```
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 -- REPLACE PHASE 2 -- PHASE 55                          PAGE    1

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

 101               JOB   FORTRAN COMPILER -- REPLACE PHASE 2 -- PHASE 55
 102               CTL   6611
 103         *
 104         * ADDRESS OF THE FIXED- AND FLOATING-WORD WORK-AREAS ARE
 105         * INSERTED INTO THE GENERATED OBJECT PROGRAM.  INSTRUCTIONS
 106         * WHICH BRANCH TO THE RELOCATABLE ROUTINES ARE CORRECTED TO
 107         * SHOW THE OBJECT CORE-STORAGE ADDRESSES OF THESE ROUTINES.
 108         * UNUSED CORE STORAGE IS CLEARED.
 109         *
 110         X1     EQU   89                                                      0089
 111         X2     EQU   94                                                      0094
 112         X3     EQU   99                                                      0099
 113         *
 114         * STUFF IN THE RESIDENT AREA
 115         *
 116         PHASID EQU   110  PHASE ID, FOR SNAPSHOT DUMPS                      0110
 117         SUBENT EQU   191  ENTRY TO SUBSCRIPT ROUTINE, FROM SUBSC            0191
 118         SNAPSH EQU   333  CORE DUMP SNAPSHOT                                0333
 119         TOPCOR EQU   688  TOP CORE ADDRESS FROM PARAM CARD                  0688
 120         LOADNX EQU   700  LOAD NEXT OVERLAY                                 0700
 121         CLEARL EQU   707  CS AT START OF OVERLAY LOADER                      0707
 122         TPREAD EQU   780  TAPE READ INSTRUCTION IN OVERLAY LOADER            0780
 123         LOADXX EQU   793  EXIT FROM OVERLAY LOADER                          0793
 124         CLRBOT EQU   833  BOTTOM OF CORE TO CLEAR IN OVERLAY LOADER         0833
 125         *
 126         * STUFF IN PHASE 52A
 127         *
 128         SUBSC  EQU   909   SUBSCRIPT ENTRY IN FUNCTION TABLE                0909
 129         CONBOT EQU   930   BOTTOM OF CONSTANTS - 1                          0930
 130         ARYBOT EQU   933   BOTTOM OF ARRAYS - 1                            0933
 131         *
 132         * RUNTIME ADDRESSES
 133         *
 134         ARITF  EQU   700  ARITHMETIC INTERPRETER                            0700
 135         FMTBAS EQU   1697  BASE ADDRESS FOR LIMITED AND NORMAL              1697
 136         *
 137               ORG   934                                                            0934
 138    934  BEGINN SBR   SX3,1&X3                                          7  0934  H V13 0?1           4
 139    941         SW    1&X3                                            4  0941  , 0?1               4
 140    945         SBR   SX2,0&X2                                        7  0945  H V16 0!0           4
 141    952         SBR   SX1,0&X1                                        7  0952  H V19 0|0           4
 142    959         MCW   TOPCOR,X2                                       7  0959  M 688 094           4
 143    966         C     0&X2                                            4  0966  C 0!0               4
 144    970         C                                                     1  0970  C                   4
 145    971         C                                                     1  0971  C                   5
 146    972         SBR   1393                                            4  0972  H T93               5
 147    976         MCW   86,X2                                           7  0976  M 086 094           5
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD
148    983         MN    0&X2                                             4  0983  D 0!0               5
149    987         SAR   SX2A                                             4  0987  Q V22               5
150         *
151         * GO THROUGH THE RELOCATABLE LIBRARY LOOKING FOR CODES
152         * THAT INDICATE VARIOUS KINDS OF RELOCATION:
153         * T WITH A WORD MARK MEANS A IS AN ADDRESS IN THE FUNCTION
154         *   TABLE; CONVERT THE T TO A B.
155         *
156    991  LOOP   C     X3,SX2                                           7  0991  C 099 V16            5
157    998  LOOPT  BE    LOOPX                                            5  0998  B /57 S              5
158  1 003         C     0&X3                                             4  1003  C 0?0                6
159  1 007         SBR   X2                                               4  1007  H 094                6
160  1 011         SBR   X3                                               4  1011  H 099                6
161  1 015         BCE   TRANSF,1&X3,T  OP CODE IS T?                    8  1015  B |95 0?1 T          6
162  1 023  CHECKA MCW   4&X3,W3        CHECK A FIELD ADDRESS            7  1023  M 0?4 V25            6
163  1 030         BCE   SEMUND,W3-2,;  SEMICOLON?                       8  1030  B T98 V23 ;          6
164  1 038         BCE   SEMUND,W3-2,_  UNDERSCORE?                      8  1038  B T98 V23 _          7
165  1 046         BCE   RBRACK,W3-2,]  RIGHT BRACKET?                   8  1046  B T87 V23 ]          7
166  1 054         MCW   W3,4&X3        W3 BACK TO A ADDRESS             7  1054  M V25 0?4            7
167  1 061  CHECKB MCW   7&X3,W3        CHECK B FIELD ADDRESS            7  1061  M 0?7 V25            7
168  1 068         BCE   SEMUND,W3-2,;  SEMICOLON?                       8  1068  B T98 V23 ;          7
169  1 076         BCE   SEMUND,W3-2,_  UNDERSCORE?                      8  1076  B T98 V23 _          8
170  1 084         MCW   W3,7&X3        W3 BACK TO B ADDRESS             7  1084  M V25 0?7            8
171  1 091         B     LOOP                                             4  1091  B 991                8
172         *
173         * REPLACE T XXX WITH B YYY WHERE YYY IS TAKEN FROM XXX.
174         *
175  1 095  TRANSF BCE   LOOP,4&X3,$                                      8  1095  B 991 0?4 $          8
176  1 103         C     0&X3,BARITF&3                                    7  1103  C 0?0 V29            8
177  1 110         BE    LOOP                                             5  1110  B 991 S              8
178  1 115         BW    CHECKA,4&X2  NOT A TRANSFER IF ANY               8  1115  V |23 0!4 1          9
179  1 123         BWZ                  OF THE NEXT THREE                1  1123  V                    9
180  1 124         BWZ                    CHARACTERS HAS A WORD MARK     1  1124  V                    9
181  1 125         MCW   BRANCH,1&X3  CONVERT TO BRANCH                   7  1125  M V30 0?1            9
182  1 132         MCW   4&X2,X1      TABLE ADDRESS TO X1                7  1132  M 0!4 089            9
183  1 139         MCW   0&X1,X1      TABLE ENTRY TO X1 (WHY???)         7  1139  M 0|0 089            9
184  1 146         MCW   X1,4&X2        AND A ADDRESS                    7  1146  M 089 0!4            9
185  1 153         B     CHECKA                                           4  1153  B |23               10
186         *
187         * REPEAT THE LOOP FOR THE FORMAT CODE
188         *
189  1 157  LOOPX  MCW   APASS3,LOOPT&3                                   7  1157  M V33 |01           10
190  1 164         MCW   SX1,X3                                           7  1164  M V19 099           10
191  1 171         MCW   AFMT,SX2                                         7  1171  M V36 V16           10
192  1 178         B     LOOP                                             4  1178  B 991               10
193         *
194         * CLEAR UNUSED CORE
195         *
196  1 182  PASS3  MCW   SX3,X3                                           7  1182  M V13 099           10
197  1 189         SBR   X3,1&X3                                          7  1189  H 099 0?1           11
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SEQ PG LIN  LABEL  OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD
198  1 196         MZ    X3,K999A                                      7  1196  Y 099 V07           11
199  1 203         MZ                                                  1  1203  Y                   11
200  1 204         MCW                                                 1  1204  M                   11
201  1 205         MZ    83,K999B                                      7  1205  Y 083 V10           11
202  1 212         MZ                                                  1  1212  Y                   11
203  1 213         MCW                                                 1  1213  M                   11
204  1 214         C     K999A,K999B                                   7  1214  C V07 V10           12
205  1 221         BE    EQUAL                                         5  1221  B S84 S             12
206  1 226         MCW   83,X3                                         7  1226  M 083 099           12
207  1 233  CLRHLP CS    0&X3  CLEAR HUNDRED AT A TIME                 4  1233  / 0?0               12
208  1 237         SBR   X3                                          4  1237  H 099               12
209  1 241         C     X3,K999A                                      7  1241  C 099 V07           12
210  1 248         BU    CLRHLP                                        5  1248  B S33 /             12
211  1 253  CLR1LP C     X3,SX3                                        7  1253  C 099 V13           13
212  1 260         BE    CLRL1X                                        5  1260  B S95 S             13
213  1 265         LCA   KB1,0&X3  CLEAR                             7  1265  L V37 0?0           13
214  1 272         SBR   X3          ONE AT                          4  1272  H 099               13
215  1 276         CW    1&X3          A TIME                        4  1276  ) 0?1               13
216  1 280         B     CLR1LP                                        4  1280  B S53               13
217         *
218         * X3 AND 83 IN SAME HUNDREDS
219         *
220  1 284  EQUAL  MCW   83,X3                                         7  1284  M 083 099           13
221  1 291         B     CLR1LP                                        4  1291  B S53               14
222         *
223         * FILL EMPTY CORE WITH RIGHT BRACKETS, EXCEPT FOR THE
224         * LAST CHARACTER, WHICH GETS A RECORD MARK.
225         *
226  1 295  CLRL1X MCW   83,X3                                         7  1295  M 083 099           14
227  1 302         MCW   RM,0&X3                                       7  1302  M V38 0?0           14
228  1 309         SBR   X3                                          4  1309  H 099               14
229  1 313         MCW   KRBRAK,0&X3                                   7  1313  M V39 0?0           14
230  1 320         MCW   0&X3                                        4  1320  M 0?0               14
231  1 324         SBR   X3                                          4  1324  H 099               14
232  1 328         LCA   KB1,2&X3                                    7  1328  L V37 0?2           15
233  1 335         LCA   KB1                                         4  1335  L V37               15
234  1 339         MCW   SUBSC,SUBENT                                7  1339  M 909 191           15
235  1 346         BSS   SNAPSH,C                                    5  1346  B 333 C             15
236  1 351         SBR   TPREAD&6,838                                7  1351  H 786 838           15
237  1 358         SBR   CLRBOT                                      4  1358  H 833               15
238  1 362         SBR   LOADXX&3,838                                7  1362  H 796 838           16
239  1 369         SBR   CLEARL&3,GMWM                               7  1369  H 710 V49           16
240  1 376         LCA   SNAP,PHASID                                 7  1376  L V47 110           16
241  1 383         B     LOADNX                                      4  1383  B 700               16
242         *
243         * A FIELD BEGINS WITH RIGHT BRACKET
244         *
245  1 387  RBRACK SBR   4&X3,0                                       7  1387  H 0?4 000           16
246  1 394         B     CHECKB                                      4  1394  B |61               16
247         *
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SEQ PG LIN  LABEL  OP    OPERANDS                                        SFX CT  LOCN  INSTRUCTION TYPE  CARD

248         * A OR B FIELD BEGINS WITH SEMICOLON OR UNDERSCORE
249         * SEMICOLON ADDS OR SUBTRACTS NEXT TWO DIGITS TO ARUBOT.
250         * UNDERSCORE ADDS OR SUBTRACTS NEXT TWO DIGITS FROM CONBOT.
251         * AB ZONE MEANS ADD, ELSE SUBTRACT.
252         *
253  1 398  SEMUND SBR   EXIT&3                                            4  1398  H U85              17
254  1 402         MCW   CONBOT,X2                                         7  1402  M 930 094          17
255  1 409         BCE   *&8,W3-2,_  UNDERSCORE?                           8  1409  B U24 V23 _        17
256  1 417         MCW   ARYBOT,X2                                        7  1417  M 933 094          17
257  1 424         BCE   NOOFF,W3,0  NO OFFSET IF LOW ORDER DIGIT ZERO    8  1424  B U75 V25 0        17
258  1 432         BWZ   ADD,W3,B    ADD UNZONED OFFSET                    8  1432  V U86 V25 B        18
259  1 440         SW    W3-1                                              4  1440  , V24              18
260  1 444  DECR   A     KP1,W3      SUBTRACT                              7  1444  A V48 V25          18
261  1 451         BWZ   DECRX,W3,B    UNZONED W3                        8  1451  V U71 V25 B        18
262  1 459         MN    0&X2             FROM                           4  1459  D 0!0              18
263  1 463         SAR   X2                 X2                           4  1463  Q 094              18
264  1 467         B     DECR                                            4  1467  B U44              18
265  1 471  DECRX  CW    W3-1                                            4  1471  ) V24              19
266  1 475  NOOFF  MCW   X2,W3                                           7  1475  M 094 V25          19
267  1 482  EXIT   B     0                                               4  1482  B 000              19
268  1 486  ADD    MN    W3,REW3&6                                       7  1486  D V25 V00          19
269  1 493         MN                                                    1  1493  D                  19
270  1 494  REW3   SBR   W3,0&X2  X2 PLUS UNZONED OFFSET TO W3           7  1494  H V25 0!0          19
271  1 501         B     EXIT                                            4  1501  B U82              19
272         *
273         * DATA
274         *
275  1 507  K999A  DSA   999                                             3  1507  999                20
276  1 510  K999B  DSA   999                                             3  1510  999                20
277  1 513  SX3    DCW   #3                                              3  1513                     20
278  1 516  SX2    DCW   #3                                              3  1516                     20
279  1 519  SX1    DCW   #3                                              3  1519                     20
280  1 522  SX2A   DCW   #3                                              3  1522                     20
281  1 525  W3     DCW   #3                                              3  1525                     20
282  1 526  BARITF B     ARITF                                           4  1526  B 700              21
283  1 530  BRANCH B                                                     1  1530  B                  21
284  1 533  APASS3 DSA   PASS3                                           3  1533  /82                21
285  1 536  AFMT   DSA   FMTBAS-1  ONE BEFORE FORMAT                     3  1536  W96                21
286  1 537  KB1    DCW   #1                                              1  1537                     21
287  1 538  RM     DCW   @|@                                             1  1538                     21
288  1 539  KRBRAK DCW   @]@                                             1  1539                     21
289  1 547  SNAP   DCW   @SNAPSHOT@                                      8  1547                     22
290  1 548  KP1    DCW   &1                                              1  1548                     22
291  1 549  GMWM   DCW   @}@                                             1  1549          GMARK      22
292                EX    BEGINN                                                B 934              23
293                END                                                         / 000 080
```

| SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADD | 1486 | AFMT | 1536 | APASS3 | 1533 | ARITF | 700 | ARYBOT | 933 | BARITF | 1526 | BEGINN | 934 |
| BRANCH | 1530 | CHECKA | 1023 | CHECKB | 1061 | CLEARL | 707 | CLR1LP | 1253 | CLRBOT | 833 | CLRHLP | 1233 |
| CLRL1X | 1295 | CONBOT | 930 | DECR | 1444 | DECRX | 1471 | EQUAL | 1284 | EXIT | 1482 | FMTBAS | 1697 |
| GMWM | 1549 | K999A | 1507 | K999B | 1510 | KB1 | 1537 | KP1 | 1548 | KRBRAK | 1539 | LOADNX | 700 |
| LOADXX | 793 | LOOP | 991 | LOOPT | 998 | LOOPX | 1157 | NOOFF | 1475 | PASS3 | 1182 | PHASID | 110 |
| RBRACK | 1387 | REW3 | 1494 | RM | 1538 | SEMUND | 1398 | SNAP | 1547 | SNAPSH | 333 | SUBENT | 191 |
| SUBSC | 909 | SX1 | 1519 | SX2 | 1516 | SX2A | 1522 | SX3 | 1513 | TOPCOR | 688 | TPREAD | 780 |
| TRANSF | 1095 | W3 | 1525 | X1 | 89 | X2 | 94 | X3 | 99 | | | | |