```
CLEAR STORAGE 1     ,008015,022026,030037,044,049,053053N000000N00001026                                  1
CLEAR STORAGE 2     L068116,105106,110117B101/I9I#071029C029056B026/B001/0991,001/001117I0?                2
BOOTSTRAP           ,008015,022029,036040,047054,061068,072/061039             ,0010011040                3

                         FORTRAN COMPILER -- DO PHASE -- PHASE 46                                PAGE    1

 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

 101               JOB   FORTRAN COMPILER -- DO PHASE -- PHASE 46
 102               CTL   6611
 103         *
 104         * STRINGS OF UNCONDITIONAL BRANCH INSTRUCTIONS AND PARAMETERS
 105         * ARE GENERATED IN-LINE.  AN UNCONDITIONAL BRANCH IS GENERATED
 106         * TO FOLLOW THE LAST STATEMENT WITHIN THE RANGE OF THE DO
 107         *
 108         X1     EQU   89                                                    0089
 109         X2     EQU   94                                                    0094
 110         X3     EQU   99                                                    0099
 111         *
 112         * STUFF IN THE RESIDENT AREA
 113         *
 114         PHASID EQU   110  PHASE ID, FOR SNAPSHOT DUMPS                    0110
 115         NEGAR2 EQU   142  LOOKS LIKE NEGARY -- SEE PHASE 20               0142
 116         DOCNT  EQU   151  COUNT OF DO STATEMENTS                          0151
 117         GLOBER EQU   184  GLOBAL ERROR FLAG -- WM MEANS ERROR            0184
 118         SNAPSH EQU   333  CORE DUMP SNAPSHOT                             0333
 119         LOADNX EQU   700  LOAD NEXT OVERLAY                              0700
 120         CLEARL EQU   707  CS AT START OF OVERLAY LOADER                   0707
 121         CDOVLY EQU   769  1 IF RUNNING FROM CARDS, N IF FROM TAPE        0769
 122         LOADXX EQU   793  EXIT FROM OVERLAY LOADER                        0793
 123         *
 124               ORG   838                                                         0838
 125         LOADDD EQU   *&1          LOAD ADDRESS                            0838
 126    838  BEGINN SW    GM,GM3                                            7  0838  , V98 W26            4
 127    845         SW    GM4,GM2                                           7  0845  , W31 W22            4
 128    852         MCW   X3,SX3                                            7  0852  M 099 W37            4
 129    859  LOOP   BW    DONE,0&X1                                         8  0859  V V33 0|0 1          4
 130    867         MCW   KLESS,2&X1  MARK TOP OF CODE -- BOTTOM OF FREE    7  0867  M W38 0|2            4
 131    874         SBR   TSTLES&6,2&X1                                     7  0874  H S65 0|2            5
 132    881         C     0&X1                                              4  0881  C 0|0                5
 133    885         SAR   X1                                                4  0885  Q 089                5
 134    889         C     2&X1,KD  DO STATEMENT?                            7  0889  C 0|2 W39            5
 135    896         BU    ALMOST   NO                                       5  0896  B V26 /              5
 136    901         CW    111,112                                           7  0901  ) 111 112            5
 137    908         CW    113,114                                           7  0908  ) 113 114            6
 138    915         MCW   5&X1,X2  ADDRESS OF SEQUENCE NUMBER               7  0915  M 0|5 094            6
 139    922         MCW   0&X2,SEQNO                                        7  0922  M 0!0 W42            6
 140    929         MCW   0&X1,X2                                           7  0929  M 0|0 094            6
 141    936         SAR   X1                                                4  0936  Q 089                6
 142    940         MCW   0&X2,SEQEND                                       7  0940  M 0!0 W45            6
 143    947         ZA    SEQNO,SEQDIF                                      7  0947  ? W42 W48            7
 144    954         S     SEQEND,SEQDIF                                     7  0954  S W45 W48            7
 145    961         MCW   NOP,SWICH1                                        7  0961  M W49 S12            7
 146    968         BWZ   MSG38,SEQDIF,B  ILLEGAL RANGE IF POSITIVE         8  0968  V T97 W48 B          7
 147    976         MCW   X1,X2                                             7  0976  M 089 094            7
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SEQ PG LIN  LABEL   OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
148    983          MCW   KB3,F5                                            7  0983  M W52 W21            8
149    990          MCW   KT,LONGOP                                         7  0990  M W53 W27            8
150    997          MCW   BRANCH,SWICH2                                     7  0997  M W54 S16            8
151  1 004  NESTED C     0&X2  DOWN TO BODY OF STMT BELOW DO                4  1004  C 0!0                8
152  1 008          C                                                       1  1008  C                    8
153  1 009          SAR   X2                                                4  1009  Q 094                8
154  1 013          C     2&X2,KD  IS IT A DO STATEMENT?                    7  1013  C 0!2 W39            8
155  1 020          BU    NOTDO                                             5  1020  B |90 /              9
156  1 025          MCW   0&X2,X3                                          7  1025  M 0!0 099            9
157  1 032          C     0&X3,SEQNO  PROPERLY NESTED?                      7  1032  C 0?0 W42            9
158  1 039          BH    NESTED      YES                                   5  1039  B |04 U              9
159  1 044          C     0&X3,SEQEND                                       7  1044  C 0?0 W45            9
160  1 051          BH    MSG39  ILLEGAL DO NESTING                         5  1051  B U42 U              9
161  1 056          BCE   *&8,1&X2,H  CO-ENDING?                           8  1056  B |71 0!1 H         10
162  1 064          MCW   KE,1&X2  NOT CO-ENDING                           7  1064  M W55 0!1            10
163  1 071          BL    NOTDO                                             5  1071  B |90 T              10
164  1 076          MCW   KH,1&X2  CO-ENDING AFTER ALL                     7  1076  M W56 0!1            10
165  1 083          MCW   5&X2,F5                                          7  1083  M 0!5 W21            10
166  1 090  NOTDO   BCE   COEND,4&X1,H                                     8  1090  B /20 0|4 H          11
167  1 098          MCW   NOP,SWICH2                                       7  1098  M W49 S16            11
168  1 105          BCE   *&8,4&X1,}                                       8  1105  B /20 0|4 } GMARK    11
169  1 113          MCW   BRANCH,LONGOP                                    7  1113  M W54 W27            11
170  1 120  COEND   MCW   SEQEND,LONG                                      7  1120  M W45 W34            11
171  1 127          SW    6&X1                                              4  1127  , 0|6                12
172  1 131          MCW   8&X1,SHORT                                       7  1131  M 0|8 W25            12
173  1 138          MCW   8&X1,F6                                          7  1138  M 0|8 W30            12
174          *
175          * TEST SYNTAX AND GENERATE CODE
176          *
177  1 145  GEN     B     SUB                                               4  1145  B T01                12
178  1 149          DCW   @,@                                               1  1149                       12
179  1 152          DSA   F4                                                3  1152  W18                  12
180  1 153          B     SUB                                               4  1153  B T01                12
181  1 157          DCW   @#@                                               1  1157                       13
182  1 160          DSA   F1                                                3  1160  W09                  13
183  1 161          B     SUB                                               4  1161  B T01                13
184  1 165          DCW   @,@                                               1  1165                       13
185  1 168          DSA   F2                                                3  1168  W12                  13
186  1 169          BW    NRBOT,0&X1                                        8  1169  V T86 0|0 1          13
187  1 177          B     SUB                                               4  1177  B T01                13
188  1 181          DCW   @,@                                               1  1181                       14
189  1 184          DSA   F3                                                3  1184  W15                  14
190  1 185          BW    BOTTOM,0&X1                                       8  1185  V /97 0|0 1          14
191  1 193          B     MSG40  SYNTAX ERROR                               4  1193  B U80                14
192          *
193  1 197  BOTTOM  MCW   SX3,X3                                           7  1197  M W37 099            14
194  1 204          MN    0&X1                                              4  1204  D 0|0                14
195  1 208          SAR   X1                                                4  1208  Q 089                14
196  1 212  SWICH1  NOP   TSTLES                                           4  1212  N S59                15
197  1 216  SWICH2  NOP   SKIP                                            4  1216  N S40                15
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SEQ PG LIN  LABEL   OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD
198  1 220          A     KP1,DOCNT                                          7  1220  A W57 151           15
199  1 227          LCA   LONG,0&X3                                          7  1227  L W34 0?0           15
200  1 234          LCA                                                      1  1234  L                   15
201  1 235          LCA                                                      1  1235  L                   15
202  1 236          SBR   X3                                                 4  1236  H 099               15
203  1 240  SKIP    LCA   SHORT,0&X3                                         7  1240  L W25 0?0           16
204  1 247          CHAIN 8                                                                MACRO
205                 LCA                                                      1  1247  L           GEN     16
206                 LCA                                                      1  1248  L           GEN     16
207                 LCA                                                      1  1249  L           GEN     16
208                 LCA                                                      1  1250  L           GEN     16
209                 LCA                                                      1  1251  L           GEN     16
210                 LCA                                                      1  1252  L           GEN     16
211                 LCA                                                      1  1253  L           GEN     17
212                 LCA                                                      1  1254  L           GEN     17
213  1 255          SBR   SX3                                                4  1255  H W37               17
214  1 259  TSTLES  BCE   LOOP,0,<                                           8  1259  B 859 000 <         17
215  1 267          CS    332                                                4  1267  / 332               17
216  1 271          CS                                                       1  1271  /                   17
217  1 272          CC    1                                                  2  1272  F 1                 17
218  1 274          MCW   ERROR2,270                                         7  1274  M W93 270           18
219  1 281          W                                                        1  1281  2                   18
220  1 282          CC    1                                                  2  1282  F 1                 18
221  1 284          BCE   HALT,CDOVLY,1                                     8  1284  B S97 769 1         18
222  1 292          RWD   1                                                  5  1292  U %U1 R             18
223  1 297  HALT    H     HALT                                               4  1297  . S97               18
224         *
225         * CHECK THE NEXT CHARACTER AGAINST THE ONE AT 0&X1, THEN
226         * CHECK THAT THE NEXT THREE HAVE NUMERIC PARTS IN 0..9,
227         * THAT IS, THEY CONSTITUTE AN ADDRESS.
228         *
229  1 301  SUB     SBR   X2                                                 4  1301  H 094               18
230  1 305          C     0&X1,0&X2                                          7  1305  C 0|0 0!0           19
231  1 312          SAR   X1                                                 4  1312  Q 089               19
232  1 316          BU    MSG40  SYNTAX ERROR IF NOT THE EXPECTED CHAR       5  1316  B U80 /             19
233  1 321          MCW   3&X2,*&7                                           7  1321  M 0!3 T34           19
234  1 328          MCW   0&X1,0                                             7  1328  M 0|0 000           19
235  1 335          S     W1                                                 4  1335  S W94               19
236  1 339  GOTDIG  A     KP1,W1                                             7  1339  A W57 W94           20
237  1 346          BCE   4&X2,W1,D  EXIT IF THREE TIMES THROUGH LOOP       8  1346  B 0!4 W94 D         20
238  1 354          MN    0&X1,*&12                                          7  1354  D 0|0 T72           20
239  1 361          SAR   X1                                                 4  1361  Q 089               20
240  1 365          BCE   GOTDIG,DIGITS,0                                   8  1365  B T39 X04 0         20
241  1 373          CHAIN 9                                                                MACRO
242                 BCE                                                      1  1373  B           GEN     20
243                 BCE                                                      1  1374  B           GEN     20
244                 BCE                                                      1  1375  B           GEN     21
245                 BCE                                                      1  1376  B           GEN     21
246                 BCE                                                      1  1377  B           GEN     21
247                 BCE                                                      1  1378  B           GEN     21
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
248                BCE                                                     1  1379  B           GEN     21
249                BCE                                                     1  1380  B           GEN     21
250                BCE                                                     1  1381  B           GEN     21
251  1 382         B     MSG40  SPECIAL CHARACTER MEANS SYNTAX ERROR        4  1382  B U80               22
252         *
253  1 386  NRBOT  MCW   NEGAR2,F3                                         7  1386  M 142 W15           22
254  1 393         B     BOTTOM                                            4  1393  B /97               22
255         *
256         * ILLEGAL RANGE OF DO
257         *
258  1 397  MSG38  CS    332                                               4  1397  / 332               22
259  1 401         CS                                                      1  1401  /                   22
260  1 402         SW    GLOBER                                            4  1402  , 184               22
261  1 406         MN    SEQNO,245                                         7  1406  D W42 245           22
262  1 413         MN                                                      1  1413  D                   23
263  1 414         MN                                                      1  1414  D                   23
264  1 415         MCW   ERR38                                             4  1415  M X46               23
265  1 419         W                                                       1  1419  2                   23
266  1 420         BCV   *&5                                               5  1420  B U29 @             23
267  1 425         B     *&3                                               4  1425  B U31               23
268  1 429         CC    1                                                 2  1429  F 1                 23
269  1 431  SET1   MCW   BRANCH,SWICH1                                     7  1431  M W54 S12           24
270  1 438         B     GEN                                               4  1438  B /45               24
271         *
272         * ILLEGAL NESTING
273         *
274  1 442  MSG39  CS    332                                               4  1442  / 332               24
275  1 446         CS                                                      1  1446  /                   24
276  1 447         SW    GLOBER                                            4  1447  , 184               24
277  1 451         MN    SEQNO,241                                         7  1451  D W42 241           24
278  1 458         MN                                                      1  1458  D                   24
279  1 459         MN                                                      1  1459  D                   25
280  1 460         MCW   ERR39                                             4  1460  M X84               25
281  1 464         W                                                       1  1464  2                   25
282  1 465         BCV   *&5                                               5  1465  B U74 @             25
283  1 470         B     *&3                                               4  1470  B U76               25
284  1 474         CC    1                                                 2  1474  F 1                 25
285  1 476         B     SET1                                              4  1476  B U31               25
286         *
287         * SYNTAX ERROR
288         *
289  1 480  MSG40  CS    332                                               4  1480  / 332               26
290  1 484         CS                                                      1  1484  /                   26
291  1 485         SW    GLOBER                                            4  1485  , 184               26
292  1 489         MN    SEQNO,235                                         7  1489  D W42 235           26
293  1 496         MN                                                      1  1496  D                   26
294  1 497         MN                                                      1  1497  D                   26
295  1 498         MCW   ERR40                                             4  1498  M Y16               26
296  1 502         W                                                       1  1502  2                   27
297  1 503         BCV   *&5                                               5  1503  B V12 @             27
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD
298  1 508         B     *&3                                                  4  1508  B V14              27
299  1 512         CC    1                                                    2  1512  F 1                27
300  1 514         C     1&X1                                                 4  1514  C 0|1              27
301  1 518         SAR   X1                                                   4  1518  Q 089              27
302  1 522         B     TSTLES                                               4  1522  B S59              27
303         *
304  1 526  ALMOST SBR   X1,5&X1                                             7  1526  H 089 0|5          28
305  1 533  DONE   MCW   SX3,X3                                              7  1533  M W37 099          28
306  1 540         MN    0&X3                                                 4  1540  D 0?0              28
307  1 544         SAR   X2                                                   4  1544  Q 094              28
308  1 548  CSLOOP CS    0&X2                                                 4  1548  / 0!0              28
309  1 552         SBR   X2                                                   4  1552  H 094              28
310  1 556         C     0&X2,1899  SHOULD THIS BE @1899@???                  7  1556  C 0!0 Y99          28
311  1 563         BU    CSLOOP                                               5  1563  B V48 /            29
312  1 568         BSS   SNAPSH,E                                             5  1568  B 333 E            29
313  1 573         SBR   LOADXX&3,1175                                       7  1573  H 796 /75          29
314  1 580         SBR   CLEARL&3,2499                                       7  1580  H 710 M99          29
315  1 587         LCA   RESORT,PHASID                                       7  1587  L Y24 110          29
316  1 594         B     LOADNX                                               4  1594  B 700              29
317  1 598  GM     DC    @}@                                                  1  1598             GMARK   29
318         *
319         * GENERATED CODE TEMPLATE
320         *
321  1 602         DCW   @T924@                                               4  1602                     30
322  1 606         DCW   @T921@                                               4  1606                     30
323  1 609  F1     DCW   #3                                                   3  1609                     30
324  1 612  F2     DCW   #3                                                   3  1612                     30
325  1 615  F3     DCW   #3                                                   3  1615                     30
326  1 618  F4     DCW   #3                                                   3  1618                     30
327  1 621  F5     DCW   #3                                                   3  1621                     30
328  1 622  GM2    DC    @}@                                                  1  1622             GMARK   30
329  1 625  SHORT  DC    #3                                                   3  1625                     30
330  1 626  GM3    DC    @}@                                                  1  1626             GMARK   30
331  1 627  LONGOP DCW   @T@                                                  1  1627                     31
332  1 630  F6     DC    #3                                                   3  1630                     31
333  1 631  GM4    DC    @}@                                                  1  1631             GMARK   31
334  1 634  LONG   DC    #3                                                   3  1634                     31
335         *
336         * DATA
337         *
338  1 637  SX3    DCW   #3                                                   3  1637                     31
339  1 638  KLESS  DCW   @<@                                                  1  1638                     31
340  1 639  KD     DCW   @D@                                                  1  1639                     31
341  1 642  SEQNO  DCW   #3  SEQUENCE NUMBER OF DO                           3  1642                     31
342  1 645  SEQEND DCW   #3  SEQUENCE NUMBER OF FINAL STATEMENT OF DO        3  1645                     31
343  1 648  SEQDIF DCW   #3  SEQNO - SEQEND -- BETTER BE NEGATIVE            3  1648                     31
344  1 649  NOP    NOP                                                       1  1649  N                  32
345  1 652  KB3    DCW   #3                                                   3  1652                     32
346  1 653  KT     DCW   @T@                                                  1  1653                     32
347  1 654  BRANCH B                                                         1  1654  B                  32
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SEQ PG LIN  LABEL   OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
348  1 655  KE      DCW   @E@                                               1  1655                      32
349  1 656  KH      DCW   @H@                                               1  1656                      32
350  1 657  KP1     DCW   &1                                                1  1657                      32
351  1 693  ERROR2  DCW   @MESSAGE 2 - OBJECT PROGRAM TOO LARGE@            36  1693                      33
352  1 694  W1      DCW   #1                                                1  1694                      33
353  1 704  DIGITS  DCW   @0123456789@                                     10  1704                      34
354  1 746  ERR38   DCW   @ERROR 38 - ILLEGAL RANGE OF DO, STATEMENT @     42  1746                      36
355  1 784  ERR39   DCW   @ERROR 39 - ILLEGAL NESTING, STATEMENT @         38  1784                      37
356  1 816  ERR40   DCW   @ERROR 40 - DO SYNTAX, STATEMENT @               32  1816                      38
357  1 824  RESORT  DCW   @RESORT 1@                                        8  1824                      39
358  1 825          DCW   @}@                                               1  1825            GMARK     39
359                 ORG   201                                                      0201
360    203          DSA   LOADDD    LOAD ADDRESS FOR CARD-TO-TAPE PROGRAM   3  0203  838                 40
361                 EX    BEGINN                                                   B 838                 41
362                 END                                                            / 000 080
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
ALMOST	1526	BEGINN	838	BOTTOM	1197	BRANCH	1654	CDOVLY	769	CLEARL	707	COEND	1120
CSLOOP	1548	DIGITS	1704	DOCNT	151	DONE	1533	ERR38	1746	ERR39	1784	ERR40	1816
ERROR2	1693	F1	1609	F2	1612	F3	1615	F4	1618	F5	1621	F6	1630
GEN	1145	GLOBER	184	GM	1598	GM2	1622	GM3	1626	GM4	1631	GOTDIG	1339
HALT	1297	KB3	1652	KD	1639	KE	1655	KH	1656	KLESS	1638	KP1	1657
KT	1653	LOADDD	838	LOADNX	700	LOADXX	793	LONG	1634	LONGOP	1627	LOOP	859
MSG38	1397	MSG39	1442	MSG40	1480	NEGAR2	142	NESTED	1004	NOP	1649	NOTDO	1090
NRBOT	1386	PHASID	110	RESORT	1824	SEQDIF	1648	SEQEND	1645	SEQNO	1642	SET1	1431
SHORT	1625	SKIP	1240	SNAPSH	333	SUB	1301	SWICH1	1212	SWICH2	1216	SX3	1637
TSTLES	1259	W1	1694	X1	89	X2	94	X3	99				