Table A23 List of the file, eqellipse.stiffened.opm4.STAGS. This file, called "eqellipse.STAGS" for the specific case, "eqellipse", must be called WALLTHICK.STAGS in the directory from which the STAGS program is executed. The WALLTHICK.STAGS file must exist at the time that SUBROUTINE WALL is executed. (See Tables a21, a22, a35, a36). The file, "eqellipse.STAGS" is generated automatically in SUBROUTINE STRUCT whenever the GENOPT processor, OPTIMIZE, is executed in the "ITYPE = 2" mode, that is, for the analysis of a "fixed" design.

Number of shell segments (units) = 12

Isogrid spacing,modulus,nu,density= 2.915400E+00 1.600000E+07
2.500000E-01 1.605492E-01

Nodal points in Segment 1 = 13

```
Angle (X-coordinate)=
 0.00000E+00
              8.156468E-02 2.993615E-01
                                          5.914913E-01
                                                        8.873521E-01
 1.183329E+00
              1.479094E+00
                            1.774868E+00
                                          2.070654E+00
                                                        2.366536E+00
              2.876780E+00 2.958103E+00
 2.658591E+00
Meridional arc length (X-coordinate)=
 0.00000E+00
              7.027998E-02
                            2.587581E-01
                                          5.111271E-01
                                                        7.666907E-01
 1.022254E+00
              1.277818E+00
                            1.533381E+00
                                          1.788945E+00
                                                        2.044508E+00
 2.296877E+00
             2.485355E+00 2.555635E+00
               Shell skin thickness=
 1.245300E-01
              1.256817E-01 1.287704E-01
                                          1.329060E-01
                                                        1.370940E-01
 1.412820E-01
              1.454700E-01
                            1.496580E-01
                                          1.538460E-01
                                                        1.580340E-01
 1.621697E-01
              1.652583E-01 1.664100E-01
      Stringer (or isogrid) height=
              6.660147E-01
                            6.616022E-01
 6.676600E-01
                                          6.556940E-01
                                                        6.497110E-01
              6.377450E-01
 6.437280E-01
                            6.317620E-01
                                          6.257790E-01
                                                        6.197960E-01
 6.138878E-01
              6.094753E-01
                            6.078300E-01
    Stringer (or isogrid) thickness=
 9.053100E-02
              9.053100E-02 9.053100E-02
                                          9.053100E-02
                                                        9.053100E-02
 9.053100E-02
              9.053100E-02
                            9.053100E-02
                                          9.053100E-02
                                                        9.053100E-02
 9.053100E-02
             9.053100E-02 9.053100E-02
             Nodal points in Segment 2 = 13
```

3.335835E+00

5.199648E+00

3.704859E+00

5.573376E+00

4.078567E+00

5.947057E+00

Angle (X-coordinate)=

6.591689E+00 6.694480E+00

3.060174E+00

4.825966E+00

2.957441E+00

4.452235E+00

6.316089E+00

```
Meridional arc length (X-coordinate)=
 2.555635E+00
                2.641534E+00
                              2.871897E+00
                                             3.180351E+00
                                                            3.492708E+00
 3.805066E+00
                4.117423E+00
                              4.429781E+00
                                             4.742138E+00
                                                            5.054496E+00
 5.362949E+00
               5.593312E+00
                              5.679211E+00
                 Shell skin thickness=
 1.664100E-01
                1.658102E-01
                              1.642017E-01
                                             1.620480E-01
                                                            1.598670E-01
 1.576860E-01
                1.555050E-01
                              1.533240E-01
                                             1.511430E-01
                                                            1.489620E-01
 1.468083E-01
                1.451998E-01
                              1.446000E-01
       Stringer (or isogrid)
                               height=
 6.078300E-01
               6.180449E-01
                              6.454393E-01
                                             6.821200E-01
                                                            7.192650E-01
 7.564100E-01
                7.935550E-01
                              8.307000E-01
                                             8.678450E-01
                                                            9.049900E-01
 9.416707E-01
               9.690651E-01
                              9.792800E-01
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
                9.053100E-02
                              9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                         3 =
                                              13
                Angle (X-coordinate)=
 6.677820E+00
                6.787783E+00
                              7.082718E+00
                                             7.477612E+00
                                                            7.877512E+00
               8.677313E+00
                              9.077207E+00
                                             9.477120E+00
                                                            9.877010E+00
 8.277422E+00
 1.027192E+01
               1.056684E+01
                              1.067682E+01
Meridional arc length (X-coordinate)=
 5.679211E+00
                5.765109E+00
                              5.995471E+00
                                             6.303923E+00
                                                            6.616279E+00
 6.928634E+00
                7.240990E+00
                              7.553346E+00
                                             7.865702E+00
                                                            8.178058E+00
 8.486509E+00
               8.716871E+00
                              8.802770E+00
                Shell skin thickness=
                1.450461E-01
                              1.462423E-01
 1.446000E-01
                                             1.478440E-01
                                                            1.494660E-01
                1.527100E-01
                              1.543320E-01
                                             1.559540E-01
                                                            1.575760E-01
 1.510880E-01
 1.591777E-01
               1.603739E-01
                              1.608200E-01
       Stringer (or isogrid)
                               height=
 9.792800E-01
               9.868953E-01
                              1.007318E+00
                                             1.034664E+00
                                                            1.062356E+00
 1.090048E+00
               1.117740E+00
                              1.145432E+00
                                             1.173124E+00
                                                            1.200816E+00
 1.228162E+00
               1.248585E+00
                              1.256200E+00
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
                9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
```

Nodal points in Segment 4 = 13

```
Angle (X-coordinate)=
 1.065673E+01
                1.077948E+01
                              1.110865E+01
                                             1.154942E+01
                                                            1.199575E+01
 1.244210E+01
                1.288845E+01
                              1.333478E+01
                                             1.378113E+01
                                                            1.422747E+01
 1.466823E+01
                1.499742E+01
                              1.512016E+01
Meridional arc length (X-coordinate)=
 8.802770E+00
                8.888667E+00
                              9.119027E+00
                                             9.427476E+00
                                                            9.739830E+00
 1.005218E+01
                1.036454E+01
                              1.067689E+01
                                             1.098924E+01
                                                            1.130160E+01
 1.161005E+01
                1.184041E+01
                              1.192630E+01
                Shell skin thickness=
                1.592607E-01
                              1.550791E-01
 1.608200E-01
                                             1.494800E-01
                                                            1.438100E-01
                              1.268000E-01
 1.381400E-01
               1.324700E-01
                                             1.211300E-01
                                                            1.154600E-01
 1.098609E-01
               1.056792E-01
                              1.041200E-01
       Stringer (or isogrid)
                              height=
 1.256200E+00
               1.253389E+00
                              1.245852E+00
                                             1.235760E+00
                                                            1.225540E+00
 1.215320E+00
                1.205100E+00
                              1.194880E+00
                                             1.184660E+00
                                                            1.174440E+00
 1.164348E+00
               1.156811E+00
                              1.154000E+00
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
                9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
                9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                         5 =
                                              13
                Angle (X-coordinate)=
                1.523219E+01
                              1.561814E+01
                                             1.613492E+01
                                                            1.665823E+01
 1.508829E+01
 1.718155E+01
                1.770487E+01
                              1.822818E+01
                                             1.875149E+01
                                                            1.927481E+01
 1.979159E+01
                2.017753E+01
                              2.032144E+01
Meridional arc length (X-coordinate)=
 1.192630E+01
                1.201220E+01
                              1.224257E+01
                                             1.255102E+01
                                                            1.286338E+01
 1.317574E+01
                1.348810E+01
                                             1.411282E+01
                                                            1.442518E+01
                              1.380046E+01
 1.473364E+01
               1.496400E+01
                              1.504990E+01
                 Shell skin thickness=
               1.040067E-01
                              1.037029E-01
 1.041200E-01
                                             1.032960E-01
                                                            1.028840E-01
 1.024720E-01
                1.020600E-01
                              1.016480E-01
                                             1.012360E-01
                                                            1.008240E-01
 1.004172E-01
               1.001133E-01
                              1.00000E-01
       Stringer (or isogrid)
                               height=
                1.144381E+00
 1.154000E+00
                              1.118585E+00
                                                            1.049066E+00
                                             1.084044E+00
 1.014088E+00
                9.791100E-01
                              9.441320E-01
                                             9.091539E-01
                                                            8.741760E-01
 8.396352E-01
               8.138389E-01
                              8.042200E-01
```

Stringer (or isogrid) thickness=

```
9.053100E-02
               9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
                              9.053100E-02
 9.053100E-02
               9.053100E-02
                                             9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                              13
                Angle (X-coordinate)=
 2.026536E+01
               2.044455E+01
                              2.092512E+01
                                             2.156858E+01
                                                            2.222019E+01
 2.287180E+01
               2.352341E+01
                              2.417502E+01
                                             2.482663E+01
                                                           2.547823E+01
 2.612170E+01
               2.660226E+01
                              2.678145E+01
Meridional arc length (X-coordinate)=
 1.504990E+01
               1.513580E+01
                              1.536616E+01
                                             1.567462E+01
                                                            1.598697E+01
 1.629933E+01
               1.661169E+01
                              1.692405E+01
                                             1.723640E+01
                                                            1.754876E+01
                              1.817347E+01
               1.808758E+01
 1.785721E+01
                Shell skin thickness=
 1.00000E-01
               1.000445E-01
                              1.001640E-01
                                             1.003240E-01
                                                            1.004860E-01
 1.006480E-01
                                             1.011340E-01
                                                            1.012960E-01
               1.008100E-01
                              1.009720E-01
 1.014560E-01
               1.015754E-01
                              1.016200E-01
       Stringer (or isogrid)
                              height=
 8.042200E-01
               8.169905E-01
                              8.512385E-01
                                             8.970960E-01
                                                            9.435340E-01
 9.899721E-01
               1.036410E+00
                              1.082848E+00
                                             1.129286E+00
                                                            1.175724E+00
 1.221582E+00
               1.255830E+00
                              1.268600E+00
    Stringer (or isogrid) thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                            9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                             9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                              13
                                         7 =
                Angle (X-coordinate)=
               2.696524E+01
                              2.742050E+01
 2.679548E+01
                                             2.803009E+01
                                                            2.864739E+01
               2.988201E+01
 2.926470E+01
                              3.049931E+01
                                                            3.173392E+01
                                             3.111662E+01
 3.234351E+01
               3.279877E+01
                              3.296853E+01
Meridional arc length (X-coordinate)=
 1.817347E+01
               1.823699E+01
                              1.840732E+01
                                             1.863539E+01
                                                            1.886634E+01
 1.909730E+01
               1.932825E+01
                              1.955921E+01
                                             1.979016E+01
                                                           2.002112E+01
 2.024919E+01
               2.041952E+01
                              2.048303E+01
                Shell skin thickness=
 1.016200E-01
               1.026191E-01
                              1.052984E-01
                                             1.088860E-01
                                                            1.125190E-01
 1.161520E-01
               1.197850E-01
                              1.234180E-01
                                             1.270510E-01
                                                            1.306840E-01
 1.342716E-01
               1.369509E-01
                              1.379500E-01
```

Stringer (or isogrid) height=

```
1.268600E+00
               1.258007E+00
                              1.229597E+00
                                            1.191558E+00
                                                           1.153037E+00
 1.114516E+00
               1.075995E+00
                              1.037474E+00
                                            9.989530E-01
                                                           9.604321E-01
 9.223925E-01
               8.939837E-01
                              8.833901E-01
    Stringer (or isogrid) thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                             13
                Angle (X-coordinate)=
               3.313707E+01
                              3.364623E+01
                                                           3.501837E+01
 3.294721E+01
                                            3.432798E+01
 3.570876E+01
               3.639914E+01
                              3.708953E+01
                                            3.777991E+01
                                                           3.847030E+01
 3.915207E+01
               3.966122E+01
                              3.985107E+01
Meridional arc length (X-coordinate)=
 2.048303E+01
               2.053856E+01
                              2.068748E+01
                                            2.088689E+01
                                                           2.108882E+01
                                                           2.209846E+01
 2.129074E+01
               2.149267E+01
                              2.169460E+01
                                            2.189653E+01
 2.229786E+01
               2.244678E+01
                              2.250231E+01
                Shell skin thickness=
 1.379500E-01
               1.369617E-01
                              1.343111E-01
                                            1.307620E-01
                                                           1.271680E-01
 1.235740E-01
               1.199800E-01
                              1.163860E-01
                                            1.127920E-01
                                                           1.091980E-01
 1.056489E-01
               1.029984E-01
                              1.020100E-01
       Stringer (or isogrid) height=
 8.833901E-01
               8.785008E-01
                              8.653888E-01
                                            8.478320E-01
                                                           8.300531E-01
 8.122740E-01
               7.944950E-01
                              7.767161E-01
                                            7.589370E-01
                                                           7.411581E-01
 7.236013E-01
               7.104893E-01
                              7.056000E-01
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                                           9.053100E-02
                                            9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment
                                             13
                Angle (X-coordinate)=
               4.002785E+01
                              4.069519E+01
 3.977901E+01
                                            4.158876E+01
                                                           4.249363E+01
               4.430339E+01
                                            4.611314E+01
 4.339851E+01
                              4.520827E+01
                                                           4.701801E+01
 4.791158E+01
               4.857893E+01
                              4.882777E+01
Meridional arc length (X-coordinate)=
 2.250231E+01
               2.255784E+01
                              2.270677E+01
                                            2.290617E+01
                                                           2.310810E+01
               2.351196E+01
 2.331003E+01
                              2.371389E+01
                                            2.391582E+01
                                                           2.411775E+01
 2.431715E+01
               2.446608E+01
                              2.452161E+01
```

Shell skin thickness=

```
1.020100E-01
               1.020677E-01
                              1.022226E-01
                                            1.024300E-01
                                                           1.026400E-01
 1.028500E-01
               1.030600E-01
                              1.032700E-01
                                            1.034800E-01
                                                           1.036900E-01
 1.038974E-01
               1.040523E-01
                              1.041100E-01
       Stringer (or isogrid) height=
 7.056000E-01
               7.022684E-01
                              6.933335E-01
                                            6.813701E-01
                                                           6.692550E-01
 6.571400E-01
               6.450250E-01
                              6.329100E-01
                                            6.207951E-01
                                                           6.086801E-01
 5.967165E-01
               5.877816E-01
                              5.844500E-01
    Stringer (or isogrid) thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment 10 =
                                             13
                Angle (X-coordinate)=
 4.874254E+01
               4.907703E+01
                              4.997408E+01
                                            5.117522E+01
                                                           5.239155E+01
                                            5.725691E+01
                                                           5.847325E+01
 5.360789E+01
               5.482423E+01
                              5.604056E+01
 5.967438E+01
               6.057143E+01
                              6.090592E+01
Meridional arc length (X-coordinate)=
 2.452161E+01
               2.457714E+01
                              2.472606E+01
                                            2.492546E+01
                                                           2.512739E+01
 2.532931E+01
               2.553124E+01
                              2.573317E+01
                                            2.593509E+01
                                                           2.613702E+01
 2.633642E+01
               2.648534E+01
                              2.654087E+01
                Shell skin thickness=
 1.041100E-01
               1.067110E-01
                              1.136862E-01
                                            1.230260E-01
                                                           1.324840E-01
 1.419420E-01
               1.514000E-01
                              1.608580E-01
                                            1.703160E-01
                                                           1.797740E-01
 1.891138E-01
               1.960891E-01
                              1.986900E-01
       Stringer (or isogrid) height=
 5.844500E-01
               5.825624E-01
                              5.775002E-01
                                            5.707220E-01
                                                           5.638580E-01
 5.569940E-01
               5.501300E-01
                              5.432660E-01
                                            5.364020E-01
                                                           5.295380E-01
 5.227598E-01
               5.176976E-01
                              5.158100E-01
    Stringer (or isogrid)
                           thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment 11 =
                                             13
                Angle (X-coordinate)=
 6.095361E+01
               6.134404E+01
                              6.239109E+01
                                            6.379308E+01
                                                           6.521282E+01
               6.805230E+01
 6.663256E+01
                              6.947204E+01
                                            7.089178E+01
                                                           7.231151E+01
 7.371350E+01
               7.476056E+01
                              7.515099E+01
```

Meridional arc length (X-coordinate)=

```
2.654087E+01
               2.659085E+01
                              2.672488E+01
                                            2.690434E+01
                                                           2.708607E+01
 2.726781E+01
               2.744954E+01
                              2.763127E+01
                                            2.781301E+01
                                                           2.799474E+01
 2.817420E+01
               2.830823E+01
                              2.835821E+01
                Shell skin thickness=
 1.986900E-01
               1.959760E-01
                              1.886976E-01
                                            1.789520E-01
                                                           1.690830E-01
 1.592140E-01
               1.493450E-01
                              1.394761E-01
                                            1.296070E-01
                                                           1.197381E-01
 1.099924E-01
               1.027141E-01
                              1.00000E-01
       Stringer (or isogrid)
                              height=
               5.110899E-01
                              4.984314E-01
                                            4.814821E-01
                                                           4.643180E-01
 5.158100E-01
 4.471541E-01
               4.299900E-01
                              4.128261E-01
                                            3.956620E-01
                                                           3.784981E-01
 3.615486E-01
               3.488902E-01
                              3.441700E-01
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
              Nodal points in Segment 12 =
                                             13
                Angle (X-coordinate)=
 7.531520E+01
               7.571658E+01
                              7.679298E+01
                                            7.823426E+01
                                                           7.969379E+01
 8.115332E+01
               8.261285E+01
                              8.407239E+01
                                            8.553191E+01
                                                           8.699145E+01
 8.843273E+01
               8.950913E+01
                              8.991051E+01
Meridional arc length (X-coordinate)=
 2.835821E+01
               2.840263E+01
                              2.852177E+01
                                            2.868129E+01
                                                           2.884283E+01
 2.900438E+01
               2.916592E+01
                              2.932747E+01
                                            2.948901E+01
                                                           2.965055E+01
 2.981007E+01
               2.992921E+01
                              2.997364E+01
                Shell skin thickness=
 1.00000E-01
               1.026892E-01
                              1.099013E-01
                                            1.195580E-01
                                                           1.293370E-01
               1.488951E-01
 1.391161E-01
                              1.586740E-01
                                            1.684530E-01
                                                           1.782320E-01
 1.878887E-01
               1.951008E-01
                              1.977900E-01
       Stringer (or isogrid)
                              height=
 3.441700E-01
               3.475368E-01
                              3.565661E-01
                                            3.686560E-01
                                                           3.808990E-01
 3.931421E-01
                              4.176280E-01
                                            4.298711E-01
                                                           4.421140E-01
               4.053851E-01
 4.542039E-01
               4.632332E-01
                              4.666000E-01
    Stringer (or isogrid)
                            thickness=
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
                                            9.053100E-02
                                                           9.053100E-02
 9.053100E-02
               9.053100E-02
                              9.053100E-02
```