Table 25 Portion of the **behavior.new** file generated automatically by GENTEXT that corresponds to the GENOPT user's input listed in Table 15. The complete behavior.new file, available after the GENOPT user has completed the interactive "GENTEXT" session, is listed in Table a13 of the appendix. The behavior.new file created by GENTEXT contains the **skeletal** version of SUBROUTINES BEHXi, I = 1, 2, 3... In the present application of GENOPT the GENOPT user does not modify these **skeletal** subroutines, but instead "**fleshes out**" only SUBROUTINE STRUCT. The file, **equivellipse.SUB**, contains similar FORTRAN coding as behavior.new after the GENOPT user's completion of the "GENTEXT" interactive session. equivellipse.SUB lacks a copy of the file, equivellipse.DEF and lacks the labeled common blocks generated automatically by “GENTEXT” and added to each BEHXi, i=1,14, in the skeletal behavior.new file. equivellipse.SUB is listed in Table a28 of the appendix.

```
==============================================================
C=DECK      BEHX4
      SUBROUTINE BEHX4
     1 (IFILE,NPRINX,IMODX,IFAST,ILOADX,JCOL,PHRASE)
C
C   PURPOSE: OBTAIN buckling load factor, isogrid member, mode 1
C
C   YOU MUST WRITE CODE THAT, USING
C   THE VARIABLES IN THE LABELLED
C   COMMON BLOCKS AS INPUT, ULTIMATELY
C   YIELDS THE RESPONSE VARIABLE FOR
C   THE ith LOAD CASE, ILOADX:
C
C     STFBK1(ILOADX,JCOL)
C
C   AS OUTPUT. THE ith CASE REFERS
C   TO ith ENVIRONMENT (e.g. load com-
C   bination).
C   THE jth COLUMN  (JCOL)
C   INDEX IS DEFINED AS FOLLOWS:
C     number of regions for computing behavior
C
C   DEFINITIONS OF INPUT DATA:
C    IMODX  = DESIGN CONTROL INTEGER:
C     IMODX = 0 MEANS BASELINE DESIGN
C     IMODX = 1 MEANS PERTURBED DESIGN
C     IFAST = 0 MEANS FEW  SHORTCUTS FOR PERTURBED DESIGNS
C     IFAST = 1 MEANS MORE SHORTCUTS FOR PERTURBED DESIGNS
C    IFILE = FILE FOR OUTPUT LIST:
C    NPRINX= OUTPUT CONTROL INTEGER:
C     NPRINX=0 MEANS SMALLEST AMOUNT
C     NPRINX=1 MEANS MEDIUM AMOUNT
```

```
C     NPRINX=2 MEANS LOTS OF OUTPUT
C
C     ILOADX = ith LOADING COMBINATION
C     JCOL   = jth column of STFBK1
C     JCOL   = number of regions for computing behavior
C     PHRASE = buckling load factor, isogrid member, mode 1
C
C   OUTPUT:
C
C     STFBK1(ILOADX,JCOL)
C
       CHARACTER*80 PHRASE
C  INSERT ADDITIONAL COMMON BLOCKS:
      (lines skipped to save space)
      COMMON/FV28/STFBK1(20,10),STFBK1A(20,10),STFBK1F(20,10)
      REAL STFBK1,STFBK1A,STFBK1F
      COMMON/FV31/SKNST1(20,10),SKNST1A(20,10),SKNST1F(20,10)
      REAL SKNST1,SKNST1A,SKNST1F
      (lines skipped to save space)
C
C  INSERT SUBROUTINE STATEMENTS HERE.
C
C
      RETURN
      END
C
C
C=DECK      BEHX5
      SUBROUTINE BEHX5
     1 (IFILE,NPRINX,IMODX,IFAST,ILOADX,JCOL,PHRASE)
C
C   PURPOSE: OBTAIN maximum stress in the shell skin, mode 1
C
C   YOU MUST WRITE CODE THAT, USING
C   THE VARIABLES IN THE LABELLED
C   COMMON BLOCKS AS INPUT, ULTIMATELY
C   YIELDS THE RESPONSE VARIABLE FOR
C   THE ith LOAD CASE, ILOADX:
C
C     SKNST1(ILOADX,JCOL)
C
C   AS OUTPUT. THE ith CASE REFERS
C   TO ith ENVIRONMENT (e.g. load com-
C   bination).
C   THE jth COLUMN  (JCOL)
C   INDEX IS DEFINED AS FOLLOWS:
C     number of regions for computing behavior
C
```

```
C   DEFINITIONS OF INPUT DATA:
    (lines skipped to save space)
C     ILOADX = ith LOADING COMBINATION
C     JCOL   = jth column of SKNST1
C     JCOL   = number of regions for computing behavior
C     PHRASE = maximum stress in the shell skin, mode 1
C
C   OUTPUT:
C
C     SKNST1(ILOADX,JCOL)
C
       CHARACTER*80 PHRASE
C  INSERT ADDITIONAL COMMON BLOCKS:
      (lines skipped to save space)
      COMMON/FV28/STFBK1(20,10),STFBK1A(20,10),STFBK1F(20,10)
      REAL STFBK1,STFBK1A,STFBK1F
      COMMON/FV31/SKNST1(20,10),SKNST1A(20,10),SKNST1F(20,10)
      REAL SKNST1,SKNST1A,SKNST1F
      (lines skipped to save space)
C
C  INSERT SUBROUTINE STATEMENTS HERE.
C
C
      RETURN
      END
```

==========

NOTE: IN THIS PARTICULAR APPLICATION OF GENOPT THE GENOPT USER (THE WRITER) DECIDED THAT THE "BEHAVIOR" SUBROUTINES, SUBROUTINE BEHXi, i = 1, 2, 3, 4,...14, WERE NOT TO BE MODIFIED. INSTEAD, THE GENOPT USER DECIDED FOR VARIOUS REASONS THAT THE OUTPUT ORDINARILY TO BE GENERATED BY "BEHXi" WOULD INSTEAD BE COMPUTED IN SUBROUTINE STRUCT. THE SKELETAL "BEHXi" SUBROUTINES THEREFORE DO NOTHING IN THIS APPLICATION. HOWEVER, TWO OF THEM ARE LISTED HERE IN ORDER TO INFORM THE READER THAT IN DIFFERENT APPLICATIONS OF GENOPT, SUCH AS THOSE DESCRIBED IN REFS. [2 - 7], THE GENOPT USER MAY DECIDE TO "FLESH OUT" THE "BEHXi" SUBROUTINES INSTEAD OF CREATING AN ELABORATE SUBROUTINE STRUCT, AS WAS DONE HERE. SEE TABLE a31 IN THE APPENDIX FOR A RELATIVELY SIMPLE EXAMPLE IN WHICH THE SKELETAL "BEHXi" SUBROUTINES ARE "FLESHED OUT" BY THE GENOPT USER.