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

101               JOB   FORTRAN COMPILER -- STMT NUMBERS TWO -- PHASE 28
102               CTL   6611
103         *
104         * SAME AS VARIABLES PHASE TWO (14).
105         *
106         * THE ENTIRE SOURCE PROGRAM IS SHIFTED TO THE TOP (LEFTMOST
107         * PART) OF AVAILABLE STORAGE, LEAVING ROOM FOR SUBSEQUENT
108         * COMPILER PHASES.  THE REMAINING STORAGE IS CLEARED FOR
109         * TABLES.
110         *
111         * ON ENTRY, 83 IS THE TOP OF CODE IN HIGH CORE AND X2 IS ONE
112         * BELOW THE BOTTOM OF CODE IN HIGH CORE.
113         *
114         * ON EXIT, 83 IS ONE BELOW THE TABLES IN HIGH CORE, AND X1 AND
115         * X2 ARE THE TOP OF CODE IN LOW CORE.
116         *
117         X1     EQU   89                                                  0089
118         X2     EQU   94                                                  0094
119         X3     EQU   99                                                  0099
120         *
121         * STUFF IN THE RESIDENT AREA
122         *
123               EXT00   SNAPSH, LOADNX, CDOVLY                                      MACRO
124         SNAPSH EQU   333                                                 0333      GEN
125         PHASLD EQU   381                                                 0381      GEN
126         SNAPEX EQU   564                                                 0564      GEN
127         LOADNX EQU   700   CARD OVERLAY UNLESS NOP                      0700      GEN
128         CDOVLY EQU   700   1 IF LOADING FROM CARDS, N IF FROM TAPE      0700      GEN
129         TPREAD EQU   704   LOAD OVERLAY FROM TAPE                       0704      GEN
130         TPERR  EQU   728                                                 0728      GEN
131         *
132               EXT03     START, TOP OF PHASE 3                                   MACRO
133         BEGIN3 EQU   838                                                 0838      GEN
134         TOP3   EQU   2600                                                2600      GEN
135               EXT36     STUFF IN PHASE 36 -- NDRITH                             MACRO
136         NDRITH EQU   3123                                                3123      GEN
137         *
138         110    DCW   @STNUM TWO@                                      9  0110                 1
139         099    DCW   000                                              3  0099                 2
140         100    DC    0                                                1  0100                 2
141         *
142         PHAS28 LDPH  STNUM TWO,LOADAD,BEGN28,,,28                              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         )6J004 EQU   110  PHASE ID                                       0110      GEN
144         )6K004 EQU   700  LOAD NEXT PHASE                                0700      GEN
145         )6L004 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         )6M004  EQU   728  TAPE ERROR HANDLER                                  0728              GEN
            *                                                                                        GEN
147                 ORG   201                                                              0201
148         PHAS28  BSS   )8J004,G                                             5  0201  B 257 G     GEN      3   257
149                 NOP     TO PATCH IN TRAPS FOR DEBUGGING                    1  0206  N           GEN      3
150         )0J004  EQU   *&1                                                      0207              GEN
151                 LCA   )9J004,)6J004                                        7  0207  L 281 110   GEN      3   281     110
152                 BCE   )1J004,)6K004,1    Q: LOADING FROM CARDS?           8  0214  B 250 700 1 GEN      3   250     700
153                 BCE   )1J004,)6L004&4,0  Q: LOADING FROM AUTOCODER TAPE?   8  0222  B 250 708 0 GEN      3   250     708
154                 RTW   1,LOADAD           READ THE BLOCK                   8  0230  L %U1 838 R GEN      3   %U1     838
155                 BER   )6M004             Q: TAPE ERROR?                   5  0238  B 728 L     GEN      4   728
156                 CS    BEGN28,)9R004      ENTER THE BLOCK                  7  0243  / 937 285   GEN      4   937     285
157         )1J004  CS    )6K004,)9R004      LOAD CARDS OR AUTOCODER TAPE     7  0250  / 700 285   GEN      4   700     285
158         )8J004  SW    )9R004                                             4  0257  , 285       GEN      4   285
159                 MU    %T0,)8K004,W                                       8  0261  M %T0 273 W GEN      4   %T0     273
160                 H     )0J004                                             4  0269  . 207       GEN      4   207
161         )8K004  EQU   *&1                                                      0273              GEN
162         )9J004  DCW   @STNUM TWO@          PHASE ID                     9  0281              GEN      5
163                 DCW   #1                                                 1  0282              GEN      5
164                 DC    @28@          PHASE NUMBER                       2  0284              GEN      5
165         )9R004  DCW   @}@                                               1  0285              GEN      5
166                 XFR   PHAS28                                                   B 201               5   201
167         *
168                 ORG   BEGIN3                                                   0838
169         LOADAD  EQU   *&1          LOAD ADDRESS                              0838
170 *  840  TOPCD9  DCW   #3  TOP OF CODE & 5 & X00 - 1                         3  0840                  6
171 *  846  DIFF16  DCW   #6  16 * (BOTTAB - 1 - TOPCD9)                        6  0846                  6
172 *  849  BNDRY   DCW   #3  TOPCD9 + 0.48 * (BOTTAB - 1 - TOPCD9)            3  0849                  6
173 *  852  BOTTAB  DCW   #3  BOTTOM OF TABLES                                 3  0852                  6
174         *
175         * MOVE DOWN
176         *
177 *  853  MOVEDN  SBR   MOVEDX&3                                            4  0853  H 936           6   936
178    857          MN    0&X1                                                4  0857  D 0|0           6   000+1
179    861          SAR   X1                                                  4  0861  Q 089           6   089
180    865  MORE    MCM   0&X2                                                4  0865  P 0!0           7   000+2
181    869          SAR   NEWX2&6                                             4  0869  Q 891           7   891
182    873          MCM   0&X2,1&X1                                          7  0873  P 0!0 0|1       7   000+2   001+1
183    880          MN                                                        1  0880  D               7
184    881          SBR   X1                                                  4  0881  H 089           7   089
185    885  NEWX2   SBR   X2,0                                               7  0885  H 094 000       7   094     000
186    892          BCE   MORE,0&X1,|                                        8  0892  B 865 0|0 |     7   865     000+1
187    900          MN    0&X2                                                4  0900  D 0!0           8   000+2
188    904          CW                                                        1  0904  )               8
189    905          SW    0&X1  UNDER THE GM                                  4  0905  , 0|0           8   000+1
190    909          C     X2,BOTTAB                                           7  0909  C 094 852       8   094     852
191    916          BU    MORE                                                5  0916  B 865 /         8   865
192    921          MN    0&X1                                                4  0921  D 0|0           8   000+1
193    925          SAR   X1                                                  4  0925  Q 089           8   089
194    929          SBR   X2  SEQNO OF TOP OF CODE IN LOW CORE                4  0929  H 094           9   094
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

195    933  MOVEDX B     0-0                                                  4  0933  B 000               9   000
196         *
197         * START PHASE 28 HERE
198         *
199 *  937  BEGN28 MCW   83,X3  TOP OF CODE                                   7  0937  M 083 099           9   083     099
200    944         SBR   BOTTAB,1&X3  BOTTOM OF TABLES                       7  0944  H 852 0?1           9   852     001+3
201    951         MCW   X2,X3                                               7  0951  M 094 099           9   094     099
202    958  CLEAR  CS    0&X3                                                 4  0958  / 0?0               9   000+3
203    962         SBR   X3                                                  4  0962  H 099               9   099
204    966         C     X3,ABOT  DONE?                                       7  0966  C 099 S73          10   099    1273
205    973         BU    CLEAR     NO                                         5  0973  B 958 /            10   958
206    978         SBR   X1,BOTCOD                                           7  0978  H 089 A99          10   089    3199
207    985         B     MOVEDN                                               4  0985  B 853              10   853
208    989         SBR   TOPCD9,5&X1                                        7  0989  H 840 0|5          10   840     005+1
209    996         MN    K99,TOPCD9                                           7  0996  D S38 840          10  1238     840
210  1 003         MN                                                         1  1003  D                  10
211  1 004         MCW   83,X3                                               7  1004  M 083 099          11   083     099
212  1 011  CLEAR2 CS    0&X3                                                 4  1011  / 0?0              11   000+3
213  1 015         SBR   X3                                                  4  1015  H 099              11   099
214  1 019         C     X3,TOPCD9                                            7  1019  C 099 840          11   099     840
215  1 026         BU    CLEAR2                                               5  1026  B |11 /            11  1011
216  1 031         MCW   KLESS,0&X3                                          7  1031  M S74 0?0          11  1274     000+3
217  1 038         MCW   83,TOCONV                                            7  1038  M 083 S36          12   083    1236
218  1 045         B     CONV                                                 4  1045  B /63              12  1163
219  1 049         MCW   W5,DIFF16                                            7  1049  M S79 846          12  1279     846
220  1 056         MCW   TOPCD9,TOCONV                                       7  1056  M 840 S36          12   840    1236
221  1 063         B     CONV                                                 4  1063  B /63              12  1163
222  1 067         S     W5,DIFF16                                            7  1067  S S79 846          12  1279     846
223  1 074         A     DIFF16                                               4  1074  A 846              13   846
224  1 078         A     DIFF16                                               4  1078  A 846              13   846
225  1 082         A     DIFF16                                               4  1082  A 846              13   846
226  1 086         A     DIFF16  16 * (BOTTAB - 1 - TOPCD9)                   4  1086  A 846              13   846
227  1 090         A     DIFF16-2,W6                                          7  1090  A 844 S85          13   844    1285
228  1 097         A     W6                                                   4  1097  A S85              13  1285
229  1 101         A     DIFF16-2,W6  0.48 * (BOTTAB - 1 - TOPCD9)            7  1101  A 844 S85          13   844    1285
230  1 108         A     W5,W6  TOPCD9 + 0.48 * (BOTTAB - 1 - TOPCD9)         7  1108  A S79 S85          14  1279    1285
231  1 115         MCW   W6-3,X3                                             7  1115  M S82 099          14  1282     099
232  1 122         A     X3                                                   4  1122  A 099              14   099
233  1 126         MZ    ZONES-1&X3,W6-2                                      7  1126  Y SC9 S83          14  1239+3  1283
234  1 133         MZ    ZONES&X3,W6                                          7  1133  Y SD0 S85          14  1240+3  1285
235  1 140         MCW   W6,X3                                               7  1140  M S85 099          14  1285     099
236  1 147         SW    2&X3                                                 4  1147  , 0?2              15   002+3
237  1 151         MCW   KLESS                                               4  1151  M S74              15  1274
238  1 155         SBR   BNDRY                                               4  1155  H 849              15   849
239  1 196         B     LOADNX                                               4  1159  B 700              15   700
240         *
241         * CONVERT TOCONV TO DECIMAL IN W5
242         *
243  1 200  CONV   SBR   CONVX&3                                             4  1163  H S31              15  1231
244  1 204         MN    TOCONV,W5                                            7  1167  D S36 S79          15  1236    1279
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SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

245  1 211         MN                                                       1  1174  D                  15
246  1 212         MN                                                       1  1175  D                  16
247  1 213         MCW                                                      1  1176  M                  16
248  1 214         MZ    TOCONV,K99                                         7  1177  Y S36 S38          16  1236    1238
249  1 221         MZ    TOCONV-2,K99-1                                     7  1184  Y S34 S37          16  1234    1237
250  1 228         SBR   X3,ZONES-4                                        7  1191  H 099 S36          16   099    1236
251  1 235  CONVL  C     4&X3,K99                                           7  1198  C 0?4 S38          16   004+3  1238
252  1 242         SAR   X3                                                4  1205  Q 099              16   099
253  1 246         A     KP1,W5-3                                           7  1209  A S86 S76          17  1286    1276
254  1 253         BU    CONVL                                              5  1216  B /98 /            17  1198
255  1 258         MZ    KB,W5-3                                            7  1221  Y S87 S76          17  1287    1276
256  1 265  CONVX  B     0-0                                                4  1228  B 000              17   000
257         *
258         * DATA
259         *
260  1 273  TOCONV DCW   @0J   @                                           5  1236                     17
261  1 275  K99    DCW   @99@                                             2  1238                     17
262         ZONES  EQU   *&2                                                1240
263  1 307         DC    @99Z9R9I99ZZZRZIZ9RZRRRIR9IZIRIII@                32  1270                     18
264  1 310  ABOT   DSA   BOTCOD                                            3  1273  A99                18  3199
265  1 311  KLESS  DCW   @<@                                               1  1274                     18
266  1 316  W5     DCW   #5                                                5  1279                     19
267  1 322  W6     DCW   #6                                                6  1285                     19
268  1 332  KP1    DCW   &1                                                1  1286                     19
269  1 333  KB     DCW   #1                                                1  1287                     19
270  1 334  GMWM   DCW   @}@                                               1  1288             GMARK   19
271                ORG   NDRITH&X00                                              3200
272         BOTCOD EQU   *                                                  3199
273                XFR   BEGN28                                                  B 937               19   937
274         CLRME  CLRA  BEGN28,BOTCOD,C                                                             MACRO
            *      CLRA  CLRBOT,CLRTOP[,SS,HERE,GWMAD]                                               GEN
            *                                                                                        GEN
            * CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS                                      GEN
            *                                                                                        GEN
275                ORG   201                                                     0201
            *                                                                                      GEN
            * CLEAR DOWN TO CLRBOT & X00 THE EASY WAY                                              GEN
            *                                                                                      GEN
276         CLRME  EQU   *&1                                                0201                   GEN
277                BSS   SNAPSH,C                                           5  0201  B 333 C       GEN     20   333
278         )0J005 CS    BOTCOD         CLEAR FROM CLRTOP                 4  0206  / A99           GEN     20  3199
279                SBR   )0J005&3                                           4  0210  H 209           GEN     20   209
280                SBR   )0L005&6                                           4  0214  H 255           GEN     20   255
281                C     )0J005&3,)0M005   DOWN TO CLRBOT & X00?           7  0218  C 209 266       GEN     20   209     266
282                BU    )0J005                                             5  0225  B 206 /         GEN     20   206
            *                                                                                      GEN
            * NOW CLEAR DOWN TO CLRBOT THE HARD WAY                                                GEN
            *                                                                                      GEN
283         )0K005 C     )0L005&6,)0N005                                    7  0230  C 255 269       GEN     20   255     269
284                BU    )0L005                                             5  0237  B 249 /         GEN     21   249
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```
SEQ PG LIN  LABEL   OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD A-ADDR  B-ADDR

285                 CS    LOADNX,)0Q005  LOAD THE NEXT BLOCK AT 1          7  0242  / 700 276   GEN     21   700     276
286         )0L005  LCA   )0P005,0-0     CLEAR WITH BLANK AND WORD MARK    7  0249  L 270 000   GEN     21   270     000
287                 SBR   )0L005&6                                         4  0256  H 255       GEN     21   255
288                 B     )0K005                                          4  0260  B 230       GEN     21   230
289         )0M005  DSA   )0R005         CLRBOT & X00 - 1                3  0266  999         GEN     21   999
290         )0N005  DSA   BEGN28         CLRBOT                          3  0269  937         GEN     21   937
291         )0P005  DCW   #1                                            1  0270                GEN     22
292                 DC    @CLRA @     IDENTIFY IN A DECK, TAPE, OR DUMP 5  0275                GEN     22
293         )0Q005  DCW   @}@                                           1  0276                GEN     22
294                 ORG   BEGN28&X00                                            1000
295         )0R005  EQU   *           CLRBOT & X00 - 1                      0999                GEN
296                 XFR   CLRME                                                 B 201               22   201
```

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J004	0207: 0	)0J005	0206: 0	)0K005	0230: 0	)0L005	0249: 0	)0M005	0266: 0	)0N005	0269: 0
)0P005	0270: 0	)0Q005	0276: 0	)0R005	0999: 0	)1J004	0250: 0	)6J004	0110: 0	)6K004	0700: 0
)6L004	0704: 0	)6M004	0728: 0	)8J004	0257: 0	)8K004	0273: 0	)9J004	0281: 0	)9R004	0285: 0
ABOT	1273: 0	BEGIN3	0838: 0	BEGN28	0937: 0	BNDRY	0849: 0	BOTCOD	3199: 0	BOTTAB	0852: 0
CDOVLY	0700: 0	CLEAR	0958: 0	CLEAR2	1011: 0	CLRME	0201: 0	CONV	1163: 0	CONVL	1198: 0
CONVX	1228: 0	DIFF16	0846: 0	GMWM	1288: 0	K99	1238: 0	KB	1287: 0	KLESS	1274: 0
KP1	1286: 0	LOADAD	0838: 0	LOADNX	0700: 0	MORE	0865: 0	MOVEDN	0853: 0	MOVEDX	0933: 0
NDRITH	3123: 0	NEWX2	0885: 0	PHAS28	0201: 0	PHASLD	0381: 0	SNAPEX	0564: 0	SNAPSH	0333: 0
TOCONV	1236: 0	TOP3	2600: 0	TOPCD9	0840: 0	TPERR	0728: 0	TPREAD	0704: 0	W5	1279: 0
W6	1285: 0	X1	0089: 0	X2	0094: 0	X3	0099: 0	ZONES	1240: 0		

UNREFERENCED SYMBOLS

CDOVLY GMWM PHASLD SNAPEX TOP3 TPERR TPREAD