09	0.19293575E 09
20	0.14503850E 04	0.83878801E 03	0.81801900E 09	0.19780070E 09
21	0.13859350E 04	0.78330467E 03	0.77543767E 09	0.20266564E 09
22	0.13214849E 04	0.72782146E 03	0.73285629E 09	0.20753056E 09
23	0.12570350E 04	0.67233850E 03	0.69027500E 09	0.21239551E 09
24	0.11925850E 04	0.61685550E 03	0.64769367E 09	0.21726045E 09
25	0.11237494E 04	0.56336214E 03	0.54401966E 09	0.19716435E 09
26	0.10505285E 04	0.51185851E 03	0.37925303E 09	0.15210722E 09
27	0.97730751E 03	0.46035484E 03	0.21448637E 09	0.10705008E 09
28	0.89613547E 03	0.41245657E 03	0.13153397E 09	0.84521479E 08
29	0.80701301E 03	0.36816401E 03	0.13039600E 09	0.84521500E 08
30	0.71789035E 03	0.32387134E 03	0.12925800E 09	0.84521500E 08
31	0.62876771E 03	0.27957877E 03	0.12811997E 09	0.84521479E 08
32	0.53964552E 03	0.23528650E 03	0.12698200E 09	0.84521500E 08
33	0.45052319E 03	0.19099418E 03	0.12584400E 09	0.84521500E 08
34	0.36140060E 03	0.14670176E 03	0.12470597E 09	0.84521479E 08
35	0.27227803E 03	0.10240937E 03	0.12356800E 09	0.84521500E 08
36	0.18315537E 03	0.58116937E 02	0.12243000E 09	0.84521500E 08
37	0.12740044E 03	0.30407690E 02	0.12129197E 09	0.84521479E 08
38	0.10501341E 03	0.19281689E 02	0.12015400E 09	0.84521500E 08
39	0.82626343E 02	0.81556802E 01	0.11901600E 09	0.84521500E 08
40	0.71432782E 02	0.25926693E 01	0.11787797E 09	0.84521479E 08
41	0.71432800E 02	0.25926700E 01	0.11674000E 09	0.84521500E 08
42	0.71432800E 02	0.25926700E 01	0.11560200E 09	0.84521500E 08
43	0.71432782E 02	0.25926693E 01	0.11427764E 09	0.84521479E 08
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46	0.71432782E 02	0.25926693E 01	0.10972947E 09	0.84521479E 08
47	0.71432800E 02	0.25926700E 01	0.10818650E 09	0.84521500E 08
48	0.71432800E 02	0.25926700E 01	0.10664350E 09	0.84521500E 08
49	0.71432757E 02	0.25926684E 01	0.10510027E 09	0.84521449E 08
50	0.71432800E 02	0.25926700E 01	0.10355700E 09	0.84521500E 08
51	0.71432800E 02	0.25926700E 01	0.10201367E 09	0.84521500E 08
52	0.71432783E 02	0.25926693E 01	0.10047054E 09	0.84521479E 08
53	0.71432800E 02	0.25926700E 01	0.98927700E 08	0.84521500E 08
54	0.71432800E 02	0.25926700E 01	0.97384834E 08	0.84521500E 08
55	0.90556625E 02	0.30553387E 01	0.95841843E 08	0.84521479E 08
56	0.12880438E 03	0.39806796E 01	0.94298800E 08	0.84521500E 08
57	0.16705211E 03	0.49060194E 01	0.92755734E 08	0.84521500E 08
58	0.21547092E 03	0.60774294E 01	0.91212644E 08	0.84521479E 08
59	0.27406097E 03	0.74949145E 01	0.89669600E 08	0.84521500E 08
60	0.33265096E 03	0.89123974E 01	0.88126534E 08	0.84521500E 08

61	0.36941690E 03	0.97946206E 01	0.11492428E 09	0.13441552E 09
62	0.38435699E 03	0.10141620E 02	0.17006298E 09	0.23420376E 09
63	0.39330C99E 03	0.10488606E 02	0.22520163E 09	0.33395194E 09
64	0.40091307E 03	0.10508666E 02	0.22464417E 09	0.35267700E 09
65	0.38919550E 03	0.10202805E 02	0.16839062E 09	0.29025902E 09
66	0.37747784E 03	0.98949418E 01	0.11213703E 09	0.22784097E 09
67	0.40492601E 03	0.10361805E 02	0.90330466E 08	0.23651862E 09
68	0.47154045E 03	0.11602404E 02	0.10297109E 09	0.31625239E 09
69	0.53815479E 03	0.12843001E 02	0.11561169E 09	0.39606610E 09
70	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
71	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
72	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
73	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
74	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
75	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
76	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
77	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
78	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
79	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
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87	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
88	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
89	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
90	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
91	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
92	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
93	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
94	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
95	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
96	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
97	0.57146185E 03	0.13463296E 02	0.12193197E 09	0.43595289E 09
98	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
99	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
100	0.57146144E 03	0.13463287E 02	0.12193188E 09	0.43595258E 09
101	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
102	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
103	0.57146144E 03	0.13463287E 02	0.12193188E 09	0.43595258E 09
104	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
105	0.57146200E 03	0.13463300E 02	0.12193200E 09	0.43595300E 09
106	0.55852081E 03	0.13162004E 02	0.12193188E 09	0.43595258E 09
107	0.53264001E 03	0.12555450E 02	0.12193200E 09	0.43595300E 09
108	0.50675869E 03	0.11956884E 02	0.12193200E 09	0.43595300E 09
109	0.45983564E 03	0.10864386E 02	0.10830426E 09	0.39072631E 09
110	0.39187205E 03	0.92819860E 01	0.81049019E 08	0.30027381E 09
111	0.32390806E 03	0.76995765E 01	0.53793692E 08	0.20982100E 09
112	0.25594371E 03	0.61171609E 01	0.40165961E 08	0.16459434E 09
113	0.18797570E 03	0.45347561E 01	0.40166000E 08	0.16459450E 09
114	0.12001548E 03	0.29523465E 01	0.40166000E 08	0.16459450E 09
115	0.11264408E 03	0.28744639E 01	0.40165961E 08	0.16459434E 09
116	0.16586611E 03	0.43011239E 01	0.40166000E 08	0.16459450E 09
117	0.21908800E 03	0.57277802E 01	0.40166000E 08	0.16459450E 09
118	0.25237074E 03	0.66155759E 01	0.48294767E 08	0.18980242E 09
119	0.26571498E 03	0.69657397E 01	0.64552488E 08	0.24021896E 09
120	0.27905898E 03	0.73154929E 01	0.80810150E 08	0.29063528E 09
121	0.28573072E 03	0.74903627E 01	0.88938914E 08	0.31584320E 09
122	0.28573100E 03	0.74903700E 01	0.88939000E 08	0.31584350E 09
123	0.28573100E 03	0.74903700E 01	0.88939000E 08	0.31584350E 09
124	0.28573072E 03	0.74903627E 01	0.81766438E 08	0.29063511E 09
125	0.28573100E 03	0.74903700E 01	0.67421510E 08	0.24021904E 09
126	0.28573100E 03	0.74903700E 01	0.53076514E 08	0.18980272E 09
127	0.28573072E 03	0.74903627E 01	0.45903956E 08	0.16459434E 09
128	0.28573100E 03	0.74903700E 01	0.45904000E 08	0.16459450E 09
129	0.28573100E 03	0.74903700E 01	0.45904000E 08	0.16459450E 09
130	0.28573072E 03	0.74903627E 01	0.45903956E 08	0.16459434E 09
131	0.28573100E 03	0.74903700E 01	0.45904000E 08	0.16459450E 09
132	0.28573100E 03	0.74903700E 01	0.45904000E 08	0.16459450E 09
133	0.41664345E 03	0.92404551E 01	0.45075625E 08	0.16162426E 09
134	0.67847012E 03	0.12740783E 02	0.43419002E 08	0.15568424E 09
135	0.94029639E 03	0.16241055E 02	0.41762335E 08	0.14974407E 09
136	0.11447771E 04	0.18829046F 02	0.39051416E 08	0.14002375E 09
137	0.12919148E 04	0.20504797E 02	0.35286355E 08	0.12652368E 09
138	0.14390514E 04	0.22180530E 02	0.31521256E 08	0.11302347E 09
139	0.12825268E 04	0.19416767E 02	0.27756128E 08	0.99523165E 08
140	0.82234316E 03	0.12213540E 02	0.23991055E 08	0.86023057E 08
141	0.36215828E 03	0.50102956E 01	0.20225956E 08	0.72522853E 08
142	0.12327657E 03	0.12856279E 01	0.16460850E 08	0.59022582E 08
143	0.10570002E 03	0.10395668E 01	0.12695790E 08	0.45522434E 08
144	0.88123350E 02	0.79350440E 00	0.89307119E 07	0.32022221E 08

COMPUTED TERMS FOLLOW . . .

BEAM	BK	BJ	R1	R2
1	0.13429962E 06	0.20799750E 07	0.49659474E 08	0.49659474E 08
2	0.63644605E 05	0.96462209E 06	0.25955327E 08	0.25955327E 08
3	0.34593462E 05	0.26161592E 06	0.25628602E 07	0.25628602E 07
4	0.89404071E 04	0.35268672E 05	0.27559190E 06	0.27559190E 06

TOTAL VEHICLE MASS AND LOCATION OF CG

TVM = 0.24147809E 06 LB-SEC**2/IN
= 0.93307135E 08 LBM

XMC = 0.35536069E 02 IN

CONVERSION FACTORS FOR INPUT DATA

FMP =-0.00000000E-38

FIP =-0.00000000E-38

FEI =-0.00000000E-38

FGA =-0.00000000E-38

LATERAL SUPPORT SPRING CONSTANTS

BEAM	SSL1	SSL2	SSR1	SSR2
1	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
2	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
3	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38

ROTATIONAL SUPPORT SPRING CONSTANTS

BEAM	RSL1	RSL2	RSR1	RSR2
1	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
2	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
3	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38

BRANCH BEAM SPRING CONSTANTS

SKB(I,J,K) I =INTERSTAGE NUMBER

I	(I,1,1)	(I,1,2)	(I,2,1)	(I,2,2)
1	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
2	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
3	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38

INTERSTAGE SPRING CONSTANTS

SK(I,J,K) I = INTERSTAGE NUMBER

I	J	K = 1	2	3	4
1					
	1	0.10000000E 14	0.00000000E-38	0.00000000E-38	0.00000000E-38
	2	0.00000000E-38	0.11000000E 14	0.00000000E-38	0.00000000E-38
	3	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
	4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
2					
	1	0.10000000E 13	0.00000000E-38	0.00000000E-38	0.00000000E-38
	2	0.00000000E-38	0.11000000E 13	0.00000000E-38	0.00000000E-38
	3	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
	4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.00000000E-38
3					
	1	0.18404000E 10	0.18362325E 10	0.00000000E-38	0.00000000E-38
	2	0.00000000E-38	0.18404000E 10	0.00000000E-38	0.00000000E-38
	3	0.00000000E-38	0.00000000E-38	0.18404000E 10	0.18362325E 10
	4	0.00000000E-38	0.00000000E-38	0.00000000E-38	0.18404000E 10

BEAM	SHP FCN	Y1	Y2	YZ1	YZ2
1					
	1	-0.57950542E 05	-0.57950542E 05	-0.11474881E 07	-0.11474881E 07
	2	-0.74414619E 05	-0.74414619E 05	-0.13084633E 07	-0.13084633E 07
	3	-0.86638563E 05	-0.86638563E 05	-0.13936237E 07	-0.13936237E 07
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.31820540E 05	0.31820540E 05	0.65802879E 06	0.65802879E 06
	2	-0.29023572E 05	-0.29023572E 05	-0.65179473E 06	-0.65179473E 06
	3	-0.33274451E 05	-0.33274451E 05	-0.65988696E 06	-0.65988696E 06
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.21836667E 05	0.21836667E 05	0.18435450E 06	0.18435450E 06
	2	-0.19839012E 05	-0.19839012E 05	-0.17064398E 06	-0.17064398E 06
	3	-0.18193060E 05	-0.18193060E 05	-0.14681895E 06	-0.14681895E 06
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	-0.38874516E 04	-0.38874516E 04	-0.20009396E 05	-0.20009396E 05
	2	-0.39203453E 04	-0.39203453E 04	-0.24665668E 05	-0.24665668E 05
	3	-0.40340005E 04	-0.40340005E 04	-0.21722366E 05	-0.21722366E 05
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

BEAM	SHP FCN	Y1PL	Y2PL	Y1PR	Y2PR
1					
	1	-0.25289939E-01	-0.25289939E-01	0.21735917E 00	0.21735917E 00
	2	-0.37162976E-01	-0.37162976E-01	0.14599744E 00	0.14599744E 00
	3	-0.10485152E 00	-0.10485152E 00	0.39014370E-01	0.39014370E-01
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.48960098E-01	0.48960098E-01	-0.71741068E-01	-0.71741068E-01
	2	-0.35144027E-01	-0.35144027E-01	0.20295327E 00	0.20295327E 00
	3	-0.86091162E-01	-0.86091162E-01	0.65758556E-01	0.65758556E-01
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.12360351E 00	0.12360351E 00	-0.15875683E 00	-0.15875683E 00
	2	-0.86662955E-01	-0.86662955E-01	0.62426668E 00	0.62426668E 00
	3	-0.36018053E 00	-0.36018053E 00	0.10207106E 00	0.10207106E 00
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	-0.36237286E 00	-0.36237286E 00	0.19591540E 00	0.19591540E 00
	2	-0.18092621E 00	-0.18092621E 00	0.79334632E 00	0.79334632E 00
	3	-0.25864947E 00	-0.25864947E 00	0.25836378E 00	0.25836378E 00
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

G1(I,J,K) I = BEAM NUMBER J,K = SHAPE FUNCTION NUMBERS

I	J	K = 1	2	3	4
1					
	1	0.57863017E 09	0.36086964E 09	0.44080864E 08	-0.00000000E-19
	2	0.36086964E 09	0.24243176E 09	0.65081643E 08	-0.00000000E-19
	3	0.44080864E 08	0.65081643E 08	0.18419189E 09	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.29442211E 08	-0.26922318E 08	-0.30794295E 08	-0.00000000E-19
	2	-0.26922318E 08	0.76437541E 08	0.24694575E 08	-0.00000000E-19
	3	-0.30794295E 08	0.24694575E 08	0.53819184E 08	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.43331725E 08	-0.36769463E 08	-0.35570333E 08	-0.00000000E-19
	2	-0.36769463E 08	0.15310718E 09	0.23873370E 08	-0.00000000E-19
	3	-0.35570333E 08	0.23873370E 08	0.10179369E 09	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	0.65840589E 07	0.19352083E 07	0.51258183E 07	-0.00000000E-19
	2	0.19352083E 07	0.84892875E 07	0.25595624E 07	-0.00000000E-19
	3	0.51258183E 07	0.25595624E 07	0.42230257E 07	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

G2(I,J,K) I = BEAM NUMBER J,K = SHAPE FUNCTION NUMBERS

I	J	K = 1	2	3	4
1					
	1	0.57863017E 09	0.36086964E 09	0.44080864E 08	-0.00000000E-19
	2	0.36086964E 09	0.24243176E 09	0.65081643E 08	-0.00000000E-19
	3	0.44080864E 08	0.65081643E 08	0.18419189E 09	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.29442211E 08	-0.26922318E 08	-0.30794295E 08	-0.00000000E-19
	2	-0.26922318E 08	0.76437541E 08	0.24694575E 08	-0.00000000E-19
	3	-0.30794295E 08	0.24694575E 08	0.53819184E 08	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.43331725E 08	-0.36769463E 08	-0.35570333E 08	-0.00000000E-19
	2	-0.36769463E 08	0.15310718E 09	0.23873370E 08	-0.00000000E-19
	3	-0.35570333E 08	0.23873370E 08	0.10179369E 09	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	0.65840589E 07	0.19352083E 07	0.51258183E 07	-0.00000000E-19
	2	0.19352083E 07	0.84892875E 07	0.25595624E 07	-0.00000000E-19
	3	0.51258183E 07	0.25595624E 07	0.42230257E 07	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

BYZ1(I,J,K) I = BEAM NUMBER J,K = SHAPE FUNCTIØN NUMBERS

1					
	1	0.42356304E 05	0.46434718E 05	0.47090285E 05	-0.00000000E-19
	2	0.46434718E 05	0.54068772E 05	0.58792282E 05	-0.00000000E-19
	3	0.47090285E 05	0.58792282E 05	0.69862051E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.24038240E 05	-0.22761673E 05	-0.24804031E 05	-0.00000000E-19
	2	-0.22761673E 05	0.22210844E 05	0.23173659E 05	-0.00000000E-19
	3	-0.24804031E 05	0.23173659E 05	0.25916231E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.16583064E 05	-0.15504325E 05	-0.14394384E 05	-0.00000000E-19
	2	-0.15504325E 05	0.15010293E 05	0.13004556E 05	-0.00000000E-19
	3	-0.14394384E 05	0.13004556E 05	0.14863855E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	0.30095205E 04	0.27750708E 04	0.30244214E 04	-0.00000000E-19
	2	0.27750708E 04	0.29768123E 04	0.29117187E 04	-0.00000000E-19
	3	0.30244214E 04	0.29117187E 04	0.30781721E 04	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

BYZ2(I,J,K) I = BEAM NUMBER J,K = SHAPE FUNCTIØN NUMBERS

I	J	K = 1	2	3	4
1					
	1	0.42356304E 05	0.46434718E 05	0.47090285E 05	-0.00000000E-19
	2	0.46434718E 05	0.54068772E 05	0.58792282E 05	-0.00000000E-19
	3	0.47090285E 05	0.58792282E 05	0.69862051E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
2					
	1	0.24038240E 05	-0.22761673E 05	-0.24804031E 05	-0.00000000E-19
	2	-0.22761673E 05	0.22210844E 05	0.23173659E 05	-0.00000000E-19
	3	-0.24804031E 05	0.23173659E 05	0.25916231E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
3					
	1	0.16583064E 05	-0.15504325E 05	-0.14394384E 05	-0.00000000E-19
	2	-0.15504325E 05	0.15010293E 05	0.13004556E 05	-0.00000000E-19
	3	-0.14394384E 05	0.13004556E 05	0.14863855E 05	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
4					
	1	0.30095205E 04	0.27750708E 04	0.30244214E 04	-0.00000000E-19
	2	0.27750708E 04	0.29768123E 04	0.29117187E 04	-0.00000000E-19
	3	0.30244214E 04	0.29117187E 04	0.30781721E 04	-0.00000000E-19
	4	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

PNUT(I)	0.00000000E-38	0.00000000E-38	0.00000000E-38	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
CNU(I)	0.10000000E 01	0.10000000E 01	0.10000000E 01	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
SNU(I)	0.00000000E-38	0.00000000E-38	0.00000000E-38	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19
	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19	-0.00000000E-19

THE ANGULAR DISPLACEMENT COEFFICIENT MATRIX, C FOLLOWS

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	2.3392E-02	-4.6648E-02	2.3256E-02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.3392E-02	-4.6648E-02	2.3256E-02	0.0000E-39
ROW(3)	0.0000E-39	2.3256E-02	-1.0326E-01	8.0000E-02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39
ROW(4)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.3256E-02	-1.0326E-01	8.0000E-02
ROW(5)	0.0000E-39	0.0000E-39	8.0000E-02	-4.0800E 00	4.0000E 00	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	0.0000E-39	0.0000E-39	0.0000E-39	4.0000E 00	-4.0833E 00	8.3333E-02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	8.0000E-02	-4.0800E 00
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.0000E 00

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	0.0000E-39	0.0000E-39	-2.1736E-01	-1.4600E-01	-3.9014E-02	4.8960E-02	-3.9144E-02	-8.6091E-02	0.0000E-39	0.0000E-39
ROW(2)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	7.1741E-02	-2.0295E-01	-6.5759E-02	1.2360E-01	-8.6663E-02
ROW(4)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39
ROW(5)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.5876E-01	-6.2427E-01
ROW(6)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	4.0000E 00	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(8)	-4.0833E 00	8.3333E-02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(2)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.1736E-01	-1.4600E-01	-3.9014E-02	4.8960E-02	-3.9144E-02	-8.6091E-02
ROW(3)	-3.6018E-01	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	7.1741E-02	-2.0295E-01	-6.5759E-02
ROW(5)	-1.0207E-01	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	0.0000E-39	-3.6237E-01	-1.8093E-01	-2.9865E-01	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
ROW(1)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(2)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(3)	0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(4)	1.2360E-01	-8.6663E-02	-3.6018E-01	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(5)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(6)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(7)	1.5876E-01	-6.2427E-01	-1.0207E-01	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	-3.6237E-01	-1.8093E-01	-2.9865E-01	

THE STIFFNESS MATRIX, S FOLLOWS

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(
ROW(1)	1.0000E 13	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(2)	0.0000E-39	1.1000E 13	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(3)	0.0000E-39	0.0000E-39	1.0000E 12	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(4)	0.0000E-39	0.0000E-39	0.0000E-39	1.1000E 12	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(5)	0.0000E-39	0.0000E-39	[illegible]	0.0000E-39	1.8404E 09	1.8362E 09	0.0000E-39	0.0000E-39	
ROW(6)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.8362E 09	1.8404E 09	0.0000E-39	0.0000E-39	
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.8404E 09	1.8362E 09	
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.8362E 09	1.8404E 09	

THE K.E. MATRIX, A FOLLOWS

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	6.4163E 04	2.1482E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	2.1482E 04	5.9988E 04	8.3956E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	0.0000E-39	8.3956E 03	2.3174E 04	4.5273E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	0.0000E-39	0.0000E-39	4.5273E 03	1.6402E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(5)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.9761E 03	1.0252E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.0252E 03	1.9138E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	6.4163E 04	2.1482E 04	0.0000E-39	0.0000E-39
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.1482E 04	5.9988E 04	8.3956E 03	0.0000E-39
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	8.3956E 03	2.3174E 04	4.5273E 03
ROW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.5273E 03	1.6402E 04
ROW(11)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(13)	-3.1109E 04	-2.6842E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(14)	-4.3807E 04	-3.0607E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(15)	-5.4039E 04	-3.2599E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(16)	0.0000E-39	1.6518E 04	1.5303E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(17)	0.0000E-39	-1.3866E 04	-1.5158E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(18)	0.0000E-39	-1.7928E 04	-1.5346E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(19)	0.0000E-39	0.0000E-39	7.0883E 03	1.4748E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(20)	0.0000E-39	0.0000E-39	-6.1875E 03	-1.3652E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(21)	0.0000E-39	0.0000E-39	-6.4475E 03	-1.1746E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(22)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.2200E 03	-1.6674E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(23)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.8649E 03	-2.0555E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(24)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.2238E 03	-1.8102E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-3.1109E 04	-2.6842E 04	0.0000E-39	0.0000E-39
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-4.3807E 04	-3.0607E 04	0.0000E-39	0.0000E-39
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-5.4039E 04	-3.2599E 04	0.0000E-39	0.0000E-39
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.6518E 04	1.5303E 04	0.0000E-39
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.3866E 04	-1.5158E 04	0.0000E-39
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.7928E 04	-1.5346E 04	0.0000E-39
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	7.0883E 03	1.4748E 04
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-6.1875E 03	-1.3652E 04
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-6.4475E 03	-1.1746E 04
ROW(34)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(35)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(36)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	0.0000E-39	0.0000E-39	-3.1109E 04	-4.3807E 04	-5.4039E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	0.0000E-39	0.0000E-39	-2.6842E 04	-3.0607E 04	-3.2599E 04	1.6518E 04	-1.3866E 04	-1.7928E 04	0.0000E-39	0.0000E-39
ROW(3)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.5303E 04	-1.5158E 04	-1.5346E 04	7.0883E 03	-6.1875E 03
ROW(4)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.4748E 04	-1.3652E 04
ROW(5)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(11)	4.9761E 03	1.0252E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(12)	1.0252E 03	1.9138E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(13)	0.0000E-39	0.0000E-39	4.2356E 04	4.6435E 04	4.7090E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(14)	0.0000E-39	0.0000E-39	4.6435E 04	5.4069E 04	5.8792E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(15)	0.0000E-39	0.0000E-39	4.7090E 04	5.8792E 04	6.9862E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(16)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.4038E 04	-2.2762E 04	-2.4804E 04	0.0000E-39	0.0000E-39
ROW(17)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.2762E 04	2.2211E 04	2.3174E 04	0.0000E-39	0.0000E-39
ROW(18)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.4804E 04	2.3174E 04	2.5916E 04	0.0000E-39	0.0000E-39
ROW(19)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.6583E 04	-1.5504E 04
ROW(20)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.5504E 04	1.5016E 04
ROW(21)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.4394E 04	1.3005E 04
ROW(22)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(23)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(24)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(34)	-2.2200E 03	-1.6674E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(35)	-1.8649E 03	-2.0555E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(36)	-2.2238E 03	-1.8102E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	-6.4475E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	-1.1746E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(5)	0.0000E-39	-2.2200E 03	-1.8649E 03	-2.2238E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	0.0000E-39	-1.6674E 03	-2.0555E 03	-1.8102E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-3.1109E 04	-4.3807E 04	-5.4039E 04	0.0000E-39	0.0000E-39	0.0000E-39
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.6842E 04	-3.0607E 04	-3.2599E 04	1.6518E 04	-1.3866E 04	-1.7928E 04
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.5303E 04	-1.5158E 04	-1.5346E 04
ROW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(11)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(13)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(14)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(15)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(16)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(17)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(18)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(19)	-1.4394E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(20)	1.3005E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(21)	1.4864E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(22)	0.0000E-39	3.0095E 03	2.7751E 03	3.0244E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(23)	0.0000E-39	2.7751E 03	2.9768E 03	2.9117E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(24)	0.0000E-39	3.0244E 03	2.9117E 03	3.0782E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.2356E 04	4.6435E 04	4.7090E 04	0.0000E-39	0.0000E-39	0.0000E-39
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.6435E 04	5.4069E 04	5.8792E 04	0.0000E-39	0.0000E-39	0.0000E-39
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.7090E 04	5.8792E 04	6.9862E 04	0.0000E-39	0.0000E-39	0.0000E-39
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.4038E 04	-2.2762E 04	-2.4804E 04
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.2762E 04	2.2211E 04	2.3174E 04
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.4804E 04	2.3174E 04	2.5916E 04
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(34)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(35)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(36)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(

RØW(1)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(2)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(3)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(4)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(5)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(6)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(9)	7.0883E 03	-6.1675E 03	-6.4475E 03	0.0000E-39	0.0000E-39	0.0000E-39
RØW(10)	1.4748E 04	-1.3652E 04	-1.1746E 04	0.0000E-39	0.0000E-39	0.0000E-39
RØW(11)	0.0000E-39	0.0000E-39	0.0000E-39	-2.2200E 03	-1.8649E 03	-2.2238E 03
RØW(12)	0.0000E-39	0.0000E-39	0.0000E-39	-1.6674E 03	-2.0555E 03	-1.8102E 03
RØW(13)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(14)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(15)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(16)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(17)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(18)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(19)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(20)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(21)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(22)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(23)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(24)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(31)	1.6583E 04	-1.5504E 04	-1.4354E 04	0.0000E-39	0.0000E-39	0.0000E-39
RØW(32)	-1.5504E 04	1.5010E 04	1.3005E 04	0.0000E-39	0.0000E-39	0.0000E-39
RØW(33)	-1.4354E 04	1.3005E 04	1.4864E 04	0.0000E-39	0.0000E-39	0.0000E-39
RØW(34)	0.0000E-39	0.0000E-39	0.0000E-39	3.0095E 03	2.7751E 03	3.0244E 03
RØW(35)	0.0000E-39	0.0000E-39	0.0000E-39	2.7751E 03	2.9768E 03	2.9117E 03
RØW(36)	0.0000E-39	0.0000E-39	0.0000E-39	3.0244E 03	2.9117E 03	3.0782E 03

THE P.E. MATRIX, B FØLLØWS

	CØLUMN(1)	CØLUMN(2)	CØLUMN(3)	CØLUMN(4)	CØLUMN(5)	CØLUMN(6)	CØLUMN(7)	CØLUMN(8)	CØLUMN(9)	CØLUMN(10)
RØW(1)	5.4718E 09	-1.0912E 10	5.4400E 09	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(2)	-1.0912E 10	2.2301E 10	-1.3256E 10	1.8605E 09	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(3)	5.4400E 09	-1.3256E 10	1.6082E 10	-8.2736E 09	-1.0908E 07	1.2242E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(4)	0.0000E-39	1.8605E 09	-8.2736E 09	6.5478E 09	-1.2384E 08	-1.0852E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(5)	0.0000E-39	0.0000E-39	-1.0908E 07	-1.2384E 08	1.4892E 08	-1.4170E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(6)	-0.0000E-39	-0.0000E-39	1.2242E 07	-1.0852E 07	-1.4170E 07	1.2781E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39
RØW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	6.0189E 09	-1.2003E 10	5.9840E 09	-1.4575E 10
RØW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.2003E 10	2.4531E 10	-1.4575E 10	2.0465E 09
RØW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	5.9840E 09	-1.4575E 10	1.7685E 10	-9.0996E 09
RØW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	2.0465E 09	-9.0996E 09	7.1878E 09
RØW(11)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-1.0906E 07	-1.2384E 08
RØW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	1.2242E 07	-1.0852E 07
RØW(13)	-5.0844E 10	1.0139E 11	-5.0545E 10	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(14)	-3.4151E 10	6.8104E 10	-3.3953E 10	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(15)	-9.1262E 09	1.8199E 10	-9.0731E 09	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(16)	1.1453E 10	-2.1170E 10	3.9784E 09	5.7393E 09	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(17)	-9.1565E 09	1.3540E 10	1.1853E 10	-1.6236E 10	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(18)	-2.0138E 10	3.8630E 10	-1.3231E 10	-5.2607E 09	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(19)	0.0000E-39	7.8745E 09	-1.2735E 10	9.8623E 09	-2.1646E 07	2.4293E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(20)	0.0000E-39	-2.0154E 09	8.8565E 09	-6.8307E 09	8.5118E 07	-9.5525E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(21)	0.0000E-39	-8.3763E 09	3.7176E 10	-2.8798E 10	1.3917E 07	-1.5619E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(22)	0.0000E-39	0.0000E-39	-5.3232E 07	4.7191E 07	6.1617E 07	-5.5576E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(23)	0.0000E-39	0.0000E-39	-2.6578E 07	2.3562E 07	3.0764E 07	-2.7748E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(24)	0.0000E-39	0.0000E-39	-4.3871E 07	3.8893E 07	5.0781E 07	-4.5803E 07	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
RØW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-5.5929E 10	1.1153E 11	-5.5604E 10	-0.0000E-39
RØW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-3.7567E 10	7.4915E 10	-3.7348E 10	-0.0000E-39
RØW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.0039E 10	2.0019E 10	-9.9804E 09	-0.0000E-39
RØW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	1.2598E 10	-2.3287E 10	4.3762E 09	6.3132E 09
RØW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.0072E 10	1.4894E 10	1.3038E 10	-1.7860E 10
RØW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-2.2152E 10	4.2493E 10	-1.4554E 10	-5.7868E 09
RØW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	3.1620E 09	-1.4016E 10	1.0851E 10
RØW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	-2.2170E 09	9.7514E 09	-7.5240E 09
RØW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	-9.2139E 09	4.0895E 10	-3.1679E 10
RØW(34)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-5.3232E 07	4.7191E 07
RØW(35)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-2.6578E 07	2.3562E 07
RØW(36)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-4.3871E 07	3.8893E 07

	CØLUMN(11)	CØLUMN(12)	CØLUMN(13)	CØLUMN(14)	CØLUMN(15)	CØLUMN(16)	CØLUMN(17)	CØLUMN(18)	CØLUMN(19)	CØLUMN(20)
RØW(1)	-0.0000E-39	0.0000E-39	-5.0844E 10	-3.4151E 10	-9.1262E 09	1.1453E 10	-9.1565E 09	-2.0138E 10	0.0000E-39	0.0000E-39
RØW(2)	-0.0000E-39	0.0000E-39	1.0139E 11	6.8104E 10	1.8199E 10	-2.1170E 10	1.3540E 10	3.8630E 10	2.8745E 09	-2.0154E 09
RØW(3)	-0.0000E-39	0.0000E-39	-5.0545E 10	-3.3953E 10	-9.0731E 09	3.9784E 09	1.1853E 10	-1.3231E 10	-1.2735E 10	8.8565E 09
RØW(4)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	5.7393E 09	-1.6236E 10	-5.2607E 09	9.8623E 09	-6.8307E 09
RØW(5)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.1646E 07	8.5118E 07
RØW(6)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	2.4293E 07	-9.5525E 07
RØW(7)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(8)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(9)	-1.0908E 07	1.2242E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(10)	-1.2384E 08	-1.0852E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(11)	1.4892E 08	-1.4170E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(12)	-1.4170E 07	1.2781E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(13)	-0.0000E-39	0.0000E-39	4.7351E 11	3.1770E 11	8.4845E 10	-1.0642E 11	8.5083E 10	1.8713E 11	0.0000E-39	0.0000E-39
RØW(14)	-0.0000E-39	0.0000E-39	3.1770E 11	2.1339E 11	5.7025E 10	-7.1480E 10	5.7149E 10	1.2569E 11	0.0000E-39	0.0000E-39
RØW(15)	-0.0000E-39	0.0000E-39	8.4845E 10	5.7025E 10	1.5405E 10	-1.9101E 10	1.5272E 10	3.3588E 10	0.0000E-39	0.0000E-39

RØW(16)	-1.1073E-08	-0.0000E-39	-5.5394E-09	0.0000E-39	0.0000E-39	1.0000E 00	-0.0000E-39	-3.1243E-08	-0.0000E-39	1.2696E-09
RØW(17)	-0.0000E-39	-1.0217E-09	-0.0000E-39	3.0759E-09	1.7300E-08	-0.0000E-39	1.0000E 00	-0.0000E-39	-3.3481E-09	-0.0000E-39
RØW(18)	-5.5722E-09	-0.0000E-39	-6.4257E-09	0.0000E-39	0.0000E-39	-3.1243E-08	-0.0000E-39	1.0000E 00	-0.0000E-39	-6.2155E-09
RØW(19)	-0.0000E-39	6.1634E-09	-0.0000E-39	1.5250E-08	7.4907E-10	-0.0000E-39	-3.3481E-09	-0.0000E-39	1.0000E 00	-0.0000E-39
RØW(20)	-1.0815E-08	-0.0000E-39	8.0081E-10	0.0000E-39	0.0000E-39	1.2696E-09	-0.0000E-39	-6.2155E-09	-0.0000E-39	1.0000E 00
RØW(21)	3.6066E-09	-0.0000E-39	8.1485E-09	0.0000E-39	0.0000E-39	-1.1742E-08	-0.0000E-39	1.7100E-09	-0.0000E-39	1.0318E-09
RØW(22)	0.0000E-39	-8.5807E-09	0.0000E-39	6.6826E-09	-6.0753E-09	0.0000E-39	2.8681E-09	0.0000E-39	-7.8724E-09	0.0000E-39
RØW(23)	-3.4316E-08	-0.0000E-39	9.7645E-09	0.0000E-39	0.0000E-39	-7.8112E-10	-0.0000E-39	-1.4329E-08	-0.0000E-39	5.8998E-09
RØW(24)	-0.0000E-39	4.4164E-09	-0.0000E-39	-7.0182E-09	1.3127E-08	-0.0000E-39	1.8835E-09	-0.0000E-39	-1.3221E-08	-0.0000E-39
RØW(25)	6.4365E-08	-0.0000E-39	1.4629E-08	0.0000E-39	0.0000E-39	6.4991E-09	-0.0000E-39	-1.0111E-08	-0.0000E-39	1.6384E-08
RØW(26)	0.0000E-39	-2.1878E-08	0.0000E-39	1.2969E-08	2.4174E-09	0.0000E-39	4.9108E-09	0.0000E-39	2.6411E-08	0.0000E-39
RØW(27)	-0.0000E-39	3.3674E-08	-0.0000E-39	-5.7573E-10	-1.1340E-08	-0.0000E-39	-8.9504E-09	-0.0000E-39	-1.2193E-08	-0.0000E-39
RØW(28)	-1.7678E-07	-0.0000E-39	1.7543E-09	0.0000E-39	0.0000E-39	1.7140E-09	-0.0000E-39	-1.0166E-08	-0.0000E-39	-8.6728E-09
RØW(29)	-0.0000E-39	2.4438E-07	-0.0000E-39	2.3626E-08	-7.7108E-08	-0.0000E-39	1.1043E-08	-0.0000E-39	-5.4703E-09	-0.0000E-39
RØW(30)	1.2441E-06	-0.0000E-39	-1.6877E-08	0.0000E-39	0.0000E-39	4.3447E-08	-0.0000E-39	-3.9533E-09	-0.0000E-39	-2.1331E-09
RØW(31)	-1.6615E-06	-0.0000E-39	2.8192E-08	0.0000E-39	0.0000E-39	-5.3753E-08	-0.0000E-39	-3.4731E-10	-0.0000E-39	9.9188E-10
RØW(32)	0.0000E-39	-3.3480E-07	0.0000E-39	-3.0087E-08	1.0516E-07	0.0000E-39	-4.4636E-09	0.0000E-39	2.6921E-09	0.0000E-39
RØW(33)	0.0000E-39	1.7309E-08	0.0000E-39	-3.1963E-10	-5.6139E-09	0.0000E-39	-5.6183E-10	0.0000E-39	-2.3359E-09	0.0000E-39
RØW(34)	2.5641E-07	-0.0000E-39	-5.0810E-09	0.0000E-39	0.0000E-39	8.0519E-09	-0.0000E-39	3.6335E-09	-0.0000E-39	2.5461E-09
RØW(35)	0.0000E-39	-5.0001E-08	0.0000E-39	-4.4498E-09	1.7618E-08	0.0000E-39	1.2020E-09	0.0000E-39	1.6794E-09	0.0000E-39
RØW(36)	1.5326E-08	-0.0000E-39	-1.8533E-09	0.0000E-39	0.0000E-39	5.8262E-10	-0.0000E-39	4.6450E-10	-0.0000E-39	-1.7675E-09

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
RØW(1)	0.0000E-39	5.7847E-08	0.0000E-39	8.9144E-09	0.0000E-39	-1.6102E-08	-2.1229E-08	0.0000E-39	7.4568E-09	0.0000E-39
RØW(2)	-1.0074E-08	0.0000E-39	3.5698E-09	-0.0000E-39	-1.6522E-10	0.0000E-39	-0.0000E-39	3.0353E-09	-0.0000E-39	1.2375E-09
RØW(3)	-0.0000E-39	5.0715E-04	-0.0000E-39	6.0815E-05	-0.0000E-39	-1.8238E-04	-2.2263E-04	-0.0000E-39	7.3611E-05	-0.0000E-39
RØW(4)	4.6512E-04	0.0000E-39	-5.5742E-05	-0.0000E-39	-1.6730E-04	0.0000E-39	-0.0000E-39	-2.0420E-04	-0.0000E-39	-6.7521E-05
RØW(5)	0.0000E-39	-3.2648E-05	0.0000E-39	-6.1894E-06	0.0000E-39	4.0044E-06	-2.5462E-05	0.0000E-39	1.4982E-05	0.0000E-39
RØW(6)	2.9236E-05	0.0000E-39	-5.5358E-06	-0.0000E-39	-3.5882E-06	0.0000E-39	-0.0000E-39	2.2752E-05	-0.0000E-39	1.3415E-05
RØW(7)	1.5631E-07	0.0000E-39	2.5514E-07	-0.0000E-39	6.5545E-07	0.0000E-39	-0.0000E-39	-1.7441E-07	-0.0000E-39	-3.1602E-07
RØW(8)	0.0000E-39	-1.6167E-07	0.0000E-39	2.5791E-07	0.0000E-39	-6.6343E-07	1.7941E-07	0.0000E-39	-3.1909E-07	0.0000E-39
RØW(9)	1.2766E-07	0.0000E-39	1.2103E-05	-0.0000E-39	-1.5357E-05	0.0000E-39	-0.0000E-39	4.7436E-05	-0.0000E-39	-3.2987E-04
RØW(10)	-0.0000E-39	1.1999E-07	-0.0000E-39	-1.0710E-05	-0.0000E-39	-1.3601E-05	4.1995E-05	-0.0000E-39	2.9205E-04	-0.0000E-39
RØW(11)	3.6066E-09	0.0000E-39	-3.4316E-08	-0.0000E-39	6.4365E-08	0.0000E-39	-0.0000E-39	-1.7678E-07	-0.0000E-39	1.2441E-06
RØW(12)	-0.0000E-39	-8.5807E-09	-0.0000E-39	4.4164E-09	-0.0000E-39	-2.1878E-08	3.3674E-08	-0.0000E-39	2.4438E-07	-0.0000E-39
RØW(13)	8.1485E-09	0.0000E-39	9.7645E-09	-0.0000E-39	1.4629E-08	0.0000E-39	-0.0000E-39	1.7543E-09	-0.0000E-39	-1.6877E-08
RØW(14)	0.0000E-39	6.6826E-09	0.0000E-39	-7.0182E-09	0.0000E-39	1.2969E-08	-5.7573E-10	0.0000E-39	2.3626E-08	0.0000E-39
RØW(15)	0.0000E-39	-6.0753E-09	0.0000E-39	1.3127E-08	0.0000E-39	2.4174E-09	-1.1340E-08	0.0000E-39	-7.7108E-08	0.0000E-39
RØW(16)	-1.1742E-08	0.0000E-39	-7.8112E-10	-0.0000E-39	6.4991E-09	0.0000E-39	-0.0000E-39	1.7140E-09	-0.0000E-39	4.3447E-08
RØW(17)	-0.0000E-39	2.8681E-09	-0.0000E-39	1.8835E-09	-0.0000E-39	4.9108E-09	-8.9504E-09	-0.0000E-39	1.1043E-08	-0.0000E-39
RØW(18)	1.7100E-09	0.0000E-39	-1.4329E-08	-0.0000E-39	-1.0111E-08	0.0000E-39	-0.0000E-39	-1.0166E-08	-0.0000E-39	-3.9533E-09
RØW(19)	-0.0000E-39	-7.8724E-09	-0.0000E-39	-1.3221E-08	-0.0000E-39	2.6411E-08	-1.2193E-08	-0.0000E-39	-5.4703E-09	-0.0000E-39
RØW(20)	1.0318E-09	0.0000E-39	5.8998E-09	-0.0000E-39	1.6384E-08	0.0000E-39	-0.0000E-39	-8.6728E-09	-0.0000E-39	-2.1331E-09
RØW(21)	1.0000E 00	0.0000E-39	-1.4407E-08	-0.0000E-39	2.2651E-08	0.0000E-39	-0.0000E-39	1.4560E-08	-0.0000E-39	-8.8375E-10
RØW(22)	0.0000E-39	1.0000E 00	0.0000E-39	-2.3859E-09	0.0000E-39	2.5792E-08	1.0474E-08	0.0000E-39	-5.6929E-09	0.0000E-39
RØW(23)	-1.4407E-08	0.0000E-39	1.0000E 00	-0.0000E-39	-1.6183E-08	0.0000E-39	-0.0000E-39	1.0332E-08	-0.0000E-39	-2.3726E-08
RØW(24)	-0.0000E-39	-2.3859E-09	-0.0000E-39	1.0000E 00	-0.0000E-39	-3.5335E-10	5.0104E-09	-0.0000E-39	-1.9000E-08	-0.0000E-39
RØW(25)	2.2651E-08	0.0000E-39	-1.6183E-08	-0.0000E-39	1.0000E 00	0.0000E-39	-0.0000E-39	-1.5286E-08	-0.0000E-39	-7.8357E-09
RØW(26)	0.0000E-39	2.5792E-08	0.0000E-39	-3.5335E-10	0.0000E-39	1.0000E 00	-1.7043E-08	0.0000E-39	2.0057E-09	0.0000E-39
RØW(27)	-0.0000E-39	1.0474E-08	-0.0000E-39	5.0104E-09	-0.0000E-39	-1.7043E-08	1.0000E 00	-0.0000E-39	1.4970E-08	-0.0000E-39
RØW(28)	1.4560E-08	0.0000E-39	1.0332E-08	-0.0000E-39	-1.5286E-08	0.0000E-39	-0.0000E-39	1.0000E 00	-0.0000E-39	-1.9795E-08
RØW(29)	-0.0000E-39	-5.6929E-09	-0.0000E-39	-1.9000E-08	-0.0000E-39	2.0057E-09	1.4970E-08	-0.0000E-39	1.0000E 00	-0.0000E-39
RØW(30)	-8.8375E-10	0.0000E-39	-2.3726E-08	-0.0000E-39	-7.8357E-09	0.0000E-39	-0.0000E-39	-1.9795E-08	-0.0000E-39	1.0000E 00
RØW(31)	2.5536E-09	0.0000E-39	-4.4033E-09	-0.0000E-39	1.7695E-08	0.0000E-39	-0.0000E-39	-2.4256E-08	-0.0000E-39	-3.0044E-08
RØW(32)	0.0000E-39	-2.0510E-09	0.0000E-39	-1.7564E-09	0.0000E-39	-3.7846E-09	8.0061E-09	0.0000E-39	-2.1608E-08	0.0000E-39
RØW(33)	0.0000E-39	-2.7178E-09	0.0000E-39	-1.3132E-08	0.0000E-39	-1.1321E-08	7.5855E-09	0.0000E-39	-2.0645E-08	0.0000E-39
RØW(34)	8.3556E-09	0.0000E-39	1.1036E-09	-0.0000E-39	-6.1322E-09	0.0000E-39	-0.0000E-39	-3.6431E-08	-0.0000E-39	-5.1178E-08
RØW(35)	0.0000E-39	4.3578E-09	0.0000E-39	-6.6509E-09	0.0000E-39	-1.2699E-08	-3.1918E-08	0.0000E-39	4.836CE-08	0.0000E-39
RØW(36)	-8.7954E-10	0.0000E-39	3.8206E-09	-0.0000E-39	-8.9920E-08	0.0000E-39	-0.0000E-39	1.0994E-07	-0.0000E-39	-1.3128E-09

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
RØW(1)	0.0000E-39	2.3200E-09	-3.5682E-09	0.0000E-39	1.0337E-08	0.0000E-39	
RØW(2)	1.6480E-09	0.0000E-39	0.0000E-39	-4.4391E-09	0.0000E-39	-3.1564E-11	
RØW(3)	-0.0000E-39	2.3614E-05	-2.5598E-05	-0.0000E-39	7.7400E-05	-0.0000E-39	
RØW(4)	-2.1663E-05	0.0000E-39	0.0000E-39	7.4622E-05	0.0000E-39	4.7521E-06	
RØW(5)	0.0000E-39	7.3611E-06	-2.4024E-06	0.0000E-39	7.2651E-06	0.0000E-39	
RØW(6)	6.5903E-06	0.0000E-39	0.0000E-39	-6.8365E-06	0.0000E-39	-4.3559E-07	
RØW(7)	-1.8431E-07	0.0000E-39	0.0000E-39	1.1539E-07	0.0000E-39	7.1710E-09	
RØW(8)	0.0000E-39	-1.8715E-07	3.7010E-08	0.0000E-39	-1.1176E-07	0.0000E-39	
RØW(9)	4.3843E-04	0.0000E-39	0.0000E-39	-6.7422E-05	0.0000E-39	-4.2967E-06	
RØW(10)	-0.0000E-39	-3.8818E-04	1.8767E-05	-0.0000E-39	-5.6793E-05	-0.0000E-39	
RØW(11)	-1.6615E-06	0.0000E-39	0.0000E-39	2.5641E-07	0.0000E-39	1.5326E-08	
RØW(12)	-0.0000E-39	-3.3480E-07	1.7309E-08	-0.0000E-39	-5.0001E-08	-0.0000E-39	
RØW(13)	2.8192E-08	0.0000E-39	0.0000E-39	-5.0810E-09	0.0000E-39	-1.8533E-09	
RØW(14)	0.0000E-39	-3.0087E-08	-3.1963E-10	0.0000E-39	-4.4498E-09	0.0000E-39	
RØW(15)	0.0000E-39	1.0516E-07	-5.6139E-09	0.0000E-39	1.7618E-08	0.0000E-39	
RØW(16)	-5.3753E-08	0.0000E-39	0.0000E-39	8.0519E-09	0.0000E-39	5.8262E-10	
RØW(17)	-0.0000E-39	-4.4636E-09	-5.6183E-10	-0.0000E-39	1.2020E-09	-0.0000E-39	
RØW(18)	-3.4731E-10	0.0000E-39	0.0000E-39	3.6335E-09	0.0000E-39	4.6450E-10	
RØW(19)	-0.0000E-39	2.6921E-09	-2.3359E-09	-0.0000E-39	1.6794E-09	-0.0000E-39	
RØW(20)	9.9188E-10	0.0000E-39	0.0000E-39	2.5461E-09	0.0000E-39	-1.7675E-09	
RØW(21)	2.5536E-09	0.0000E-39	0.0000E-39	8.3556E-09	0.0000E-39	-8.7954E-10	
RØW(22)	0.0000E-39	-2.0510E-09	-2.7178E-09	0.0000E-39	4.3578E-09	0.0000E-39	
RØW(23)	-4.4033E-09	0.0000E-39	0.0000E-39	1.1036E-09	0.0000E-39	3.8206E-09	
RØW(24)	-0.0000E-39	-1.7564E-09	-1.3132E-08	-0.0000E-39	-6.6509E-09	-0.0000E-39	
RØW(25)	1.7695E-08	0.0000E-39	0.0000E-39	-6.1322E-09	0.0000E-39	-8.9920E-08	
RØW(26)	0.0000E-39	-3.7846E-09	-1.1321E-08	0.0000E-39	-1.2699E-08	0.0000E-39	
RØW(27)	-0.0000E-39	8.0061E-09	7.5855E-09	-0.0000E-39	-3.1918E-08	-0.0000E-39	
RØW(28)	-2.4256E-08	0.0000E-39	0.0000E-39	-3.6431E-08	0.0000E-39	1.0994E-07	
RØW(29)	-0.0000E-39	-2.1608E-08	-2.0649E-08	-0.0000E-39	4.8360E-08	-0.0000E-39	
RØW(30)	-3.0044E-08	0.0000E-39	0.0000E-39	-5.1178E-08	0.0000E-39	-1.3128E-09	
RØW(31)	1.0000E 00	0.0000E-39	0.0000E-39	-7.4714E-08	0.0000E-39	-1.4128E-09	
RØW(32)	0.0000E-39	1.0000E 00	-3.0035E-08	0.0000E-39	7.2476E-08	0.0000E-39	
RØW(33)	0.0000E-39	-3.0035E-08	1.0000E 00	0.0000E-39	1.8374E-08	0.0000E-39	
RØW(34)	-7.4714E-08	0.0000E-39	0.0000E-39	1.0000E 00	0.0000E-39	-1.3693E-07	
RØW(35)	0.0000E-39	7.2476E-08	1.8374E-08	0.0000E-39	1.0000E 00	0.0000E-39	
RØW(36)	-1.4128E-09	0.0000E-39	0.0000E-39	-1.3693E-07	0.0000E-39	1.0000E 00	

ERRØR- DW(34)= -5.6408735E-04, ABSØLUTE VALUE ØF DW USED CALCULATIØNS CØNTINUE
ERRØR- DW(35)= -7.1279784E-04, ABSØLUTE VALUE ØF DW USED CALCULATIØNS CØNTINUE
ERRØR- DW(36)= -1.8421079E-03, ABSØLUTE VALUE ØF DW USED CALCULATIØNS CØNTINUE

P(-1) B P0(-1) = F (PP**A)

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	8.5279E 04	-2.1895E 05	1.9946E 05	-4.9138E 04	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	-2.1895E 05	5.7240E 05	-5.8536E 05	2.0932E 05	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	1.9946E 05	-5.8536E 05	9.9085E 05	-7.1041E 05	-1.0464E 03	2.3761E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	-4.9138E 04	2.0932E 05	-7.1041E 05	7.1332E 05	-1.3860E 04	2.2722E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(5)	0.0000E-39	0.0000E-39	-1.0464E 03	-1.3860E 04	2.9927E 04	-1.5409E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	-0.0000E-39	-0.0000E-39	2.3761E 03	2.2722E 03	-1.5409E 04	1.4648E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	9.3807E 04	-2.4085E 05	2.194CE 05	-5.4052E 04
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-2.4085E 05	6.2964E 05	-6.4389E 05	2.3025E 05
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	2.194CE 05	-6.4389E 05	1.0899E 06	-7.8137E 05
ROW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-5.4052E 04	2.3025E 05	-7.8137E 05	7.8366E 05
ROW(11)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-1.0464E 03	-1.3860E 04
ROW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	2.3761E 03	2.2722E 03
ROW(13)	-1.4189E 06	3.6591E 06	-3.4343E 06	9.4921E 05	-2.8329E 02	-2.1729E 02	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(14)	1.7751E 06	-4.5528E 06	4.1180E 06	-9.8439E 05	-8.2680E 01	-6.3415E 01	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(15)	-1.3078E 06	3.3554E 06	-3.0425E 06	7.3509E 05	3.9718E 01	3.0463E 01	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(16)	5.8686E 05	-1.3684E 06	3.8232E 05	7.8806E 05	-1.9153E 03	-1.4690E 03	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(17)	5.8606E 05	-2.1257E 06	5.8113E 06	-5.3795E 06	6.4883E 02	4.9765E 02	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(18)	-2.2814E 06	5.4545E 06	-2.4547E 06	-1.9562E 06	-2.7605E 02	-2.1173E 02	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(19)	-1.0224E 05	5.0699E 05	-1.9831E 06	2.0194E 06	2.3577E 04	6.1782E 03	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(20)	-5.2661E 04	3.5993E 05	-1.751CE 06	1.8839E 06	4.7125E 04	-9.4750E 04	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(21)	-4.8465E 04	-3.5411E 05	3.2987E 06	-3.8530E 06	4.0232E 04	-5.1732E 04	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(22)	0.0000E-39	0.0000E-39	-9.5008E 03	2.8987E 03	4.0047E 04	-5.0224E 04	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(23)	0.0000E-39	0.0000E-39	8.2563E 03	-8.7040E 03	-2.3671E 04	3.9336E 04	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(24)	0.0000E-39	0.0000E-39	1.0536E 04	-2.9136E 04	2.2386E 03	3.7636E 04	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.5607E 06	4.0250E 06	-3.7777E 06	1.0441E 06
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	1.9526E 06	-5.0081E 06	4.5298E 06	-1.0828E 06
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.4386E 06	3.6910E 06	-3.3468E 06	8.086CE 05
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	6.4555E 05	-1.5052E 06	4.2061E 05	8.6660E 05
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	6.4467E 05	-2.3382E 06	6.3924E 06	-5.9174E 06
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-2.5096E 06	6.0CC0E 06	-2.7001E 06	-2.1519E 06
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-1.1247E 05	5.5768E 05	-2.1819E 06	2.2237E 06
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-5.7927E 04	3.9552E 05	-1.9241E 06	2.0693E 06
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-5.3311E 04	-3.8952E 05	3.6295E 06	-4.2387E 06
ROW(34)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-9.5008E 03	2.8987E 03
ROW(35)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	8.2563E 03	-8.7040E 03
ROW(36)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	1.0536E 04	-2.9136E 04

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	-0.0000E-39	0.0000E-39	-1.4189E 06	1.7751E 06	-1.3078E 06	5.8686E 05	5.8606E 05	-2.2814E 06	-1.0224E 05	-5.2661E 04
ROW(2)	-0.0000E-39	0.0000E-39	3.6591E 06	-4.5528E 06	3.3554E 06	-1.3684E 06	-2.1257E 06	5.4545E 06	5.0699E 05	3.5993E 05
ROW(3)	-0.0000E-39	0.0000E-39	-3.4343E 06	4.1180E 06	-3.0425E 06	3.8232E 05	5.8113E 06	-2.4547E 06	-1.9831E 06	-1.751CE 06
ROW(4)	-0.0000E-39	0.0000E-39	9.4921E 05	-9.8439E 05	7.3509E 05	7.8806E 05	-5.3795E 06	-1.9562E 06	2.0194E 06	1.8839E 06
ROW(5)	-0.0000E-39	0.0000E-39	-2.8329E 02	-8.2680E 01	3.9718E 01	-1.9153E 03	6.4883E 02	-2.7605E 02	2.3577E 04	4.7125E 04
ROW(6)	0.0000E-39	-0.0000E-39	-2.1729E 02	-6.3415E 01	3.0463E 01	-1.4690E 03	4.9765E 02	-2.1173E 02	6.1782E 03	-9.4750E 04
ROW(7)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(8)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(9)	-1.0464E 03	2.3761E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(10)	-1.3860E 04	2.2722E 03	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(11)	2.9927E 04	-1.5409E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(12)	-1.5409E 04	1.4648E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(13)	-0.0000E-39	0.0000E-39	2.3659E 07	-2.9565E 07	2.1783E 07	-9.5482E 06	-1.0733E 07	3.7322E 07	2.0858E 06	1.2342E 06
ROW(14)	-0.0000E-39	0.0000E-39	-2.9565E 07	3.7027E 07	-2.7281E 07	1.2281E 07	1.1915E 07	-4.7674E 07	-2.0159E 06	-9.9162E 05
ROW(15)	-0.0000E-39	0.0000E-39	2.1783E 07	-2.7281E 07	2.0241E 07	-9.0269E 06	-8.8470E 06	3.5075E 07	1.5141E 06	7.5741E 05
ROW(16)	-0.0000E-39	0.0000E-39	-9.5482E 06	1.2281E 07	-9.0269E 06	5.9130E 06	-4.3561E 06	-2.1144E 07	2.5923E 06	2.6971E 06
ROW(17)	-0.0000E-39	0.0000E-39	-1.0733E 07	1.1915E 07	-8.8470E 06	-4.3561E 06	4.1768E 07	8.8158E 06	-1.5528E 07	-1.3996E 07
ROW(18)	-0.0000E-39	0.0000E-39	3.7322E 07	-4.7674E 07	3.5075E 07	-2.1144E 07	8.8158E 06	7.7056E 07	-6.8823E 06	-7.4275E 06
ROW(19)	-0.0000E-39	0.0000E-39	2.0858E 06	-2.0159E 06	1.5141E 06	2.5923E 06	-1.5528E 07	-6.8823E 06	6.0443E 06	5.2789E 06
ROW(20)	-0.0000E-39	0.0000E-39	1.2342E 06	-9.9162E 05	7.5741E 05	2.6971E 06	-1.3996E 07	-7.4275E 06	5.2789E 06	6.0346E 06
ROW(21)	-0.0000E-39	0.0000E-39	5.2232E 04	-1.2289E 06	8.4899E 05	-6.7899E 06	2.8669E 07	2.0123E 07	-1.1403E 07	-9.925CE 06
ROW(22)	-0.0000E-39	0.0000E-39	1.222CE 03	3.5664E 02	-1.7132E 02	8.2617E 03	-2.7988E 03	1.19C8E 03	-4.9211E 04	3.7382E 05
ROW(23)	-0.0000E-39	0.0000E-39	-1.2442E 03	-3.6313E 02	1.7444E 02	-8.4119E 03	2.8496E 03	-1.2124E 03	5.5414E 04	-3.2226E 05
ROW(24)	-0.0000E-39	0.0000E-39	-2.1190E 03	-6.1844E 02	2.9709E 02	-1.4326E 04	4.8532E 03	-2.0648E 03	1.0758E 05	-4.0364E 05
ROW(25)	-2.8329E 02	-2.1729E 02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(26)	-8.2680E 01	-6.3415E 01	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(27)	3.9718E 01	3.0463E 01	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(28)	-1.9153E 03	-1.4690E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(29)	6.4883E 02	4.9765E 02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(30)	-2.7605E 02	-2.1173E 02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(31)	2.3577E 04	6.1782E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(32)	4.7129E 04	-9.4750E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(33)	4.0232E 04	-5.1732E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(34)	4.0047E 04	-5.0224E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(35)	-2.3671E 04	3.9336E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(36)	2.2386E 03	3.7636E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	-4.8465E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	-3.5411E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	3.2987E 06	-9.5008E 03	8.2563E 03	1.0536E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	-3.8530E 06	2.8987E 03	-8.7040E 03	-2.9136E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(5)	4.0232E 04	4.0047E 04	-2.3671E 04	2.2386E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	-5.1732E 04	-5.0224E 04	3.9336E 04	3.7636E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.5607E 06	1.9526E 06	-1.4386E 06	6.4555E 05	6.4467E 05	-2.5096E 06
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.0250E 06	-5.0081E 06	3.691CE 06	-1.5052E 06	-2.3382E 06	6.0000E 06
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-3.7777E 06	4.5298E 06	-3.3468E 06	4.2061E 05	6.3924E 06	-2.7001E 06
ROW(10)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	1.0441E 06	-1.0828E 06	8.0860E 05	8.6660E 05	-5.9174E 06	-2.1519E 06
ROW(11)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-2.8329E 02	-8.2680E 01	3.9718E 01	-1.9153E 03	6.4883E 02	-2.7605E 02
ROW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.1729E 02	-6.3415E 01	3.0463E 01	-1.4690E 03	4.9765E 02	-2.1173E 02
ROW(13)	5.2232E 04	1.2220E 03	-1.2442E 03	-2.1190E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(14)	-1.2289E 06	3.5664E 02	-3.6313E 02	-6.1844E 02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(15)	8.4899E 05	-1.7132E 02	1.7444E 02	2.9709E 02	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(16)	-6.7899E 06	8.2617E 03	-8.4119E 03	-1.4326E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(17)	2.8669E 07	-2.7988E 03	2.8496E 03	4.8532E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(18)	2.0123E 07	1.1908E 03	-1.2124E 03	-2.0648E 03	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(19)	-1.1403E 07	-4.9211E 04	5.5414E 04	1.0758E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(20)	-9.9250E 06	3.7382E 05	-3.2226E 05	-4.0364E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(21)	2.2726E 07	1.9059E 05	-1.5723E 05	-1.7617E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(22)	1.9059E 05	1.9014E 05	-1.5774E 05	-1.7890E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(23)	-1.5723E 05	-1.5774E 05	1.8999E 05	2.2134E 04	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(24)	-1.7617E 05	-1.7890E 05	2.2134E 04	9.1511E 05	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.6022E 07	-3.2517E 07	2.3959E 07	-1.05C3E 07	-1.18C7E 07	4.1054E 07
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-3.2517E 07	4.0722E 07	-3.0003E 07	1.35C9E 07	1.3106E 07	-5.2441E 07
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.3959E 07	-3.0003E 07	2.2247E 07	-9.9299E 06	-9.732CE 06	3.8583E 07
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.0503E 07	1.3509E 07	-9.9299E 06	6.5C39E 06	-4.7917E 06	-2.3259E 07
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.1807E 07	1.3106E 07	-9.732CE 06	-4.7917E 06	4.5935E 07	9.6906E 06
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	4.1054E 07	-5.2441E 07	3.8583E 07	-2.3259E 07	9.6906E 06	8.4745E 07
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.2945E 06	-2.2175E 06	1.6655E 06	2.8522E 06	-1.708CE 07	-7.5704E 06
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.3573E 06	-1.0909E 06	8.3319E 05	2.9645E 06	-1.5395E 07	-8.1706E 06
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	5.7328E 04	-1.3518E 06	9.3390E 05	-7.4658E 06	3.153CE 07	2.2135E 07
ROW(34)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	1.2220E 03	3.5664E 02	-1.7132E 02	8.2617E 03	-2.7988E 03	1.1908E 03
ROW(35)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-1.2442E 03	-3.6313E 02	1.7444E 02	-8.4119E 03	2.8496E 03	-1.2124E 03
ROW(36)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-2.1190E 03	-6.1844E 02	2.9709E 02	-1.4326E 04	4.8532E 03	-2.0648E 03

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(

RØW(1)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(2)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(3)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(4)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(5)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(6)	-0.0000E-39	-0.0000E-39	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
RØW(7)	-1.1247E 05	-5.7927E 04	-5.3311E 04	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(8)	5.5768E 05	3.9592E 05	-3.8952E 05	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(9)	-2.1819E 06	-1.9241E 06	3.6255E 06	-9.5008E 03	8.2563E 03	1.0536E 04
RØW(10)	2.2237E 06	2.0693E 06	-4.2387E 06	2.8987E 03	-8.7040E 03	-2.9136E 04
RØW(11)	2.3577E 04	4.7129E 04	4.0232E 04	4.0047E 04	-2.3671E 04	2.2386E 03
RØW(12)	6.1782E 03	-9.4750E 04	-5.1732E 04	-5.0224E 04	3.9336E 04	3.7636E 04
RØW(13)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(14)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(15)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(16)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(17)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(18)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(19)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(20)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(21)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(22)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(23)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(24)	0.0000E-39	0.0000E-39	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
RØW(25)	2.2945E 06	1.3573E 06	5.7328E 04	1.2220E 03	-1.2442E 03	-2.1190E 03
RØW(26)	-2.2175E 06	-1.0909E 06	-1.3518E 06	3.5664E 02	-3.6313E 02	-6.1844E 02
RØW(27)	1.6655E 06	8.3319E 05	9.3390E 05	-1.7132E 02	1.7444E 02	2.5709E 02
RØW(28)	2.8522E 06	2.9645E 06	-7.4698E 06	8.2617E 03	-8.4119E 03	-1.4326E 04
RØW(29)	-1.7080E 07	-1.5395E 07	3.1536E 07	-2.7988E 03	2.8496E 03	4.8532E 03
RØW(30)	-7.5704E 06	-8.1706E 06	2.2135E 07	1.1908E 03	-1.2124E 03	-2.0648E 03
RØW(31)	6.6400E 06	5.8216E 06	-1.2539E 07	-4.9211E 04	5.5414E 04	1.0758E 05
RØW(32)	5.8216E 06	6.5309E 06	-1.0972E 07	3.7382E 05	-3.2226E 05	-4.0364E 05
RØW(33)	-1.2539E 07	-1.0972E 07	2.4964E 07	1.9059E 05	-1.5723E 05	-1.7617E 05
RØW(34)	-4.9211E 04	3.7382E 05	1.9059E 05	1.9014E 05	-1.5774E 05	-1.7890E 05
RØW(35)	5.5414E 04	-3.2226E 05	-1.5723E 05	-1.5774E 05	1.8999E 05	2.2134E 04
RØW(36)	1.0758E 05	-4.0364E 05	-1.7617E 05	-1.7890E 05	2.2134E 04	9.1511E 05

TIME CHECK FØR EIGENVALUE SØLUTIØN

TIME IN 200057

TIME ØUT 200114

ELAPSED TIME 17 SECØNDS

EIGENVALUES ØF F MATRIX

DW(1)	=	0.17282958750346940 09
DW(2)	=	0.15713259246862680 09
DW(3)	=	0.92264465865231730 08
DW(4)	=	0.83885843192756710 08
DW(5)	=	0.18697227504253490 07
DW(6)	=	0.18697201850651240 07
DW(7)	=	0.70273728809723640 06
DW(8)	=	0.70273722365976580 06
DW(9)	=	0.17608575388995040 06
DW(10)	=	0.17606236877854890 06
DW(11)	=	0.12721341561251880 06
DW(12)	=	0.12721220317601070 06
DW(13)	=	0.10407627510396910 06
DW(14)	=	0.10407626228916480 06
DW(15)	=	0.86110241235294180 05
DW(16)	=	0.86106924749166780 05
DW(17)	=	0.50188505888927740 05
DW(18)	=	0.50187706739790460 05
DW(19)	=	0.17410816728278580 05
DW(20)	=	0.17410727540966900 05
DW(21)	=	0.90583658178659360 04
DW(22)	=	0.90583534291350140 04
DW(23)	=	0.51665270987746820 04
DW(24)	=	0.51664565785909400 04
DW(25)	=	0.28578977067586220 04
DW(26)	=	0.28578842696045800 04
DW(27)	=	0.10013935183835750 04
DW(28)	=	0.10013653193891040 04
DW(29)	=	0.27800327711282940 03
DW(30)	=	0.27799908811543410 03
DW(31)	=	0.98914613155282610 02
DW(32)	=	0.98914002462014940 02
DW(33)	=	0.93828517128738710-03
DW(34)	=	-0.56408735690633520-03
DW(35)	=	-0.71279783912692240-03
DW(36)	=	-0.18421075040779700-02

EIGENVECTORS OF F MATRIX

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	0.0000E-39	-2.2319E-02	0.0000E-39	-9.0869E-03	0.0000E-39	1.7380E-04	-5.8471E-05	0.0000E-39	7.2289E-03	0.0000E-39
ROW(2)	0.0000E-39	5.5003E-02	0.0000E-39	3.3705E-02	0.0000E-39	-9.8935E-05	-6.2470E-05	0.0000E-39	-2.1834E-02	0.0000E-39
ROW(3)	0.0000E-39	-3.5760E-02	0.0000E-39	-9.6713E-02	0.0000E-39	-1.7239E-02	5.0599E-03	0.0000E-39	4.2903E-02	0.0000E-39
ROW(4)	0.0000E-39	-5.8094E-03	0.0000E-39	9.1113E-02	0.0000E-39	2.4261E-02	1.9276E-02	0.0000E-39	-4.1754E-02	0.0000E-39
ROW(5)	0.0000E-39	1.7063E-05	0.0000E-39	-1.0801E-04	0.0000E-39	3.3760E-02	-5.5254E-02	0.0000E-39	1.0362E-02	0.0000E-39
ROW(6)	0.0000E-39	-1.8879E-05	0.0000E-39	7.8813E-05	0.0000E-39	-6.8509E-02	3.4832E-02	0.0000E-39	1.2345E-03	0.0000E-39
ROW(7)	2.2321E-02	0.0000E-39	-9.0867E-03	0.0000E-39	-1.7388E-04	0.0000E-39	0.0000E-39	5.8517E-05	0.0000E-39	7.2272E-03
ROW(8)	-5.5009E-02	0.0000E-39	3.3687E-02	0.0000E-39	9.7576E-05	0.0000E-39	0.0000E-39	6.2236E-05	0.0000E-39	-2.1841E-02
ROW(9)	3.5765E-02	0.0000E-39	-9.6702E-02	0.0000E-39	1.7236E-02	0.0000E-39	0.0000E-39	-5.0589E-03	0.0000E-39	4.2884E-02
ROW(10)	5.8085E-03	0.0000E-39	9.1117E-02	0.0000E-39	-2.4256E-02	0.0000E-39	0.0000E-39	-1.9277E-02	0.0000E-39	-4.1761E-02
ROW(11)	-1.5503E-05	0.0000E-39	-1.0887E-04	0.0000E-39	-3.3761E-02	0.0000E-39	0.0000E-39	5.5254E-02	0.0000E-39	1.0386E-02
ROW(12)	1.7147E-05	0.0000E-39	7.7123E-05	0.0000E-39	6.8910E-02	0.0000E-39	0.0000E-39	-3.4832E-02	0.0000E-39	1.2917E-03
ROW(13)	0.0000E-39	3.6795E-01	0.0000E-39	1.6813E-01	0.0000E-39	-8.1075E-05	9.7038E-04	0.0000E-39	3.7432E-02	0.0000E-39
ROW(14)	0.0000E-39	-4.6607E-01	0.0000E-39	-1.8511E-01	0.0000E-39	4.7864E-03	-1.5915E-03	0.0000E-39	-1.8472E-01	0.0000E-39
ROW(15)	0.0000E-39	3.4341E-01	0.0000E-39	1.3738E-01	0.0000E-39	-3.5784E-03	1.5304E-03	0.0000E-39	7.5485E-01	0.0000E-39
ROW(16)	0.0000E-39	-1.8467E-01	0.0000E-39	8.0734E-02	0.0000E-39	2.2577E-02	-2.4596E-03	0.0000E-39	1.3550E-02	0.0000E-39
ROW(17)	0.0000E-39	-1.3694E-02	0.0000E-39	-7.0533E-01	0.0000E-39	-2.8403E-02	1.9769E-02	0.0000E-39	1.2128E-01	0.0000E-39
ROW(18)	0.0000E-39	6.8829E-01	0.0000E-39	-1.7452E-01	0.0000E-39	-1.7676E-02	1.5478E-02	0.0000E-39	-5.5803E-01	0.0000E-39
ROW(19)	0.0000E-39	-2.8134E-02	0.0000E-39	2.6349E-01	0.0000E-39	-1.0179E-01	-3.5790E-02	0.0000E-39	-6.4158E-02	0.0000E-39
ROW(20)	0.0000E-39	-3.6478E-02	0.0000E-39	2.3704E-01	0.0000E-39	7.3100E-01	-3.2404E-01	0.0000E-39	-1.0203E-01	0.0000E-39
ROW(21)	0.0000E-39	1.2026E-01	0.0000E-39	-4.8953E-01	0.0000E-39	3.5518E-01	-2.0900E-01	0.0000E-39	2.1857E-01	0.0000E-39
ROW(22)	0.0000E-39	6.7343E-05	0.0000E-39	-2.3663E-04	0.0000E-39	2.7655E-01	-5.1640E-02	0.0000E-39	-1.9255E-02	0.0000E-39
ROW(23)	0.0000E-39	-5.4282E-05	0.0000E-39	2.3865E-04	0.0000E-39	-2.1109E-01	2.5887E-01	0.0000E-39	3.8325E-02	0.0000E-39
ROW(24)	0.0000E-39	-5.7238E-05	0.0000E-39	-2.6971E-04	0.0000E-39	-4.4682E-01	-8.7693E-01	0.0000E-39	-4.8871E-03	0.0000E-39
ROW(25)	-3.6796E-01	0.0000E-39	1.6811E-01	0.0000E-39	8.4778E-05	0.0000E-39	0.0000E-39	-9.7156E-04	0.0000E-39	3.7494E-02
ROW(26)	4.6638E-01	0.0000E-39	-1.8512E-01	0.0000E-39	-4.7860E-03	0.0000E-39	0.0000E-39	1.5928E-03	0.0000E-39	-1.8476E-01
ROW(27)	-3.4339E-01	-0.0000E-39	1.3733E-01	-0.0000E-39	3.5602E-03	-0.0000E-39	-0.0000E-39	-1.5316E-03	-0.0000E-39	7.5482E-01
ROW(28)	1.8468E-01	0.0000E-39	8.0778E-02	0.0000E-39	-2.2570E-02	0.0000E-39	0.0000E-39	2.4582E-03	0.0000E-39	1.3469E-02
ROW(29)	1.3731E-02	0.0000E-39	-7.0533E-01	0.0000E-39	2.8363E-02	0.0000E-39	0.0000E-39	-1.9758E-02	0.0000E-39	1.2115E-01
ROW(30)	-6.8829E-01	-0.0000E-39	-1.7452E-01	-0.0000E-39	1.7651E-02	-0.0000E-39	-0.0000E-39	-1.5472E-02	-0.0000E-39	-5.5807E-01
ROW(31)	2.8132E-02	0.0000E-39	2.6350E-01	0.0000E-39	1.0181E-01	0.0000E-39	0.0000E-39	3.9787E-02	0.0000E-39	-6.4135E-02
ROW(32)	3.6495E-02	0.0000E-39	2.3707E-01	0.0000E-39	-7.3099E-01	0.0000E-39	0.0000E-39	3.2404E-01	0.0000E-39	-1.0203E-01
ROW(33)	-1.2025E-01	-0.0000E-39	-4.8952E-01	-0.0000E-39	-3.5521E-01	-0.0000E-39	-0.0000E-39	2.0501E-01	-0.0000E-39	2.1860E-01
ROW(34)	-6.1159E-05	0.0000E-39	-2.2747E-04	0.0000E-39	-2.7655E-01	0.0000E-39	0.0000E-39	9.1641E-02	0.0000E-39	-1.9254E-02
ROW(35)	4.9303E-05	0.0000E-39	2.3586E-04	0.0000E-39	2.1108E-01	0.0000E-39	0.0000E-39	-2.5887E-01	0.0000E-39	3.8348E-02
ROW(36)	5.1933E-05	0.0000E-39	-3.1683E-04	0.0000E-39	4.4682E-01	0.0000E-39	0.0000E-39	8.7693E-01	0.0000E-39	-4.8879E-03

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	3.8680E-03	0.0000E-39	7.6213E-04	0.0000E-39	0.0000E-39	1.0111E-02	0.0000E-39	5.4324E-03	0.0000E-39	9.6217E-03
ROW(2)	-9.0529E-03	0.0000E-39	-1.4712E-03	0.0000E-39	0.0000E-39	-1.9713E-02	0.0000E-39	-9.4331E-03	0.0000E-39	-1.8391E-02
ROW(3)	-1.6499E-02	0.0000E-39	8.7052E-03	0.0000E-39	0.0000E-39	-1.4912E-02	0.0000E-39	-1.5703E-02	0.0000E-39	-4.9598E-03
ROW(4)	1.4892E-01	0.0000E-39	1.5677E-01	0.0000E-39	0.0000E-39	-4.3379E-02	0.0000E-39	-5.4619E-02	0.0000E-39	1.8816E-01
ROW(5)	-1.6739E-01	0.0000E-39	-3.9732E-01	0.0000E-39	0.0000E-39	1.2974E-01	0.0000E-39	1.4016E-01	0.0000E-39	-3.4057E-01
ROW(6)	-5.5881E-03	0.0000E-39	1.9180E-01	0.0000E-39	0.0000E-39	-2.7904E-02	0.0000E-39	-4.0104E-02	0.0000E-39	1.9643E-01
ROW(7)	0.0000E-39	-3.8687E-03	0.0000E-39	7.6240E-04	1.0112E-02	0.0000E-39	-5.4326E-03	0.0000E-39	9.6223E-03	0.0000E-39
ROW(8)	0.0000E-39	9.0541E-03	0.0000E-39	-1.4718E-03	-1.9716E-02	0.0000E-39	9.4335E-03	0.0000E-39	-1.8352E-02	0.0000E-39
ROW(9)	0.0000E-39	1.6495E-02	0.0000E-39	8.7057E-03	-1.4906E-02	0.0000E-39	1.5705E-02	0.0000E-39	-4.9575E-03	0.0000E-39
ROW(10)	0.0000E-39	-1.4891E-01	0.0000E-39	1.9677E-01	-4.3386E-02	0.0000E-39	5.4614E-02	0.0000E-39	1.8816E-01	0.0000E-39
ROW(11)	0.0000E-39	1.6740E-01	0.0000E-39	-3.9732E-01	1.2974E-01	0.0000E-39	-1.4015E-01	0.0000E-39	-3.4057E-01	0.0000E-39
ROW(12)	0.0000E-39	5.5880E-03	0.0000E-39	1.9180E-01	-2.7906E-02	0.0000E-39	4.0103E-02	0.0000E-39	1.9643E-01	0.0000E-39
ROW(13)	-4.4397E-02	0.0000E-39	-1.0742E-02	0.0000E-39	0.0000E-39	-3.0914E-01	0.0000E-39	2.1656E-01	0.0000E-39	-2.6219E-02
ROW(14)	4.3698E-02	0.0000E-39	1.9556E-02	0.0000E-39	0.0000E-39	4.2370E-01	0.0000E-39	-4.4964E-01	0.0000E-39	-1.1731E-01
ROW(15)	1.8107E-01	0.0000E-39	3.0783E-02	0.0000E-39	0.0000E-39	4.5522E-01	0.0000E-39	-2.2102E-01	0.0000E-39	-2.7584E-02
ROW(16)	8.7747E-02	0.0000E-39	4.3474E-02	0.0000E-39	0.0000E-39	1.8396E-01	0.0000E-39	5.3203E-02	0.0000E-39	2.2991E-01
ROW(17)	2.1234E-01	0.0000E-39	2.7783E-02	0.0000E-39	0.0000E-39	2.1923E-01	0.0000E-39	5.9653E-01	0.0000E-39	1.1342E-01
ROW(18)	6.5896E-02	0.0000E-39	2.8400E-02	0.0000E-39	0.0000E-39	3.4771E-01	0.0000E-39	-1.9953E-01	0.0000E-39	4.6719E-03
ROW(19)	-5.0908E-01	0.0000E-39	-3.9297E-01	0.0000E-39	0.0000E-39	4.0264E-01	0.0000E-39	2.4101E-01	0.0000E-39	4.5320E-01
ROW(20)	-1.6026E-02	0.0000E-39	3.7806E-01	0.0000E-39	0.0000E-39	2.2630E-01	0.0000E-39	2.6509E-01	0.0000E-39	-6.2798E-02
ROW(21)	-5.4721E-01	0.0000E-39	-3.3095E-02	0.0000E-39	0.0000E-39	-2.2731E-01	0.0000E-39	-3.4653E-01	0.0000E-39	1.4835E-01
ROW(22)	2.1517E-01	0.0000E-39	-5.4227E-01	0.0000E-39	0.0000E-39	-1.1961E-02	0.0000E-39	2.2743E-02	0.0000E-39	-4.1076E-01
ROW(23)	-5.0037E-01	0.0000E-39	4.0832E-01	0.0000E-39	0.0000E-39	1.7179E-01	0.0000E-39	1.7109E-01	0.0000E-39	-5.6054E-01
ROW(24)	8.6363E-03	0.0000E-39	1.0081E-01	0.0000E-39	0.0000E-39	4.1688E-03	0.0000E-39	2.0552E-02	0.0000E-39	-1.1976E-01
ROW(25)	0.0000E-39	4.4388E-02	0.0000E-39	-1.0745E-02	-3.0913E-01	0.0000E-39	-2.1697E-01	0.0000E-39	-2.6215E-02	0.0000E-39
ROW(26)	0.0000E-39	-4.3680E-02	0.0000E-39	1.9599E-02	4.2367E-01	0.0000E-39	4.4965E-01	0.0000E-39	-1.1732E-01	0.0000E-39
ROW(27)	-0.0000E-39	-1.8113E-01	-0.0000E-39	3.0797E-02	4.5528E-01	-0.0000E-39	2.2102E-01	-0.0000E-39	-2.7582E-02	-0.0000E-39
ROW(28)	0.0000E-39	-8.7748E-02	0.0000E-39	4.3477E-02	1.8396E-01	0.0000E-39	-5.3204E-02	0.0000E-39	2.2992E-01	0.0000E-39
ROW(29)	0.0000E-39	-2.4236E-01	0.0000E-39	2.7791E-02	2.1928E-01	0.0000E-39	-5.9654E-01	0.0000E-39	1.1342E-01	0.0000E-39
ROW(30)	-0.0000E-39	-6.5862E-02	-0.0000E-39	2.8402E-02	3.4768E-01	-0.0000E-39	1.9993E-01	-0.0000E-39	4.6727E-03	-0.0000E-39
ROW(31)	0.0000E-39	5.0309E-01	0.0000E-39	-3.8296E-01	4.0264E-01	0.0000E-39	-2.4101E-01	0.0000E-39	4.5315E-01	0.0000E-39
ROW(32)	0.0000E-39	1.6037E-02	0.0000E-39	3.7806E-01	2.2628E-01	0.0000E-39	-2.6507E-01	0.0000E-39	-6.2805E-02	0.0000E-39
ROW(33)	-0.0000E-39	5.4718E-01	-0.0000E-39	-3.3097E-02	-2.2727E-01	-0.0000E-39	3.4651E-01	-0.0000E-39	1.4836E-01	-0.0000E-39
ROW(34)	0.0000E-39	-2.1517E-01	0.0000E-39	-5.4227E-01	-1.1956E-02	0.0000E-39	-2.2741E-02	0.0000E-39	-4.1076E-01	0.0000E-39
ROW(35)	0.0000E-39	5.0037E-01	0.0000E-39	4.0832E-01	1.7178E-01	0.0000E-39	-1.7108E-01	0.0000E-39	-5.6054E-01	0.0000E-39
ROW(36)	0.0000E-39	-8.6355E-03	0.0000E-39	1.0081E-01	4.1658E-03	0.0000E-39	-2.0551E-02	0.0000E-39	-1.1976E-01	0.0000E-39

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	4.3461E-02	0.0000E-39	-7.9459E-03	0.0000E-39	-4.0127E-02	0.0000E-39	-0.0000E-39	-1.3589E-01	-0.0000E-39	-1.8263E-01
ROW(2)	-1.0687E-01	0.0000E-39	3.4845E-02	0.0000E-39	9.7683E-02	0.0000E-39	-0.0000E-39	3.9544E-01	-0.0000E-39	4.6356E-01
ROW(3)	5.0895E-02	0.0000E-39	-1.5821E-01	0.0000E-39	-7.5838E-02	0.0000E-39	-0.0000E-39	-6.7943E-01	-0.0000E-39	-2.0175E-01
ROW(4)	7.5789E-02	0.0000E-39	4.0061E-01	0.0000E-39	2.6448E-01	0.0000E-39	-0.0000E-39	3.5139E-01	-0.0000E-39	-4.1699E-01
ROW(5)	-3.1492E-02	0.0000E-39	-3.2851E-01	0.0000E-39	-4.1629E-01	0.0000E-39	-0.0000E-39	3.2548E-01	-0.0000E-39	-3.0570E-02
ROW(6)	-4.9947E-02	0.0000E-39	-5.7127E-03	0.0000E-39	8.7498E-02	0.0000E-39	-0.0000E-39	-2.3096E-01	-0.0000E-39	6.9660E-01
ROW(7)	0.0000E-39	4.3465E-02	0.0000E-39	7.9511E-03	0.0000E-39	-4.0125E-02	-1.3589E-01	0.0000E-39	1.8263E-01	0.0000E-39
ROW(8)	0.0000E-39	-1.0687E-01	0.0000E-39	-3.4853E-02	0.0000E-39	9.7686E-02	3.9544E-01	0.0000E-39	-4.6357E-01	0.0000E-39
ROW(9)	0.0000E-39	5.0905E-02	0.0000E-39	1.5822E-01	0.0000E-39	-7.5838E-02	-6.7943E-01	0.0000E-39	2.0175E-01	0.0000E-39
ROW(10)	0.0000E-39	7.5790E-02	0.0000E-39	-4.0062E-01	0.0000E-39	2.6447E-01	3.5138E-01	0.0000E-39	4.1701E-01	0.0000E-39
ROW(11)	0.0000E-39	-3.1493E-02	0.0000E-39	3.2851E-01	0.0000E-39	-4.1628E-01	3.2548E-01	0.0000E-39	3.0580E-02	0.0000E-39
ROW(12)	0.0000E-39	-4.9949E-02	0.0000E-39	5.7194E-03	0.0000E-39	8.7497E-02	-2.3095E-01	0.0000E-39	-6.9660E-01	0.0000E-39
ROW(13)	-4.7666E-01	0.0000E-39	4.9885E-01	0.0000E-39	-4.4106E-01	0.0000E-39	-0.0000E-39	-1.3729E-01	-0.0000E-39	-6.9108E-03
ROW(14)	-4.5885E-01	0.0000E-39	2.7157E-01	0.0000E-39	-1.7632E-01	0.0000E-39	-0.0000E-39	-3.7070E-02	-0.0000E-39	2.8208E-03
ROW(15)	-5.0839E-02	0.0000E-39	-1.3865E-03	0.0000E-39	1.2239E-02	0.0000E-39	-0.0000E-39	-3.2423E-03	-0.0000E-39	-5.1145E-03
ROW(16)	6.2926E-01	0.0000E-39	3.1931E-01	0.0000E-39	-5.7441E-01	0.0000E-39	-0.0000E-39	1.8012E-02	-0.0000E-39	1.4566E-01
ROW(17)	-1.1054E-01	0.0000E-39	8.6407E-02	0.0000E-39	4.2466E-02	0.0000E-39	-0.0000E-39	5.0814E-02	-0.0000E-39	5.2065E-03
ROW(18)	1.2097E-01	0.0000E-39	-2.5445E-02	0.0000E-39	-3.9138E-02	0.0000E-39	-0.0000E-39	-3.0404E-02	-0.0000E-39	-1.0247E-02
ROW(19)	-1.0185E-01	0.0000E-39	1.2198E-01	0.0000E-39	2.1696E-01	0.0000E-39	-0.0000E-39	-8.5335E-02	-0.0000E-39	-3.7026E-02
ROW(20)	-9.4354E-02	0.0000E-39	-1.1259E-01	0.0000E-39	7.4383E-03	0.0000E-39	-0.0000E-39	-4.6313E-02	-0.0000E-39	9.9338E-03
ROW(21)	1.0984E-01	0.0000E-39	1.2506E-01	0.0000E-39	-3.0956E-02	0.0000E-39	-0.0000E-39	6.7970E-02	-0.0000E-39	-2.0859E-03
ROW(22)	2.1654E-01	0.0000E-39	4.1838E-01	0.0000E-39	3.3321E-01	0.0000E-39	-0.0000E-39	-2.0376E-01	-0.0000E-39	1.6703E-01
ROW(23)	1.7782E-01	0.0000E-39	2.2564E-01	0.0000E-39	1.1442E-01	0.0000E-39	-0.0000E-39	-3.2844E-02	-0.0000E-39	1.2129E-02
ROW(24)	4.3231E-02	0.0000E-39	5.8173E-02	0.0000E-39	3.0547E-02	0.0000E-39	-0.0000E-39	-9.0451E-03	-0.0000E-39	3.3830E-03
ROW(25)	0.0000E-39	-4.7662E-01	0.0000E-39	-4.9889E-01	0.0000E-39	-4.4109E-01	-1.3730E-01	0.0000E-39	6.9058E-03	0.0000E-39
ROW(26)	0.0000E-39	-4.5884E-01	0.0000E-39	-2.7159E-01	0.0000E-39	-1.7634E-01	-3.7075E-02	0.0000E-39	-2.8211E-03	0.0000E-39
ROW(27)	-0.0000E-39	-5.0823E-02	-0.0000E-39	1.3929E-03	-0.0000E-39	1.2243E-02	-3.2415E-03	-0.0000E-39	5.1147E-03	-0.0000E-39
ROW(28)	0.0000E-39	6.2928E-01	0.0000E-39	-3.1927E-01	0.0000E-39	-5.7440E-01	1.8027E-02	0.0000E-39	-1.4567E-01	0.0000E-39
ROW(29)	0.0000E-39	-1.1054E-01	0.0000E-39	-8.6410E-02	0.0000E-39	4.2466E-02	5.0815E-02	0.0000E-39	-5.2063E-03	0.0000E-39
ROW(30)	-0.0000E-39	1.2097E-01	-0.0000E-39	2.5446E-02	-0.0000E-39	-3.9138E-02	-3.0403E-02	-0.0000E-39	1.0246E-02	-0.0000E-39
ROW(31)	0.0000E-39	-1.0185E-01	0.0000E-39	-1.2198E-01	0.0000E-39	2.1696E-01	-8.5341E-02	0.0000E-39	3.7025E-02	0.0000E-39
ROW(32)	0.0000E-39	-9.4361E-02	0.0000E-39	1.1259E-01	0.0000E-39	7.4392E-03	-4.6316E-02	0.0000E-39	-9.9346E-03	0.0000E-39
ROW(33)	-0.0000E-39	1.0985E-01	-0.0000E-39	-1.2506E-01	-0.0000E-39	-3.0956E-02	6.7975E-02	-0.0000E-39	2.0871E-03	-0.0000E-39
ROW(34)	0.0000E-39	2.1655E-01	0.0000E-39	-4.1838E-01	0.0000E-39	3.3321E-01	-2.0376E-01	0.0000E-39	-1.6703E-01	0.0000E-39
ROW(35)	0.0000E-39	1.7783E-01	0.0000E-39	-2.2563E-01	0.0000E-39	1.1442E-01	-3.2845E-02	0.0000E-39	-1.2125E-02	0.0000E-39
ROW(36)	0.0000E-39	4.3233E-02	0.0000E-39	-5.8172E-02	0.0000E-39	3.0546E-02	-9.0453E-03	0.0000E-39	-3.3831E-03	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(

RØW(1)	-2.6790E-01	0.0000E-39	-0.0000E-39	-9.3194E-01	-0.0000E-39	-5.9355E-02
RØW(2)	5.4038E-01	0.0000E-39	-0.0000E-39	-2.8509E-01	-0.0000E-39	-4.7752E-01
RØW(3)	2.3142E-01	0.0000E-39	-0.0000E-39	1.2027E-01	-0.0000E-39	-6.1856E-01
RØW(4)	-3.1325E-01	0.0000E-39	-0.0000E-39	1.4194E-01	-0.0000E-39	-4.8803E-01
RØW(5)	-3.7553E-01	0.0000E-39	-0.0000E-39	1.0519E-01	-0.0000E-39	-3.4086E-01
RØW(6)	-5.7480E-01	0.0000E-39	-0.0000E-39	6.9269E-02	-0.0000E-39	-1.8283E-01
RØW(7)	0.0000E-39	2.6779E-01	2.9322E-01	0.0000E-39	-8.8660E-01	0.0000E-39
RØW(8)	0.0000E-39	-5.4038E-01	-3.3641E-01	0.0000E-39	-4.4289E-01	0.0000E-39
RØW(9)	0.0000E-39	-2.3142E-01	-6.1868E-01	0.0000E-39	-1.1962E-01	0.0000E-39
RØW(10)	0.0000E-39	3.1325E-01	-5.0351E-01	0.0000E-39	-5.0806E-02	0.0000E-39
RØW(11)	0.0000E-39	3.7554E-01	-3.5546E-01	0.0000E-39	-2.9809E-02	0.0000E-39
RØW(12)	0.0000E-39	5.7481E-01	-1.9546E-01	0.0000E-39	-4.0725E-03	0.0000E-39
RØW(13)	4.0560E-03	0.0000E-39	-0.0000E-39	1.8102E-06	-0.0000E-39	7.6852E-07
RØW(14)	4.2503E-03	0.0000E-39	-0.0000E-39	1.0272E-06	-0.0000E-39	4.5351E-07
RØW(15)	-3.4054E-03	0.0000E-39	-0.0000E-39	-4.1275E-07	-0.0000E-39	-2.2499E-07
RØW(16)	1.0096E-01	0.0000E-39	-0.0000E-39	4.1309E-07	-0.0000E-39	1.0039E-06
RØW(17)	-2.8408E-04	0.0000E-39	-0.0000E-39	-9.5625E-08	-0.0000E-39	4.645E-07
RØW(18)	-7.5918E-02	0.0000E-39	-0.0000E-39	3.7180E-07	-0.0000E-39	-1.2154E-07
RØW(19)	3.5434E-02	0.0000E-39	-0.0000E-39	9.6900E-09	-0.0000E-39	-8.2159E-07
RØW(20)	8.9243E-03	0.0000E-39	-0.0000E-39	6.1428E-08	-0.0000E-39	-4.4597E-07
RØW(21)	-1.9218E-02	0.0000E-39	-0.0000E-39	-8.7643E-08	-0.0000E-39	7.0422E-07
RØW(22)	-5.1223E-02	0.0000E-39	-0.0000E-39	-3.6920E-08	-0.0000E-39	3.4039E-07
RØW(23)	-1.9946E-03	0.0000E-39	-0.0000E-39	-1.8453E-09	-0.0000E-39	6.7194E-09
RØW(24)	-5.5177E-04	0.0000E-39	-0.0000E-39	-6.4727E-10	-0.0000E-39	2.3363E-09
RØW(25)	0.0000E-39	-4.0580E-03	-1.8110E-06	0.0000E-39	-1.3724E-06	0.0000E-39
RØW(26)	0.0000E-39	-4.2512E-03	-1.0843E-06	0.0000E-39	-8.2798E-07	0.0000E-39
RØW(27)	-0.0000E-39	3.4058E-03	6.1073E-07	-0.0000E-39	5.2806E-07	-0.0000E-39
RØW(28)	0.0000E-39	-1.0096E-01	-2.1600E-06	0.0000E-39	-1.0388E-06	0.0000E-39
RØW(29)	0.0000E-39	2.8394E-04	-5.6810E-08	0.0000E-39	4.5870E-08	0.0000E-39
RØW(30)	-0.0000E-39	7.5919E-03	5.2876E-07	-0.0000E-39	-6.0370E-08	0.0000E-39
RØW(31)	0.0000E-39	-3.5436E-02	-1.4465E-06	0.0000E-39	-4.1739E-07	0.0000E-39
RØW(32)	0.0000E-39	-8.9253E-03	-8.3434E-07	0.0000E-39	-2.2858E-07	0.0000E-39
RØW(33)	-0.0000E-39	1.9819E-02	1.2678E-06	-0.0000E-39	3.7590E-07	-0.0000E-39
RØW(34)	0.0000E-39	5.1223E-02	-1.8827E-07	0.0000E-39	5.1045E-09	0.0000E-39
RØW(35)	0.0000E-39	1.9946E-03	7.1331E-09	0.0000E-39	8.0949E-10	0.0000E-39
RØW(36)	0.0000E-39	5.5177E-04	2.7054E-09	0.0000E-39	3.1545E-10	0.0000E-39

ØRTHØ CHECK

	CØLUMN(1)	CØLUMN(2)	CØLUMN(3)	CØLUMN(4)	CØLUMN(5)	CØLUMN(6)	CØLUMN(7)	CØLUMN(8)	CØLUMN(9)	CØLUMN(10)
RØW(1)	1.0000E 00	0.0000E-39	4.0311E-09	0.0000E-39	-1.8740E-08	0.0000E-39	0.0000E-39	-1.7113E-08	0.0000E-39	-7.0258E-08
RØW(2)	0.0000E-39	1.0000E 00	-0.0000E-39	-1.7322E-09	0.0000E-39	-3.5132E-09	-2.2411E-09	0.0000E-39	1.6775E-08	-0.0000E-39
RØW(3)	4.0311E-09	-0.0000E-39	1.0000E 00	-0.0000E-39	-2.4722E-06	-0.0000E-39	-0.0000E-39	-4.7491E-04	-0.0000E-39	3.3105E-04
RØW(4)	0.0000E-39	-1.7322E-09	-0.0000E-39	1.0000E 00	0.0000E-39	2.2824E-06	4.3677E-04	0.0000E-39	3.0354E-04	-0.0000E-39
RØW(5)	-1.8740E-08	0.0000E-39	-2.4722E-06	0.0000E-39	1.0000E 00	0.0000E-39	0.0000E-39	-8.3211E-09	0.0000E-39	-3.1964E-08
RØW(6)	0.0000E-39	-3.5132E-09	-0.0000E-39	2.2824E-06	0.0000E-39	1.0000E 00	-1.7679E-08	0.0000E-39	2.2461E-08	-0.0000E-39
RØW(7)	0.0000E-39	-2.2411E-09	-0.0000E-39	4.3677E-04	0.0000E-39	-1.7679E-08	1.0000E 00	0.0000E-39	5.7615E-09	-0.0000E-39
RØW(8)	-1.7113E-08	0.0000E-39	-4.7491E-04	0.0000E-39	-8.3211E-09	0.0000E-39	0.0000E-39	1.0000E 00	0.0000E-39	-2.9040E-09
RØW(9)	0.0000E-39	1.6779E-08	-0.0000E-39	3.0354E-04	0.0000E-39	2.2461E-08	5.7615E-09	0.0000E-39	1.0000E 00	-0.0000E-39
RØW(10)	-7.0258E-08	-0.0000E-39	3.3105E-04	-0.0000E-39	-3.1964E-08	-0.0000E-39	-0.0000E-39	-2.9040E-09	-0.0000E-39	1.0000E 00
RØW(11)	0.0000E-39	-5.5308E-10	-0.0000E-39	-2.5837E-04	0.0000E-39	-2.3381E-06	5.6246E-09	0.0000E-39	-9.5262E-09	-0.0000E-39
RØW(12)	-1.4987E-09	-0.0000E-39	2.8164E-04	-0.0000E-39	-2.6103E-06	-0.0000E-39	-0.0000E-39	5.7178E-09	-0.0000E-39	2.7619E-09
RØW(13)	0.0000E-39	-1.0583E-09	-0.0000E-39	-5.2544E-05	0.0000E-39	5.7943E-05	1.5365E-08	0.0000E-39	-5.0459E-09	-0.0000E-39
RØW(14)	2.4589E-09	0.0000E-39	-5.7297E-05	0.0000E-39	-6.4711E-05	0.0000E-39	0.0000E-39	-1.7225E-08	0.0000E-39	-1.9985E-09
RØW(15)	4.7898E-08	0.0000E-39	-6.0642E-04	0.0000E-39	7.1364E-06	0.0000E-39	0.0000E-39	6.8507E-09	0.0000E-39	-1.1417E-08
RØW(16)	0.0000E-39	-1.4119E-08	-0.0000E-39	-5.5623E-04	0.0000E-39	-6.3803E-06	-8.7758E-09	0.0000E-39	-2.7589E-08	-0.0000E-39
RØW(17)	-2.0419E-08	-0.0000E-39	5.2597E-05	-0.0000E-39	1.7797E-05	-0.0000E-39	-0.0000E-39	8.9962E-09	-0.0000E-39	5.0825E-09
RØW(18)	0.0000E-39	5.6717E-09	-0.0000E-39	-4.8270E-05	0.0000E-39	1.5942E-05	5.3871E-09	0.0000E-39	-6.6286E-09	-0.0000E-39
RØW(19)	2.2508E-08	-0.0000E-39	1.5088E-04	-0.0000E-39	6.9769E-05	-0.0000E-39	-0.0000E-39	1.3028E-07	-0.0000E-39	-1.5522E-08
RØW(20)	0.0000E-39	-2.5259E-09	-0.0000E-39	1.3837E-04	0.0000E-39	-6.2464E-05	-1.3209E-07	0.0000E-39	-1.8645E-08	-0.0000E-39
RØW(21)	0.0000E-39	-1.0074E-08	-0.0000E-39	4.6512E-04	0.0000E-39	2.9236E-05	1.5631E-07	0.0000E-39	1.2766E-07	-0.0000E-39
RØW(22)	5.7847E-08	0.0000E-39	5.0715E-04	0.0000E-39	-3.2648E-05	0.0000E-39	0.0000E-39	-1.6167E-07	0.0000E-39	1.1995E-07
RØW(23)	0.0000E-39	3.5698E-09	-0.0000E-39	-5.5742E-05	0.0000E-39	-5.5398E-06	2.5514E-07	0.0000E-39	1.2103E-05	-0.0000E-39
RØW(24)	8.9144E-09	-0.0000E-39	6.0815E-05	-0.0000E-39	-6.1894E-06	-0.0000E-39	-0.0000E-39	2.5791E-07	-0.0000E-39	-1.0710E-05
RØW(25)	0.0000E-39	-1.6522E-10	-0.0000E-39	-1.6730E-04	0.0000E-39	-3.5882E-06	6.5545E-07	0.0000E-39	-1.5357E-05	-0.0000E-39
RØW(26)	-1.6102E-08	0.0000E-39	-1.8238E-04	0.0000E-39	4.0644E-06	0.0000E-39	0.0000E-39	-6.6343E-07	0.0000E-39	-1.3601E-05
RØW(27)	-2.1229E-08	-0.0000E-39	-2.2263E-04	-0.0000E-39	-2.5462E-05	-0.0000E-39	-0.0000E-39	1.7941E-07	-0.0000E-39	4.1995E-05
RØW(28)	0.0000E-39	3.0393E-09	-0.0000E-39	-2.0420E-04	0.0000E-39	2.2792E-05	-1.7441E-07	0.0000E-39	4.7436E-05	-0.0000E-39
RØW(29)	7.4568E-09	-0.0000E-39	7.3611E-05	-0.0000E-39	1.4982E-05	-0.0000E-39	-0.0000E-39	-3.1909E-07	-0.0000E-39	2.9205E-04
RØW(30)	0.0000E-39	1.2375E-09	-0.0000E-39	-6.7521E-05	0.0000E-39	1.3415E-05	-3.1602E-07	0.0000E-39	-3.2987E-04	-0.0000E-39
RØW(31)	0.0000E-39	1.6480E-09	-0.0000E-39	-2.1663E-05	0.0000E-39	6.5903E-06	-1.8431E-07	0.0000E-39	4.3843E-04	-0.0000E-39
RØW(32)	2.3200E-09	0.0000E-39	2.3614E-05	0.0000E-39	7.3611E-06	0.0000E-39	0.0000E-39	-1.8715E-07	0.0000E-39	-3.8818E-04
RØW(33)	-3.9682E-09	0.0000E-39	-2.5598E-05	0.0000E-39	-2.4024E-06	0.0000E-39	0.0000E-39	3.7010E-08	0.0000E-39	1.8767E-05
RØW(34)	0.0000E-39	-4.4391E-09	-0.0000E-39	7.4622E-05	0.0000E-39	-6.8365E-06	1.1539E-07	0.0000E-39	-6.7422E-05	-0.0000E-39
RØW(35)	1.0337E-08	0.0000E-39	7.7400E-05	0.0000E-39	7.2651E-06	0.0000E-39	0.0000E-39	-1.1176E-07	0.0000E-39	-5.6793E-05
RØW(36)	0.0000E-39	-3.1564E-11	-0.0000E-39	4.7521E-06	0.0000E-39	-4.3559E-07	7.1710E-09	0.0000E-39	-4.2967E-06	-0.0000E-39

	CØLUMN(11)	CØLUMN(12)	CØLUMN(13)	CØLUMN(14)	CØLUMN(15)	CØLUMN(16)	CØLUMN(17)	CØLUMN(18)	CØLUMN(19)	CØLUMN(20)
RØW(1)	0.0000E-39	-1.4987E-09	0.0000E-39	2.4589E-09	4.7898E-08	0.0000E-39	-2.0419E-08	0.0000E-39	2.2508E-08	0.0000E-39
RØW(2)	-5.5308E-10	-0.0000E-39	-1.0583E-09	0.0000E-39	0.0000E-39	-1.4119E-08	-0.0000E-39	5.6717E-09	-0.0000E-39	-2.5259E-09
RØW(3)	-0.0000E-39	2.8164E-04	-0.0000E-39	-5.7297E-05	-6.0642E-04	-0.0000E-39	5.2597E-05	-0.0000E-39	1.5088E-04	-0.0000E-39
RØW(4)	-2.5837E-04	-0.0000E-39	-5.2544E-05	0.0000E-39	0.0000E-39	-5.5623E-04	-0.0000E-39	-4.8270E-05	-0.0000E-39	1.3837E-04
RØW(5)	0.0000E-39	-2.6103E-06	0.0000E-39	-6.4711E-05	7.1364E-06	0.0000E-39	1.7797E-05	0.0000E-39	6.9769E-05	0.0000E-39
RØW(6)	-2.3381E-06	-0.0000E-39	5.7943E-05	0.0000E-39	0.0000E-39	-6.3803E-06	-0.0000E-39	1.5942E-05	-0.0000E-39	-6.2464E-05
RØW(7)	5.6246E-09	-0.0000E-39	1.5365E-08	0.0000E-39	0.0000E-39	-8.7758E-09	-0.0000E-39	5.3871E-09	-0.0000E-39	-1.3209E-07
RØW(8)	0.0000E-39	5.7178E-09	0.0000E-39	-1.7225E-08	6.8507E-09	0.0000E-39	8.9962E-09	0.0000E-39	1.3028E-07	0.0000E-39
RØW(9)	-9.5262E-09	-0.0000E-39	-5.0459E-09	0.0000E-39	0.0000E-39	-2.7589E-08	-0.0000E-39	-6.6286E-09	-0.0000E-39	-1.8645E-08
RØW(10)	-0.0000E-39	2.7619E-09	-0.0000E-39	-1.9985E-09	-1.1417E-08	-0.0000E-39	5.0825E-09	-0.0000E-39	-1.5522E-08	-0.0000E-39
RØW(11)	1.0000E 00	-0.0000E-39	9.3835E-09	0.0000E-39	0.0000E-39	-1.1073E-08	-0.0000E-39	-5.5722E-09	-0.0000E-39	-1.0815E-08
RØW(12)	-0.0000E-39	1.0000E 00	-0.0000E-39	-1.1386E-08	1.2388E-08	-0.0000E-39	-1.0217E-09	-0.0000E-39	6.1634E-09	-0.0000E-39
RØW(13)	9.3835E-09	-0.0000E-39	1.0000E 00	0.0000E-39	0.0000E-39	-5.5394E-09	-0.0000E-39	-6.4257E-09	-0.0000E-39	8.0081E-10
RØW(14)	0.0000E-39	-1.1386E-08	0.0000E-39	1.0000E 00	-1.7644E-08	0.0000E-39	3.0759E-09	0.0000E-39	1.5250E-08	0.0000E-39
RØW(15)	0.0000E-39	1.2388E-08	0.0000E-39	-1.7644E-08	1.0000E 00	0.0000E-39	1.7300E-08	0.0000E-39	7.4907E-10	0.0000E-39

ROW(16)	-0.0000E-39	0.0000E-39	-1.0642E 11	-7.1480E 10	-1.9101E 10	2.9147E 10	-3.3752E 10	-4.6859E 10	8.8674E 09	-6.2173E 09
ROW(17)	-0.0000E-39	0.0000E-39	8.5083E 10	5.7149E 10	1.5272E 10	-3.3752E 10	5.6589E 10	4.7070E 10	-2.5086E 10	1.7589E 10
ROW(18)	0.0000E-39	0.0000E-39	1.8713E 11	1.2569E 11	3.3588E 10	-4.6899E 10	4.7070E 10	7.8495E 10	-8.1280E 09	5.6988E 09
ROW(19)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	8.8674E 09	-2.5086E 10	-8.1280E 09	1.5368E 10	-1.0931E 10
ROW(20)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-6.2173E 09	1.7589E 10	5.6988E 09	-1.0931E 10	8.3808E 09
ROW(21)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.5840E 10	7.3100E 10	2.3685E 10	-4.4585E 10	3.1355E 10
ROW(22)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.0564E 08	4.1539E 08
ROW(23)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-5.2743E 07	2.0740E 08
ROW(24)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-8.7061E 07	3.4234E 08
ROW(25)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(26)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(27)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(28)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(29)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(30)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(31)	-2.1646E 07	2.4293E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(32)	8.5118E 07	-9.5525E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(33)	1.3917E 07	-1.5619E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(34)	6.1617E 07	-5.5576E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(35)	3.0764E 07	-2.7748E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(36)	5.0781E 07	-4.5803E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(2)	-8.3763E 09	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(3)	3.7176E 10	-5.3232E 07	-2.6578E 07	-4.3871E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(4)	-2.8798E 10	4.7191E 07	2.3562E 07	3.8893E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(5)	1.3917E 07	6.1617E 07	3.0764E 07	5.0781E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	-1.5619E 07	-5.5576E 07	-2.7748E 07	-4.5803E 07	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(7)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-5.5929E 10	-3.7567E 10	-1.0039E 10	1.2598E 10	-1.0072E 10	-2.2152E 10
ROW(8)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	1.1153E 11	7.4915E 10	2.0019E 10	-2.3287E 10	1.4894E 10	4.2493E 10
ROW(9)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-5.5604E 10	-3.7348E 10	-9.5804E 09	4.3762E 09	1.3038E 10	-1.4554E 10
ROW(10)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	6.3132E 09	-1.7860E 10	-5.7868E 09
ROW(11)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(12)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(13)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(14)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(15)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(16)	-2.5840E 10	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(17)	7.3100E 10	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(18)	2.3685E 10	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(19)	-4.4585E 10	-1.0564E 08	-5.2743E 07	-8.7061E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(20)	3.1355E 10	4.1539E 08	2.0740E 08	3.4234E 08	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(21)	1.2985E 11	6.7918E 07	3.3910E 07	5.5975E 07	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(22)	6.7918E 07	2.4865E 08	1.2260E 08	2.0430E 08	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(23)	3.3910E 07	1.2260E 08	6.8733E 07	1.0200E 08	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(24)	5.5975E 07	2.0430E 08	1.0200E 08	1.6837E 08	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39
ROW(25)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	5.2627E 11	3.4943E 11	9.3326E 10	-1.1706E 11	9.3591E 10	2.0584E 11
ROW(26)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	3.4943E 11	2.3471E 11	6.2721E 10	-7.8629E 10	6.2864E 10	1.3826E 11
ROW(27)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	9.3326E 10	6.2721E 10	1.6928E 10	-2.1012E 10	1.6799E 10	3.6947E 10
ROW(28)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-1.1706E 11	-7.8629E 10	-2.1012E 10	3.2059E 10	-3.7124E 10	-5.1585E 10
ROW(29)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	9.3591E 10	6.2864E 10	1.6799E 10	-3.7124E 10	6.224CE 10	5.1775E 10
ROW(30)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	2.0584E 11	1.3826E 11	3.6947E 10	-5.1585E 10	5.1775E 10	8.6339E 10
ROW(31)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	9.7542E 09	-2.7594E 10	-8.9408E 09
ROW(32)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-6.8390E 09	1.9347E 10	6.2687E 09
ROW(33)	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	-2.8424E 10	8.041CE 10	2.6053E 10
ROW(34)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(35)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39
ROW(36)	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
ROW(1)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(2)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(3)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(4)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(5)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(6)	-0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	0.0000E-39	
ROW(7)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(8)	3.1620E 09	-2.2170E 09	-9.2139E 09	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(9)	-1.4016E 10	9.7514E 09	4.0855E 10	-5.3232E 07	-2.6578E 07	-4.3871E 07	
ROW(10)	1.0851E 10	-7.5240E 09	-3.1679E 10	4.7191E 07	2.3562E 07	3.8893E 07	
ROW(11)	-2.1646E 07	8.5118E 07	1.3917E 07	6.1617E 07	3.0764E 07	5.0781E 07	
ROW(12)	2.4293E 07	-9.5525E 07	-1.5619E 07	-5.5576E 07	-2.7748E 07	-4.5803E 07	
ROW(13)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(14)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(15)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(16)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(17)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(18)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(19)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(20)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(21)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(22)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(23)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(24)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(25)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(26)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(27)	0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(28)	9.7542E 09	-6.8390E 09	-2.8424E 10	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(29)	-2.7594E 10	1.9347E 10	8.041CE 10	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(30)	-8.9408E 09	6.2687E 09	2.6053E 10	-0.0000E-39	-0.0000E-39	-0.0000E-39	
ROW(31)	1.6835E 10	-1.2002E 10	-4.9037E 10	-1.0564E 08	-5.2743E 07	-8.7061E 07	
ROW(32)	-1.2002E 10	9.1318E 09	3.4477E 10	4.1539E 08	2.0740E 08	3.4234E 08	
ROW(33)	-4.9037E 10	3.4477E 10	1.4282E 11	6.7918E 07	3.3910E 07	5.5975E 07	
ROW(34)	-1.0564E 08	4.1539E 08	6.7918E 07	2.4865E 08	1.2260E 08	2.0430E 08	
ROW(35)	-5.2743E 07	2.0740E 08	3.391CE 07	1.2260E 08	6.8733E 07	1.0200E 08	
ROW(36)	-8.7061E 07	3.4234E 08	5.5975E 07	2.0430E 08	1.0200E 08	1.6837E 08	

SYSTEM EIGENVALUES AND EIGENVECTORS

MODE	1	2	3	4	5	6	7	8	9
FREQ.	0.036831	0.004249	0.003780	0.004875	1.582884	1.582889	2.653639	2.653659	5.036356
GEN. MASS	5.0938E 04	1.1945E 05	9.5679E 04	4.4566E 04	4.4250E 03	4.4251E 03	2.3300E 03	2.3300E 03	8.5756E 03
UL1(1)	0.063593	0.000000	-1.000000	0.000000	0.000000	-0.115219	-0.071922	-0.000000	-0.189573
UR1(1)	-0.347903	0.000000	-0.412241	0.000000	0.000000	0.116978	0.082523	-0.000000	0.189525
UL1(2)	-0.347903	0.000000	-0.412241	0.000000	0.000000	0.116978	0.082523	-0.000000	0.189525
UR1(2)	-0.761816	0.000000	0.178969	0.000000	0.000000	0.089250	-0.063669	-0.000000	-0.428808
UL1(3)	-0.761816	0.000000	0.178969	0.000000	0.000000	0.089250	-0.063669	-0.000000	-0.428808
UR1(3)	-0.882117	0.000000	0.350832	0.000000	0.000000	-0.183206	-0.122040	-0.000000	0.333666
UL1(4)	-0.884523	0.000000	0.354269	0.000000	0.000000	-0.193818	-0.116592	-0.000000	0.361660
UR1(4)	-1.000000	-0.000000	0.519256	-0.000000	-0.000000	-1.000000	1.000000	0.000000	-1.000000
UL2(1)	-0.000000	-1.000000	-0.000000	0.310232	0.115214	-0.000000	-0.000000	0.071921	-0.000000
UR2(1)	-0.000000	-0.626339	-0.000000	-0.196712	-0.116972	-0.000000	-0.000000	-0.082521	-0.000000
UL2(2)	-0.000000	-0.626339	-0.000000	-0.196712	-0.116972	-0.000000	-0.000000	-0.082521	-0.000000
UR2(2)	-0.000000	-0.250484	-0.000000	-0.706596	-0.089244	-0.000000	-0.000000	0.063668	-0.000000
UL2(3)	-0.000000	-0.250484	-0.000000	-0.706596	-0.089244	-0.000000	-0.000000	0.063668	-0.000000
UR2(3)	-0.000000	-0.141206	-0.000000	-0.854778	0.183210	-0.000000	-0.000000	0.122045	-0.000000
UL2(4)	0.000000	-0.139020	0.000000	-0.857742	0.193822	0.000000	0.000000	0.116598	0.000000
UR2(4)	-0.000000	-0.034111	-0.000000	-1.000000	1.000000	-0.000000	-0.000000	-1.000000	-0.000000
BLMD1(1,1)	-0.000005	-0.000000	-0.000015	-0.000000	-0.000000	-0.003688	-0.003338	0.000000	0.015087
BLMD1(1,2)	0.000007	0.000000	0.000024	0.000000	0.000000	-0.005552	-0.011090	-0.000000	-0.117540
BLMD1(1,3)	-0.000002	-0.000000	-0.000005	-0.000000	-0.000000	-0.000177	0.000357	0.000000	-0.004165
BLMD1(2,1)	0.000003	-0.000000	0.000013	-0.000000	-0.000000	0.016607	0.016948	0.000000	-0.135184
BLMD1(2,2)	0.000004	0.000000	0.000003	0.000000	0.000000	-0.025441	-0.001169	-0.000000	0.129078
BLMD1(2,3)	-0.000003	-0.000000	0.000009	-0.000000	-0.000000	-0.030739	-0.043857	0.000000	-0.242319
BLMD1(3,1)	0.000001	-0.000000	-0.000000	-0.000000	-0.000000	-0.003860	-0.019085	0.000000	0.016923
BLMD1(3,2)	-0.000000	-0.000000	0.000000	-0.000000	-0.000000	-0.009829	0.019101	0.000000	-0.019568
BLMD1(3,3)	0.000004	-0.000000	-0.000001	-0.000000	-0.000000	-0.034403	-0.002628	0.000000	0.164257
BLMD1(4,1)	0.000002	-0.000000	-0.000000	-0.000000	-0.000000	-0.068036	0.094500	0.000000	0.177864
BLMD1(4,2)	-0.000000	-0.000000	0.000000	-0.000000	-0.000000	0.002215	-0.010257	0.000000	0.049418
BLMD1(4,3)	0.000001	0.000000	-0.000000	0.000000	0.000000	-0.036232	0.161199	-0.000000	-0.826843
BLMD2(1,1)	0.000000	0.000018	0.000000	0.000013	0.003691	0.000000	0.000000	0.003338	0.000000
BLMD2(1,2)	-0.000000	-0.000028	-0.000000	-0.000019	0.005547	-0.000000	-0.000000	0.011090	-0.000000
BLMD2(1,3)	0.000000	0.000006	0.000000	0.000004	0.000178	0.000000	0.000000	0.000357	0.000000
BLMD2(2,1)	0.000000	-0.000006	0.000000	0.000006	-0.016608	0.000000	0.000000	-0.016952	0.000000
BLMD2(2,2)	-0.000000	0.000000	-0.000000	0.000004	0.025441	-0.000000	-0.000000	0.001169	-0.000000
BLMD2(2,3)	0.000000	-0.000002	0.000000	0.000007	0.030739	0.000000	0.000000	0.043856	0.000000
BLMD2(3,1)	0.000000	0.000001	0.000000	0.000002	0.003862	0.000000	0.000000	0.019086	0.000000
BLMD2(3,2)	0.000000	0.000000	0.000000	-0.000001	0.009829	0.000000	0.000000	-0.019101	0.000000
BLMD2(3,3)	0.000000	0.000003	0.000000	0.000007	0.034405	0.000000	0.000000	0.002629	0.000000
BLMD2(4,1)	-0.000000	-0.000000	-0.000000	-0.000002	0.068036	-0.000000	-0.000000	-0.094499	-0.000000
BLMD2(4,2)	-0.000000	-0.000000	-0.000000	-0.000000	-0.002215	-0.000000	-0.000000	0.010257	-0.000000
BLMD2(4,3)	0.000000	0.000000	0.000000	0.000001	0.036232	0.000000	0.000000	-0.161202	0.000000

MODE	10	11	12	13	14	15	16	17	18
FREQ.	5.036428	8.508293	8.508313	11.439750	11.439828	15.147632	15.147643	21.000449	21.000503
GEN. MASS	8.5757E 03	1.0998E 03	1.0998E 03	3.0326E 02	3.0325E 02	5.4905E 02	5.4909E 02	7.1550E 01	7.1551E 01
UL1(1)	-0.000000	0.000000	-0.086099	-0.000000	0.051800	0.000000	-0.104397	-0.008130	-0.000000
UR1(1)	-0.000000	0.000000	0.029622	-0.000000	0.011374	0.000000	-0.076411	-0.009017	-0.000000
UL1(2)	-0.000000	0.000000	0.029622	-0.000000	0.011374	0.000000	-0.076411	-0.009017	-0.000000
UR1(2)	-0.000000	0.000000	0.060883	-0.000000	-0.079171	0.000000	-0.063675	-0.033836	-0.000000
UL1(3)	-0.000000	0.000000	0.060883	-0.000000	-0.079171	0.000000	-0.063675	-0.033836	-0.000000
UR1(3)	-0.000000	0.000000	-0.072893	-0.000000	0.014407	0.000000	0.055248	-0.059651	-0.000000
UL1(4)	-0.000000	0.000000	-0.105516	-0.000000	-0.009317	0.000000	0.046749	-0.085333	-0.000000
UR1(4)	0.000000	-0.000000	0.412152	0.000000	0.266633	-0.000000	0.204731	-0.184153	0.000000
UL2(1)	-0.185583	-0.086111	-0.000000	-0.051803	-0.000000	-0.104392	-0.000000	-0.000000	-0.008130
UR2(1)	0.185522	0.029620	-0.000000	-0.011377	-0.000000	-0.076409	-0.000000	-0.000000	-0.009017
UL2(2)	0.185522	0.029620	-0.000000	-0.011377	-0.000000	-0.076409	-0.000000	-0.000000	-0.009017
UR2(2)	-0.428812	0.060884	-0.000000	0.079169	-0.000000	-0.063674	-0.000000	-0.000000	-0.033835
UL2(3)	-0.428812	0.060884	-0.000000	0.079169	-0.000000	-0.063674	-0.000000	-0.000000	-0.033835
UR2(3)	0.333667	-0.072894	-0.000000	-0.014405	-0.000000	0.055248	-0.000000	-0.000000	-0.059651
UL2(4)	0.361662	-0.105517	0.000000	0.009318	0.000000	0.046749	0.000000	0.000000	-0.085333
UR2(4)	-1.000000	0.412153	-0.000000	-0.266635	-0.000000	0.204731	-0.000000	-0.000000	-0.184153
BLMD1(1,1)	0.000000	-0.000000	0.059999	0.000000	-0.068857	-0.000000	0.205674	0.020528	0.000000
BLMD1(1,2)	-0.000000	0.000000	-0.138532	-0.000000	0.121676	0.000000	-0.305730	-0.024932	-0.000000
BLMD1(1,3)	0.000000	-0.000000	-0.006454	0.000000	0.007676	-0.000000	-0.029662	-0.005225	0.000000
BLMD1(2,1)	0.000000	-0.000000	-0.245662	0.000000	0.075917	-0.000000	0.346413	0.080612	0.000000
BLMD1(2,2)	-0.000000	0.000000	-0.007515	-0.000000	0.042507	0.000000	-0.004906	0.029083	-0.000000
BLMD1(2,3)	0.000000	-0.000000	-0.072870	0.000000	-0.025595	-0.000000	0.207594	0.018960	0.000000
BLMD1(3,1)	0.000000	-0.000000	0.093561	0.000000	0.080196	-0.000000	0.002288	0.126232	0.000000
BLMD1(3,2)	0.000000	-0.000000	-0.017513	0.000000	-0.028571	-0.000000	-0.028908	0.010905	0.000000
BLMD1(3,3)	0.000000	-0.000000	-0.026789	0.000000	0.056833	-0.000000	0.067168	0.032746	0.000000
BLMD1(4,1)	0.000000	-0.000000	-0.567100	0.000000	-0.684957	-0.000000	-0.762760	0.840816	0.000000
BLMD1(4,2)	0.000000	-0.000000	-0.050142	0.000000	-0.038960	-0.000000	-0.019249	-0.028430	0.000000
BLMD1(4,3)	-0.000000	0.000000	1.000000	-0.000000	1.000000	0.000000	1.000000	-1.000000	-0.000000
BLMD2(1,1)	0.015105	0.060025	0.000000	0.068875	0.000000	0.205697	0.000000	0.000000	0.020532
BLMD2(1,2)	-0.117573	-0.138575	-0.000000	-0.121702	-0.000000	-0.305758	-0.000000	-0.000000	-0.024937
BLMD2(1,3)	-0.004160	-0.006449	0.000000	-0.007671	0.000000	-0.029645	0.000000	0.000000	-0.005223
BLMD2(2,1)	-0.135168	-0.245666	0.000000	-0.075911	0.000000	0.346392	0.000000	0.000000	0.080612
BLMD2(2,2)	0.129084	-0.007516	-0.000000	-0.042509	-0.000000	-0.004908	-0.000000	-0.000000	0.029082
BLMD2(2,3)	-0.242321	-0.072873	0.000000	0.025596	0.000000	0.207576	0.000000	0.000000	0.018960
BLMD2(3,1)	0.016926	0.093560	0.000000	-0.080199	0.000000	0.002291	0.000000	0.000000	0.126235

BLMD2(3,2)	-0.015567	-0.017513	0.000000	0.028570	0.000000	-0.028908	0.000000	0.000000	0.010905
BLMD2(3,3)	0.164270	-0.026791	0.000000	-0.056835	0.000000	0.067171	0.000000	0.000000	0.032750
BLMD2(4,1)	0.177880	-0.567099	-0.000000	0.684955	-0.000000	-0.762760	-0.000000	-0.000000	0.840817
BLMD2(4,2)	0.049419	-0.050142	-0.000000	0.038960	-0.000000	-0.019249	-0.000000	-0.000000	-0.028431
BLMD2(4,3)	-0.826870	1.000000	0.000000	-1.000000	0.000000	1.000000	0.000000	0.000000	-1.000000

MODE	19	20	21	22	23	24	25	26	27
FREQ.	35.654866	35.655149	46.702397	46.703296	51.344742	51.344745	56.765506	56.765777	66.781074
GEN. MASS	1.9735E 03	1.9738E 03	3.7335E 02	3.7336E 02	8.8461E 01	8.8462E 01	5.0210E 02	5.0208E 02	1.2120E 02
UL1(1)	-0.069492	-0.000000	-0.027021	0.000000	0.000000	-0.001698	-0.000000	-0.032291	-0.000000
UR1(1)	-0.060758	-0.000000	-0.031702	0.000000	0.000000	-0.001430	-0.000000	-0.017841	-0.000000
UL1(2)	-0.060758	-0.000000	-0.031702	0.000000	0.000000	-0.001430	-0.000000	-0.017841	-0.000000
UR1(2)	-0.009186	-0.000000	-0.056197	0.000000	0.000000	0.005559	-0.000000	0.081369	-0.000000
UL1(3)	-0.009186	-0.000000	-0.056197	0.000000	0.000000	0.005559	-0.000000	0.081369	-0.000000
UR1(3)	-0.078811	-0.000000	-0.097724	0.000000	0.000000	0.066054	-0.000000	0.350049	-0.000000
UL1(4)	0.104829	-0.000000	0.031083	0.000000	0.000000	-0.100499	-0.000000	0.013860	-0.000000
UR1(4)	0.257928	0.000000	0.120756	-0.000000	-0.000000	0.053709	0.000000	-0.394646	0.000000
UL2(1)	-0.000000	0.069499	-0.000000	-0.027036	-0.001699	-0.000000	0.032306	-0.000000	-0.084412
UR2(1)	-0.000000	0.060763	-0.000000	-0.031705	-0.001431	-0.000000	0.017843	-0.000000	-0.008903
UL2(2)	-0.000000	0.060763	-0.000000	-0.031705	-0.001431	-0.000000	0.017843	-0.000000	-0.008903
UR2(2)	-0.000000	0.009186	-0.000000	-0.056195	0.005559	-0.000000	-0.081373	-0.000000	0.012777
UL2(3)	-0.000000	0.009186	-0.000000	-0.056195	0.005559	-0.000000	-0.081373	-0.000000	0.012777
UR2(3)	-0.000000	0.078817	-0.000000	-0.097732	0.066052	-0.000000	-0.350051	-0.000000	-0.016777
UL2(4)	0.000000	-0.104831	0.000000	0.031085	-0.100499	0.000000	-0.013858	0.000000	-0.001888
UR2(4)	-0.000000	-0.257933	-0.000000	0.120757	0.053711	-0.000000	0.394649	-0.000000	0.016847
BLMD1(1,1)	0.039455	0.000000	0.373464	-0.000000	-0.000000	0.016603	0.000000	0.277787	0.000000
BLMD1(1,2)	0.254767	-0.000000	-0.740801	0.000000	0.000000	-0.029357	-0.000000	-0.450900	-0.000000
BLMD1(1,3)	-0.337037	0.000000	0.339944	-0.000000	-0.000000	0.011622	0.000000	0.159773	0.000000
BLMD1(2,1)	0.161950	0.000000	1.000000	-0.000000	-0.000000	0.036910	0.000000	0.310218	0.000000
BLMD1(2,2)	0.805799	-0.000000	0.393671	0.000000	0.000000	0.027186	-0.000000	0.316947	-0.000000
BLMD1(2,3)	-0.641797	0.000000	0.543477	-0.000000	-0.000000	0.013034	0.000000	0.045954	0.000000
BLMD1(3,1)	-0.152607	0.000000	0.098033	-0.000000	-0.000000	0.076550	0.000000	-0.975260	0.000000
BLMD1(3,2)	0.106705	0.000000	0.076755	-0.000000	-0.000000	0.153856	0.000000	-0.360313	0.000000
BLMD1(3,3)	-0.401733	0.000000	-0.114620	-0.000000	-0.000000	-0.008124	0.000000	-0.319976	0.000000
BLMD1(4,1)	-1.000000	0.000000	-0.240842	-0.000000	-0.000000	-1.000000	0.000000	0.616679	0.000000
BLMD1(4,2)	0.301672	0.000000	0.246387	-0.000000	-0.000000	-0.022962	0.000000	-1.000000	0.000000
BLMD1(4,3)	0.901281	-0.000000	0.079515	0.000000	0.000000	0.935965	-0.000000	0.191026	-0.000000
BLMD2(1,1)	0.000000	-0.039468	0.000000	0.373582	0.016612	0.000000	-0.277913	0.000000	0.680644
BLMD2(1,2)	-0.000000	-0.254776	-0.000000	-0.740972	-0.029371	-0.000000	0.451084	-0.000000	-1.000000
BLMD2(1,3)	0.000000	0.337063	0.000000	0.339995	0.011627	0.000000	-0.159831	0.000000	0.314693
BLMD2(2,1)	0.000000	-0.162003	0.000000	1.000000	0.036916	0.000000	-0.310149	0.000000	-0.635450
BLMD2(2,2)	-0.000000	-0.805888	-0.000000	0.393699	0.027190	-0.000000	-0.316937	-0.000000	-0.157875
BLMD2(2,3)	0.000000	0.641830	0.000000	0.543449	0.013036	0.000000	-0.045897	0.000000	-0.469643
BLMD2(3,1)	0.000000	0.152608	0.000000	0.098055	0.076554	0.000000	0.975257	0.000000	0.076793
BLMD2(3,2)	0.000000	-0.106707	0.000000	0.076754	0.153857	0.000000	0.360314	0.000000	0.016137
BLMD2(3,3)	0.000000	0.401743	0.000000	-0.114600	-0.008124	0.000000	0.319967	0.000000	0.062803
BLMD2(4,1)	-0.000000	1.000000	-0.000000	-0.240798	-1.000000	-0.000000	-0.616692	-0.000000	0.007415
BLMD2(4,2)	-0.000000	-0.301685	-0.000000	0.246402	-0.022958	-0.000000	1.000000	-0.000000	0.054416
BLMD2(4,3)	0.000000	-0.901273	0.000000	0.079459	0.935962	0.000000	-0.191011	0.000000	-0.053119

MODE	28	29	30	31	32	33	34	35	36
FREQ.	66.785509	133.418671	133.418676	217.624826	217.624975	1457.687622	1528.753159	1955.047623	2092.325165
GEN. MASS	1.2119E 02	1.3345E 00	1.3345E 00	5.1401E 00	5.1402E 00	4.4375E 02	4.4376E 02	1.7706E 02	1.7708E 02
UL1(1)	-0.084411	0.000000	-0.000033	0.000123	0.000000	-0.040876	-0.000000	-0.075139	0.000000
UR1(1)	-0.008907	0.000000	-0.000024	0.000017	0.000000	0.040345	-0.000000	0.017157	0.000000
UL1(2)	-0.008907	0.000000	-0.000024	0.000017	0.000000	0.040345	-0.000000	0.017157	0.000000
UR1(2)	0.012780	0.000000	0.001908	-0.006039	0.000000	-0.071744	-0.000000	0.000346	0.000000
UL1(3)	0.012780	0.000000	0.001908	-0.006039	0.000000	-0.071744	-0.000000	0.000346	0.000000
UR1(3)	-0.016767	0.000000	0.004822	-0.010042	0.000000	0.030228	-0.000000	-0.011432	0.000000
UL1(4)	-0.001888	0.000000	-0.017171	-0.006280	0.000000	-0.000176	-0.000000	0.000003	0.000000
UR1(4)	0.016820	-0.000000	0.063706	0.040792	-0.000000	0.000445	0.000000	0.000021	-0.000000
UL2(1)	-0.000000	0.000033	-0.000000	-0.000000	-0.000123	-0.000000	-0.040869	-0.000000	0.075139
UR2(1)	-0.000000	0.000024	-0.000000	-0.000000	-0.000017	-0.000000	0.040341	-0.000000	-0.017161
UL2(2)	-0.000000	0.000024	-0.000000	-0.000000	-0.000017	-0.000000	0.040341	-0.000000	-0.017161
UR2(2)	-0.000000	-0.001908	-0.000000	-0.000000	0.006038	-0.000000	-0.071753	-0.000000	-0.000347
UL2(3)	-0.000000	-0.001908	-0.000000	-0.000000	0.006038	-0.000000	-0.071753	-0.000000	-0.000347
UR2(3)	-0.000000	-0.004822	-0.000000	-0.000000	0.010042	-0.000000	0.030221	-0.000000	0.011430
UL2(4)	0.000000	0.017171	0.000000	0.000000	0.006280	0.000000	-0.000188	0.000000	-0.000003
UR2(4)	-0.000000	-0.063706	-0.000000	-0.000000	-0.040793	-0.000000	0.000496	-0.000000	-0.000019
BLMD1(1,1)	0.680633	-0.000000	0.000220	-0.000880	-0.000000	0.324243	0.000000	0.551871	-0.000000
BLMD1(1,2)	-1.000000	0.000000	-0.000311	0.001161	0.000000	-0.386533	-0.000000	-0.699443	0.000000
BLMD1(1,3)	0.314699	-0.000000	0.000078	-0.000283	-0.000000	0.095091	0.000000	0.168310	-0.000000
BLMD1(2,1)	-0.635343	-0.000000	0.001459	-0.002491	-0.000000	-1.000000	0.000000	1.000000	-0.000000
BLMD1(2,2)	-0.157813	0.000000	0.002807	-0.007579	0.000000	-0.785196	-0.000000	0.314040	0.000000
BLMD1(2,3)	-0.469599	-0.000000	0.000010	0.000795	-0.000000	-0.268286	0.000000	0.699806	-0.000000
BLMD1(3,1)	0.076765	-0.000000	-0.032877	0.121189	-0.000000	-0.270340	0.000000	0.065226	-0.000000
BLMD1(3,2)	0.016128	-0.000000	-0.023888	0.098365	-0.000000	-0.060908	0.000000	0.022688	-0.000000
BLMD1(3,3)	0.062791	-0.000000	-0.006301	0.021014	-0.000000	-0.269111	0.000000	0.041761	-0.000000
BLMD1(4,1)	0.007422	-0.000000	0.667236	0.730805	-0.000000	0.003432	0.000000	0.000582	-0.000000
BLMD1(4,2)	0.054390	-0.000000	0.389789	0.325269	-0.000000	0.002464	0.000000	0.000214	-0.000000
BLMD1(4,3)	-0.053108	0.000000	-1.000000	-1.000000	0.000000	-0.005608	-0.000000	-0.000752	0.000000
BLMD2(1,1)	0.000000	-0.000221	0.000000	0.000000	0.000880	0.000000	0.324168	0.000000	-0.551868
BLMD2(1,2)	-0.000000	0.000312	-0.000000	-0.000000	-0.001161	-0.000000	-0.386422	-0.000000	0.699429
BLMD2(1,3)	0.000000	-0.000078	0.000000	0.000000	0.000283	0.000000	0.095050	0.000000	-0.168302
BLMD2(2,1)	0.000000	-0.001458	0.000000	0.000000	0.002481	0.000000	-1.000000	0.000000	-1.000000
BLMD2(2,2)	-0.000000	-0.002806	-0.000000	-0.000000	0.007573	-0.000000	-0.785212	-0.000000	-0.314026
BLMD2(2,3)	0.000000	-0.000009	0.000000	0.000000	-0.000799	0.000000	-0.268283	0.000000	-0.699822

BLMD2(3,1)	0.000000	0.032877	0.000000	0.000000	-0.121191	0.000000	-0.270284	0.000000	-0.065210
BLMD2(3,2)	0.000000	0.023888	0.000000	0.000000	-0.098366	0.000000	-0.060865	0.000000	-0.022674
BLMD2(3,3)	0.000000	0.006301	0.000000	0.000000	-0.021016	0.000000	-0.265105	0.000000	-0.041759
BLMD2(4,1)	-0.000000	-0.667236	-0.000000	-0.000000	-0.730804	-0.000000	0.004114	-0.000000	-0.000528
BLMD2(4,2)	-0.000000	-0.389789	-0.000000	-0.000000	-0.325270	0.000000	0.002817	-0.000000	0.000195
BLMD2(4,3)	0.000000	1.000000	0.000000	0.000000	1.000000	0.000000	-0.006588	0.000000	0.000682

ACCURACY CHECK MATRICES FØLLØW

ØMEGA**2*A*X

	CØLUMN(1)	CØLUMN(2)	CØLUMN(3)	CØLUMN(4)	CØLUMN(5)	CØLUMN(6)	CØLUMN(7)	CØLUMN(8)	CØLUMN(9)	CØLUMN(10)
RØW(1)	-6.2508E 00	0.0000E-39	-4.1189E 01	0.0000E-39	0.0000E-39	-4.4635E 05	-6.2077E 05	-0.0000E-39	-3.1918E 06	-0.0000E-39
RØW(2)	-4.7710E 01	0.0000E-39	-2.5220E 01	0.0000E-39	0.0000E-39	6.6712E 05	1.2215E 06	-0.0000E-39	7.3570E 06	-0.0000E-39
RØW(3)	-4.5258E 01	0.0000E-39	1.2832E 00	0.0000E-39	0.0000E-39	3.5488E 05	-1.7279E 05	-0.0000E-39	-7.9705E 06	-0.0000E-39
RØW(4)	-3.3006E 01	0.0000E-39	3.7031E 00	0.0000E-39	0.0000E-39	-2.0566E 05	-7.7877E 05	-0.0000E-39	2.1215E 06	-0.0000E-39
RØW(5)	-9.9966E 00	0.0000E-39	1.2947E 00	0.0000E-39	0.0000E-39	-1.7431E 05	-2.8937E 04	-0.0000E-39	2.1291E 06	-0.0000E-39
RØW(6)	-5.1960E 00	0.0000E-39	7.6545E-01	0.0000E-39	0.0000E-39	-1.9170E 05	3.7575E 05	-0.0000E-39	-4.4506E 05	-0.0000E-39
RØW(7)	0.0000E-39	-5.5326E 01	0.0000E-39	1.4712E 01	4.4633E 05	0.0000E-39	0.0000E-39	6.2078E 05	0.0000E-39	-3.1920E 06
RØW(8)	0.0000E-39	-4.3593E 01	0.0000E-39	-1.0385E 01	-6.6708E 05	0.0000E-39	0.0000E-39	-1.2215E 06	0.0000E-39	7.3574E 06
RØW(9)	0.0000E-39	-8.3416E 00	0.0000E-39	-2.0545E 01	-3.5486E 05	0.0000E-39	0.0000E-39	1.7279E 05	0.0000E-39	-7.9712E 06
RØW(10)	0.0000E-39	-2.4592E 00	0.0000E-39	-1.6157E 01	2.0967E 05	0.0000E-39	0.0000E-39	7.7881E 05	0.0000E-39	2.1218E 06
RØW(11)	-0.0000E-39	-5.1803E-01	-0.0000E-39	-4.9668E 00	1.7431E 05	-0.0000E-39	-0.0000E-39	2.8947E 04	-0.0000E-39	2.1292E 06
RØW(12)	-0.0000E-39	-1.4813E-01	-0.0000E-39	-2.6208E 00	1.9170E 05	-0.0000E-39	-0.0000E-39	-3.7975E 05	-0.0000E-39	-4.4506E 05
RØW(13)	1.3558E 01	0.0000E-39	2.3795E 01	0.0000E-39	0.0000E-39	2.1841E 03	-1.8094E 05	-0.0000E-39	-4.2106E 06	-0.0000E-39
RØW(14)	1.4484E 01	0.0000E-39	3.1825E 01	0.0000E-39	0.0000E-39	9.7453E 04	-4.1911E 04	-0.0000E-39	-3.4003E 06	-0.0000E-39
RØW(15)	1.4562E 01	0.0000E-39	3.8064E 01	0.0000E-39	0.0000E-39	1.8799E 05	1.0070E 05	-0.0000E-39	-2.4283E 06	-0.0000E-39
RØW(16)	-3.2061E 01	0.0000E-39	-2.2961E 00	0.0000E-39	0.0000E-39	4.9840E 05	5.3115E 05	-0.0000E-39	-3.6136E 06	-0.0000E-39
RØW(17)	3.0158E 01	0.0000E-39	1.6940E 00	0.0000E-39	0.0000E-39	-4.5800E 05	-4.4681E 05	-0.0000E-39	4.2063E 06	-0.0000E-39
RØW(18)	3.3026E 01	0.0000E-39	2.6197E 00	0.0000E-39	0.0000E-39	-5.2078E 05	-5.8005E 05	-0.0000E-39	3.2515E 06	-0.0000E-39
RØW(19)	-3.3913E 01	0.0000E-39	3.6343E 00	0.0000E-39	0.0000E-39	-1.4696E 05	-7.8563E 05	-0.0000E-39	1.0125E 05	-0.0000E-39
RØW(20)	3.0866E 01	0.0000E-39	-3.3263E 00	0.0000E-39	0.0000E-39	1.3584E 05	7.2514E 05	-0.0000E-39	-3.2226E 05	-0.0000E-39
RØW(21)	2.8134E 01	0.0000E-39	-2.9753E 00	0.0000E-39	0.0000E-39	9.8201E 04	6.4718E 05	-0.0000E-39	7.9018E 05	-0.0000E-39
RØW(22)	6.6889E 00	0.0000E-39	-9.3205E-01	0.0000E-39	0.0000E-39	1.7701E 05	-1.8491E 05	-0.0000E-39	-9.6505E 05	-0.0000E-39
RØW(23)	6.8250E 00	0.0000E-39	-9.7473E-01	0.0000E-39	0.0000E-39	2.1061E 05	-3.1608E 05	-0.0000E-39	-3.8635E 05	-0.0000E-39
RØW(24)	6.9580E 00	0.0000E-39	-9.7462E-01	0.0000E-39	0.0000E-39	1.9094E 05	-2.2206E 05	-0.0000E-39	-8.5857E 05	-0.0000E-39
RØW(25)	0.0000E-39	3.4158E 01	0.0000E-39	-4.1012E 00	-2.1884E 03	0.0000E-39	0.0000E-39	1.8054E 05	0.0000E-39	-4.2109E 06
RØW(26)	0.0000E-39	4.4890E 01	0.0000E-39	-7.1026E 00	-9.7454E 04	0.0000E-39	0.0000E-39	4.1907E 04	0.0000E-39	-3.4006E 06
RØW(27)	0.0000E-39	5.3073E 01	0.0000E-39	-9.7133E 00	-1.8798E 05	0.0000E-39	0.0000E-39	-1.0070E 05	0.0000E-39	-2.4285E 06
RØW(28)	0.0000E-39	-1.0107E 01	0.0000E-39	-1.3195E 01	-4.9838E 05	0.0000E-39	0.0000E-39	-5.3117E 05	0.0000E-39	-3.6135E 06
RØW(29)	0.0000E-39	8.8958E 00	0.0000E-39	1.2609E 01	4.5798E 05	0.0000E-39	0.0000E-39	4.4682E 05	0.0000E-39	4.2062E 06
RØW(30)	0.0000E-39	1.0744E 01	0.0000E-39	1.3484E 01	5.2076E 05	0.0000E-39	0.0000E-39	5.8007E 05	0.0000E-39	3.2514E 06
RØW(31)	0.0000E-39	-2.7500E 00	0.0000E-39	-1.6528E 01	1.4697E 05	0.0000E-39	0.0000E-39	7.8566E 05	0.0000E-39	1.0112E 05
RØW(32)	0.0000E-39	2.4788E 00	0.0000E-39	1.5051E 01	-1.3985E 05	0.0000E-39	0.0000E-39	-7.2517E 05	0.0000E-39	-3.2211E 05
RØW(33)	0.0000E-39	2.3334E 00	0.0000E-39	1.3695E 01	-9.8208E 04	0.0000E-39	0.0000E-39	-6.4721E 05	0.0000E-39	7.9038E 05
RØW(34)	0.0000E-39	2.6053E-01	0.0000E-39	3.3512E 00	-1.7701E 05	0.0000E-39	0.0000E-39	1.8451E 05	0.0000E-39	-9.6511E 05
RØW(35)	0.0000E-39	2.3477E-01	0.0000E-39	3.4295E 00	-2.1061E 05	0.0000E-39	0.0000E-39	3.1608E 05	0.0000E-39	-3.8635E 05
RØW(36)	0.0000E-39	2.6438E-01	0.0000E-39	3.4882E 00	-1.9094E 05	0.0000E-39	0.0000E-39	2.2206E 05	0.0000E-39	-8.5863E 05

	CØLUMN(11)	CØLUMN(12)	CØLUMN(13)	CØLUMN(14)	CØLUMN(15)	CØLUMN(16)	CØLUMN(17)	CØLUMN(18)	CØLUMN(19)	CØLUMN(20)
RØW(1)	0.0000E-39	-9.6332E 05	-0.0000E-39	-1.8109E 05	0.0000E-39	2.3367E 06	3.5894E 05	-0.0000E-39	3.0686E 06	-0.0000E-39
RØW(2)	0.0000E-39	1.8047E 06	-0.0000E-39	6.5973E 05	0.0000E-39	-4.4298E 06	-5.0217E 05	-0.0000E-39	-3.8054E 06	-0.0000E-39
RØW(3)	0.0000E-39	-7.2391E 05	-0.0000E-39	-1.9890E 06	0.0000E-39	7.6768E 05	-2.0691E 05	-0.0000E-39	-5.9424E 06	-0.0000E-39
RØW(4)	0.0000E-39	2.8968E 06	-0.0000E-39	4.0461E 06	0.0000E-39	2.3314E 06	3.4235E 06	-0.0000E-39	-1.6216E 07	-0.0000E-39
RØW(5)	0.0000E-39	-2.7832E 06	-0.0000E-39	-2.0849E 06	0.0000E-39	-4.7153E 05	-3.5381E 06	-0.0000E-39	2.2044E 07	-0.0000E-39
RØW(6)	0.0000E-39	-2.3123E 05	-0.0000E-39	-4.5076E 05	0.0000E-39	-5.3461E 05	4.6475E 05	-0.0000E-39	8.5212E 05	-0.0000E-39
RØW(7)	-9.6331E 05	0.0000E-39	1.8121E 05	0.0000E-39	2.3369E 06	0.0000E-39	0.0000E-39	3.5856E 05	0.0000E-39	-3.0684E 06
RØW(8)	1.8048E 06	0.0000E-39	-6.5985E 05	0.0000E-39	-4.4299E 06	0.0000E-39	0.0000E-39	-5.0222E 05	0.0000E-39	3.8059E 06
RØW(9)	-7.2393E 05	0.0000E-39	1.9890E 06	0.0000E-39	7.6790E 05	0.0000E-39	0.0000E-39	-2.0688E 05	0.0000E-39	5.9435E 06
RØW(10)	2.8968E 06	0.0000E-39	-4.0461E 06	0.0000E-39	2.3315E 06	0.0000E-39	0.0000E-39	3.4236E 06	0.0000E-39	1.6216E 07
RØW(11)	-2.7832E 06	-0.0000E-39	2.0850E 06	-0.0000E-39	-4.7154E 05	-0.0000E-39	-0.0000E-39	-3.5382E 06	-0.0000E-39	-2.2045E 07
RØW(12)	-2.3123E 05	-0.0000E-39	4.5076E 05	-0.0000E-39	-5.3461E 05	-0.0000E-39	-0.0000E-39	4.6475E 05	-0.0000E-39	-8.5218E 05
RØW(13)	0.0000E-39	-6.6074E 06	-0.0000E-39	6.0872E 06	0.0000E-39	-1.4340E 07	-6.8452E 05	-0.0000E-39	7.1400E 07	-0.0000E-39

RØW(14)	0.0000E-39	-6.3404E 06	-0.0000E-39	6.2797E 06	0.0000E-39	-1.6412E 07	-1.2166E 06	-0.0000E-39	3.4916E 07	-0.0000E-39
RØW(15)	0.0000E-39	-5.9532E 06	-0.0000E-39	6.5995E 06	0.0000E-39	-2.0192E 07	-2.2787E 06	-0.0000E-39	-4.8877E 07	-0.0000E-39
RØW(16)	0.0000E-39	-7.1613E 06	-0.0000E-39	2.4209E 06	0.0000E-39	9.5394E 06	2.4168E 06	-0.0000E-39	1.6394E 07	-0.0000E-39
RØW(17)	0.0000E-39	6.8661E 06	-0.0000E-39	-1.7290E 06	0.0000E-39	-1.0494E 07	-1.9439E 06	-0.0000E-39	1.6067E 07	-0.0000E-39
RØW(18)	0.0000E-39	7.3315E 06	-0.0000E-39	-2.8430E 06	0.0000E-39	-8.8679E 06	-2.6689E 06	-0.0000E-39	-3.7460E 07	-0.0000E-39
RØW(19)	0.0000E-39	4.4731E 06	-0.0000E-39	3.1313E 06	0.0000E-39	-1.0619E 06	5.8029E 06	-0.0000E-39	1.8578E 07	-0.0000E-39
RØW(20)	0.0000E-39	-4.1253E 06	-0.0000E-39	-3.3064E 06	0.0000E-39	3.5737E 05	-5.5880E 06	-0.0000E-39	-6.2173E 06	-0.0000E-39
RØW(21)	0.0000E-39	-4.3128E 06	-0.0000E-39	-1.7562E 06	0.0000E-39	3.1807E 06	-4.6957E 06	-0.0000E-39	-7.0366E 07	-0.0000E-39
RØW(22)	0.0000E-39	2.0736E 06	-0.0000E-39	2.2268E 06	0.0000E-39	2.0861E 06	-1.3295E 06	-0.0000E-39	-5.4859E 06	-0.0000E-39
RØW(23)	0.0000E-39	1.5385E 06	-0.0000E-39	1.8819E 06	0.0000E-39	2.0808E 06	-2.1828E 06	-0.0000E-39	1.0826E 06	-0.0000E-39
RØW(24)	0.0000E-39	2.0165E 06	-0.0000E-39	2.2278E 06	0.0000E-39	2.1799E 06	-1.6515E 06	-0.0000E-39	-3.6014E 06	-0.0000E-39
RØW(25)	-6.6089F 06	0.0000E-39	-6.0871E 06	0.0000E-39	-1.4338E 07	0.0000E-39	0.0000E-39	-6.8442E 05	0.0000E-39	-7.1409E 07
RØW(26)	-6.3411E 06	0.0000E-39	-6.2797E 06	0.0000E-39	-1.6411E 07	0.0000E-39	0.0000E-39	-1.2166E 06	0.0000E-39	-3.4921E 07
RØW(27)	-5.9539E 06	0.0000E-39	-6.5996E 06	0.0000E-39	-2.0190E 07	0.0000E-39	0.0000E-39	-2.2787E 06	0.0000E-39	4.8881E 07
RØW(28)	-7.1613E 06	0.0000E-39	-2.4204E 06	0.0000E-39	9.5398E 06	0.0000E-39	0.0000E-39	2.4169E 06	0.0000E-39	-1.6396E 07
RØW(29)	6.8662E 06	0.0000E-39	1.7288E 06	0.0000E-39	-1.0495E 07	0.0000E-39	0.0000E-39	-1.9440E 06	0.0000E-39	-1.6069E 07
RØW(30)	7.3316E 06	0.0000E-39	2.8426E 06	0.0000E-39	-8.8684E 06	0.0000E-39	0.0000E-39	-2.6650E 06	0.0000E-39	3.7463E 07
RØW(31)	4.4731E 06	0.0000E-39	-3.1314E 06	0.0000E-39	-1.0619E 06	0.0000E-39	0.0000E-39	5.8029E 06	0.0000E-39	-1.8580E 07
RØW(32)	-4.1253E 06	0.0000E-39	3.3064E 06	0.0000E-39	3.9736E 05	0.0000E-39	0.0000E-39	-5.9881E 06	0.0000E-39	6.2187E 06
RØW(33)	-4.3128E 06	0.0000E-39	1.7563E 06	0.0000E-39	3.1808E 06	0.0000E-39	0.0000E-39	-4.6955E 06	0.0000E-39	7.0370E 07
RØW(34)	2.0736E 06	0.0000E-39	-2.2268E 06	0.0000E-39	2.0861E 06	0.0000E-39	0.0000E-39	-1.3295E 06	0.0000E-39	5.4861E 06
RØW(35)	1.5385E 06	0.0000E-39	-1.8819E 06	0.0000E-39	2.0808E 06	0.0000E-39	0.0000E-39	-2.1828E 06	0.0000E-39	-1.0826E 06
RØW(36)	2.0165E 06	0.0000E-39	-2.2278E 06	0.0000E-39	2.1799E 06	0.0000E-39	0.0000E-39	-1.6515E 06	0.0000E-39	3.6016E 06

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
RØW(1)	4.2611E 06	0.0000E-39	0.0000E-39	1.8857E 05	-0.0000E-39	2.7929E 06	-0.0000E-39	3.5457E 06	0.0000E-39	-1.2023E 04
RØW(2)	-6.1094E 06	0.0000E-39	0.0000E-39	-2.6764E 05	-0.0000E-39	-4.9943E 06	-0.0000E-39	-8.5366E 06	0.0000E-39	-1.5678E 04
RØW(3)	-4.8649E 06	0.0000E-39	0.0000E-39	1.2067E 06	-0.0000E-39	-7.8930E 06	-0.0000E-39	1.0744E 07	0.0000E-39	6.0517E 05
RØW(4)	-9.7352E 06	0.0000E-39	0.0000E-39	2.4214E 07	-0.0000E-39	5.1345E 07	-0.0000E-39	-7.5171E 06	0.0000E-39	2.0717E 06
RØW(5)	1.5227E 07	0.0000E-39	0.0000E-39	-2.7436E 07	-0.0000E-39	-3.3659E 07	-0.0000E-39	1.4169E 06	0.0000E-39	-3.1641E 06
RØW(6)	1.2215E 06	0.0000E-39	0.0000E-39	2.0943E 06	-0.0000E-39	-7.5920E 06	-0.0000E-39	3.9066E 05	0.0000E-39	5.1488E 05
RØW(7)	0.0000E-39	4.2619E 06	1.8904E 05	0.0000E-39	-2.7934E 06	0.0000E-39	3.5484E 06	0.0000E-39	1.2033E 04	0.0000E-39
RØW(8)	0.0000E-39	-6.1108E 06	-2.6775E 05	0.0000E-39	4.9950E 06	0.0000E-39	-8.5392E 06	0.0000E-39	1.5638E 04	0.0000E-39
RØW(9)	0.0000E-39	-4.8637E 06	1.2067E 06	0.0000E-39	7.8915E 06	0.0000E-39	1.0737E 07	0.0000E-39	-6.0506E 05	0.0000E-39
RØW(10)	0.0000E-39	-9.7367E 06	2.4213E 07	0.0000E-39	-5.1345E 07	0.0000E-39	-7.5193E 06	0.0000E-39	-2.0718E 06	0.0000E-39
RØW(11)	-0.0000E-39	1.5228E 07	-2.7436E 07	-0.0000E-39	3.3660E 07	-0.0000E-39	1.4220E 06	-0.0000E-39	3.1641E 06	-0.0000E-39
RØW(12)	-0.0000E-39	1.2215E 06	2.0943E 06	-0.0000E-39	7.5922E 06	-0.0000E-39	3.9588E 05	-0.0000E-39	-5.1488E 05	-0.0000E-39
RØW(13)	-7.5843E 07	0.0000E-39	0.0000E-39	-2.2309E 06	-0.0000E-39	-2.0888E 07	-0.0000E-39	1.3848E 07	0.0000E-39	1.3031E 05
RØW(14)	-4.9293E 07	0.0000E-39	0.0000E-39	-1.5485E 06	-0.0000E-39	-1.6101E 07	-0.0000E-39	1.5035E 06	0.0000E-39	8.4135E 04
RØW(15)	2.3758E 07	0.0000E-39	0.0000E-39	6.4672E 05	-0.0000E-39	7.6705E 06	-0.0000E-39	1.6957E 07	0.0000E-39	2.3772E 04
RØW(16)	1.8393E 07	0.0000E-39	0.0000E-39	6.8583E 05	-0.0000E-39	6.8066E 06	-0.0000E-39	2.8051E 06	0.0000E-39	-1.8029E 05
RØW(17)	-1.1381E 07	0.0000E-39	0.0000E-39	1.3690E 05	-0.0000E-39	7.3128E 06	-0.0000E-39	6.6374E 05	0.0000E-39	5.4128E 05
RØW(18)	-1.4260E 07	0.0000E-39	0.0000E-39	-7.6813E 05	-0.0000E-39	-1.1160E 07	-0.0000E-39	-1.8437E 07	0.0000E-39	1.8120E 05
RØW(19)	2.1175E 07	0.0000E-39	0.0000E-39	1.5133E 06	-0.0000E-39	-3.0672E 07	-0.0000E-39	-6.6157E 06	0.0000E-39	3.4312E 05
RØW(20)	-1.5205E 07	0.0000E-39	0.0000E-39	8.4070E 06	-0.0000E-39	3.4223E 07	-0.0000E-39	1.5035E 06	0.0000E-39	-5.8950E 06
RØW(21)	-5.2223E 07	0.0000E-39	0.0000E-39	-3.4868E 06	-0.0000E-39	-5.0462E 06	-0.0000E-39	2.6872E 07	0.0000E-39	8.0616E 03
RØW(22)	-6.1092E 06	0.0000E-39	0.0000E-39	-1.1338E 07	-0.0000E-39	3.6366E 07	-0.0000E-39	-1.9730E 06	0.0000E-39	-1.9504E 06
RØW(23)	-8.2287E 05	0.0000E-39	0.0000E-39	-4.2814E 06	-0.0000E-39	9.6765E 06	-0.0000E-39	-5.6058E 05	0.0000E-39	9.2286E 05
RØW(24)	-4.6456E 06	0.0000E-39	0.0000E-39	-8.7375E 06	-0.0000E-39	2.8617E 07	-0.0000E-39	-1.5690E 06	0.0000E-39	-1.6504E 06
RØW(25)	0.0000E-39	-7.5843E 07	-2.2309E 06	0.0000E-39	2.0884E 07	0.0000E-39	1.3866E 07	0.0000E-39	-1.3043E 05	0.0000E-39
RØW(26)	0.0000E-39	-4.9293E 07	-1.5488E 06	0.0000E-39	1.6099E 07	0.0000E-39	1.5191E 06	0.0000E-39	-8.4212E 04	0.0000E-39
RØW(27)	0.0000E-39	2.3760E 07	6.4702E 05	0.0000E-39	-7.6739E 06	0.0000E-39	1.6960E 07	0.0000E-39	-2.3792E 04	0.0000E-39
RØW(28)	0.0000E-39	1.8394E 07	6.8604E 05	0.0000E-39	-6.8071E 06	0.0000E-39	2.8015E 06	0.0000E-39	1.8024E 05	0.0000E-39
RØW(29)	0.0000E-39	-1.1380E 07	1.3685E 05	0.0000E-39	-7.3130E 06	0.0000E-39	6.6739E 05	0.0000E-39	-5.4105E 05	0.0000E-39
RØW(30)	0.0000E-39	-1.4262E 07	-7.6838E 05	0.0000E-39	1.1162E 07	0.0000E-39	-1.8427E 07	0.0000E-39	-1.8116E 05	0.0000E-39
RØW(31)	0.0000E-39	2.1175E 07	1.5135E 06	0.0000E-39	3.0672E 07	0.0000E-39	-6.6202E 06	0.0000E-39	-3.4325E 05	0.0000E-39
RØW(32)	0.0000E-39	-1.5206E 07	8.4068E 06	0.0000E-39	-3.4223E 07	0.0000E-39	3.2205E 06	0.0000E-39	5.8951E 06	0.0000E-39
RØW(33)	0.0000E-39	-5.2221E 07	-3.4871E 06	0.0000E-39	5.0422E 06	0.0000E-39	2.6873E 07	0.0000E-39	-7.6984E 03	0.0000E-39
RØW(34)	0.0000E-39	-6.1094E 06	-1.1338E 07	0.0000E-39	-3.6365E 07	0.0000E-39	-1.9775E 06	0.0000E-39	1.9504E 06	0.0000E-39
RØW(35)	0.0000E-39	-8.2292E 05	-4.2814E 06	0.0000E-39	-9.6766E 06	0.0000E-39	-5.6570E 05	0.0000E-39	-9.2286E 05	0.0000E-39
RØW(36)	0.0000E-39	-4.6458E 06	-8.7376E 06	0.0000E-39	-2.8617E 07	0.0000E-39	-1.5737E 06	0.0000E-39	1.6504E 06	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
RØW(1)	1.8662E 05	0.0000E-39	-4.0674E 09	-0.0000E-39	-1.1821E 10	0.0000E-39	
RØW(2)	-3.3879E 04	0.0000E-39	1.2324E 10	-0.0000E-39	2.2468E 10	0.0000E-39	
RØW(3)	-1.0815E 07	0.0000E-39	-2.3080E 10	-0.0000E-39	-6.8475E 09	0.0000E-39	
RØW(4)	1.0550E 07	0.0000E-39	1.4786E 10	-0.0000E-39	-3.8011E 09	0.0000E-39	
RØW(5)	1.0095E 07	0.0000E-39	-1.3464E 07	-0.0000E-39	2.5167E 06	0.0000E-39	
RØW(6)	-9.9731E 06	0.0000E-39	2.9726E 06	-0.0000E-39	-1.1103E 06	0.0000E-39	
RØW(7)	0.0000E-39	-1.8670E 05	0.0000E-39	-4.4736E 09	0.0000E-39	1.3003E 10	
RØW(8)	0.0000E-39	3.2529E 04	0.0000E-39	1.3547E 10	0.0000E-39	-2.4716E 10	
RØW(9)	0.0000E-39	1.0813E 07	0.0000E-39	-2.5393E 10	0.0000E-39	7.5328E 09	
RØW(10)	0.0000E-39	-1.0548E 07	0.0000E-39	1.6265E 10	0.0000E-39	4.1810E 09	
RØW(11)	-0.0000E-39	-1.0096E 07	-0.0000E-39	-1.4527E 07	-0.0000E-39	-2.5150E 06	
RØW(12)	-0.0000E-39	9.9732E 06	-0.0000E-39	3.1099E 06	-0.0000E-39	1.1090E 06	
RØW(13)	-1.8508E 06	0.0000E-39	3.7850E 10	-0.0000E-39	1.0991E 11	0.0000E-39	
RØW(14)	-1.2345E 06	0.0000E-39	2.5431E 10	-0.0000E-39	7.3818E 10	0.0000E-39	
RØW(15)	-3.4446E 05	0.0000E-39	6.7477E 09	-0.0000E-39	1.9725E 10	0.0000E-39	
RØW(16)	1.4885E 06	0.0000E-39	4.7982E 09	-0.0000E-39	-2.8150E 10	0.0000E-39	
RØW(17)	-3.6037E 06	0.0000E-39	-3.0808E 10	-0.0000E-39	2.9437E 10	0.0000E-39	
RØW(18)	-1.6643E 06	0.0000E-39	2.7599E 09	-0.0000E-39	4.6644E 10	0.0000E-39	
RØW(19)	-1.6421E 07	0.0000E-39	2.2836E 10	-0.0000E-39	-5.8739E 09	0.0000E-39	
RØW(20)	8.4621E 07	0.0000E-39	-1.6040E 10	-0.0000E-39	4.1275E 09	0.0000E-39	
RØW(21)	7.4401E 06	0.0000E-39	-6.6538E 10	-0.0000E-39	1.7116E 10	0.0000E-39	
RØW(22)	4.3974E 07	0.0000E-39	-1.2313E 07	-0.0000E-39	4.8287E 06	0.0000E-39	
RØW(23)	2.3271E 07	0.0000E-39	-4.7885E 06	-0.0000E-39	2.4116E 06	0.0000E-39	
RØW(24)	3.6097E 07	0.0000E-39	-1.0333E 07	-0.0000E-39	3.9794E 06	0.0000E-39	
RØW(25)	0.0000E-39	1.8533E 06	0.0000E-39	4.1673E 10	0.0000E-39	-1.2090E 11	
RØW(26)	0.0000E-39	1.2368E 06	0.0000E-39	2.7970E 10	0.0000E-39	-8.1199E 10	
RØW(27)	0.0000E-39	3.4670E 05	0.0000E-39	7.4167E 09	0.0000E-39	-2.1698E 10	
RØW(28)	0.0000E-39	-1.4873E 06	0.0000E-39	5.2847E 09	0.0000E-39	3.0966E 10	
RØW(29)	0.0000E-39	3.5988E 06	0.0000E-39	-3.3893E 10	0.0000E-39	-3.2380E 10	
RØW(30)	0.0000E-39	1.6633E 06	0.0000E-39	3.0286E 09	0.0000E-39	-5.1308E 10	
RØW(31)	0.0000E-39	1.6426E 07	0.0000E-39	2.5118E 10	0.0000E-39	6.4609E 09	
RØW(32)	0.0000E-39	-8.4626E 07	0.0000E-39	-1.7643E 10	0.0000E-39	-4.5390E 09	
RØW(33)	0.0000E-39	-7.4509E 06	0.0000E-39	-7.3186E 10	0.0000E-39	-1.8826E 10	
RØW(34)	0.0000E-39	-4.3974E 07	0.0000E-39	-1.2788E 07	0.0000E-39	-4.8232E 06	
RØW(35)	0.0000E-39	-2.3271E 07	0.0000E-39	-4.7606E 06	0.0000E-39	-2.4086E 06	
RØW(36)	0.0000E-39	-3.6097E 07	0.0000E-39	-1.0761E 07	0.0000E-39	-3.9749E 06	

B*X VECTORS

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	-4.5863E 01	-0.0000E-39	-2.3805E 01	-0.0000E-39	-0.0000E-39	-4.4632E 05	-6.2076E 05	0.0000E-39	-3.1917E 06	0.0000E-39
ROW(2)	3.2700E 01	-0.0000E-39	1.5802E 02	-0.0000E-39	-0.0000E-39	6.6705E 05	1.2214E 06	0.0000E-39	7.3567E 06	0.0000E-39
ROW(3)	-1.8640E 00	-0.0000E-39	-8.2432E 01	-0.0000E-39	-0.0000E-39	3.5483E 05	-1.7271E 05	0.0000E-39	-7.9707E 06	0.0000E-39
ROW(4)	1.6195E 01	-0.0000E-39	3.7659E 01	-0.0000E-39	-0.0000E-39	-2.0962E 05	-7.7875E 05	0.0000E-39	2.1217E 06	0.0000E-39
ROW(5)	9.3999E 00	-0.0000E-39	-9.4086E-01	-0.0000E-39	-0.0000E-39	-1.7431E 05	-2.8537E 04	0.0000E-39	2.1291E 06	0.0000E-39
ROW(6)	5.0636E 00	0.0000E-39	-7.5483E-01	0.0000E-39	0.0000E-39	-1.9170E 05	3.7575E 05	-0.0000E-39	-4.4506E 05	-0.0000E-39
ROW(7)	-0.0000E-39	2.5932E 01	-0.0000E-39	-1.9742E 01	4.4630E 05	-0.0000E-39	-0.0000E-39	6.2073E 05	-0.0000E-39	-3.1916E 06
ROW(8)	-0.0000E-39	8.0738E 01	-0.0000E-39	7.0441E 01	-6.6705E 05	-0.0000E-39	-0.0000E-39	-1.2215E 06	-0.0000E-39	7.3572E 06
ROW(9)	-0.0000E-39	-5.2766E 01	-0.0000E-39	-7.3389E 01	-3.5477E 05	-0.0000E-39	-0.0000E-39	1.7272E 05	-0.0000E-39	-7.9707E 06
ROW(10)	0.0000E-39	-1.5173E 00	0.0000E-39	5.4373E-01	2.0959E 05	0.0000E-39	0.0000E-39	7.7861E 05	0.0000E-39	2.1216E 06
ROW(11)	0.0000E-39	1.0736E-01	0.0000E-39	-5.8742E 00	1.7431E 05	0.0000E-39	0.0000E-39	2.8947E 04	0.0000E-39	2.1292E 06
ROW(12)	-0.0000E-39	1.4053E-01	-0.0000E-39	-2.7180E 00	1.9170E 05	-0.0000E-39	-0.0000E-39	-3.7975E 05	-0.0000E-39	-4.4505E 05
ROW(13)	6.6181E 02	-0.0000E-39	8.6905E 02	-0.0000E-39	-0.0000E-39	1.7280E 03	-1.8138E 05	0.0000E-39	-4.2117E 06	0.0000E-39
ROW(14)	1.0887E 02	-0.0000E-39	3.6958E 02	-0.0000E-39	-0.0000E-39	9.7472E 04	-4.2112E 04	0.0000E-39	-3.4010E 06	0.0000E-39
ROW(15)	1.0051E 02	-0.0000E-39	5.4695E 01	-0.0000E-39	-0.0000E-39	1.8794E 05	1.0066E 05	0.0000E-39	-2.4285E 06	0.0000E-39
ROW(16)	-1.9141E-01	-0.0000E-39	-1.1873E 02	-0.0000E-39	-0.0000E-39	4.9848E 05	5.3127E 05	0.0000E-39	-3.6134E 06	0.0000E-39
ROW(17)	3.1754E 01	-0.0000E-39	6.3610E 01	-0.0000E-39	-0.0000E-39	-4.5818E 05	-4.4688E 05	0.0000E-39	4.2065E 06	0.0000E-39
ROW(18)	3.6318E 00	-0.0000E-39	2.4694E 02	-0.0000E-39	-0.0000E-39	-5.2102E 05	-5.8026E 05	0.0000E-39	3.2512E 06	0.0000E-39
ROW(19)	3.4287E 01	-0.0000E-39	3.1434E 01	-0.0000E-39	-0.0000E-39	-1.4695E 05	-7.8565E 05	0.0000E-39	1.0085E 05	0.0000E-39
ROW(20)	-2.4078E 01	-0.0000E-39	-4.8381E 00	-0.0000E-39	-0.0000E-39	1.3980E 05	7.2515E 05	0.0000E-39	-3.2201E 05	0.0000E-39
ROW(21)	-2.4442E 01	-0.0000E-39	-3.7350E 01	-0.0000E-39	-0.0000E-39	9.7945E 04	6.4721E 05	0.0000E-39	7.9127E 05	0.0000E-39
ROW(22)	-6.4257E 00	-0.0000E-39	1.0403E 00	-0.0000E-39	-0.0000E-39	1.7701E 05	-1.8491E 05	0.0000E-39	-9.6506E 05	0.0000E-39
ROW(23)	-6.9795E 00	-0.0000E-39	8.9290E-01	-0.0000E-39	-0.0000E-39	2.1061E 05	-3.1608E 05	0.0000E-39	-3.8635E 05	0.0000E-39
ROW(24)	-6.3336E 00	-0.0000E-39	7.5353E-01	-0.0000E-39	-0.0000E-39	1.9094E 05	-2.2206E 05	0.0000E-39	-8.5856E 05	0.0000E-39
ROW(25)	-0.0000E-39	4.4949E 02	-0.0000E-39	3.2772E 02	-1.7920E 03	-0.0000E-39	-0.0000E-39	1.8125E 05	-0.0000E-39	-4.2117E 06
ROW(26)	-0.0000E-39	3.1355E 02	-0.0000E-39	-1.0552E 02	-9.7216E 04	-0.0000E-39	-0.0000E-39	4.2048E 04	-0.0000E-39	-3.4012E 06
ROW(27)	-0.0000E-39	-7.7412E 00	-0.0000E-39	-7.7383E 00	-1.8797E 05	-0.0000E-39	-0.0000E-39	-1.0062E 05	-0.0000E-39	-2.4287E 06
ROW(28)	-0.0000E-39	-1.0479E 02	-0.0000E-39	5.7773E 00	-4.9847E 05	-0.0000E-39	-0.0000E-39	-5.3124E 05	-0.0000E-39	-3.6133E 06
ROW(29)	-0.0000E-39	8.7250E 01	-0.0000E-39	4.3172E 01	4.5821E 05	-0.0000E-39	-0.0000E-39	4.4652E 05	-0.0000E-39	4.2063E 06
ROW(30)	-0.0000E-39	2.6225E 02	-0.0000E-39	-1.3574E 00	5.2089E 05	-0.0000E-39	-0.0000E-39	5.8027E 05	-0.0000E-39	3.2512E 06
ROW(31)	-0.0000E-39	-1.3289E 01	-0.0000E-39	4.2118E 01	1.4687E 05	-0.0000E-39	-0.0000E-39	7.8568E 05	-0.0000E-39	1.0073E 05
ROW(32)	0.0000E-39	1.2137E 01	0.0000E-39	5.0425E 01	-1.3979E 05	0.0000E-39	0.0000E-39	-7.2517E 05	0.0000E-39	-3.2183E 05
ROW(33)	0.0000E-39	-9.4707E 01	0.0000E-39	-9.6342E 01	-9.7913E 04	0.0000E-39	0.0000E-39	-6.4721E 05	0.0000E-39	7.9115E 05
ROW(34)	0.0000E-39	-1.9999E-01	0.0000E-39	3.7892E 00	-1.7701E 05	0.0000E-39	0.0000E-39	1.8491E 05	0.0000E-39	-9.6511E 05
ROW(35)	0.0000E-39	-2.2411E-01	0.0000E-39	3.7373E 00	-2.1061E 05	0.0000E-39	0.0000E-39	3.1607E 05	0.0000E-39	-3.8639E 05
ROW(36)	0.0000E-39	-2.6566E-01	0.0000E-39	3.9325E 00	-1.9094E 05	0.0000E-39	0.0000E-39	2.2206E 05	0.0000E-39	-8.5864E 05

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	-0.0000E-39	-9.6333E 05	0.0000E-39	-1.8112E 05	-0.0000E-39	2.3369E 06	3.5894E 05	0.0000E-39	3.0675E 06	0.0000E-39
ROW(2)	-0.0000E-39	1.8048E 06	0.0000E-39	6.5981E 05	-0.0000E-39	-4.4303E 06	-5.0215E 05	0.0000E-39	-3.8054E 06	0.0000E-39
ROW(3)	-0.0000E-39	-7.2394E 05	0.0000E-39	-1.9889E 06	-0.0000E-39	7.6785E 05	-2.0688E 05	0.0000E-39	-5.9424E 06	0.0000E-39
ROW(4)	-0.0000E-39	2.8969E 06	0.0000E-39	4.0461E 06	-0.0000E-39	2.3314E 06	3.4235E 06	0.0000E-39	-1.6216E 07	0.0000E-39
ROW(5)	-0.0000E-39	-2.7832E 06	0.0000E-39	-2.0849E 06	-0.0000E-39	-4.7153E 05	-3.5381E 06	0.0000E-39	2.2044E 07	0.0000E-39
ROW(6)	0.0000E-39	-2.3123E 05	-0.0000E-39	-4.5076E 05	0.0000E-39	-5.3461E 05	4.6475E 05	-0.0000E-39	8.5212E 05	-0.0000E-39
ROW(7)	-9.6328E 05	-0.0000E-39	1.8119E 05	-0.0000E-39	2.3368E 06	-0.0000E-39	-0.0000E-39	3.5895E 05	-0.0000E-39	-3.0685E 06
ROW(8)	1.8047E 06	-0.0000E-39	-6.5981E 05	-0.0000E-39	-4.4301E 06	-0.0000E-39	-0.0000E-39	-5.0226E 05	-0.0000E-39	3.8061E 06
ROW(9)	-7.2390E 05	-0.0000E-39	1.9856E 06	-0.0000E-39	7.6800E 05	-0.0000E-39	-0.0000E-39	-2.0664E 05	-0.0000E-39	5.9436E 06
ROW(10)	2.8969E 06	0.0000E-39	-4.0461E 06	0.0000E-39	2.3314E 06	0.0000E-39	0.0000E-39	3.4236E 06	0.0000E-39	1.6216E 07
ROW(11)	-2.7832E 06	0.0000E-39	2.0850E 06	0.0000E-39	-4.7154E 05	0.0000E-39	0.0000E-39	-3.5382E 06	0.0000E-39	-2.2045E 07
ROW(12)	-2.3123E 05	-0.0000E-39	4.5076E 05	-0.0000E-39	-5.3461E 05	-0.0000E-39	-0.0000E-39	4.6475E 05	-0.0000E-39	-8.5218E 05
ROW(13)	-0.0000E-39	-6.6071E 06	0.0000E-39	6.0873E 06	-0.0000E-39	-1.4340E 07	-6.8454E 05	0.0000E-39	7.1400E 07	0.0000E-39
ROW(14)	-0.0000E-39	-6.3405E 06	0.0000E-39	6.2799E 06	-0.0000E-39	-1.6413E 07	-1.2166E 06	0.0000E-39	3.4916E 07	0.0000E-39
ROW(15)	-0.0000E-39	-5.9532E 06	0.0000E-39	6.5995E 06	-0.0000E-39	-2.0192E 07	-2.2787E 06	0.0000E-39	-4.8877E 07	0.0000E-39
ROW(16)	-0.0000E-39	-7.1612E 06	0.0000E-39	2.4208E 06	-0.0000E-39	9.5397E 06	2.4168E 06	0.0000E-39	1.6394E 07	0.0000E-39
ROW(17)	-0.0000E-39	6.8660E 06	0.0000E-39	-1.7289E 06	-0.0000E-39	-1.0495E 07	-1.5439E 06	0.0000E-39	1.6067E 07	0.0000E-39
ROW(18)	-0.0000E-39	7.3316E 06	0.0000E-39	-2.8428E 06	-0.0000E-39	-8.8684E 06	-2.6690E 06	0.0000E-39	-3.7461E 07	0.0000E-39
ROW(19)	-0.0000E-39	4.4732E 06	0.0000E-39	3.1313E 06	-0.0000E-39	-1.0621E 06	5.8029E 06	0.0000E-39	1.8578E 07	0.0000E-39
ROW(20)	-0.0000E-39	-4.1253E 06	0.0000E-39	-3.3063E 06	-0.0000E-39	3.9740E 05	-5.9880E 06	0.0000E-39	-6.2173E 06	0.0000E-39
ROW(21)	-0.0000E-39	-4.3130E 06	0.0000E-39	-1.7561E 06	-0.0000E-39	3.1808E 06	-4.6957E 06	0.0000E-39	-7.0366E 07	0.0000E-39
ROW(22)	-0.0000E-39	2.0736E 06	0.0000E-39	2.2268E 06	-0.0000E-39	2.0861E 06	-1.3295E 06	0.0000E-39	-5.4855E 06	0.0000E-39
ROW(23)	-0.0000E-39	1.5385E 06	0.0000E-39	1.8819E 06	-0.0000E-39	2.0808E 06	-2.1828E 06	0.0000E-39	1.0826E 06	0.0000E-39
ROW(24)	-0.0000E-39	2.0165E 06	0.0000E-39	2.2278E 06	-0.0000E-39	2.1799E 06	-1.6515E 06	0.0000E-39	-3.6014E 06	0.0000E-39
ROW(25)	-6.6084E 06	-0.0000E-39	-6.0876E 06	-0.0000E-39	-1.4338E 07	-0.0000E-39	-0.0000E-39	-6.8461E 05	-0.0000E-39	-7.1409E 07
ROW(26)	-6.3415E 06	-0.0000E-39	-6.2798E 06	-0.0000E-39	-1.6410E 07	-0.0000E-39	-0.0000E-39	-1.2165E 06	-0.0000E-39	-3.4920E 07
ROW(27)	-5.9539E 06	-0.0000E-39	-6.5997E 06	-0.0000E-39	-2.0190E 07	-0.0000E-39	-0.0000E-39	-2.2787E 06	-0.0000E-39	4.8881E 07
ROW(28)	-7.1612E 06	-0.0000E-39	-2.4204E 06	-0.0000E-39	9.5397E 06	-0.0000E-39	-0.0000E-39	2.4169E 06	-0.0000E-39	-1.6397E 07
ROW(29)	6.8660E 06	-0.0000E-39	1.7284E 06	-0.0000E-39	-1.0494E 07	-0.0000E-39	-0.0000E-39	-1.9440E 06	-0.0000E-39	-1.6068E 07
ROW(30)	7.3314E 06	-0.0000E-39	2.8426E 06	-0.0000E-39	-8.8684E 06	-0.0000E-39	-0.0000E-39	-2.6690E 06	-0.0000E-39	3.7464E 07
ROW(31)	4.4732E 06	-0.0000E-39	-3.1314E 06	-0.0000E-39	-1.0621E 06	-0.0000E-39	-0.0000E-39	5.8029E 06	-0.0000E-39	-1.8580E 07
ROW(32)	-4.1253E 06	0.0000E-39	3.3064E 06	0.0000E-39	3.9742E 05	0.0000E-39	0.0000E-39	-5.9881E 06	0.0000E-39	6.2185E 06
ROW(33)	-4.3131E 06	0.0000E-39	1.7562E 06	0.0000E-39	3.1810E 06	0.0000E-39	0.0000E-39	-4.6956E 06	0.0000E-39	7.0371E 07
ROW(34)	2.0736E 06	0.0000E-39	-2.2268E 06	0.0000E-39	2.0861E 06	0.0000E-39	0.0000E-39	-1.3295E 06	0.0000E-39	5.4861E 06
ROW(35)	1.5385E 06	0.0000E-39	-1.8819E 06	0.0000E-39	2.0808E 06	0.0000E-39	0.0000E-39	-2.1828E 06	0.0000E-39	-1.0826E 06
ROW(36)	2.0165E 06	0.0000E-39	-2.2278E 06	0.0000E-39	2.1799E 06	0.0000E-39	0.0000E-39	-1.6515E 06	0.0000E-39	3.6016E 06

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	4.2615E 06	-0.0000E-39	-0.0000E-39	1.8858E 05	0.0000E-39	2.7931E 06	0.0000E-39	3.5458E 06	-0.0000E-39	-1.2024E 04
ROW(2)	-6.1097E 06	-0.0000E-39	-0.0000E-39	-2.6765E 05	0.0000E-39	-4.5943E 06	0.0000E-39	-8.5924E 06	-0.0000E-39	-1.5622E 04
ROW(3)	-4.8649E 06	-0.0000E-39	-0.0000E-39	1.2067E 06	0.0000E-39	-7.8927E 06	0.0000E-39	1.0658E 07	-0.0000E-39	6.0517E 05
ROW(4)	-9.7351E 06	-0.0000E-39	-0.0000E-39	2.4213E 07	0.0000E-39	5.1346E 07	0.0000E-39	-7.5272E 06	-0.0000E-39	2.0717E 06
ROW(5)	1.5227E 07	-0.0000E-39	-0.0000E-39	-2.7436E 07	0.0000E-39	-3.3659E 07	0.0000E-39	1.4363E 06	-0.0000E-39	-3.1641E 06
ROW(6)	1.2215E 06	0.0000E-39	0.0000E-39	2.0943E 06	-0.0000E-39	-7.5923E 06	-0.0000E-39	4.3442E 05	0.0000E-39	5.1488E 05
ROW(7)	-0.0000E-39	4.2623E 06	1.8905E 05	-0.0000E-39	-2.7935E 06	-0.0000E-39	3.5489E 06	-0.0000E-39	1.2033E 06	-0.0000E-39
ROW(8)	-0.0000E-39	-6.1113E 06	-2.6777E 05	-0.0000E-39	4.9949E 06	-0.0000E-39	-8.5888E 06	-0.0000E-39	1.5581E 04	-0.0000E-39
ROW(9)	-0.0000E-39	-4.8636E 06	1.2067E 06	-0.0000E-39	7.8913E 06	-0.0000E-39	1.0697E 07	-0.0000E-39	-6.0506E 05	-0.0000E-39
ROW(10)	0.0000E-39	-9.7367E 06	2.4213E 07	0.0000E-39	-5.1346E 07	0.0000E-39	-7.5283E 06	0.0000E-39	-2.0718E 06	0.0000E-39
ROW(11)	0.0000E-39	1.5228E 07	-2.7436E 07	0.0000E-39	3.3660E 07	0.0000E-39	1.4373E 06	0.0000E-39	3.1641E 06	0.0000E-39
ROW(12)	-0.0000E-39	1.2215E 06	2.0943E 06	-0.0000E-39	7.5922E 06	-0.0000E-39	4.3442E 05	-0.0000E-39	-5.1488E 05	-0.0000E-39
ROW(13)	-7.5846E 07	-0.0000E-39	-0.0000E-39	-2.2304E 06	0.0000E-39	-2.0888E 07	0.0000E-39	1.3853E 07	-0.0000E-39	1.3032E 05
ROW(14)	-4.9293E 07	-0.0000E-39	-0.0000E-39	-1.5485E 06	0.0000E-39	-1.6102E 07	0.0000E-39	1.5094E 06	-0.0000E-39	8.4147E 04
ROW(15)	2.3758E 07	-0.0000E-39	-0.0000E-39	6.4670E 05	0.0000E-39	7.6702E 06	0.0000E-39	1.6964E 07	-0.0000E-39	2.3783E 04
ROW(16)	1.8393E 07	-0.0000E-39	-0.0000E-39	6.8583E 05	0.0000E-39	6.8070E 06	0.0000E-39	2.7700E 06	-0.0000E-39	-1.8024E 05
ROW(17)	-1.1381E 07	-0.0000E-39	-0.0000E-39	1.3690E 05	0.0000E-39	7.3126E 06	0.0000E-39	7.0176E 05	-0.0000E-39	5.4123E 05
ROW(18)	-1.4262E 07	-0.0000E-39	-0.0000E-39	-7.6818E 05	0.0000E-39	-1.1160E 07	0.0000E-39	-1.8356E 07	-0.0000E-39	1.8115E 05
ROW(19)	2.1175E 07	-0.0000E-39	-0.0000E-39	1.5133E 06	0.0000E-39	-3.0672E 07	0.0000E-39	-6.6355E 06	-0.0000E-39	3.4307E 05
ROW(20)	-1.5205E 07	-0.0000E-39	-0.0000E-39	8.4071E 06	0.0000E-39	3.4223E 07	0.0000E-39	3.2347E 06	-0.0000E-39	-5.8949E 06
ROW(21)	-5.2223E 07	-0.0000E-39	-0.0000E-39	-3.4868E 06	0.0000E-39	-5.0462E 06	0.0000E-39	2.6887E 07	-0.0000E-39	8.0760E 03
ROW(22)	-6.1092E 06	-0.0000E-39	-0.0000E-39	-1.1338E 07	0.0000E-39	3.6366E 07	0.0000E-39	-2.0042E 06	-0.0000E-39	-1.9504E 06
ROW(23)	-8.2286E 05	-0.0000E-39	-0.0000E-39	-4.2814E 06	0.0000E-39	9.6768E 06	0.0000E-39	-6.0302E 05	-0.0000E-39	9.2285E 05
ROW(24)	-4.6456E 06	-0.0000E-39	-0.0000E-39	-8.7375E 06	0.0000E-39	2.8617E 07	0.0000E-39	-1.6039E 06	-0.0000E-39	-1.6504E 06
ROW(25)	-0.0000E-39	-7.5845E 07	-2.2310E 06	-0.0000E-39	2.0886E 07	-0.0000E-39	1.3871E 07	-0.0000E-39	-1.3044E 05	-0.0000E-39
ROW(26)	-0.0000E-39	-4.9295E 07	-1.5489E 06	-0.0000E-39	1.6101E 07	-0.0000E-39	1.5242E 06	-0.0000E-39	-8.4224E 04	-0.0000E-39
ROW(27)	-0.0000E-39	2.3759E 07	6.4700E 05	-0.0000E-39	-7.6737E 06	-0.0000E-39	1.6967E 07	-0.0000E-39	-2.3803E 04	-0.0000E-39
ROW(28)	-0.0000E-39	1.8395E 07	6.8604E 05	-0.0000E-39	-6.8672E 06	-0.0000E-39	2.7667E 06	-0.0000E-39	1.8020E 05	-0.0000E-39
ROW(29)	-0.0000E-39	-1.1381E 07	1.3689E 05	-0.0000E-39	-7.3129E 06	-0.0000E-39	7.0774E 05	-0.0000E-39	-5.4100E 05	-0.0000E-39
ROW(30)	-0.0000E-39	-1.4263E 07	-7.6840E 05	-0.0000E-39	1.1163E 07	-0.0000E-39	-1.8391E 07	-0.0000E-39	-1.8111E 05	-0.0000E-39
ROW(31)	-0.0000E-39	2.1175E 07	1.5135E 06	-0.0000E-39	3.0672E 07	-0.0000E-39	-6.6342E 06	-0.0000E-39	-3.4321E 05	-0.0000E-39
ROW(32)	0.0000E-39	-1.5207E 07	8.4068E 06	0.0000E-39	-3.4223E 07	0.0000E-39	3.2333E 06	0.0000E-39	5.8950E 06	0.0000E-39
ROW(33)	0.0000E-39	-5.2222E 07	-3.4871E 06	0.0000E-39	5.0426E 06	0.0000E-39	2.6886E 07	0.0000E-39	-7.7235E 03	0.0000E-39
ROW(34)	0.0000E-39	-6.1094E 06	-1.1338E 07	0.0000E-39	-3.6365E 07	0.0000E-39	-2.0051E 06	0.0000E-39	1.9504E 06	0.0000E-39
ROW(35)	0.0000E-39	-8.2291E 05	-4.2815E 06	0.0000E-39	-9.6766E 06	0.0000E-39	-6.0327E 05	0.0000E-39	-9.2285E 05	0.0000E-39
ROW(36)	0.0000E-39	-4.6457E 06	-8.7376E 06	0.0000E-39	-2.8617E 07	0.0000E-39	-1.6046E 06	0.0000E-39	1.6504E 06	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
ROW(1)	0.0000E-39	-1.5207E 07	8.4068E 06	0.0000E-39	-3.4223E 07	0.0000E-39	3.2333E 06
ROW(2)	0.0000E-39	-5.2222E 07	-3.4871E 06	0.0000E-39	5.0426E 06	0.0000E-39	2.6886E 07
ROW(3)	0.0000E-39	-6.1094E 06	-1.1338E 07	0.0000E-39	-3.6365E 07	0.0000E-39	-2.0051E 06
ROW(4)	0.0000E-39	-8.2291E 05	-4.2815E 06	0.0000E-39	-9.6766E 06	0.0000E-39	-6.0327E 05
ROW(5)	0.0000E-39	-4.6457E 06	-8.7376E 06	0.0000E-39	-2.8617E 07	0.0000E-39	-1.6046E 06

RØW(1)	1.8662E 05	-0.0000E-39	-4.0674E 09	0.0000E-39	-1.1821E 10	-0.0000E-39
RØW(2)	-5.1754E 04	-0.0000E-39	1.2409E 10	0.0000E-39	2.2468E 10	-0.0000E-39
RØW(3)	-1.0809E 07	-0.0000E-39	-2.3125E 10	0.0000E-39	-6.8475E 09	-0.0000E-39
RØW(4)	1.0554E 07	-0.0000E-39	1.4787E 10	0.0000E-39	-3.8011E 09	-0.0000E-39
RØW(5)	1.0393E 07	-0.0000E-39	-6.0687E 06	0.0000E-39	2.5167E 06	-0.0000E-39
RØW(6)	-9.9730E 06	0.0000E-39	2.2537E 06	-0.0000E-39	-1.1103E 06	0.0000E-39
RØW(7)	-0.0000E-39	-1.8670E 05	-0.0000E-39	-4.4736E 09	-0.0000E-39	1.3003E 10
RØW(8)	-0.0000E-39	5.2490E 04	-0.0000E-39	1.3649E 10	-0.0000E-39	-2.4716E 10
RØW(9)	-0.0000E-39	1.0806E 07	-0.0000E-39	-2.5438E 10	-0.0000E-39	7.5328E 09
RØW(10)	0.0000E-39	-1.0552E 07	0.0000E-39	1.6266E 10	0.0000E-39	4.1810E 09
RØW(11)	0.0000E-39	-1.0093E 07	0.0000E-39	-6.0647E 06	0.0000E-39	-2.5153E 06
RØW(12)	-0.0000E-39	9.9730E 06	-0.0000E-39	2.2489E 06	-0.0000E-39	1.1090E 06
RØW(13)	-1.8368E 06	-0.0000E-39	3.7847E 10	0.0000E-39	1.0991E 11	-0.0000E-39
RØW(14)	-1.2193E 06	-0.0000E-39	2.5416E 10	0.0000E-39	7.3819E 10	-0.0000E-39
RØW(15)	-3.2665E 05	-0.0000E-39	6.7905E 09	0.0000E-39	1.9725E 10	-0.0000E-39
RØW(16)	1.4853E 06	-0.0000E-39	4.7456E 09	0.0000E-39	-2.8150E 10	-0.0000E-39
RØW(17)	-3.6012E 06	-0.0000E-39	-3.0742E 10	0.0000E-39	2.9437E 10	-0.0000E-39
RØW(18)	-1.6605E 06	-0.0000E-39	2.8134E 09	0.0000E-39	4.6644E 10	-0.0000E-39
RØW(19)	-1.6405E 07	-0.0000E-39	2.2848E 10	0.0000E-39	-5.8739E 09	-0.0000E-39
RØW(20)	8.4603E 07	-0.0000E-39	-1.6039E 10	0.0000E-39	4.1275E 09	-0.0000E-39
RØW(21)	7.4266E 06	-0.0000E-39	-6.6589E 10	0.0000E-39	1.7116E 10	-0.0000E-39
RØW(22)	4.3975E 07	-0.0000E-39	-9.8002E 06	0.0000E-39	4.8287E 06	-0.0000E-39
RØW(23)	2.3268E 07	-0.0000E-39	-4.8798E 06	0.0000E-39	2.4116E 06	-0.0000E-39
RØW(24)	3.6097E 07	-0.0000E-39	-8.0766E 06	0.0000E-39	3.9794E 06	-0.0000E-39
RØW(25)	-0.0000E-39	1.8377E 06	-0.0000E-39	4.1622E 10	-0.0000E-39	-1.2090E 11
RØW(26)	-0.0000E-39	1.2199E 06	-0.0000E-39	2.7951E 10	-0.0000E-39	-8.1199E 10
RØW(27)	-0.0000E-39	3.2681E 05	-0.0000E-39	7.4680E 09	-0.0000E-39	-2.1698E 10
RØW(28)	-0.0000E-39	-1.4837E 06	-0.0000E-39	5.2216E 09	-0.0000E-39	3.0966E 10
RØW(29)	-0.0000E-39	3.5960E 06	-0.0000E-39	-3.3814E 10	-0.0000E-39	-3.2380E 10
RØW(30)	-0.0000E-39	1.6591E 06	-0.0000E-39	3.0928E 09	-0.0000E-39	-5.1308E 10
RØW(31)	-0.0000E-39	1.6408E 07	-0.0000E-39	2.5133E 10	-0.0000E-39	6.4609E 09
RØW(32)	0.0000E-39	-8.4605E 07	0.0000E-39	-1.7641E 10	0.0000E-39	-4.5390E 09
RØW(33)	0.0000E-39	-7.4357E 06	0.0000E-39	-7.3247E 10	0.0000E-39	-1.8826E 10
RØW(34)	0.0000E-39	-4.3975E 07	0.0000E-39	-9.7789E 06	0.0000E-39	-4.8232E 06
RØW(35)	0.0000E-39	-2.3269E 07	0.0000E-39	-4.8676E 06	0.0000E-39	-2.4088E 06
RØW(36)	0.0000E-39	-3.6097E 07	0.0000E-39	-8.0592E 06	0.0000E-39	-3.9749E 06

ØMEGA**2*A*X - B*X VECTØRS

	CØLUMN(1)	CØLUMN(2)	CØLUMN(3)	CØLUMN(4)	CØLUMN(5)	CØLUMN(6)	CØLUMN(7)	CØLUMN(8)	CØLUMN(9)	CØLUMN(10)
RØW(1)	3.9612E 01	0.0000E-39	1.7385E 01	0.0000E-39	0.0000E-39	2.7742E 01	1.3031E 01	0.0000E-39	8.2375E 01	0.0000E-39
RØW(2)	8.0410E 01	0.0000E-39	1.8324E 02	0.0000E-39	0.0000E-39	6.7680E 01	1.2406E 02	0.0000E-39	3.0475E 02	0.0000E-39
RØW(3)	4.3394E 01	0.0000E-39	8.3715E 01	0.0000E-39	0.0000E-39	4.9508E 01	7.4596E 01	0.0000E-39	2.3912E 02	0.0000E-39
RØW(4)	4.9201E 01	0.0000E-39	3.3956E 01	0.0000E-39	0.0000E-39	4.3559E 01	1.5266E 01	0.0000E-39	1.8034E 02	0.0000E-39
RØW(5)	1.9396E 01	0.0000E-39	2.2356E 00	0.0000E-39	0.0000E-39	6.8359E-02	3.0786E-01	0.0000E-39	0.0000E-39	0.0000E-39
RØW(6)	1.0260E 01	0.0000E-39	1.5203E 00	0.0000E-39	0.0000E-39	2.5391E-02	3.7500E-01	0.0000E-39	7.6953E-01	0.0000E-39
RØW(7)	0.0000E-39	8.1258E 01	0.0000E-39	3.4454E 01	2.5836E 01	0.0000E-39	0.0000E-39	4.8336E 01	0.0000E-39	1.5028E 02
RØW(8)	0.0000E-39	1.2433E 02	0.0000E-39	8.0827E 01	3.2469E 01	0.0000E-39	0.0000E-39	7.9062E 01	0.0000E-39	2.1056E 02
RØW(9)	0.0000E-39	4.4424E 01	0.0000E-39	5.2844E 01	8.4121E 01	0.0000E-39	0.0000E-39	6.2600E 01	0.0000E-39	5.1669E 02
RØW(10)	0.0000E-39	9.4193E-01	0.0000E-39	1.6700E 01	8.0422E 01	0.0000E-39	0.0000E-39	6.5625E-01	0.0000E-39	2.4844E 02
RØW(11)	0.0000E-39	6.2539E-01	0.0000E-39	9.0741E-01	2.7148E-01	0.0000E-39	0.0000E-39	7.9590E-02	0.0000E-39	4.3750E-01
RØW(12)	0.0000E-39	2.8866E-01	0.0000E-39	9.7154E-02	8.2031E-02	0.0000E-39	0.0000E-39	3.7500E-01	0.0000E-39	1.0273E 00
RØW(13)	6.4825E 02	0.0000E-39	8.4530E 02	0.0000E-39	0.0000E-39	4.5612E 02	4.3651E 02	0.0000E-39	1.1304E 03	0.0000E-39
RØW(14)	9.4391E 01	0.0000E-39	3.3775E 02	0.0000E-39	0.0000E-39	1.8587E 01	2.0099E 02	0.0000E-39	6.2366E 02	0.0000E-39
RØW(15)	8.5947E 01	0.0000E-39	1.6632E 01	0.0000E-39	0.0000E-39	4.4521E 01	4.0013E 01	0.0000E-39	2.6434E 02	0.0000E-39
RØW(16)	3.1870E 01	0.0000E-39	1.1644E 02	0.0000E-39	0.0000E-39	7.6586E 01	1.2321E 02	0.0000E-39	1.5628E 02	0.0000E-39
RØW(17)	1.5959E 00	0.0000E-39	6.1916E 01	0.0000E-39	0.0000E-39	1.7858E 02	7.2285E 01	0.0000E-39	2.0925E 02	0.0000E-39
RØW(18)	2.9394E 01	0.0000E-39	2.4432E 02	0.0000E-39	0.0000E-39	2.3173E 02	2.0287E 02	0.0000E-39	2.9562E 02	0.0000E-39
RØW(19)	6.8200E 01	0.0000E-39	2.7799E 01	0.0000E-39	0.0000E-39	1.2680E 01	1.5805E 01	0.0000E-39	4.4494E 02	0.0000E-39
RØW(20)	5.4945E 01	0.0000E-39	1.5118E 00	0.0000E-39	0.0000E-39	3.5100E 01	8.3672E 00	0.0000E-39	2.4754E 02	0.0000E-39
RØW(21)	5.2576E 01	0.0000E-39	3.4375E 01	0.0000E-39	0.0000E-39	2.5608E 02	2.7555E 01	0.0000E-39	1.0976E 03	0.0000E-39
RØW(22)	1.3115E 01	0.0000E-39	1.9724E 00	0.0000E-39	0.0000E-39	3.9844E-01	1.4727E 00	0.0000E-39	5.2734E 00	0.0000E-39
RØW(23)	1.3804E 01	0.0000E-39	1.8676E 00	0.0000E-39	0.0000E-39	4.2969E-02	3.1641E-01	0.0000E-39	1.8555E 00	0.0000E-39
RØW(24)	1.3292E 01	0.0000E-39	1.7281E 00	0.0000E-39	0.0000E-39	2.4219E-01	1.1309E 00	0.0000E-39	2.8516E 00	0.0000E-39
RØW(25)	0.0000E-39	4.1533E 02	0.0000E-39	3.3182E 02	3.9637E 02	0.0000E-39	0.0000E-39	3.1236E 02	0.0000E-39	8.2744E 02
RØW(26)	0.0000E-39	2.6866E 02	0.0000E-39	9.8421E 01	2.3779E 02	0.0000E-39	0.0000E-39	1.4145E 02	0.0000E-39	6.0828E 02
RØW(27)	0.0000E-39	6.0814E 01	0.0000E-39	1.9750E 00	1.6982E 01	0.0000E-39	0.0000E-39	7.6827E 01	0.0000E-39	1.6031E 02
RØW(28)	0.0000E-39	9.4685E 01	0.0000E-39	1.8972E 01	9.0152E 01	0.0000E-39	0.0000E-39	7.0633E 01	0.0000E-39	2.1469E 02
RØW(29)	0.0000E-39	7.8353E 01	0.0000E-39	3.0563E 01	2.3034E 02	0.0000E-39	0.0000E-39	9.4191E 01	0.0000E-39	1.2262E 02
RØW(30)	0.0000E-39	2.5151E 02	0.0000E-39	1.4841E 01	1.2625E 02	0.0000E-39	0.0000E-39	2.0047E 02	0.0000E-39	1.4472E 02
RØW(31)	0.0000E-39	1.0539E 01	0.0000E-39	5.8646E 01	9.9668E 01	0.0000E-39	0.0000E-39	1.5266E 01	0.0000E-39	3.9182E 02
RØW(32)	0.0000E-39	9.6587E 00	0.0000E-39	3.5374E 01	5.7664E 01	0.0000E-39	0.0000E-39	1.6250E 00	0.0000E-39	2.8105E 02
RØW(33)	0.0000E-39	9.7040E 01	0.0000E-39	1.1004E 02	2.9480E 02	0.0000E-39	0.0000E-39	4.7578E 00	0.0000E-39	7.7250E 02
RØW(34)	0.0000E-39	4.6052E-01	0.0000E-39	4.3798E-01	2.1484E-01	0.0000E-39	0.0000E-39	9.0234E-01	0.0000E-39	1.5781E 00
RØW(35)	0.0000E-39	4.5888E-01	0.0000E-39	3.0786E-01	1.0938E-01	0.0000E-39	0.0000E-39	3.6328E-01	0.0000E-39	9.2969E-01
RØW(36)	0.0000E-39	5.3004E-01	0.0000E-39	4.4427E-01	4.6875E-02	0.0000E-39	0.0000E-39	3.2227E-01	0.0000E-39	3.1719E 00

	CØLUMN(11)	CØLUMN(12)	CØLUMN(13)	CØLUMN(14)	CØLUMN(15)	CØLUMN(16)	CØLUMN(17)	CØLUMN(18)	CØLUMN(19)	CØLUMN(20)
RØW(1)	0.0000E-39	5.2734E 00	0.0000E-39	3.2283E 01	0.0000E-39	1.4725E 02	2.8789E 00	0.0000E-39	1.1362E 02	0.0000E-39
RØW(2)	0.0000E-39	4.4906E 01	0.0000E-39	8.2555E 01	0.0000E-39	4.8544E 02	1.9758E 01	0.0000E-39	5.7625E 01	0.0000E-39
RØW(3)	0.0000E-39	2.3273E 01	0.0000E-39	3.0562E 01	0.0000E-39	1.7009E 02	2.5400E 01	0.0000E-39	4.1437E 01	0.0000E-39
RØW(4)	0.0000E-39	5.4187E 01	0.0000E-39	3.2562E 01	0.0000E-39	2.3500E 01	8.1250E 00	0.0000E-39	2.5087E 02	0.0000E-39
RØW(5)	0.0000E-39	1.8438E 00	0.0000E-39	1.5156E 00	0.0000E-39	1.4922E 00	5.0000E-01	0.0000E-39	6.2500E 00	0.0000E-39
RØW(6)	0.0000E-39	9.4336E-01	0.0000E-39	7.5391E-01	0.0000E-39	3.4375E-01	6.1719E-01	0.0000E-39	1.1719E-01	0.0000E-39
RØW(7)	2.7133E 01	0.0000E-39	1.3617E 01	0.0000E-39	4.0594E 01	0.0000E-39	0.0000E-39	1.0270E 01	0.0000E-39	1.7119E 02
RØW(8)	9.4422E 01	0.0000E-39	4.1461E 01	0.0000E-39	2.0462E 02	0.0000E-39	0.0000E-39	3.8250E 01	0.0000E-39	2.2178E 02
RØW(9)	2.7117E 01	0.0000E-39	2.2859E 01	0.0000E-39	9.6109E 01	0.0000E-39	0.0000E-39	3.5914E 01	0.0000E-39	1.8106E 02
RØW(10)	4.5719E 01	0.0000E-39	1.1906E 01	0.0000E-39	5.5312E 01	0.0000E-39	0.0000E-39	1.1344E 01	0.0000E-39	2.9275E 02
RØW(11)	1.5625E 00	0.0000E-39	2.3594E 00	0.0000E-39	1.4414E 00	0.0000E-39	0.0000E-39	3.1250E-01	0.0000E-39	5.2500E 00
RØW(12)	1.1641E 00	0.0000E-39	7.6953E-01	0.0000E-39	6.6406E-01	0.0000E-39	0.0000E-39	2.7734E-01	0.0000E-39	1.3750E 00
RØW(13)	0.0000E-39	2.6125E 02	0.0000E-39	1.2481E 02	0.0000E-39	6.7875E 01	2.8625E 01	0.0000E-39	1.9600E 02	0.0000E-39
RØW(14)	0.0000E-39	6.5312E 01	0.0000E-39	2.4625E 02	0.0000E-39	2.3912E 02	4.6594E 01	0.0000E-39	2.6500E 02	0.0000E-39
RØW(15)	0.0000E-39	1.8312E 01	0.0000E-39	5.7062E 01	0.0000E-39	2.0225E 02	5.1875E 00	0.0000E-39	6.2000E 01	0.0000E-39

RØW(16)	0.0000E-39	7.8437E 01	0.0000E-39	8.9437E 01	0.0000E-39	2.8800E C2	8.9687E CC	0.0000E-39	4.3750E 00	0.0000E-39
RØW(17)	0.0000E-39	1.3012E 02	0.0000E-39	1.1678E 02	0.0000E-39	2.7187E C2	4.4266E 01	0.0000E-39	1.7625E 02	0.0000E-39
RØW(18)	0.0000E-39	8.3937E 01	0.0000E-39	1.9544E 02	0.0000E-39	4.3575E C2	3.2344E 01	0.0000E-39	8.4450E 02	0.0000E-39
RØW(19)	0.0000E-39	5.3900E 01	0.0000E-39	6.8625E 01	0.0000E-39	1.3541E C2	8.7500E CC	0.0000E-39	7.1500E 01	0.0000E-39
RØW(20)	0.0000E-39	3.4437E 01	0.0000E-39	4.7500E 01	0.0000E-39	3.4969E C1	1.8125E 01	0.0000E-39	1.0562E 01	0.0000E-39
RØW(21)	0.0000E-39	2.6406E 02	0.0000E-39	1.6659E 02	0.0000E-39	1.2800E C2	4.7562E 01	0.0000E-39	4.9700E 02	0.0000E-39
RØW(22)	0.0000E-39	4.4531E 00	0.0000E-39	3.0937E 00	0.0000E-39	2.1094E C0	2.5156E 00	0.0000E-39	2.1250E 00	0.0000E-39
RØW(23)	0.0000E-39	2.3438E 00	0.0000E-39	1.4063E 00	0.0000E-39	8.2813E-01	9.6875E-01	0.0000E-39	9.8438E-01	0.0000E-39
RØW(24)	0.0000E-39	4.2656E 00	0.0000E-39	4.8438E 00	0.0000E-39	1.1875E C0	2.6719E 00	0.0000E-39	1.9063E C0	0.0000E-39
RØW(25)	4.0012E 02	0.0000E-39	4.0381E 02	0.0000E-39	2.5450E 02	0.0000E-39	C.0000E-39	1.8904E 02	0.0000E-39	4.9900E 02
RØW(26)	4.5144E 02	0.0000E-39	1.1537E 02	0.0000E-39	4.8600E C2	0.0000E-39	0.0000E-39	7.1516E 01	0.0000E-39	5.6950E 02
RØW(27)	3.2562E 01	0.0000E-39	7.7062E 01	0.0000E-39	1.1425E 02	0.0000E-39	0.0000E-39	2.9344E 01	0.0000E-39	2.1850E 02
RØW(28)	1.8956E 02	0.0000E-39	2.6156E 01	0.0000E-39	6.1000E 01	0.0000E-39	0.0000E-39	7.3750E 00	0.0000E-39	1.0454E 03
RØW(29)	1.8787E 02	0.0000E-39	1.2066E 02	0.0000E-39	3.6975E 02	0.0000E-39	C.0000E-39	3.6719E 01	0.0000E-39	7.3562E 02
RØW(30)	1.8162E 02	0.0000E-39	6.3156E 01	0.0000E-39	6.0250E 01	0.0000E-39	0.0000E-39	1.0500E 01	0.0000E-39	8.3050E 02
RØW(31)	1.1800E 02	0.0000E-39	2.5406E 01	0.0000E-39	1.5558E 02	0.0000E-39	0.0000E-39	1.4312E 01	0.0000E-39	5.7125E 02
RØW(32)	6.1344E 01	0.0000E-39	4.9375E 00	0.0000E-39	6.6219E 01	0.0000E-39	0.0000E-39	4.5625E 00	0.0000E-39	1.8450E 02
RØW(33)	2.7656E 02	0.0000E-39	1.0339E 02	0.0000E-39	2.0131E C2	0.0000E-39	C.0000E-39	2.9250E 01	0.0000E-39	1.0110E 03
RØW(34)	2.6094E 00	0.0000E-39	3.5312E 00	0.0000E-39	7.8125E-02	0.0000E-39	0.0000E-39	1.7188E-01	0.0000E-39	2.6250E 00
RØW(35)	1.5625E 00	0.0000E-39	1.5625E 00	0.0000E-39	1.8750E-01	0.0000E-39	C.0000E-39	6.2500E-02	0.0000E-39	9.3750E-02
RØW(36)	4.8594E 00	0.0000E-39	4.7187E 00	0.0000E-39	8.4375E-01	0.0000E-39	C.0000E-39	2.1406E 00	0.0000E-39	8.7500E-01

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
RØW(1)	3.8850E 02	0.0000E-39	0.0000E-39	5.8730E 00	0.0000E-39	2.0966E C2	C.0000E-39	1.6566E 02	0.0000E-39	1.2793E-01
RØW(2)	2.9031E 02	0.0000E-39	0.0000E-39	1.2418E 01	0.0000E-39	1.8125E C0	0.0000E-39	5.5794E 04	0.0000E-39	5.6032E 01
RØW(3)	2.2937E 01	0.0000E-39	0.0000E-39	1.8828E 01	0.0000E-39	2.7937E C2	C.0000E-39	4.5333E 04	0.0000E-39	2.4453E 00
RØW(4)	7.3875E 01	0.0000E-39	0.0000E-39	1.7750E 01	0.0000E-39	2.8000E C2	C.0000E-39	1.0091E 04	0.0000E-39	4.4359E 01
RØW(5)	5.1250E 00	0.0000E-39	0.0000E-39	1.0250E 01	0.0000E-39	1.0250E C2	0.0000E-39	1.9462E 04	0.0000E-39	2.1875E-01
RØW(6)	4.3594E 00	0.0000E-39	0.0000E-39	2.9531E 00	0.0000E-39	2.4581E C2	0.0000E-39	4.3765E 04	0.0000E-39	4.9492E 00
RØW(7)	0.0000E-39	4.0375E 02	4.8164E 00	0.0000E-39	9.1344E 01	0.0000E-39	5.1478E 02	0.0000E-39	1.6467E-01	0.0000E-39
RØW(8)	0.0000E-39	4.6719E 02	2.4891E 01	0.0000E-39	6.2437E 01	0.0000E-39	4.5606E 04	0.0000E-39	5.6995E 01	0.0000E-39
RØW(9)	0.0000E-39	1.2050E 02	2.0000E 00	0.0000E-39	2.4400E 02	0.0000E-39	4.0031E 04	0.0000E-39	1.5547E 00	0.0000E-39
RØW(10)	0.0000E-39	7.1250E 01	1.9000E 01	0.0000E-39	8.7000E 01	0.0000E-39	8.9459E 03	0.0000E-39	4.1953E 01	0.0000E-39
RØW(11)	0.0000E-39	8.2500E 00	8.0000E 00	0.0000E-39	1.6000E 01	0.0000E-39	1.7225E 04	0.0000E-39	3.0000E 00	0.0000E-39
RØW(12)	0.0000E-39	8.9063E 00	3.1250E-02	0.0000E-39	4.9375E 01	0.0000E-39	3.8744E 04	0.0000E-39	3.4023E 00	0.0000E-39
RØW(13)	2.4910E 03	0.0000E-39	0.0000E-39	7.1562E 01	0.0000E-39	3.7275E C2	0.0000E-39	4.3830E 03	0.0000E-39	9.2969E 00
RØW(14)	5.0350E 02	0.0000E-39	0.0000E-39	2.5094E 01	0.0000E-39	9.3525E C2	C.0000E-39	5.8547E 03	0.0000E-39	8.4561E 00
RØW(15)	1.0250E 01	0.0000E-39	0.0000E-39	2.4914E 01	0.0000E-39	2.8669E C2	C.0000E-39	7.4135E 03	0.0000E-39	1.0549E 01
RØW(16)	1.4250E 01	0.0000E-39	0.0000E-39	5.6953E 00	0.0000E-39	4.5262E C2	C.0000E-39	3.9172E 04	0.0000E-39	5.2271E 01
RØW(17)	3.2100E 02	0.0000E-39	0.0000E-39	2.9492E 00	0.0000E-39	1.8637E C2	0.0000E-39	3.8021E 04	0.0000E-39	5.2375E 01
RØW(18)	2.0431E 03	0.0000E-39	0.0000E-39	5.4500E 01	0.0000E-39	3.1275E C2	C.0000E-39	4.1242E 04	0.0000E-39	5.0648E 01
RØW(19)	4.0500E 01	0.0000E-39	0.0000E-39	1.6875E 00	0.0000E-39	2.2500E C0	C.0000E-39	1.5759E 04	0.0000E-39	4.4367E 01
RØW(20)	1.5625E 01	0.0000E-39	0.0000E-39	1.3500E 01	0.0000E-39	2.6550E C2	0.0000E-39	1.4437E 04	0.0000E-39	3.8812E 01
RØW(21)	1.6200E 02	0.0000E-39	0.0000E-39	1.5938E 00	0.0000E-39	4.8687E C1	C.0000E-39	1.4556E 04	0.0000E-39	1.4375E 01
RØW(22)	4.6250E 00	0.0000E-39	0.0000E-39	5.1250E 00	0.0000E-39	1.7350E C2	C.0000E-39	3.1186E 04	0.0000E-39	2.0078E 01
RØW(23)	5.6797E 00	0.0000E-39	0.0000E-39	6.3750E 00	0.0000E-39	2.3812E C2	0.0000E-39	4.2441E 04	0.0000E-39	3.3906E 00
RØW(24)	4.5000E 00	0.0000E-39	0.0000E-39	6.2500E-01	0.0000E-39	1.9200E C2	C.0000E-39	3.4900E 04	0.0000E-39	1.2484E 01
RØW(25)	0.0000E-39	1.8260E 03	1.2484E 02	0.0000E-39	2.5727E C3	0.0000E-39	5.4832E 03	0.0000E-39	1.1585E 01	0.0000E-39
RØW(26)	0.0000E-39	2.1875E 03	2.2125E 01	0.0000E-39	1.4919E 03	0.0000E-39	6.1589E 03	0.0000E-39	1.2021E 01	0.0000E-39
RØW(27)	0.0000E-39	8.8575E 02	1.5422E 01	0.0000E-39	2.6569E C2	0.0000E-39	6.5822E C3	0.0000E-39	1.1567E C1	0.0000E-39
RØW(28)	0.0000E-39	7.1925E 02	3.9531E 00	0.0000E-39	5.7312E 01	0.0000E-39	3.4782E 04	0.0000E-39	4.8275E 01	0.0000E-39
RØW(29)	0.0000E-39	6.6150E 02	3.3418E 01	0.0000E-39	1.4794E 02	0.0000E-39	3.3345E 04	0.0000E-39	4.6273E 01	0.0000E-39
RØW(30)	0.0000E-39	5.3587E 02	1.7727E 01	0.0000E-39	5.7612E C2	0.0000E-39	3.6312E 04	0.0000E-39	5.2963E 01	0.0000E-39
RØW(31)	0.0000E-39	1.1850E 02	3.2984E 01	0.0000E-39	1.5700E 02	0.0000E-39	1.4001E 04	0.0000E-39	4.6711E 01	0.0000E-39
RØW(32)	0.0000E-39	1.0112E 02	9.7500E 00	0.0000E-39	8.5000E C0	0.0000E-39	1.2777E 04	0.0000E-39	3.8062E 01	0.0000E-39
RØW(33)	0.0000E-39	4.8100E 02	6.8750E-01	0.0000E-39	4.4200E 02	0.0000E-39	1.3034E 04	0.0000E-39	2.5114E 01	0.0000E-39
RØW(34)	0.0000E-39	7.8750E 00	2.3750E 00	0.0000E-39	2.9500E 01	0.0000E-39	2.7607E 04	0.0000E-39	2.8125E 00	0.0000E-39
RØW(35)	0.0000E-39	9.5859E 00	3.0000E 00	0.0000E-39	4.6375E 01	0.0000E-39	3.7572E 04	0.0000E-39	6.3047E 00	0.0000E-39
RØW(36)	0.0000E-39	8.8750E 00	2.5000E-01	0.0000E-39	3.7750E 01	0.0000E-39	3.0896E 04	0.0000E-39	1.4641E 01	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(
RØW(1)	4.2188E-01	0.0000E-39	7.3600E 02	0.0000E-39	3.9808E C4	0.0000E-39	
RØW(2)	1.7875E 04	0.0000E-39	8.5533E 07	0.0000E-39	6.6560E C3	0.0000E-39	
RØW(3)	5.8981E 03	0.0000E-39	4.5366E 07	0.0000E-39	7.3600E C3	0.0000E-39	
RØW(4)	3.4425E 03	0.0000E-39	9.8483E 05	0.0000E-39	9.9200E 02	0.0000E-39	
RØW(5)	2.3264E 03	0.0000E-39	7.3957E 06	0.0000E-39	3.9156E 01	0.0000E-39	
RØW(6)	1.8875E 02	0.0000E-39	7.1889E 05	0.0000E-39	1.8906E 00	0.0000E-39	
RØW(7)	0.0000E-39	1.4043E 00	0.0000E-39	8.8960E 03	0.0000E-39	3.3536E C4	
RØW(8)	0.0000E-39	1.9961E 04	0.0000E-39	1.0259E 08	0.0000E-39	2.1248E C4	
RØW(9)	0.0000E-39	6.5661E 03	0.0000E-39	5.4390E 07	0.0000E-39	7.2320E C3	
RØW(10)	0.0000E-39	3.8871E 03	0.0000E-39	1.1917E 06	0.0000E-39	2.5920E C3	
RØW(11)	0.0000E-39	2.5705E 03	0.0000E-39	8.8620E 06	0.0000E-39	2.9800E C2	
RØW(12)	0.0000E-39	2.0100E 02	0.0000E-39	8.6094E 05	0.0000E-39	1.1406E C1	
RØW(13)	1.3960E 04	0.0000E-39	4.3070E 07	0.0000E-39	2.7648E 04	0.0000E-39	
RØW(14)	1.5165E 04	0.0000E-39	1.5702E 07	0.0000E-39	7.5776E 04	0.0000E-39	
RØW(15)	1.7807E 04	0.0000E-39	4.2829E 07	0.0000E-39	6.0416E 04	0.0000E-39	
RØW(16)	3.2379E 03	0.0000E-39	5.2650E 07	0.0000E-39	6.7584E 04	0.0000E-39	
RØW(17)	2.5016E 03	0.0000E-39	6.5604E 07	0.0000E-39	1.3568E C4	0.0000E-39	
RØW(18)	3.7309E 03	0.0000E-39	5.3545E 07	0.0000E-39	2.0480E 04	0.0000E-39	
RØW(19)	1.6116E 04	0.0000E-39	1.2311E 07	0.0000E-39	1.9200E 03	0.0000E-39	
RØW(20)	1.8086E 04	0.0000E-39	1.4636E 06	0.0000E-39	1.3760E 03	0.0000E-39	
RØW(21)	1.3552E 04	0.0000E-39	5.0889E 07	0.0000E-39	2.5600E 03	0.0000E-39	
RØW(22)	1.2545E 03	0.0000E-39	2.5132E 06	0.0000E-39	1.2562E 01	0.0000E-39	
RØW(23)	2.5997E 03	0.0000E-39	9.0975E 04	0.0000E-39	3.3656E 01	0.0000E-39	
RØW(24)	1.3800E 02	0.0000E-39	2.2564E 06	0.0000E-39	1.1187E 01	0.0000E-39	
RØW(25)	0.0000E-39	1.5602E 04	0.0000E-39	5.1628E 07	0.0000E-39	5.2224E C4	
RØW(26)	0.0000E-39	1.6934E 04	0.0000E-39	1.8821E 07	0.0000E-39	2.0480E C4	
RØW(27)	0.0000E-39	1.9890E 04	0.0000E-39	5.1377E 07	0.0000E-39	1.3568E C4	
RØW(28)	0.0000E-39	3.6087E 03	0.0000E-39	6.3133E 07	0.0000E-39	3.3280E C4	
RØW(29)	0.0000E-39	2.7957E 03	0.0000E-39	7.8668E 07	0.0000E-39	4.2496E C4	
RØW(30)	0.0000E-39	4.1778E 03	0.0000E-39	6.4198E 07	0.0000E-39	2.2016E C4	
RØW(31)	0.0000E-39	1.8007E 04	0.0000E-39	1.4770E 07	0.0000E-39	6.4640E C3	
RØW(32)	0.0000E-39	2.0218E 04	0.0000E-39	1.7370E 06	0.0000E-39	4.4800E C3	
RØW(33)	0.0000E-39	1.5218E 04	0.0000E-39	6.1036E 07	0.0000E-39	8.9600E C3	
RØW(34)	0.0000E-39	1.3890E 03	0.0000E-39	3.0095E 06	0.0000E-39	5.9687E C1	
RØW(35)	0.0000E-39	2.8290E 03	0.0000E-39	1.0699E 05	0.0000E-39	1.9056E C2	
RØW(36)	0.0000E-39	9.3500E 01	0.0000E-39	2.7022E 06	0.0000E-39	5.3406E C1	

NORMALIZED ERROR MATRIX

	COLUMN(1)	COLUMN(2)	COLUMN(3)	COLUMN(4)	COLUMN(5)	COLUMN(6)	COLUMN(7)	COLUMN(8)	COLUMN(9)	COLUMN(10)
ROW(1)	6.3371E 00	0.0000E-39	7.3030E-01	0.0000E-39	0.0000E-39	6.2158E-05	2.0992E-05	0.0000E-39	2.5805E-05	0.0000E-39
ROW(2)	2.4590E 00	0.0000E-39	7.2657E 00	0.0000E-39	0.0000E-39	1.0146E-04	1.0157E-04	0.0000E-39	4.1425E-05	0.0000E-39
ROW(3)	2.3281E 01	0.0000E-39	6.5241E 01	0.0000E-39	0.0000E-39	1.3953E-04	4.3422E-04	0.0000E-39	3.0001E-05	0.0000E-39
ROW(4)	3.0481E 00	0.0000E-39	9.1698E 00	0.0000E-39	0.0000E-39	2.0780E-04	1.9602E-05	0.0000E-39	8.4995E-05	0.0000E-39
ROW(5)	2.0635E 00	0.0000E-39	2.3761E 00	0.0000E-39	0.0000E-39	3.9218E-07	1.0635E-05	0.0000E-39	0.0000E-39	0.0000E-39
ROW(6)	2.0261E 00	0.0000E-39	2.0141E 00	0.0000E-39	0.0000E-39	1.3245E-07	9.8750E-07	0.0000E-39	1.7290E-06	0.0000E-39
ROW(7)	0.0000E-39	3.1335E 00	0.0000E-39	2.3419E 00	5.7889E-05	0.0000E-39	0.0000E-39	7.7870E-05	0.0000E-39	4.7083E-05
ROW(8)	0.0000E-39	2.8521E 00	0.0000E-39	7.7828E 00	4.8675E-05	0.0000E-39	0.0000E-39	6.4728E-05	0.0000E-39	2.8620E-05
ROW(9)	0.0000E-39	5.3257E 00	0.0000E-39	2.5721E 00	2.3711E-04	0.0000E-39	0.0000E-39	3.6243E-04	0.0000E-39	6.4824E-05
ROW(10)	0.0000E-39	6.2079E-01	0.0000E-39	3.0715E 01	3.8372E-04	0.0000E-39	0.0000E-39	8.4263E-07	0.0000E-39	1.1710E-04
ROW(11)	0.0000E-39	5.8253E 00	0.0000E-39	1.8270E-01	1.5575E-06	0.0000E-39	0.0000E-39	2.7495E-06	0.0000E-39	2.0548E-07
ROW(12)	0.0000E-39	2.0540E 00	0.0000E-39	3.7070E-02	4.2791E-07	0.0000E-39	0.0000E-39	9.8749E-07	0.0000E-39	2.3084E-06
ROW(13)	4.7813E 01	0.0000E-39	3.5532E 01	0.0000E-39	0.0000E-39	2.6396E-01	2.4125E-03	0.0000E-39	2.6846E-04	0.0000E-39
ROW(14)	6.5170E 00	0.0000E-39	1.0611E 01	0.0000E-39	0.0000E-39	1.9073E-04	4.7957E-03	0.0000E-39	1.8341E-04	0.0000E-39
ROW(15)	5.9022E 00	0.0000E-39	4.3694E-01	0.0000E-39	0.0000E-39	2.3689E-04	3.9752E-04	0.0000E-39	1.0886E-04	0.0000E-39
ROW(16)	1.6650E 02	0.0000E-39	5.0711E 01	0.0000E-39	0.0000E-39	1.5366E-04	2.3197E-04	0.0000E-39	4.3250E-05	0.0000E-39
ROW(17)	5.2919E-02	0.0000E-39	3.6550E 01	0.0000E-39	0.0000E-39	3.8992E-04	1.6178E-04	0.0000E-39	4.9747E-05	0.0000E-39
ROW(18)	8.0934E 00	0.0000E-39	9.3261E 01	0.0000E-39	0.0000E-39	4.4496E-04	3.4975E-04	0.0000E-39	9.0925E-05	0.0000E-39
ROW(19)	2.0110E 00	0.0000E-39	7.6492E 00	0.0000E-39	0.0000E-39	8.6285E-05	2.5209E-05	0.0000E-39	4.4120E-03	0.0000E-39
ROW(20)	2.2819E 00	0.0000E-39	4.5451E-01	0.0000E-39	0.0000E-39	2.5106E-04	1.1539E-05	0.0000E-39	7.6875E-04	0.0000E-39
ROW(21)	2.1511E 00	0.0000E-39	1.1553E 01	0.0000E-39	0.0000E-39	2.6145E-03	4.2576E-05	0.0000E-39	1.3891E-03	0.0000E-39
ROW(22)	2.0410E 00	0.0000E-39	2.1162E 00	0.0000E-39	0.0000E-39	2.2509E-06	7.9642E-06	0.0000E-39	5.4644E-06	0.0000E-39
ROW(23)	2.0226E 00	0.0000E-39	2.0917E 00	0.0000E-39	0.0000E-39	2.0402E-07	1.0010E-06	0.0000E-39	4.8026E-06	0.0000E-39
ROW(24)	2.0586E 00	0.0000E-39	2.2934E 00	0.0000E-39	0.0000E-39	1.2684E-06	5.0926E-06	0.0000E-39	3.3213E-06	0.0000E-39
ROW(25)	0.0000E-39	1.2159E 01	0.0000E-39	8.0908E 01	2.2119E-01	0.0000E-39	0.0000E-39	1.7264E-03	0.0000E-39	1.9650E-04
ROW(26)	0.0000E-39	5.9848E 00	0.0000E-39	1.3857E 01	2.4460E-03	0.0000E-39	0.0000E-39	3.3754E-03	0.0000E-39	1.7887E-04
ROW(27)	0.0000E-39	7.8559E 00	0.0000E-39	2.5523E-01	9.0347E-05	0.0000E-39	0.0000E-39	7.6351E-04	0.0000E-39	6.6013E-05
ROW(28)	0.0000E-39	9.3686E 00	0.0000E-39	3.2838E 00	1.8089E-04	0.0000E-39	0.0000E-39	1.3298E-04	0.0000E-39	5.9416E-05
ROW(29)	0.0000E-39	8.8069E 00	0.0000E-39	2.4239E 00	5.0295E-04	0.0000E-39	0.0000E-39	2.1080E-04	0.0000E-39	2.9153E-05
ROW(30)	0.0000E-39	2.3409E 01	0.0000E-39	1.0933E 01	2.4243E-04	0.0000E-39	0.0000E-39	3.4559E-04	0.0000E-39	4.4512E-05
ROW(31)	0.0000E-39	3.8322E 00	0.0000E-39	3.5483E 00	6.7860E-04	0.0000E-39	0.0000E-39	1.9430E-05	0.0000E-39	3.8898E-03
ROW(32)	0.0000E-39	3.8965E 00	0.0000E-39	2.3502E 00	4.1251E-04	0.0000E-39	0.0000E-39	2.2409E-06	0.0000E-39	8.7327E-04
ROW(33)	0.0000E-39	4.1588E 01	0.0000E-39	8.0348E 00	3.0109E-03	0.0000E-39	0.0000E-39	7.3513E-06	0.0000E-39	9.7738E-04
ROW(34)	0.0000E-39	2.3027E 00	0.0000E-39	1.3069E-01	1.2137E-06	0.0000E-39	0.0000E-39	4.8800E-06	0.0000E-39	1.6352E-06
ROW(35)	0.0000E-39	2.0476E 00	0.0000E-39	8.9768E-02	5.1933E-07	0.0000E-39	0.0000E-39	1.1494E-06	0.0000E-39	2.4061E-06
ROW(36)	0.0000E-39	2.0048E 00	0.0000E-39	1.2736E-01	2.4550E-07	0.0000E-39	0.0000E-39	1.4513E-06	0.0000E-39	3.6941E-06

	COLUMN(11)	COLUMN(12)	COLUMN(13)	COLUMN(14)	COLUMN(15)	COLUMN(16)	COLUMN(17)	COLUMN(18)	COLUMN(19)	COLUMN(20)
ROW(1)	0.0000E-39	5.4742E-06	0.0000E-39	1.7827E-04	0.0000E-39	6.3015E-05	8.0206E-06	0.0000E-39	3.7037E-05	0.0000E-39
ROW(2)	0.0000E-39	2.4883E-05	0.0000E-39	1.2513E-04	0.0000E-39	1.0959E-04	3.5347E-05	0.0000E-39	1.5143E-05	0.0000E-39
ROW(3)	0.0000E-39	3.2149E-05	0.0000E-39	1.5366E-05	0.0000E-39	2.2157E-04	1.2278E-04	0.0000E-39	6.9732E-06	0.0000E-39
ROW(4)	0.0000E-39	1.8706E-05	0.0000E-39	8.0480E-06	0.0000E-39	1.0080E-05	2.3733E-06	0.0000E-39	1.5471E-05	0.0000E-39
ROW(5)	0.0000E-39	6.6247E-07	0.0000E-39	7.2694E-07	0.0000E-39	3.1645E-06	1.4132E-07	0.0000E-39	2.8353E-07	0.0000E-39
ROW(6)	0.0000E-39	4.0797E-06	0.0000E-39	1.6725E-06	0.0000E-39	6.4299E-07	1.3280E-06	0.0000E-39	1.3752E-07	0.0000E-39
ROW(7)	2.8167E-05	0.0000E-39	7.5153E-05	0.0000E-39	1.7371E-05	0.0000E-39	0.0000E-39	2.8610E-05	0.0000E-39	5.5791E-05
ROW(8)	5.2319E-05	0.0000E-39	6.2838E-05	0.0000E-39	4.6192E-05	0.0000E-39	0.0000E-39	7.6162E-05	0.0000E-39	5.8273E-05
ROW(9)	3.7460E-05	0.0000E-39	1.1493E-05	0.0000E-39	1.2516E-04	0.0000E-39	0.0000E-39	1.7363E-04	0.0000E-39	3.0464E-05
ROW(10)	1.5782E-05	0.0000E-39	2.9427E-06	0.0000E-39	2.3725E-05	0.0000E-39	0.0000E-39	3.3134E-06	0.0000E-39	1.8053E-05
ROW(11)	5.6141E-07	0.0000E-39	1.1316E-06	0.0000E-39	3.0568E-06	0.0000E-39	0.0000E-39	8.8322E-08	0.0000E-39	2.3815E-07
ROW(12)	5.0342E-06	0.0000E-39	1.7072E-06	0.0000E-39	1.2421E-06	0.0000E-39	0.0000E-39	5.9676E-07	0.0000E-39	1.6135E-06
ROW(13)	0.0000E-39	3.9541E-05	0.0000E-39	2.0504E-05	0.0000E-39	4.7334E-06	4.1818E-05	0.0000E-39	2.7451E-06	0.0000E-39
ROW(14)	0.0000E-39	1.0301E-05	0.0000E-39	3.9214E-05	0.0000E-39	1.4570E-05	3.8259E-05	0.0000E-39	7.5896E-06	0.0000E-39
ROW(15)	0.0000E-39	3.0761E-06	0.0000E-39	8.6465E-06	0.0000E-39	1.0016E-05	2.2765E-06	0.0000E-39	1.2685E-06	0.0000E-39
ROW(16)	0.0000E-39	1.0953E-05	0.0000E-39	3.6946E-05	0.0000E-39	3.0190E-05	3.7110E-06	0.0000E-39	2.6686E-07	0.0000E-39
ROW(17)	0.0000E-39	1.8952E-05	0.0000E-39	6.7548E-05	0.0000E-39	2.5907E-05	2.2772E-05	0.0000E-39	1.0970E-05	0.0000E-39
ROW(18)	0.0000E-39	1.1449E-05	0.0000E-39	6.8747E-05	0.0000E-39	4.9138E-05	1.2119E-05	0.0000E-39	2.2544E-05	0.0000E-39
ROW(19)	0.0000E-39	1.1960E-05	0.0000E-39	2.1916E-05	0.0000E-39	1.2751E-04	1.5079E-06	0.0000E-39	3.8487E-06	0.0000E-39
ROW(20)	0.0000E-39	8.3479E-06	0.0000E-39	1.4366E-05	0.0000E-39	8.8002E-05	3.0265E-06	0.0000E-39	1.6985E-06	0.0000E-39
ROW(21)	0.0000E-39	6.1228E-05	0.0000E-39	9.4584E-05	0.0000E-39	4.0243E-05	1.0129E-05	0.0000E-39	7.0631E-06	0.0000E-39
ROW(22)	0.0000E-39	2.1475E-06	0.0000E-39	1.3893E-06	0.0000E-39	1.0111E-06	1.8922E-06	0.0000E-39	3.8736E-07	0.0000E-39
ROW(23)	0.0000E-39	1.5234E-06	0.0000E-39	7.4723E-07	0.0000E-39	3.9799E-07	4.4382E-07	0.0000E-39	9.0926E-07	0.0000E-39
ROW(24)	0.0000E-39	2.1153E-06	0.0000E-39	2.1742E-06	0.0000E-39	5.4474E-07	1.6179E-06	0.0000E-39	5.2932E-07	0.0000E-39
ROW(25)	6.0552E-05	0.0000E-39	6.6335E-05	0.0000E-39	1.7751E-05	0.0000E-39	0.0000E-39	2.7620E-04	0.0000E-39	6.9875E-06
ROW(26)	7.1193E-05	0.0000E-39	1.8373E-05	0.0000E-39	2.9616E-05	0.0000E-39	0.0000E-39	5.8789E-05	0.0000E-39	1.6308E-05
ROW(27)	5.4691E-06	0.0000E-39	1.1677E-05	0.0000E-39	5.6587E-06	0.0000E-39	0.0000E-39	1.2878E-05	0.0000E-39	4.4700E-06
ROW(28)	2.6471E-05	0.0000E-39	1.0807E-05	0.0000E-39	6.3943E-06	0.0000E-39	0.0000E-39	3.0515E-06	0.0000E-39	6.3759E-05
ROW(29)	2.7363E-05	0.0000E-39	6.9806E-05	0.0000E-39	3.5234E-05	0.0000E-39	0.0000E-39	1.8888E-05	0.0000E-39	4.5782E-05
ROW(30)	2.4774E-05	0.0000E-39	2.2218E-05	0.0000E-39	6.7938E-06	0.0000E-39	0.0000E-39	3.9340E-06	0.0000E-39	2.2166E-05
ROW(31)	2.6380E-05	0.0000E-39	8.1135E-06	0.0000E-39	1.4651E-04	0.0000E-39	0.0000E-39	2.4664E-06	0.0000E-39	3.0746E-05
ROW(32)	1.4870E-05	0.0000E-39	1.4933E-06	0.0000E-39	1.6665E-04	0.0000E-39	0.0000E-39	7.6153E-07	0.0000E-39	2.9669E-05
ROW(33)	6.4126E-05	0.0000E-39	5.8873E-05	0.0000E-39	6.3290E-05	0.0000E-39	0.0000E-39	6.2253E-06	0.0000E-39	1.4367E-05
ROW(34)	1.2584E-06	0.0000E-39	1.5858E-06	0.0000E-39	3.7449E-08	0.0000E-39	0.0000E-39	1.2528E-07	0.0000E-39	4.7848E-07
ROW(35)	1.0156E-06	0.0000E-39	8.3026E-07	0.0000E-39	9.0112E-08	0.0000E-39	0.0000E-39	2.8633E-08	0.0000E-39	8.6599E-08
ROW(36)	2.4098E-06	0.0000E-39	2.1161E-06	0.0000E-39	3.8706E-07	0.0000E-39	0.0000E-39	1.2962E-06	0.0000E-39	2.4295E-07

	COLUMN(21)	COLUMN(22)	COLUMN(23)	COLUMN(24)	COLUMN(25)	COLUMN(26)	COLUMN(27)	COLUMN(28)	COLUMN(29)	COLUMN(30)
ROW(1)	9.1173E-05	0.0000E-39	0.0000E-39	3.1079E-05	0.0000E-39	7.5067E-05	0.0000E-39	4.6668E-05	0.0000E-39	1.0640E-05
ROW(2)	4.7519E-05	0.0000E-39	0.0000E-39	4.6398E-05	0.0000E-39	3.6291E-07	0.0000E-39	6.5358E-03	0.0000E-39	3.5867E-03
ROW(3)	4.7149E-06	0.0000E-39	0.0000E-39	1.5603E-05	0.0000E-39	3.5397E-05	0.0000E-39	4.2374E-03	0.0000E-39	4.0407E-06
ROW(4)	7.5885E-06	0.0000E-39	0.0000E-39	7.3306E-07	0.0000E-39	5.4533E-06	0.0000E-39	1.3424E-03	0.0000E-39	2.1412E-05
ROW(5)	3.3658E-07	0.0000E-39	0.0000E-39	3.7360E-07	0.0000E-39	3.0452E-06	0.0000E-39	1.3736E-02	0.0000E-39	6.9135E-08
ROW(6)	3.5689E-06	0.0000E-39	0.0000E-39	1.4101E-06	0.0000E-39	3.2378E-05	0.0000E-39	1.1203E-01	0.0000E-39	9.6124E-06
ROW(7)	0.0000E-39	9.4735E-05	2.5478E-05	0.0000E-39	3.2700E-05	0.0000E-39	1.4507E-04	0.0000E-39	1.3685E-05	0.0000E-39
ROW(8)	0.0000E-39	7.6452E-05	9.2962E-05	0.0000E-39	1.2500E-05	0.0000E-39	5.8093E-03	0.0000E-39	3.6582E-03	0.0000E-39
ROW(9)	0.0000E-39	2.4776E-05	1.6574E-06	0.0000E-39	3.0920E-05	0.0000E-39	3.7423E-03	0.0000E-39	2.5695E-06	0.0000E-39
ROW(10)	0.0000E-39	7.3177E-06	7.8470E-07	0.0000E-39	1.6944E-06	0.0000E-39	1.1897E-03	0.0000E-39	2.0250E-05	0.0000E-39
ROW(11)	0.0000E-39	5.4176E-07	2.9155E-07	0.0000E-39	4.7534E-07	0.0000E-39	1.2133E-02	0.0000E-39	9.4814E-07	0.0000E-39
ROW(12)	0.0000E-39	7.2911E-06	1.4921E-08	0.0000E-39	6.5034E-06	0.0000E-39	9.7870E-02	0.0000E-39	6.6080E-06	0.0000E-39
ROW(13)	3.2844E-05	0.0000E-39	0.0000E-39	3.2086E-05	0.0000E-39	1.7845E-05	0.0000E-39	3.1650E-04	0.0000E-39	7.1342E-05
ROW(14)	1.0214E-05	0.0000E-39	0.0000E-39	1.6205E-05	0.0000E-39	5.8086E-05	0.0000E-39	3.8940E-03	0.0000E-39	1.0050E-04
ROW(15)	4.3143E-07	0.0000E-39	0.0000E-39	3.8525E-05	0.0000E-39	3.7377E-05	0.0000E-39	4.3719E-04	0.0000E-39	4.4376E-04
ROW(16)	7.7477E-07	0.0000E-39	0.0000E-39	8.3043E-06	0.0000E-39	6.6498E-05	0.0000E-39	1.4142E-02	0.0000E-39	2.9001E-04
ROW(17)	2.8206E-05	0.0000E-39	0.0000E-39	2.1543E-05	0.0000E-39	2.5487E-05	0.0000E-39	5.7283E-02	0.0000E-39	9.6771E-05
ROW(18)	1.4328E-04	0.0000E-39	0.0000E-39	7.0952E-05	0.0000E-39	2.8024E-05	0.0000E-39	2.2420E-03	0.0000E-39	2.7960E-04
ROW(19)	1.9127E-06	0.0000E-39	0.0000E-39	1.1151E-06	0.0000E-39	7.3358E-08	0.0000E-39	2.3867E-03	0.0000E-39	1.2932E-04
ROW(20)	1.0276E-06	0.0000E-39	0.0000E-39	1.6058E-06	0.0000E-39	7.7580E-06	0.0000E-39	4.4833E-03	0.0000E-39	6.5841E-06
ROW(21)	3.1021E-06	0.0000E-39	0.0000E-39	4.5708E-07	0.0000E-39	9.6484E-06	0.0000E-39	5.4168E-04	0.0000E-39	1.7831E-03
ROW(22)	7.5705E-07	0.0000E-39	0.0000E-39	4.5202E-07	0.0000E-39	4.7710E-06	0.0000E-39	1.5806E-02	0.0000E-39	1.0294E-05
ROW(23)	6.9023E-06	0.0000E-39	0.0000E-39	1.4890E-06	0.0000E-39	2.4608E-05	0.0000E-39	7.5710E-02	0.0000E-39	3.6741E-06
ROW(24)	9.6866E-07	0.0000E-39	0.0000E-39	7.1531E-08	0.0000E-39	6.7093E-06	0.0000E-39	2.2244E-02	0.0000E-39	7.5644E-06
ROW(25)	0.0000E-39	2.4076E-05	5.5562E-05	0.0000E-39	1.2319E-04	0.0000E-39	3.5546E-04	0.0000E-39	8.8823E-05	0.0000E-39
ROW(26)	0.0000E-39	4.4377E-05	1.4285E-05	0.0000E-39	9.2668E-05	0.0000E-39	4.0571E-03	0.0000E-39	1.4274E-04	0.0000E-39
ROW(27)	0.0000E-39	3.7230E-05	2.3836E-05	0.0000E-39	3.4623E-05	0.0000E-39	4.1169E-04	0.0000E-39	4.8619E-04	0.0000E-39
ROW(28)	0.0000E-39	3.9101E-05	5.7622E-06	0.0000E-39	8.4195E-06	0.0000E-39	1.2572E-02	0.0000E-39	2.6790E-04	0.0000E-39
ROW(29)	0.0000E-39	5.8126E-05	2.4419E-04	0.0000E-39	2.0230E-05	0.0000E-39	4.5964E-02	0.0000E-39	8.5533E-05	0.0000E-39
ROW(30)	0.0000E-39	3.7573E-05	2.3070E-05	0.0000E-39	5.1614E-05	0.0000E-39	1.9745E-03	0.0000E-39	2.9244E-04	0.0000E-39
ROW(31)	0.0000E-39	5.5962E-06	2.1794E-05	0.0000E-39	5.1187E-06	0.0000E-39	2.1150E-03	0.0000E-39	1.3610E-04	0.0000E-39
ROW(32)	0.0000E-39	6.6501E-06	1.1598E-06	0.0000E-39	2.4837E-07	0.0000E-39	3.9673E-03	0.0000E-39	6.4567E-06	0.0000E-39
ROW(33)	0.0000E-39	9.2108E-06	1.5715E-07	0.0000E-39	8.7660E-05	0.0000E-39	4.8505E-04	0.0000E-39	3.2623E-03	0.0000E-39
ROW(34)	0.0000E-39	1.2890E-06	2.0947E-07	0.0000E-39	8.1121E-07	0.0000E-39	1.3961E-02	0.0000E-39	1.4420E-06	0.0000E-39
ROW(35)	0.0000E-39	1.1649E-05	7.0070E-07	0.0000E-39	4.7925E-06	0.0000E-39	6.6417E-02	0.0000E-39	6.8318E-06	0.0000E-39
ROW(36)	0.0000E-39	1.9103E-06	2.8612E-08	0.0000E-39	1.3191E-06	0.0000E-39	1.9632E-02	0.0000E-39	8.8705E-06	0.0000E-39

	COLUMN(31)	COLUMN(32)	COLUMN(33)	COLUMN(34)	COLUMN(35)	COLUMN(36)	COLUMN(

RØW(1)	2.2606E-06	0.0000E-39	1.8095E-07	0.0000E-39	3.3676E-06	0.0000E-39
RØW(2)	5.2759E-01	0.0000E-39	6.9406E-03	0.0000E-39	2.9624E-07	0.0000E-39
RØW(3)	5.4568E-04	0.0000E-39	1.5656E-03	0.0000E-39	1.0749E-06	0.0000E-39
RØW(4)	3.2629E-04	0.0000E-39	6.6606E-05	0.0000E-39	2.6058E-07	0.0000E-39
RØW(5)	2.3049E-04	0.0000E-39	1.2187E 00	0.0000E-39	1.5559E-05	0.0000E-39
RØW(6)	1.8926E-05	0.0000E-39	3.1898E-01	0.0000E-39	1.7028E-06	0.0000E-39
RØW(7)	0.0000E-39	7.5216E-06	0.0000E-39	1.9886E-06	0.0000E-39	2.5790E-06
RØW(8)	0.0000E-39	6.1362E-01	0.0000E-39	7.5734E-03	0.0000E-39	8.5965E-07
RØW(9)	0.0000E-39	6.0763E-04	0.0000E-39	2.1427E-03	0.0000E-39	9.6007E-07
RØW(10)	0.0000E-39	3.6852E-04	0.0000E-39	7.3268E-05	0.0000E-39	6.1998E-07
RØW(11)	0.0000E-39	2.5468E-04	0.0000E-39	1.4612E 00	0.0000E-39	1.1849E-04
RØW(12)	0.0000E-39	2.0154E-05	0.0000E-39	3.8282E-01	0.0000E-39	1.0285E-05
RØW(13)	7.6302E-03	0.0000E-39	1.1386E-03	0.0000E-39	2.5154E-07	0.0000E-39
RØW(14)	1.2438E-02	0.0000E-39	6.1779E-04	0.0000E-39	1.0265E-06	0.0000E-39
RØW(15)	5.4512E-02	0.0000E-39	6.3473E-03	0.0000E-39	3.0629E-06	0.0000E-39
RØW(16)	2.1800E-03	0.0000E-39	1.1095E-02	0.0000E-39	2.4008E-06	0.0000E-39
RØW(17)	6.9465E-04	0.0000E-39	2.1340E-03	0.0000E-39	4.6091E-07	0.0000E-39
RØW(18)	2.2468E-03	0.0000E-39	1.9401E-02	0.0000E-39	4.3907E-07	0.0000E-39
RØW(19)	9.8242E-04	0.0000E-39	5.3909E-04	0.0000E-39	3.2687E-07	0.0000E-39
RØW(20)	2.1378E-04	0.0000E-39	9.1251E-05	0.0000E-39	3.3338E-07	0.0000E-39
RØW(21)	1.8248E-03	0.0000E-39	7.6481E-04	0.0000E-39	1.4957E-07	0.0000E-39
RØW(22)	2.8529E-05	0.0000E-39	2.5645E-01	0.0000E-39	2.6016E-06	0.0000E-39
RØW(23)	1.1134E-04	0.0000E-39	1.8957E-02	0.0000E-39	1.3956E-05	0.0000E-39
RØW(24)	3.8231E-06	0.0000E-39	2.7938E-01	0.0000E-39	2.8114E-06	0.0000E-39
RØW(25)	0.0000E-39	8.4898E-03	0.0000E-39	1.2404E-03	0.0000E-39	4.3195E-07
RØW(26)	0.0000E-39	1.3882E-02	0.0000E-39	6.7337E-04	0.0000E-39	2.5222E-07
RØW(27)	0.0000E-39	6.0860E-02	0.0000E-39	6.9272E-03	0.0000E-39	6.2532E-07
RØW(28)	0.0000E-39	2.4323E-03	0.0000E-39	1.2091E-02	0.0000E-39	1.0747E-06
RØW(29)	0.0000E-39	7.7746E-04	0.0000E-39	2.3265E-03	0.0000E-39	1.3124E-06
RØW(30)	0.0000E-39	2.5181E-03	0.0000E-39	2.1197E-02	0.0000E-39	4.2909E-07
RØW(31)	0.0000E-39	1.0975E-03	0.0000E-39	5.8800E-04	0.0000E-39	1.0005E-06
RØW(32)	0.0000E-39	2.3897E-04	0.0000E-39	9.8463E-05	0.0000E-39	9.8700E-07
RØW(33)	0.0000E-39	2.0467E-03	0.0000E-39	8.3398E-04	0.0000E-39	4.7593E-07
RØW(34)	0.0000E-39	3.1587E-05	0.0000E-39	3.0776E-01	0.0000E-39	1.2375E-05
RØW(35)	0.0000E-39	1.2158E-04	0.0000E-39	2.2473E-02	0.0000E-39	7.9117E-05
RØW(36)	0.0000E-39	2.5903E-06	0.0000E-39	3.3530E-01	0.0000E-39	1.3436E-05