Table 5 Portion of the prompting file, **equivellipse.PRO**, generated automatically by "GENTEXT" that corresponds to the GENOPT user's interactive input listed in Table 3. The complete equivellipse.PRO file generated after the GENOPT user completes the "GENTEXT" interactive session is listed in Table 6. The variable names, the one-line definitions of the variables, and the "help" paragraphs, created by the GENOPT user during the GENTEXT interactive session, **will be seen by the "end" user.** If the GENOPT user has done his or her job well, the program system created by GENOPT (BEGIN, DECIDE, MAINSETUP, OPTIMIZE, CHOOSEPLOT, etc.), that is, the program system for the generic case, "**equivellipse**", to be used later by the "end" user for specific cases (such as a specific case called "eqellipse"), will be user-friendly. The numbering (e.g. 10.1) of the one-line prompting phrases and of the "help" paragraphs (e.g. 10.2) is created automatically by GENOPT. The "end" user always sees the one-line prompting phrases (e.g. "number of x-coordinates: npoint") during his or her interactive input session in "BEGIN". The "end" user will see the corresponding "help" paragraph if he or she types "h"(elp) in response to the one-line prompting phrase. If there is no "help" paragraph "BEGIN" will respond to the user's "h" with the phrase, "There is no help."

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  10.1 number of x-coordinates: npoint
  10.2
       The ellipse is simulated by a number of shell segments (try 10)
       each of which has constant meridional curvature (toroidal).
       npoint is the number of x-coordinates corresponding to the
       ends of the toroidal segments that make up the equivalent
       ellipse. You might try to simulate the ellipse by using 10
       toroidal segments. Then the value of npoint would be 11
       npoint includes the apex of the ellipse (x = 0) and the equator
       of the ellipse (x = a, in which a = semimajor axis length).

  15.1 Number Ixinpu  of rows in the array  xinput: Ixinpu
  20.1 x-coordinates for ends of segments: xinput
  20.2
       Please make sure to include x = 0 and x = a (equator) when
       you provide values for xinput.

  25.1 length of semi-major axis: ainput
  25.2
       ainput is the maximum "x=dimension" of the ellipse.
       The equation for the ellipse is x^2/a^2 + y^2/b^2 = 1.0

  30.1 length of semi-minor axis of ellipse: binput
  30.2
       binput is the y-dimension of the ellipse, the equation for which
       is x^2/a^2 + y^2/b^2 = 1.0.
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35.1 number of nodal points per segment: nodes
35.2
     If you have about 10 segments, use a number less than 31.
     Use an odd number, greater than or equal to 11

40.1 max. x-coordinate for x-coordinate callouts: xlimit
40.2
     xlimit has two functions:
     1. a delimiter for the definition of callouts:
     for x < xlimit callouts are x-coordinates.
     for x > xlimit callouts are y-coordinates.
     Set xlimit equal to about a/2, where a = length of the
     semi-major axis of the ellipse.
     2. a delimiter for the boundary between Region 1
     and Region 2, Design margins for maximum stress and
     minimum buckling load in the shell skin and in the
     isogrid stiffeners can be computed in two regions,
     Region 1: 0 < x < xlimit, and
     Region 2: xlimit < x < semi-major axis.

45.1 skin thickness at xinput: THKSKN
45.2
     xinput is the vector of x-coordinate callouts for
     thickness of the shell skin and height of the
     isogrid stiffeners.

50.1 height of isogrid members at xinput: HIGHST
50.2
     xinput is the vector of x-coordinate callouts for
     thickness of the shell skin and height of the
     isogrid stiffeners.

55.1 spacing of the isogrid members: SPACNG
55.2
     SPACNG = altitude of the equilateral triangle between adjacent
     isogrid members, measured to middle surfaces of isogrid members.
     SPACNG = (length of side of triangle)*sqrt(3)/2.
     SPACNG is constant over the entire shell.

60.1 thickness of an isogrid stiffening member: THSTIF
60.2
     THSTIF is constant over the entire shell.

65.1 thickness of the cylindrical shell: THKCYL
70.1 radius of the cylindrical shell: RADCYL
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