```
SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

101               JOB   FORTRAN COMPILER -- CONSTANTS PHASE TWO -- 19
102               CTL   6611
103         *
104         * EXTERNALLY REFERENCED SYMBOLS ARE MARKED WITH ASTERISK IN COLUMN 1.
105         *
106         * SAME AS VARIABLES PHASE TWO.  THE TABLE OF SIMPLE VARIABLES
107         * IS DESTROYED
108         *
109         X1     EQU   89                                                  0089
110         X2     EQU   94                                                  0094
111         X3     EQU   99                                                  0099
112         *
113         * ON ENTRY, 83 IS THE TOP OF CODE AND X2 IS ONE BELOW THE
114         * BOTTOM OF CODE, AT THE TOP OF MEMORY.
115         *
116         * STUFF IN THE RESIDENT AREA
117         *
118         TOPCOR EQU   688  TOP CORE ADDRESS FROM PARAM CARD                0688
119         IMOD   EQU   690  INTEGER MODULUS -- NUMBER OF DIGITS             0690
120         MANTIS EQU   692  FLOATING POINT MANTISSA DIGITS & 2 FOR EXP      0692
121         *
122                EXT00   SNAPSH, LOADNX, CDOVLY                                          MACRO
123         SNAPSH EQU   333                                                  0333          GEN
124         PHASLD EQU   381                                                  0381          GEN
125         SNAPEX EQU   564                                                  0564          GEN
126         LOADNX EQU   700   CARD OVERLAY UNLESS NOP                       0700          GEN
127         CDOVLY EQU   700   1 IF LOADING FROM CARDS, N IF FROM TAPE       0700          GEN
128         TPREAD EQU   704   LOAD OVERLAY FROM TAPE                        0704          GEN
129         TPERR  EQU   728                                                  0728          GEN
130         *
131                EXT03   START, TOP OF PHASE 3                                            MACRO
132         BEGIN3 EQU   838                                                  0838          GEN
133         TOP3   EQU   2600                                                 2600          GEN
134         BOTADR EQU   TOP3-1  BOTTOM OF WORKING CORE                       2599
135         *
136         110    DCW   @CONST TWO@                                      9  0110                    1
137         089    DCW   000                                              3  0089                    2
138         091    DC    00                                               2  0091                    2
139         099    DCW   000                                              3  0099                    3
140         100    DC    0                                                1  0100                    3
141         *
142         PHAS19 LDPH  CONST TWO,LOADAD,BEGN19,,,19                               MACRO
            * PHAZ   LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]      GEN
            *        XFR  PHASZ     PROHIBITED IN A MACRO                          GEN
            *                                                                      GEN
            * LOAD A BLOCK                                                        GEN
            *                                                                      GEN
143         )6J003 EQU   110  PHASE ID                                        0110          GEN
144         )6K003 EQU   700  LOAD NEXT PHASE                                 0700          GEN
145         )6L003 EQU   704  TAPE READ INSTRUCTION                           0704          GEN
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SEQ PG LIN  LABEL   OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

146         )6M003  EQU   728  TAPE ERROR HANDLER                             0728            GEN
            *                                                                               GEN
147                 ORG   201                                                      0201
148         PHAS19  EQU   *&1                                                   0201            GEN
149                 LCA   )9J003,)6J003                                      7  0201  L 252 110 GEN      4   252     110
150                 BCE   )6K003,)6K003,1      Q: LOADING FROM CARDS?        8  0208  B 700 700 1 GEN      4   700     700
151                 BCE   )6K003,)6L003&4,0    Q: LOADING FROM AUTOCODER TAPE? 8  0216  B 700 708 0 GEN      4   700     708
152                 RTW   1,LOADAD             READ THE BLOCK                8  0224  L %U1 838 R GEN      4   %U1     838
153                 BER   )6M003               Q: TAPE ERROR?                5  0232  B 728 L     GEN      4   728
154                 CS    BEGN19,)9R003        ENTER THE BLOCK               7  0237  / 849 256   GEN      5   849     256
155         )9J003  DCW   @CONST TWO@          PHASE ID                      9  0252            GEN      5
156                 DC    #1                                               1  0253            GEN      5
157                 DC    @19@          PHASE NUMBER                       2  0255            GEN      5
158         )9R003  DCW   @}@                                              1  0256            GEN      5
159                 XFR   PHAS19                                                  B 201             5   201
160         *
161                 ORG   BEGIN3                                                  0838
162         LOADAD  EQU   *&1          LOAD ADDRESS                          0838
163 *  840  TOPCOD  DCW   #3  TOP OF CODE & X00 - 1                          3  0840                    6
164 *  845  DIFF    DCW   #5  TOP OF CORE - TOPCOD AS FIVE DIGITS            5  0845                    6
165 *  848  BNDRY   DCW   #3                                                 3  0848                    6
166         *
167         * CLEAR FROM THE BOTTOM OF CODE DOWN TO BOTADR & 1
168         *
169 *  849  BEGN19  MCW   X2,X3                                              7  0849  M 094 099       6   094     099
170    856          SW    GM                                                4  0856  , T08           6  1308
171    860  CLRL    CS    0&X3                                              4  0860  / 0?0           6   000+3
172    864          SBR   X3                                                4  0864  H 099           6   099
173    868          C     X3,BOTCLR                                         7  0868  C 099 T43       7   099    1343
174    875          BU    CLRL                                              5  0875  B 860 /         7   860
175         *
176         * MOVE CODE BACK DOWN TO BOTADR-2
177         *
178    880          SBR   X1,BOTADR  WHY NOT                                7  0880  H 089 N99       7   089    2599
179    887          MN    0&X1         JUST                                 4  0887  D 0|0           7   000+1
180    891          SAR   X1             SAR  X1,BOTADR-1?                 4  0891  Q 089           7   089
181    895  MOVE    MCM   0&X2                                              4  0895  P 0!0           7   000+2
182    899          SAR   SX2&6                                             4  0899  Q 921           7   921
183    903          MCM   0&X2,1&X1                                         7  0903  P 0!0 0|1       8   000+2   001+1
184    910          MN                                                      1  0910  D               8
185    911          SBR   X1                                                4  0911  H 089           8   089
186    915  SX2     SBR   X2,0-0                                           7  0915  H 094 000       8   094     000
187    922          BCE   MOVE,0&X1,|  DO NOT SET WM UNDER RM               8  0922  B 895 0|0 |     8   895     000+1
188    930          MN    0&X2                                              4  0930  D 0!0           8   000+2
189    934          CW                                                      1  0934  )               8
190    935          SW    0&X1  UNDER GM                                    4  0935  , 0|0           9   000+1
191    939          C     X2,TOPCOR                                         7  0939  C 094 688       9   094     688
192    946          BU    MOVE                                              5  0946  B 895 /         9   895
193    951          CW    0&X2                                              4  0951  ) 0!0           9   000+2
194    955          CW                                                      1  0955  )               9
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

195    956         SBR   TOPCOD,1&X1  TOPCOD IS                      7  0956  H 840 0|1           9   840     001+1
196    963         MN    K99,TOPCOD     NOW TOP OF                   7  0963  D T07 840           9  1307     840
197    970         MN                     CODE & X00 - 1             1  0970  D                  10
198         *
199         * CLEAR FROM TOP OF CORE DOWN TO TOPCOD & 1
200         *
201    971         MCW   83,X3                                       7  0971  M 083 099          10   083     099
202    978  CLRL2  CS    0&X3                                       4  0978  / 0?0              10   000+3
203    982         SBR   X3                                         4  0982  H 099              10   099
204    986         C     X3,TOPCOD                                  7  0986  C 099 840          10   099     840
205    993         BU    CLRL2                                      5  0993  B 978 /            10   978
206    998         MCW   KLESS,0&X3                                 7  0998  M T44 0?0          10  1344     000+3
207  1 005         MCW   83,TOCONV                                  7  1005  M 083 T05          11   083    1305
208  1 012         B     CONV                                       4  1012  B S31              11  1231
209  1 016         MCW   CONV5,DIFF                                 7  1016  M T49 845          11  1349     845
210  1 023         MCW   TOPCOD,TOCONV                              7  1023  M 840 T05          11   840    1305
211  1 030         B     CONV                                       4  1030  B S31              11  1231
212  1 034         S     CONV5,DIFF                                 7  1034  S T49 845          11  1349     845
213  1 041         A     DIFF-1,W6                                  7  1041  A 844 T55          12   844    1355
214  1 048         A     W6                                         4  1048  A T55              12  1355
215  1 052         A     DIFF-1,W6                                  7  1052  A 844 T55          12   844    1355
216  1 059         A     CONV5,W6  DIFF * 1.3                       7  1059  A T49 T55          12  1349    1355
217         *
218         * CONVERT DIFF * 1.3 TO MACHINE ADDRESS
219         *
220  1 066         MCW   W6-3,X3                                    7  1066  M T52 099          12  1352     099
221  1 073         A     X3                                         4  1073  A 099              12   099
222  1 077         MZ    ZONES&X3,W6-2                              7  1077  Y T?9 T53          13  1309+3  1353
223  1 084         MZ    ZONES&1&X3,W6                              7  1084  Y TA0 T55          13  1310+3  1355
224  1 091         MCW   W6,X3                                      7  1091  M T55 099          13  1355     099
225         *
226  1 098         SW    2&X3                                       4  1098  , 0?2              13   002+3
227  1 102         MCW   KLESS                                      4  1102  M T44              13  1344
228  1 106         SBR   BNDRY                                      4  1106  H 848              13   848
229  1 110         MCW   X1,X2                                      7  1110  M 089 094          14   089     094
230  1 117         MN    0&X2                                       4  1117  D 0!0              14   000+2
231  1 121         SAR   X1                                         4  1121  Q 089              14   089
232  1 125         MCW   83,X3                                      7  1125  M 083 099          14   083     099
233  1 132         LCA   GM,1&X3                                    7  1132  L T08 0?1          14  1308     001+3
234  1 139         CS    299                                        4  1139  / 299              14   299
235  1 143         MCW   MANTIS,X3                                 7  1143  M 692 099          15   692     099
236  1 150         MCW   KZ1        AND A ZERO                      4  1150  M T56              15  1356
237  1 154         SW    200                                        4  1154  , 200              15   200
238  1 158         MCW   83,*&7                                     7  1158  M 083 /71          15   083    1171
239  1 165         LCA   199&X3,0   SPACE FOR A FP NUMBER           7  1165  L 1I9 000          15   199+3   000
240  1 172         SBR   83                                         4  1172  H 083              15   083
241  1 176         SBR   SPINT&6                                    4  1176  H /94              15  1194
242  1 180         MN    IMOD,X3                                    7  1180  D 690 099          16   690     099
243  1 187         MN                                               1  1187  D                  16
244  1 188  SPINT  LCA   199&X3,0   SPACE FOR AN INTEGER            7  1188  L 1I9 000          16   199+3   000
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SEQ PG LIN  LABEL   OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

245  1 195          SBR   X3                                                   4  1195  H 099              16   099
246  1 199          SBR   142                                                  4  1199  H 142              16   142
247  1 203          LCA   K1,0&X3                                             7  1203  L T57 0?0          16  1357     000+3
248  1 210          SBR   157                                                  4  1210  H 157              16   157
249  1 214          LCA   K15100                                               4  1214  L T60              17  1360
250  1 218          SBR   83                                                   4  1218  H 083              17   083
251          *
252          * DONE
253          *
254  1 222          BSS   SNAPSH,C                                            5  1222  B 333 C            17   333
255  1 252          B     LOADNX                                               4  1227  B 700              17   700
256          *
257          * CONVERT TOCONV FROM MACHINE ADDRESS FORMAT TO FIVE-DIGIT
258          * FORMAT IN CONV5
259          *
260  1 256  CONV   SBR   CONVX&3                                              4  1231  H T00              17  1300
261  1 260          MN    TOCONV,CONV5                                         7  1235  D T05 T49          17  1305    1349
262  1 267          MN                                                         1  1242  D                  17
263  1 268          MN                                                         1  1243  D                  18
264  1 269          MCW                                                        1  1244  M                  18
265  1 270          MZ    TOCONV,K99                                           7  1245  Y T05 T07          18  1305    1307
266  1 277          MZ    TOCONV-2,K99-1                                       7  1252  Y T03 T06          18  1303    1306
267  1 284          NOP   K99-1                                               4  1259  N T06              18  1306
268  1 288          SAR   X3                                                   4  1263  Q 099              18   099
269  1 292  CONVL  C     4&X3,K99                                             7  1267  C 0?4 T07          18   004+3  1307
270  1 299          SAR   X3                                                   4  1274  Q 099              19   099
271  1 303          A     KP1,CONV5-3                                          7  1278  A T61 T46          19  1361    1346
272  1 310          BU    CONVL                                                5  1285  B S67 /            19  1267
273  1 315          MZ    KB1,CONV5-3                                          7  1290  Y T62 T46          19  1362    1346
274  1 322  CONVX  B     0                                                    4  1297  B 000              19   000
275          *
276          * DATA
277          *
278  1 330  TOCONV DCW   @0J   @                                              5  1305                     19
279  1 332  K99    DCW   99                                                   2  1307                     19
280  1 333  GM     DC    @}@                                                  1  1308            GMARK    19
281          ZONES  EQU   *&1                                                    1309
282  1 365          DC    @99Z9R9I99ZZZRZIZ9RZRRRIR9IZIRIII@                  32  1340                     20
283  1 368  BOTCLR DSA   BOTADR  CLEAR DOWN TO HERE                           3  1343  N99                20  2599
284  1 369  KLESS  DCW   @<@                                                  1  1344                     20
285  1 374  CONV5  DCW   #5                                                   5  1349                     21
286  1 380  W6     DCW   #6                                                   6  1355                     21
287  1 381  KZ1    DCW   0                                                    1  1356                     21
288  1 382  K1     DCW   @1@                                                  1  1357                     21
289  1 385  K15100 DSA   15100                                               3  1360  A0?                21 15100
290  1 395  KP1    DCW   &1                                                   1  1361                     21
291  1 396  KB1    DCW   #1                                                   1  1362                     21
292  1 397  GMWM   DCW   @}@                                                  1  1363            GMARK    22
293                XFR   BEGN19                                                     B 849                22   849
294          CLRME  CLRA  BEGN19,GMWM                                                              MACRO
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR
            *      CLRA  CLRBOT,CLRTOP[,ORG,GMWMAD]                                                GEN
            *                                                                                      GEN
            * CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS                                    GEN
            *                                                                                      GEN
295               ORG   201                                                      0201
            *                                                                                      GEN
            * CLEAR DOWN TO CLRBOT & X00 THE EASY WAY                                             GEN
            *                                                                                      GEN
296         CLRME  EQU   *&1                                                 0201                GEN
297         )0J004 CS    GMWM         CLEAR FROM CLRTOP                  4  0201  / T63          GEN     23  1363
298               SBR   )0J004&3                                          4  0205  H 204          GEN     23   204
299               SBR   )0L004&6                                          4  0209  H 250          GEN     23   250
300               C     )0J004&3,)0M004   DOWN TO CLRBOT & X00?           7  0213  C 204 261      GEN     23   204     261
301               BU    )0J004                                            5  0220  B 201 /        GEN     23   201
            *                                                                                      GEN
            * NOW CLEAR DOWN TO CLRBOT THE HARD WAY                                               GEN
            *                                                                                      GEN
302         )0K004 C     )0L004&6,)0N004                                   7  0225  C 250 264      GEN     23   250     264
303               BU    )0L004                                            5  0232  B 244 /        GEN     23   244
304               CS    LOADNX,)0Q004  LOAD THE NEXT BLOCK AT 1           7  0237  / 700 271      GEN     24   700     271
305         )0L004 LCA   )0P004,0-0     CLEAR WITH BLANK AND WORD MARK    7  0244  L 265 000      GEN     24   265     000
306               SBR   )0L004&6                                          4  0251  H 250          GEN     24   250
307               B     )0K004                                            4  0255  B 225          GEN     24   225
308         )0M004 DSA   )0R004         CLRBOT & X00 - 1                  3  0261  899            GEN     24   899
309         )0N004 DSA   BEGN19         CLRBOT                            3  0264  849            GEN     24   849
310         )0P004 DCW   #1                                                1  0265                 GEN     24
311               DC    @CLRA @     IDENTIFY IN A DECK, TAPE, OR DUMP     5  0270                 GEN     24
312         )0Q004 DCW   @}@                                               1  0271                 GEN     25
313               ORG   BEGN19&X00                                                 0900
314         )0R004 EQU   *           CLRBOT & X00 - 1                        0899                GEN
315               XFR   CLRME                                                      B 201                 25   201
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J004	0201: 0	)0K004	0225: 0	)0L004	0244: 0	)0M004	0261: 0	)0N004	0264: 0	)0P004	0265: 0
)0Q004	0271: 0	)0R004	0899: 0	)6J003	0110: 0	)6K003	0700: 0	)6L003	0704: 0	)6M003	0728: 0
)9J003	0252: 0	)9R003	0256: 0	BEGIN3	0838: 0	BEGN19	0849: 0	BNDRY	0848: 0	BOTADR	2599: 0
BOTCLR	1343: 0	CDOVLY	0700: 0	CLRL	0860: 0	CLRL2	0978: 0	CLRME	0201: 0	CONV	1231: 0
CONV5	1349: 0	CONVL	1267: 0	CONVX	1297: 0	DIFF	0845: 0	GM	1308: 0	GMWM	1363: 0
IMOD	0690: 0	K1	1357: 0	K15100	1360: 0	K99	1307: 0	KB1	1362: 0	KLESS	1344: 0
KP1	1361: 0	KZ1	1356: 0	LOADAD	0838: 0	LOADNX	0700: 0	MANTIS	0692: 0	MOVE	0895: 0
PHAS19	0201: 0	PHASLD	0381: 0	SNAPEX	0564: 0	SNAPSH	0333: 0	SPINT	1188: 0	SX2	0915: 0
TOCONV	1305: 0	TOP3	2600: 0	TOPCOD	0840: 0	TOPCOR	0688: 0	TPERR	0728: 0	TPREAD	0704: 0
W6	1355: 0	X1	0089: 0	X2	0094: 0	X3	0099: 0	ZONES	1309: 0		

UNREFERENCED SYMBOLS

CDOVLY PHASLD SNAPEX TPERR TPREAD