```
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 -- SORT ONE PHASE -- PHASE 04                          PAGE    1

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

 101                JOB   FORTRAN COMPILER -- SORT ONE PHASE -- PHASE 04
 102                CTL   6611
 103         *
 104         * SORT ONE PHASE: DETERMINE WHETHER THERE IS SUFFICIENT ROOM
 105         * TO EXPAND EVERY STATEMENT BY THREE CHARACTERS.
 106         * 81-83 IS ONE BELOW THE GROUP MARK BELOW THE LAST (BOTTOM
 107         * ADDRESS) IN CORE.
 108         *
 109         X1     EQU   89                                                    0089
 110         X2     EQU   94                                                    0094
 111         X3     EQU   99                                                    0099
 112         *
 113         * STUFF IN THE RESIDENT AREA
 114         *
 115         PHASID EQU   110  PHASE ID, FOR SNAPSHOT DUMPS                    0110
 116         SNAPSH EQU   333  CORE DUMP SNAPSHOT                              0333
 117         LOADNX EQU   700  LOAD NEXT OVERLAY                               0700
 118         CLEARL EQU   707  CS AT START OF OVERLAY LOADER                    0707
 119         CDOVLY EQU   769  1 IF RUNNING FROM CARDS, N IF FROM TAPE         0769
 120         TPREAD EQU   780  TAPE READ INSTRUCTION IN OVERLAY LOADER          0780
 121         LOADXX EQU   793  EXIT FROM OVERLAY LOADER                        0793
 122         CLRBOT EQU   833  BOTTOM OF CORE TO CLEAR IN OVERLAY LOADER       0833
 123         *
 124         * TABLE OF ADDRESSES OF THE FIRST STATEMENT OF EACH TYPE,
 125         * INDEXED BY 30*(ZONE OF STATEMENT TYPE) + 3*(NUMERIC PART OF
 126         * STATEMENT CODE).  FILLED IN NEXT PHASE, Q.V.
 127         *
 128                ORG   838                                                                0838
 129         LOADDD EQU   *&1          LOAD ADDRESS                            0838
 130     840         DCW   #3  BLANK                                       3   0840                      4
 131     843         DCW   #3  1 READ TAPE                                 3   0843                      4
 132     846         DCW   #3  2                                           3   0846                      4
 133     849         DCW   #3  3 WRITE TAPE                                3   0849                      4
 134     852         DCW   #3  4                                           3   0852                      4
 135     855         DCW   #3  5 READ INPUT TAPE                           3   0855                      4
 136     858         DCW   #3  6 WRITE OUTPUT TAPE                         3   0858                      4
 137     861         DCW   #3  7                                           3   0861                      5
 138     864         DCW   #3  8                                           3   0864                      5
 139     867         DCW   #3  9                                           3   0867                      5
 140     870         DCW   #3  0                                           3   0870                      5
 141     873         DCW   #3  / END                                       3   0873                      5
 142     876         DCW   #3  S STOP                                      3   0876                      5
 143     879         DCW   #3  T COMPUTED GOTO                             3   0879                      5
 144     882         DCW   #3  U PUNCH                                     3   0882                      6
 145     885         DCW   #3  V                                           3   0885                      6
 146     888         DCW   #3  W IF ( SENSE SWITCH ... )                   3   0888                      6
 147     891         DCW   #3  X                                           3   0891                      6
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
148    894         DCW   #3  Y                                             3  0894                      6
149    897         DCW   #3  Z REWIND                                      3  0897                      6
150    900         DCW   #3  !                                             3  0900                      6
151    903         DCW   #3  J SENSE LIGHT                                 3  0903                      7
152    906         DCW   #3  K IF ( SENSE LIGHT ... )                      3  0906                      7
153    909         DCW   #3  L READ                                        3  0909                      7
154    912         DCW   #3  M                                             3  0912                      7
155    915         DCW   #3  N ENDFILE                                     3  0915                      7
156    918         DCW   #3  O                                             3  0918                      7
157    921         DCW   #3  P PRINT                                       3  0921                      7
158    924         DCW   #3  Q                                             3  0924                      8
159    927         DCW   #3  R ARITHMETIC                                  3  0927                      8
160    930         DCW   #3  ?                                             3  0930                      8
161    933         DCW   #3  A PAUSE                                       3  0933                      8
162    936         DCW   #3  B BACKSPACE                                   3  0936                      8
163    939         DCW   #3  C CONTINUE                                    3  0939                      8
164    942         DCW   #3  D DO                                          3  0942                      8
165    945         DCW   #3  E IF                                          3  0945                      9
166    948         DCW   #3  F FORMAT                                      3  0948                      9
167    951         DCW   #3  G GOTO                                        3  0951                      9
168    954         DCW   #3  H                                             3  0954                      9
169    957         DCW   #3  I DIMENSION                                   3  0957                      9
170                ORG   1006                                                    1006
171  1 009 ZONES   DCW   @2SKB@                                           4  1009                     10
172        *
173        * START HERE INSTEAD OF 838
174        *
175  1 010 BEGINN CS    2599                                              4  1010  / N99               10
176  1 014        CHAIN 8                                                                 MACRO
177               CS                                                      1  1014  /           GEN     10
178               CS                                                      1  1015  /           GEN     10
179               CS                                                      1  1016  /           GEN     10
180               CS                                                      1  1017  /           GEN     10
181               CS                                                      1  1018  /           GEN     10
182               CS                                                      1  1019  /           GEN     11
183               CS                                                      1  1020  /           GEN     11
184               CS                                                      1  1021  /           GEN     11
185  1 022        MCW   83,X3  ADDRESS OF END OF LAST STATEMENT            7  1022  M 083 099           11
186  1 029        MCM   2&X3                                              4  1029  P 0?2               11
187  1 033        MCW                                                     1  1033  M                   11
188  1 034        SBR   X3     ADDRESS OF BEGINNING OF LAST STATEMENT     4  1034  H 099               11
189        *
190        * MULTIPLY STATEMENT NUMBER OF LAST STATEMENT BY 3
191        *
192  1 038        MCW   0&X3,SEQ                                          7  1038  M 0?0 T52           12
193  1 045        ZA    SEQ,SEQ5                                          7  1045  ? T52 T57           12
194  1 052        A     SEQ5                                              4  1052  A T57               12
195  1 056        A     SEQ,SEQ5                                          7  1056  A T52 T57           12
196  1 063        S     KP2,SEQ5   3 * # STMTS - 2                        7  1063  S T58 T57           12
197  1 070        MCW   SEQ5,WORK5                                        7  1070  M T57 T63           12
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SEQ PG LIN  LABEL   OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD
198  1 077          MCW   K16K,SEQ5                                           7  1077  M T68 T57           13
199  1 084          S     WORK5,SEQ5  16000 - (3 * # STMTS - 2)               7  1084  S T63 T57           13
200          *
201          * CONVERT TO ADDRESS
202          *
203  1 091          BAV   LOOP      CLEAR OVERFLOW                            5  1091  B |96 Z             13
204  1 096  LOOP    A     KP96,SEQ5-3                                         7  1096  A T70 T54           13
205  1 103          BAV   LOOP                                                5  1103  B |96 Z             13
206  1 108          MN    SEQ5-3,*&4                                          7  1108  D T54 /18           13
207  1 115          MZ    ZONES-0,SEQ5-2                                      7  1115  Y |09 T55           14
208          *
209  1 122          MCW   83,X1                                               7  1122  M 083 089           14
210  1 129          MCW   X1,NOP&3                                            7  1129  M 089 /53           14
211  1 136          MCW   SEQ5,X2                                             7  1136  M T57 094           14
212  1 143          MZ    KM1,NOP&2  SET TAG FOR X2                          7  1143  Y T71 /52           14
213  1 150  NOP     NOP   0          X1 + X2                                  4  1150  N 000               14
214  1 154          SAR   X2                                                 4  1154  Q 094               15
215  1 158          S     W2A                                                 4  1158  S T73               15
216  1 162          S     W2B                                                 4  1162  S T75               15
217  1 166          MZ    X2,W2A-1                                            7  1166  Y 094 T72           15
218  1 173          MZ    X2-2,W2B-1                                          7  1173  Y 092 T74           15
219  1 180  LOOP2   BWZ   LOOP2X,W2B-1,2                                     8  1180  V /99 T74 2         15
220  1 188          A     K10V,W2B                                            7  1188  A T77 T75           16
221  1 195          B     LOOP2                                               4  1195  B /80               16
222  1 199  LOOP2X  BWZ   LOOP3X,W2A-1,2                                     8  1199  V S18 T72 2         16
223  1 207          A     K04V,W2A                                            7  1207  A T79 T73           16
224  1 214          B     LOOP2X                                              4  1214  B /99               16
225  1 218  LOOP3X  A     W2B-1,W2A                                           7  1218  A T74 T73           16
226  1 225          MCW   X2,SEQ5                                             7  1225  M 094 T57           17
227  1 232          MCW   W2A                                                 4  1232  M T73               17
228  1 236          ZA    SEQ5                                                4  1236  ? T57               17
229  1 240          MZ    *-4,SEQ5   CLEAR ZONE IN TENS DIGIT                 7  1240  Y S42 T57           17
230  1 247          C     SEQ5,K2900                                          7  1247  C T57 T84           17
231  1 254          BL    OK                                                  5  1254  B S93 T             17
232          *
233          * INSUFFICIENT ROOM TO EXPAND EVERY STATEMENT BY THREE CHARACTERS
234          *
235  1 259          CS    332                                                 4  1259  / 332               17
236  1 263          CS                                                        1  1263  /                   18
237  1 264          CC    1                                                   2  1264  F 1                 18
238  1 266          MCW   MSG2,270                                            7  1266  M U20 270           18
239  1 273          W                                                         1  1273  2                   18
240  1 274          CC    1                                                   2  1274  F 1                 18
241  1 276          BCE   HALT,CDOVLY,1                                      8  1276  B S89 769 1         18
242  1 284          RWD   1                                                   5  1284  U %U1 R             18
243  1 289  HALT    H     HALT                                                4  1289  . S89               19
244          *
245          * SOURCE CODE WILL FIT AFTER EXPANDING EVERY STATEMENT BY
246          * THREE CHARACTERS
247          *
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                        FORTRAN COMPILER -- SORT ONE PHASE -- PHASE 04                          PAGE    4

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

 248  1 293  OK     MCW   X2,83  REPLACE ADDRESS OF BOTTOM OF CODE             7  1293  M 094 083          19
 249  1 300         MCM   0&X1                                               4  1300  P 0|0              19
 250  1 304         SAR   X1     ADDRESS BELOW LAST STATEMENT                4  1304  Q 089              19
 251  1 308         BSS   SNAPSH,C                                          5  1308  B 333 C            19
 252  1 313         SBR   TPREAD&6,1022  CHANGE LOAD ADDRESS FOR NEXT PHASE  7  1313  H 786 |22          19
 253  1 320         SBR   CLRBOT                                            4  1320  H 833              19
 254  1 324         SBR   LOADXX&3,1022  CHANGE ENTRY ADDRESS FOR NEXT PHASE 7  1324  H 796 |22          20
 255  1 331         SBR   CLEARL&3,SORT2&1                                  7  1331  H 710 U27          20
 256  1 338         LCA   SORT2,PHASID                                      7  1338  L U26 110          20
 257  1 345         B     LOADNX  LOAD NEXT OVERLAY                         4  1345  B 700              20
 258         *
 259         * CONSTANTS AND WORK AREAS
 260         *
 261  1 349         DCW   0                                                 1  1349                     20
 262  1 352  SEQ    DCW   #3  SEQUENCE NUMBER OF LAST STATEMENT             3  1352                     20
 263  1 357  SEQ5   DCW   #5  STMT NUMBER TIMES 3                           5  1357                     20
 264  1 358  KP2    DCW   &2                                                1  1358                     21
 265  1 363  WORK5  DCW   #5                                                5  1363                     21
 266  1 368  K16K   DCW   16000                                             5  1368                     21
 267  1 370  KP96   DCW   &96                                               2  1370                     21
 268  1 371  KM1    DCW   -1                                                1  1371                     21
 269  1 373  W2A    DCW   #2                                                2  1373                     21
 270  1 375  W2B    DCW   #2                                                2  1375                     21
 271  1 377  K10V   DCW   @A0@  TEN, OVERFLOWED                             2  1377                     22
 272  1 379  K04V   DCW   @?4@  04, OVERFLOWED                             2  1379                     22
 273  1 384  K2900  DCW   02900                                             5  1384                     22
 274  1 420  MSG2   DCW   @MESSAGE 2 - OBJECT PROGRAM TOO LARGE@           36  1420                     23
 275  1 426  SORT2  DCW   @SORT 2@                                          6  1426                     24
 276  1 427  GMWM   DCW   @}@                                               1  1427           GMARK     24
 277                ORG   201                                                      0201
 278    203         DSA   LOADDD    LOAD ADDRESS FOR CARD-TO-TAPE PROGRAM   3  0203  838                25
 279                EX    BEGINN                                                   B |10              26
 280                END                                                            / 000 080
```

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SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
BEGINN	1010	CDOVLY	769	CLEARL	707	CLRBOT	833	GMWM	1427	HALT	1289	K04V	1379
K10V	1377	K16K	1368	K2900	1384	KM1	1371	KP2	1358	KP96	1370	LOADDD	838
LOADNX	700	LOADXX	793	LOOP	1096	LOOP2	1180	LOOP2X	1199	LOOP3X	1218	MSG2	1420
NOP	1150	OK	1293	PHASID	110	SEQ	1352	SEQ5	1357	SNAPSH	333	SORT2	1426
TPREAD	780	W2A	1373	W2B	1375	WORK5	1363	X1	89	X2	94	X3	99
ZONES	1009												