Table A17 List of the file, **eqellipse.stiffened.opm4.ALL6N .** This is a list of the file called "**eqellipse.ALL6N**", which is generated automatically by SUBROUTINE STRUCT for the **axisymmetric collapse** analysis by BIGBOSOR4 of the optimized imperfect isogrid-stiffened 12-segment equivalent ellipsoidal shell with a -mode 1 axisymmetric linear buckling modal imperfection with amplitude, Wimp = 0.2 inch. This file, with its name changed from “eqellipse.ALL6N” to “eqellipse.ALL”, is valid input for BIGBOSOR4 (or for BOSOR4). **This file is produced by the program called "BOSDEC".** In order to generate a file containing the same input data with complete annotations on each line, you first execute **bigbosorall** (with the input file name changed to “eqellipse.ALL”) followed by execution of the bigbosor4 processor, **cleanup.** See the next table for a list of the same input data with complete annotations for each input datum generated in that way.

```
=====================================================================
 Nonlinear axisymmetric collapse analysis (INDIC=0)
  0             $ INDIC
  1             $ NPRT
  1             $ ISTRES
  12            $ nseg
  11            $ NMESH
  3             $ NTYPEH
  2             $ NSHAPE
  0.000000E+00 $ R1
 -1.237500E+01 $ Z1
  2.554500E+00 $ R2
 -1.230904E+01 $ Z2
  0.000000E+00 $ RC
  3.712500E+01 $ ZC
 -1.            $ SROT
   1             $ IMP
  4             $ ITYPE
  2.000000E-01 $ WIMP
  1             $ ISTART
  13             $ NUMB
 -1.000000E+00 $ WSHAPE
 -9.998095E-01 $ WSHAPE
 -9.974246E-01 $ WSHAPE
 -9.900558E-01 $ WSHAPE
 -9.778738E-01 $ WSHAPE
 -9.611780E-01 $ WSHAPE
 -9.402764E-01 $ WSHAPE
 -9.155436E-01 $ WSHAPE
 -8.874148E-01 $ WSHAPE
 -8.563773E-01 $ WSHAPE
 -8.233898E-01 $ WSHAPE
 -7.975617E-01 $ WSHAPE
 -7.877210E-01 $ WSHAPE
```

```
 N             $ any more modes?
 3             $ NTYPEZ
 0.            $ ZVAL
 Y             $ print r(s)...?
 0             $ NRINGS
 0             $ K
 0             $ LINTYP
 1             $ IDISAB
 1             $ NLTYPE
 2             $ NPSTAT
 0             $ NLOAD(1)
 0             $ NLOAD(2)
 1             $ NLOAD(3)
-1.            $ PN(1)
-1.            $ PN(2)
  3            $ ntype
 0.000000E+00  $ callout1
 2.554500E+00  $ callout2
10             $ NWALL
 2             $ NWALL2
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 0.            $ ALPHA
 1             $ NRS
-1             $ NSUR
 1             $ NTYPET
  2            $ NTVALU
  3            $ ntype
 0.000000E+00  $ callout1
 2.554500E+00  $ callout2
 1.245300E-01  $ THKSKN(iseg)
 1.664100E-01  $ THKSKN(ipoint)
 Y             $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0             $ K1 (0 means internal)
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 2.915400E+00  $ isogrid spacing
 N             $ constant cross section?
  2            $ number of callouts
  3            $ ntype
 0.000000E+00  $ callout1
 2.554500E+00  $ callout2
 9.053100E-02  $ THSTIF
 9.053100E-02  $ THSTIF
 6.676600E-01  $ HIGHST(iseg)
```

```
 6.078300E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 2.554500E+00 $ R1
-1.230904E+01 $ Z1
 5.666450E+00 $ R2
-1.204630E+01 $ Z2
 8.364234E-02 $ RC
 3.551750E+01 $ ZC
-1.            $ SROT
  1            $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
-7.877214E-01 $ WSHAPE
-7.755676E-01 $ WSHAPE
-7.424461E-01 $ WSHAPE
-6.974480E-01 $ WSHAPE
-6.517389E-01 $ WSHAPE
-6.063795E-01 $ WSHAPE
-5.617062E-01 $ WSHAPE
-5.179358E-01 $ WSHAPE
-4.751978E-01 $ WSHAPE
-4.335580E-01 $ WSHAPE
-3.935374E-01 $ WSHAPE
-3.643599E-01 $ WSHAPE
-3.536206E-01 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  3           $ ntype
```

```
 2.554500E+00 $ callout1
 5.666450E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  3           $ ntype
 2.554500E+00 $ callout1
 5.666450E+00 $ callout2
 1.664100E-01 $ THKSKN(iseg)
 1.446000E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  3           $ ntype
 2.554500E+00 $ callout1
 5.666450E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 6.078300E-01 $ HIGHST(iseg)
 9.792800E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 5.666450E+00 $ R1
-1.204630E+01 $ Z1
 8.753630E+00 $ R2
-1.157515E+01 $ Z2
 4.623073E-01 $ RC
 3.240297E+01 $ ZC
-1.           $ SROT
  1            $ IMP
 4            $ ITYPE
```

```
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
-3.536340E-01 $ WSHAPE
-3.429709E-01 $ WSHAPE
-3.148068E-01 $ WSHAPE
-2.780212E-01 $ WSHAPE
-2.418488E-01 $ WSHAPE
-2.067450E-01 $ WSHAPE
-1.726854E-01 $ WSHAPE
-1.396409E-01 $ WSHAPE
-1.075806E-01 $ WSHAPE
-7.647277E-02 $ WSHAPE
-4.665877E-02 $ WSHAPE
-2.496399E-02 $ WSHAPE
-1.699140E-02 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  3           $ ntype
 5.666450E+00 $ callout1
 8.753630E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  3           $ ntype
 5.666450E+00 $ callout1
 8.753630E+00 $ callout2
 1.446000E-01 $ THKSKN(iseg)
```

```
 1.608200E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  3           $ ntype
 5.666450E+00 $ callout1
 8.753630E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 9.792800E-01 $ HIGHST(iseg)
 1.256200E+00 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 8.753630E+00 $ R1
-1.157515E+01 $ Z1
 1.179770E+01 $ R2
-1.087861E+01 $ Z2
 1.338907E+00 $ RC
 2.782925E+01 $ ZC
-1.            $ SROT
  1             $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
-1.700648E-02 $ WSHAPE
-9.090376E-03 $ WSHAPE
 1.180019E-02 $ WSHAPE
 3.900916E-02 $ WSHAPE
 6.563866E-02 $ WSHAPE
 9.129696E-02 $ WSHAPE
 1.159352E-01 $ WSHAPE
 1.394974E-01 $ WSHAPE
 1.619212E-01 $ WSHAPE
 1.831373E-01 $ WSHAPE
 2.028300E-01 $ WSHAPE
 2.166747E-01 $ WSHAPE
 2.216420E-01 $ WSHAPE
```

```
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  3           $ ntype
 8.753630E+00 $ callout1
 1.179770E+01 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  3           $ ntype
 8.753630E+00 $ callout1
 1.179770E+01 $ callout2
 1.608200E-01 $ THKSKN(iseg)
 1.041200E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  3           $ ntype
 8.753630E+00 $ callout1
 1.179770E+01 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 1.256200E+00 $ HIGHST(iseg)
```

```
 1.154000E+00 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 1.179770E+01 $ R1
-1.087861E+01 $ Z1
 1.477232E+01 $ R2
-9.929011E+00 $ Z2
 2.895449E+00 $ RC
 2.214145E+01 $ ZC
-1.           $ SROT
  1            $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
 2.216282E-01 $ WSHAPE
 2.264944E-01 $ WSHAPE
 2.389749E-01 $ WSHAPE
 2.542894E-01 $ WSHAPE
 2.680002E-01 $ WSHAPE
 2.797017E-01 $ WSHAPE
 2.891760E-01 $ WSHAPE
 2.961907E-01 $ WSHAPE
 3.005013E-01 $ WSHAPE
 3.018569E-01 $ WSHAPE
 3.000518E-01 $ WSHAPE
 2.965291E-01 $ WSHAPE
 2.947125E-01 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  3           $ ntype
```

```
 1.179770E+01 $ callout1
 1.477232E+01 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  3           $ ntype
 1.179770E+01 $ callout1
 1.477232E+01 $ callout2
 1.041200E-01 $ THKSKN(iseg)
 1.000000E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  3           $ ntype
 1.179770E+01 $ callout1
 1.477232E+01 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 1.154000E+00 $ HIGHST(iseg)
 8.042200E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 1.477232E+01 $ R1
-9.929011E+00 $ Z1
 1.763477E+01 $ R2
-8.682992E+00 $ Z2
 5.259145E+00 $ RC
 1.583630E+01 $ ZC
-1.           $ SROT
  1            $ IMP
 4            $ ITYPE
```

```
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
 2.947156E-01 $ WSHAPE
 2.926285E-01 $ WSHAPE
 2.857434E-01 $ WSHAPE
 2.740806E-01 $ WSHAPE
 2.599517E-01 $ WSHAPE
 2.439893E-01 $ WSHAPE
 2.266064E-01 $ WSHAPE
 2.081387E-01 $ WSHAPE
 1.888577E-01 $ WSHAPE
 1.689817E-01 $ WSHAPE
 1.489415E-01 $ WSHAPE
 1.337896E-01 $ WSHAPE
 1.281099E-01 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  3           $ ntype
 1.477232E+01 $ callout1
 1.763477E+01 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  3           $ ntype
 1.477232E+01 $ callout1
 1.763477E+01 $ callout2
 1.000000E-01 $ THKSKN(iseg)
```

```
 1.016200E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  3           $ ntype
 1.477232E+01 $ callout1
 1.763477E+01 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 8.042200E-01 $ HIGHST(iseg)
 1.268600E+00 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 1.763477E+01 $ R1
-8.682992E+00 $ Z1
 1.963631E+01 $ R2
-7.532891E+00 $ Z2
 7.971097E+00 $ RC
 1.045158E+01 $ ZC
-1.            $ SROT
  1             $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
 1.281032E-01 $ WSHAPE
 1.238767E-01 $ WSHAPE
 1.125113E-01 $ WSHAPE
 9.723734E-02 $ WSHAPE
 8.173395E-02 $ WSHAPE
 6.622934E-02 $ WSHAPE
 5.076280E-02 $ WSHAPE
 3.537831E-02 $ WSHAPE
 2.012537E-02 $ WSHAPE
 5.059964E-03 $ WSHAPE
-9.571119E-03 $ WSHAPE
-2.029704E-02 $ WSHAPE
-2.424563E-02 $ WSHAPE
```

```
 N             $ any more modes?
 3             $ NTYPEZ
 0.            $ ZVAL
 Y             $ print r(s)...?
 0             $ NRINGS
 0             $ K
 0             $ LINTYP
 1             $ IDISAB
 1             $ NLTYPE
 2             $ NPSTAT
 0             $ NLOAD(1)
 0             $ NLOAD(2)
 1             $ NLOAD(3)
-1.            $ PN(1)
-1.            $ PN(2)
  3            $ ntype
 1.763477E+01  $ callout1
 1.963631E+01  $ callout2
10             $ NWALL
 2             $ NWALL2
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 0.            $ ALPHA
 1             $ NRS
-1             $ NSUR
 1             $ NTYPET
  2            $ NTVALU
  3            $ ntype
 1.763477E+01  $ callout1
 1.963631E+01  $ callout2
 1.016200E-01  $ THKSKN(iseg)
 1.379500E-01  $ THKSKN(ipoint)
 Y             $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0             $ K1 (0 means internal)
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 2.915400E+00  $ isogrid spacing
 N             $ constant cross section?
  2            $ number of callouts
  3            $ ntype
 1.763477E+01  $ callout1
 1.963631E+01  $ callout2
 9.053100E-02  $ THSTIF
 9.053100E-02  $ THSTIF
 1.268600E+00  $ HIGHST(iseg)
```

```
 8.833900E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 1.963631E+01 $ R1
-7.532891E+00 $ Z1
 2.126065E+01 $ R2
-6.335362E+00 $ Z2
 1.052211E+01 $ RC
 6.530096E+00 $ ZC
-1.            $ SROT
  1            $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13           $ NUMB
-2.423393E-02 $ WSHAPE
-2.768403E-02 $ WSHAPE
-3.681009E-02 $ WSHAPE
-4.871560E-02 $ WSHAPE
-6.035533E-02 $ WSHAPE
-7.151767E-02 $ WSHAPE
-8.213990E-02 $ WSHAPE
-9.215508E-02 $ WSHAPE
-1.014919E-01 $ WSHAPE
-1.100749E-01 $ WSHAPE
-1.177331E-01 $ WSHAPE
-1.228745E-01 $ WSHAPE
-1.246571E-01 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.            $ PN(1)
-1.            $ PN(2)
  2           $ ntype
```

```
-7.532891E+00 $ callout1
-6.335362E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  2           $ ntype
-7.532891E+00 $ callout1
-6.335362E+00 $ callout2
 1.379500E-01 $ THKSKN(iseg)
 1.020100E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  2           $ ntype
-7.532891E+00 $ callout1
-6.335362E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 8.833900E-01 $ HIGHST(iseg)
 7.056000E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 2.126065E+01 $ R1
-6.335362E+00 $ Z1
 2.270426E+01 $ R2
-4.926436E+00 $ Z2
 1.307984E+01 $ RC
 3.490870E+00 $ ZC
-1.           $ SROT
  1            $ IMP
 4            $ ITYPE
```

```
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
-1.246322E-01 $ WSHAPE
-1.263595E-01 $ WSHAPE
-1.306006E-01 $ WSHAPE
-1.353629E-01 $ WSHAPE
-1.390724E-01 $ WSHAPE
-1.416203E-01 $ WSHAPE
-1.429722E-01 $ WSHAPE
-1.431027E-01 $ WSHAPE
-1.419962E-01 $ WSHAPE
-1.396482E-01 $ WSHAPE
-1.361193E-01 $ WSHAPE
-1.327112E-01 $ WSHAPE
-1.312749E-01 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  2           $ ntype
-6.335362E+00 $ callout1
-4.926436E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  2           $ ntype
-6.335362E+00 $ callout1
-4.926436E+00 $ callout2
 1.020100E-01 $ THKSKN(iseg)
```

```
 1.041100E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  2           $ ntype
-6.335362E+00 $ callout1
-4.926436E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 7.056000E-01 $ HIGHST(iseg)
 5.844500E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 2.270426E+01 $ R1
-4.926436E+00 $ Z1
 2.386535E+01 $ R2
-3.279007E+00 $ Z2
 1.555374E+01 $ RC
 1.346049E+00 $ ZC
-1.            $ SROT
  1            $ IMP
 4             $ ITYPE
 2.000000E-01 $ WIMP
 1             $ ISTART
 13            $ NUMB
-1.312809E-01 $ WSHAPE
-1.297502E-01 $ WSHAPE
-1.252087E-01 $ WSHAPE
-1.182174E-01 $ WSHAPE
-1.101879E-01 $ WSHAPE
-1.013301E-01 $ WSHAPE
-9.177209E-02 $ WSHAPE
-8.163905E-02 $ WSHAPE
-7.105113E-02 $ WSHAPE
-6.012135E-02 $ WSHAPE
-4.909472E-02 $ WSHAPE
-4.076409E-02 $ WSHAPE
-3.764388E-02 $ WSHAPE
```

```
 N             $ any more modes?
 3             $ NTYPEZ
 0.            $ ZVAL
 Y             $ print r(s)...?
 0             $ NRINGS
 0             $ K
 0             $ LINTYP
 1             $ IDISAB
 1             $ NLTYPE
 2             $ NPSTAT
 0             $ NLOAD(1)
 0             $ NLOAD(2)
 1             $ NLOAD(3)
-1.            $ PN(1)
-1.            $ PN(2)
  2            $ ntype
-4.926436E+00  $ callout1
-3.279006E+00  $ callout2
10             $ NWALL
 2             $ NWALL2
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 0.            $ ALPHA
 1             $ NRS
-1             $ NSUR
 1             $ NTYPET
  2            $ NTVALU
  2            $ ntype
-4.926436E+00  $ callout1
-3.279006E+00  $ callout2
 1.041100E-01  $ THKSKN(iseg)
 1.986900E-01  $ THKSKN(ipoint)
 Y             $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0             $ K1 (0 means internal)
 1.600000E+07  $ E
 2.500000E-01  $ U
 4.155000E-04  $ SM
 2.915400E+00  $ isogrid spacing
 N             $ constant cross section?
  2            $ number of callouts
  2            $ ntype
-4.926436E+00  $ callout1
-3.279006E+00  $ callout2
 9.053100E-02  $ THSTIF
 9.053100E-02  $ THSTIF
 5.844500E-01  $ HIGHST(iseg)
```

```
 5.158100E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 2.386535E+01 $ R1
-3.279007E+00 $ Z1
 2.454286E+01 $ R2
-1.597695E+00 $ Z2
 1.745365E+01 $ RC
 2.818448E-01 $ ZC
-1.            $ SROT
  1            $ IMP
 4            $ ITYPE
 2.000000E-01 $ WIMP
 1            $ ISTART
 13           $ NUMB
-3.762304E-02 $ WSHAPE
-3.477132E-02 $ WSHAPE
-2.711416E-02 $ WSHAPE
-1.686821E-02 $ WSHAPE
-6.562246E-03 $ WSHAPE
 3.595316E-03 $ WSHAPE
 1.351144E-02 $ WSHAPE
 2.307542E-02 $ WSHAPE
 3.215520E-02 $ WSHAPE
 4.059378E-02 $ WSHAPE
 4.811750E-02 $ WSHAPE
 5.308898E-02 $ WSHAPE
 5.478073E-02 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  2           $ ntype
```

```
-3.279006E+00 $ callout1
-1.597695E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  2           $ ntype
-3.279006E+00 $ callout1
-1.597695E+00 $ callout2
 1.986900E-01 $ THKSKN(iseg)
 1.000000E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  2           $ ntype
-3.279006E+00 $ callout1
-1.597695E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 5.158100E-01 $ HIGHST(iseg)
 3.441700E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 11           $ NMESH
 3            $ NTYPEH
 2            $ NSHAPE
 2.454286E+01 $ R1
-1.597695E+00 $ Z1
 2.475000E+01 $ R2
 0.000000E+00 $ Z2
 1.840842E+01 $ RC
 9.905365E-03 $ ZC
-1.           $ SROT
  1            $ IMP
 4            $ ITYPE
```

```
 2.000000E-01 $ WIMP
 1            $ ISTART
 13            $ NUMB
 5.483954E-02 $ WSHAPE
 5.628299E-02 $ WSHAPE
 5.977136E-02 $ WSHAPE
 6.369364E-02 $ WSHAPE
 6.689849E-02 $ WSHAPE
 6.944232E-02 $ WSHAPE
 7.142271E-02 $ WSHAPE
 7.292235E-02 $ WSHAPE
 7.400951E-02 $ WSHAPE
 7.473919E-02 $ WSHAPE
 7.515118E-02 $ WSHAPE
 7.527828E-02 $ WSHAPE
 7.528902E-02 $ WSHAPE
 N            $ any more modes?
 3            $ NTYPEZ
 0.           $ ZVAL
 Y            $ print r(s)...?
 0            $ NRINGS
 0            $ K
 0            $ LINTYP
 1            $ IDISAB
 1            $ NLTYPE
 2            $ NPSTAT
 0            $ NLOAD(1)
 0            $ NLOAD(2)
 1            $ NLOAD(3)
-1.           $ PN(1)
-1.           $ PN(2)
  2           $ ntype
-1.597695E+00 $ callout1
 0.000000E+00 $ callout2
10            $ NWALL
 2            $ NWALL2
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 0.           $ ALPHA
 1            $ NRS
-1            $ NSUR
 1            $ NTYPET
  2           $ NTVALU
  2           $ ntype
-1.597695E+00 $ callout1
 0.000000E+00 $ callout2
 1.000000E-01 $ THKSKN(iseg)
```

```
 1.977900E-01 $ THKSKN(ipoint)
 Y            $ print refsurf...?
 Y   $ are there stringers or isogrid...?
 0            $ K1 (0 means internal)
 1.600000E+07 $ E
 2.500000E-01 $ U
 4.155000E-04 $ SM
 2.915400E+00 $ isogrid spacing
 N            $ constant cross section?
  2           $ number of callouts
  2           $ ntype
-1.597695E+00 $ callout1
 0.000000E+00 $ callout2
 9.053100E-02 $ THSTIF
 9.053100E-02 $ THSTIF
 3.441700E-01 $ HIGHST(iseg)
 4.666000E-01 $ HIGHST(ipoint)
 N            $ are there smeared rings?
 N            $ print Cij?
 N            $ print loads?
 1            $ NLAST
 N            $ expanded plots?
 4.600000E+01 $ P
 4.600000E+01 $ DP
 0.           $ TEMP
 0.           $ DTEMP
 20           $ NSTEPS
 0.           $ OMEGA
 0.           $ DOMEGA
 12           $ nseg
 1            $ number of poles
 1            $ nodal point at pole
 0      $ grounded how many stations?
 N            $ joined to lower segs?
 0            $ number of poles
 0    $ grounded how many stations?
 Y            $ joined to lower segs?
 1      $ at how many stations joined?
 1      $ INODE= node of current seg.
  1     $ JSEG=previous segment
 11    $ JNODE prev.seg.
 1            $ IUSTAR constrained
 1            $ IVSTAR constrained
 1            $ IWSTAR constrained
 1            $ ICHI   constrained
 0.           $ D1=radial eccentricity
 0.           $ D2=axial  eccentricity
 Y      $ bc same for prebuck & buck.?
```

```
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 2     $ JSEG=previous segment
11    $ JNODE prev.seg.
1            $ IUSTAR constrained
1            $ IVSTAR constrained
1            $ IWSTAR constrained
1            $ ICHI   constrained
0.           $ D1=radial eccentricity
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 3     $ JSEG=previous segment
11    $ JNODE prev.seg.
1            $ IUSTAR constrained
1            $ IVSTAR constrained
1            $ IWSTAR constrained
1            $ ICHI   constrained
0.           $ D1=radial eccentricity
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 4     $ JSEG=previous segment
11    $ JNODE prev.seg.
1            $ IUSTAR constrained
1            $ IVSTAR constrained
1            $ IWSTAR constrained
1            $ ICHI   constrained
0.           $ D1=radial eccentricity
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 5     $ JSEG=previous segment
```

```
11    $ JNODE prev.seg.
1             $ IUSTAR constrained
1             $ IVSTAR constrained
1             $ IWSTAR constrained
1             $ ICHI   constrained
0.            $ D1=radial eccentricity
0.            $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0             $ number of poles
0    $ grounded how many stations?
Y             $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 6     $ JSEG=previous segment
11    $ JNODE prev.seg.
1             $ IUSTAR constrained
1             $ IVSTAR constrained
1             $ IWSTAR constrained
1             $ ICHI   constrained
0.            $ D1=radial eccentricity
0.            $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0             $ number of poles
0    $ grounded how many stations?
Y             $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 7     $ JSEG=previous segment
11    $ JNODE prev.seg.
1             $ IUSTAR constrained
1             $ IVSTAR constrained
1             $ IWSTAR constrained
1             $ ICHI   constrained
0.            $ D1=radial eccentricity
0.            $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0             $ number of poles
0    $ grounded how many stations?
Y             $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 8     $ JSEG=previous segment
11    $ JNODE prev.seg.
1             $ IUSTAR constrained
1             $ IVSTAR constrained
1             $ IWSTAR constrained
1             $ ICHI   constrained
0.            $ D1=radial eccentricity
```

```
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
 9     $ JSEG=previous segment
11    $ JNODE prev.seg.
1            $ IUSTAR constrained
1            $ IVSTAR constrained
1            $ IWSTAR constrained
1            $ ICHI   constrained
0.           $ D1=radial eccentricity
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
0    $ grounded how many stations?
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
10     $ JSEG=previous segment
11    $ JNODE prev.seg.
1            $ IUSTAR constrained
1            $ IVSTAR constrained
1            $ IWSTAR constrained
1            $ ICHI   constrained
0.           $ D1=radial eccentricity
0.           $ D2=axial  eccentricity
Y      $ bc same for prebuck & buck.?
0            $ number of poles
1    $ grounded how many stations?
11     $ INODE = node
1            $ IUSTAR constrained
1            $ IVSTAR constrained
0            $ IWSTAR constrained
1            $ ICHI   constrained
0.        $ D1=radial eccentricity
0.        $ D2=axial  eccentricity
N       $ bc same prebuck & buck.?
1            $ IUSTARB constrained
1            $ IVSTARB constrained
0            $ IWSTARB constrained
1            $ ICHIB   constrained
Y            $ joined to lower segs?
1      $ at how many stations joined?
1      $ INODE= node of current seg.
11     $ JSEG=previous segment
```

```
  11    $ JNODE prev.seg.
  1             $ IUSTAR constrained
  1             $ IVSTAR constrained
  1             $ IWSTAR constrained
  1             $ ICHI   constrained
  0.            $ D1=radial eccentricity
  0.            $ D2=axial  eccentricity
  Y      $ bc same for prebuck & buck.?
  N             $ rigid body possible?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for seg. i?
  Y             $ output for rings?
=============================================================
```