```
 OPTIONS NODECK,LIST,XREF,NOREL,OBJ(P)
THE LIST OF OPTIONS USED DURING THIS ASSEMBLY IS--   NODECK,LIST,XREF,NOREL,OBJ
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                                 EXTERNAL SYMBOL LIST
SYMBOL   TYPE                                                VER 15, MOD 00  26/06/20  PAGE   1
#KEDIT   MODULE
```

```
    0000                          1 #KEDIT START 0
                                  2        PRINT ON,NODATA
                                  3 *      @SYS  EXP-N
                                214+       PRINT ON
                                215 *      @FXD  EXP-N
                                620+       PRINT ON
                                621 *      @CAN  EXP-N
                                724+       PRINT ON
                                725 *      @CY0  EXP-N
                                798+       PRINT ON
                                799 *      @WKA  EXP-N
                                869+       PRINT ON
                                870 *      @DIR  EXP-N
                                990+       PRINT ON
                                991 *      @SPF  EXP-N
                               1454+       PRINT ON
                               1455 *      @ERM  EXP-N
                               2077+       PRINT ON
```

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                              2079 **********************************************************************
                              2080 *  5703-XM1 COPYRIGHT IBM CORP. 1970                                  *
                              2081 *         REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083       *
                              2082 *                                                                    *
                              2083 **********************************************************************
                              2084 *STATUS                                                              *
                              2085 *   VERSION 1 MODIFICATION 0                                         *
                              2086 *                                                                    *
                              2087 *FUNCTION                                                            *
                              2088 *   THE FUNCTION OF THE PROGRAM IS TO CREATE A USABLE WORK FILE.  THE *
                              2089 *   FILE MAY BE EITHER A COPY OF A PERMANENTLY SAVED FILE OR AN EMPTY *
                              2090 *   OR 'NULL' FILE. (IE - INITIALIZED FOR CREATION OF A NEW FILE).   *
                              2091 *   KEDITN WILL SYNTAX-CHECK THE COMMAND PARAMETERS AND IF THEY ARE   *
                              2092 *   VALID, WILL SEARCH THE FILE LIBRARY DIRECTORIES FOR THE SPECIFIED *
                              2093 *   FILE.  IF THE TILE IS FOUND, IT WILL BE LOADED INTO THE WORK FILE *
                              2094 *   AND THE APPROPRIATE EXIT WILL BE TAKEN. IF THE SPECIFIED FILE IS  *
                              2095 *   NOT FOUND, THE WORK FILE WILL BE CLEARED AND AN EXIT TO $CARPL IS *
                              2096 *   MADE. IN BOTH SITUATIONS, THE WORK FILE STATUS INDICATORS ($BASIC *
                              2097 *   $KEYDT, $PGMDT, $PRESN, $WSIND, $FITIN, $TABLN, AND $WFLOK) IN    *
                              2098 *   THE SYSTEM NUCLEUS WILL BE SET TO REFLECT THE STATUS OF THE WORK  *
                              2099 *   FILE.  ALSO, A WORK FILE STATUS MESSAGE WILL BE PRINTED UNLESS    *
                              2100 *   KEDITN WAS 'CALLED' BY THE 'RUN' OR 'STEP' COMMANDS.             *
                              2101 *                                                                    *
                              2102 *ENTRY POINTS                                                        *
                              2103 *   THE ENTRY TO KEDITN IS THE FIRST EXECUTABLE INSTRUCTION          *
                              2104 *   FOLLOWING THE PROGRAM HEADER.                                    *
                              2105 *                                                                    *
                              2106 *INPUT                                                               *
                              2107 *   INPUT IS THE COMMAND STATEMENT REFERENCED BY THE CORE ADDRESS    *
                              2108 *   SAVED IN $XRSAV AND THE LIBRARY DIRECTORIES AS REQUIRED.         *
                              2109 *                                                                    *
                              2110 *OUTPUT                                                              *
                              2111 *   OUTPUT IS A CLEARED WORK FILE OR A SAVED USER FILE BROUGHT INTO   *
                              2112 *   THE WORK FILE AREA.                                              *
                              2113 *                                                                    *
                              2114 *EXTERNAL REFERENCES                                                 *
                              2115 *       $$$ERN - EDIT CAUSED BY RUN OR STEP COMMAND                  *
                              2116 *       $WFNME - ADDR IN SYSTEM NUCLEUS-WORK FILE NAME               *
                              2117 *       $BASIC - ADDR IN SYSTEM NUCLEUS-WORK FILE TYPE  INDICATOR    *
                              2118 *       $KEYDT - ADDR IN SYSTEM NUCLEUS-WORK FILE TYPE INDICATOR     *
                              2119 *       $PGMDT - ADDR IN SYSTEM NUCLEUS-WORK FILE TYPE INDICATOR     *
                              2120 *       $PRESN - ADDR IN SYSTEM NUCLEUS-WORK FILE PRECISION INDICATOR *
                              2121 *       $WSIND - ADDR IN SYSTEM NUCLEUS-WORKING STORAGE INDICATOR    *
                              2122 *       $FITIN - ADDR IN SYSTEM NUCLEUS-FIT IN CORE INDICATOR MASK   *
                              2123 *       $WFLOK - ADDR IN SYSTEM NUCLEUS-WORK FILE PROTECTION INDR    *
                              2124 *       $TABLN - ADDR IN SYSTEM NUCLEUS-AUTOMATIC LINE NUMBER        *
                              2125 *       $CAERK - ADDR IN SYSTEM NUCLEUS-ERROR EXIT ROUTINE ADDRESS   *
                              2126 *       $CAERR - ADDR IN SYSTEM NUCLEUS-ERROR CODE SAVE AREA         *
                              2127 *       $CARPL - ADDR IN SYSTEM NUCLEUS-NORMAL EXIT ROUTINE ADDRESS  *
                              2128 *       $RLOAD - ADDR IN SYSTEM NUCLEUS-BLAST LOAD PROGRAM NOT ON (4) *
                              2129 *       $UNMSK - ADDR IN SYSTEM NUCLEUS-UNMASK IR                    *
                              2130 *       $DISKN - ADDR IN SYSTEM NUCLEUS-ENTRY TO DISK IOCS           *
                              2131 *       $SPRNT - ADDR IN SYSTEM NUCLEUS-SYSTEM PRINTER IOCR ENTRY    *
                              2132 *       $CIMSK - ADDR IN SYSTEM NUCLEUS-INQUIRY REQUEST INDR         *
                              2133 *       $EXFTR - ADDR IN SYSTEM NUCLEUS-CORE EXPANSION FACTOR        *
                              2134 *       $XRSAV - ADDR IN SYSTEM NUCLEUS-SAVE INDEX REGISTER 2        *
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                               2135 *       $WAITF - ADDR IN SYSTEM NUCLEUS-ADDR WAIT DPL                 *
                               2136 *       $$FITS - CORE ADDRESS OF FILE INDEX TABLE OUTSIDE NUCLEUS     *
                               2137 *       $$XIND - CORE ADDRESS IN INPUT LINE BUFFER                    *
                               2138 *       $IOYES - ADDR IN SYSTEM NUCLEUS-I/O ROUTINES IN CORE MASK     *
                               2139 *       $KEYCD - ADDR IN SYSTEM NUCLEUS-KEYBOARD INDICATORS           *
                               2140 *       $INDRI - ADDR IN SYSTEM NUCLEUS-WORK FILE STATUS INDICATOR    *
                               2141 *       $XIND3 - ADDR IN SYSTEM NUCLEUS-SAVED EXECUTION INDICATOR     *
                               2142 *       $XIND1 - ADDR IN SYSTEM NUCLEUS-PRIMARY EXECUTION INDICATOR   *
                               2143 *       $NUCBS - ADDR IN SYSTEM NUCLEUS-BASE ADDR IN SYSTEM NUCLEUS   *
                               2144 *       $INDR3 - ADDR IN SYSTEM NUCLEUS-SYSTEM INDICATOR BYTE         *
                               2145 *       $DBLOK - ADDR IN SYSTEM NUCLEUS-SAVE PROTECTED WORK FILE MASK *
                               2146 *       $CANIT - DELIMITER SCAN ROUTINE                               *
                               2147 *       SUFFER - FILE SPECIFICATION SYNTAX CHECKER                    *
                               2148 *       SFINDF - CONTROL MODULE FOR SVOLID, SGETDB, AND SRCHFN        *
                               2149 *       GCLEAR - CLEAR WORK FILE AND ESTABLISH FIT                    *
                               2150 *       DL2ICS - LOGICAL TWO TRACK DISK IOCS                          *
                               2151 *       DL4ICS - LOGICAL FOUR TRACK DISK IOCS                         *
                               2152 *       C2DEC5 - CONVERT BINARY TO EBCDIC                             *
                               2153 *       TSMLES - DATA MANAGEMENT COMMUNICATIONS REGION                *
                               2154 *                                                                     *
                               2155 *EXITS, NORMAL                                                        *
                               2156 *       $CARPL - NORMAL EXIT FOR EDIT COMMAND WHEN NO ERRORS OCCUR.   *
                               2157 *       $RLOAD - NORMAL EXIT TO LOAD COMPILER FOR RUN OR STEP         *
                               2158 *                COMMANDS WHEN NO ERRORS OCCURS.                      *
                               2159 *                                                                     *
                               2160 *EXITS, ERROR                                                         *
                               2161 *       $CAERK - ERROR EXIT ADDRESS FOR ANY DETECTED ERRORS. $CERR    *
                               2162 *                CONTAINS THE ERROR CONDITION CODE.                   *
                               2163 *                                                                     *
                               2164 *TABLES,WORK AREAS                                                    *
                               2165 *   N/A                                                               *
                               2166 *                                                                     *
                               2167 *ATTRIBLTES                                                           *
                               2168 *   RELOCATABLE                                                       *
                               2169 *                                                                     *
                               2170 *CHARACTER CODE DEPENDENCYT                                           *
                               2171 *   CHARACTER CODE DEPENDENCY CLASS - C                               *
                               2172 *   THE OPERATION OR THIS MODULE DEPENDS DON AN INTERNAL REPRESENTA-  *
                               2173 *   TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE *
                               2174 *   USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-   *
                               2175 *   DEFINITION OF CHARACTER CONSTANTS. BY REASSEMBLY, WILL RESULT IN  *
                               2176 *   A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE   *
                               2177 *   SPECIAL CONSIDERATIONS FOR THIS MODULE:                           *
                               2178 *   *  CHARACTER CONSTANT STRINGS WHICH ARE USED AS INFORMATIVE       *
                               2179 *      MESSAGES OR ERROR MESSAGES FOR THE USER ARE LOCATED IN A       *
                               2180 *      GROUP AT THE BEGINNING OF THE MODULE WITH ADEQUATE EXPANSION   *
                               2181 *      AREA INCLUDED FOR WORLD TRADE CONSIDERATIONS FOR TRANSLATION   *
                               2182 *      INTO FOREIGN LANGUAGES.                                        *
                               2183 *   *  OTHER CHARACTER CONSTANTS TO CONSIDER:                         *
                               2184 *      *  KEDCBW - 'BASIC' PARAMETER                                  *
                               2185 *      *  KEDCDW - 'DATA'  PARAMETER                                  *
                               2186 *      *  KEDCSW - 'SHORT' PARAMETER                                  *
                               2187 *      *  KEDCLW - 'LONG'  PARAMETER                                  *
                               2188 *                                                                     *
                               2189 *NOTES                                                                *
                               2190 *   ERROR PROCEDURES                                                  *
                               2191 *      THE FOLLOWING CONDITIONS WILL CAUSE AN ERROR CODE TO BE SAVED  *
                               2192 *      IN $CAERR, AND AN ERROR EXIT TO BE MADE TO $CAERK IN THE       *
                               2193 *      SYSTEM NUCLEUS:                                                *
                               2194 *      *  NO FILENAME SPECIFIED AND THE EDIT COMMAND WAS THE          *
                               2195 *         ISSUED KEYWORD COMMAND.                                     *
                               2196 *      *  INCORRECT FILE-SPECIFICATION DETECTED VIA SUFFER, SALPHA    *
                               2197 *         AND KEDITN.                                                 *
                               2198 *      *  FILE TYPE INCORRECTLY SPECIFIED.                            *
                               2199 *      *  EXTRANEOUS, INVALID, OR OUT-OF-ORDER SPECIFIED PARAMETERS.  *
                               2200 *      *  SPECIFIED FILE WAS NOT FOUND AND THE PARAMETERS SPECIFIED   *
                               2201 *         AND/OR THE WAY THEY WERE SPECIFIED INDICATES THE USER       *
                               2202 *         EXPECTS A SAVED FILE TO BE LOADED INTO THE WORK FILE.       *
                               2203 *      *  SPECIFIED VOLUME-ID CAN'T BE RESOLVED (IE. NOTE SVOLID      *
                               2204 *         FOR ERROR PROCEDURES AND MULTIPLY DEFINED VOLUMES).         *
                               2205 *      *  SPECIFIED PASSWORD IS NOT FOUND ON THE SPECIFIED DISK, OR   *
                               2206 *         BY THE DEFAULT ASSUMPTION OF THE 'CURRENT VOLUME-ID', IF    *
                               2207 *         ONE EXISTS.                                                 *
                               2208 *      *  THE PASSWORD FOR THE TWO-STAR LIBRARY CANNOT BE FOUND ON    *
                               2209 *         ANY DISK ON THE SYSTEM, OR IF A DISK IS SPECIFIED, IT CAN-  *
                               2210 *         NOT BE FOUND ON THAT DISK.                                  *
                               2211 *      *  THE PASSWORD FOR THE ONE-STAR LIBRARY CANNOT BE FOUND ON    *
                               2212 *         THE SPECIFIED DISK OR IF A DISK IS NOT SPECIFIED, ON ANY    *
                               2213 *         DISK ON THE SYSTEM.                                         *
                               2214 *      *  THE SPECIFIED FILENAME CANNOT BE FOUND, AND THE SYSTEM      *
                               2215 *         COMMAND IS RUN OR STEP.                                     *
                               2216 *      *  THE SPECIFIED FILENAME CANNOT BE FOUND, AND A PASSWORD WAS  *
                               2217 *         INCLUDED IN THE FILE-SPECIFICATION.                         *
                               2218 *      *  A ONE-STAR OR TWO-STAR FILE CANNOT BE FOUND, ON THE WU-     *
                               2219 *         FIED DISK OR ANY DISK ON THE SYSTEM.                        *
                               2220 *      *  THE SPECIFIED FILE IS FOUND TO BE A 'DATA' FILE AND THE     *
                               2221 *         SYSTEM COMMAND WHICH CALLED KEDITN WAS RUN OR STEP.         *
                               2222 *      *  THE SPECIFIED FILE IS FOUND TO BE A DATA FILE WHICH WAS     *
                               2223 *         GENERATED BY A PROGRAM AND UCEEDS THE WORK FILE PHYSICAL    *
                               2224 *         LIMITATIONS.                                                *
                               2225 *                                                                     *
                               2226 *   REGISTER USAGE                                                    *
                               2227 *      UPON ENTRY TO KEDITN, INDEX REGISTER 2 (@XR) IS LOADED AS A    *
                               2228 *      POINTER TO THE LINE FOR SYNTAX CHECKING AND INDEY REGISTER 1   *
                               2229 *      (@BR) IS USED AS A BASE ADDRESSING THE SYSTEM NUCLEUS (SNUBS). *
                               2230 *      IF A SAVED FILE IS TO BE LOADED TO THE WORK FILE, @XR IS       *
                               2231 *      SUBSEQUENTLY USED AS A POINTER INTO THE USER BLOCKS. THEN      *
                               2232 *      DURING THE TRANSFER, @BR IS RELOADED AS A BASE FOR ADDRESSING  *
                               2233 *      DPL'S AND CONSTANTS ETC. AND @XR IS USED TO ADDRESS THE FILE   *
                               2234 *      INDEX TABLE.                                                   *
                               2235 *                                                                     *
                               2236 *   SAVED/RESTORED AREAS                                              *
                               2237 *      N/A                                                            *
                               2238 *                                                                     *
                               2239 *   MODIFICATION CONSIDERATIONS                                       *
                               2240 *      WHEN THE SYSTEM COMMAND IS RUN OR STEP AND THE COMPILER IS     *
                               2241 *      TO BE LOADED VIA $RLOAD, THE I/O SECTOR MUST BE PRIMED FOR     *
                               2242 *      THE COMPILER.                                                  *
                               2243 *                                                                     *
                               2244 *   REQUIRED MODULES                                                  *
                               2245 *        @SPFEQ - SYSTEM PROGRAM FILE EQUATES                         *
                               2246 *        @SYSEQ - COMMON SYSTEM SOFTWARE EQUATES                      *
                               2247 *        @FYDEQ - FIXED ADDRESSES IN SYSTEM NUCLEUS                   *
                               2248 *        @CANEQ - FIXED ADDRESSES OUTSIDE SYSTEM NUCLEUS              *
                               2249 *        @DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES                    *
                               2250 *        @ERMEQ - ERROR MESSAGE EQUATES                               *
                               2251 *        @WKAEQ - SYSTEM WORK AREA EQUATES                            *
                               2252 *        GCLEAR - CREATES AN EMPTY WORK FILE                          *
                               2253 *        C2DEC5 - CONVERTS BINARY NUMBERS TO EBCIDIC                  *
                               2254 *        DL4ICS - LOGICAL FOUR TRACK DISK IOCR                        *
                               2255 *        DL2ICS - LOGICAL TWO TRACK DISK IOCR                         *
                               2256 *        SVOLID - RESOLVES SPECIFIED VOLUME-ID                        *
                               2257 *        SUFFER - SYNTAX CHECKS FILE SPECIFICATION                    *
                               2258 *        SALPHA - SYNTA, CHECKS FILENAME, PASSWORD, OR VOLUME-ID      *
                               2259 *        SCANIT - DELIMITER SCAN ROUTINE                              *
                               2260 *        SFINDF - CONTROL MODULE FOR FILE SEARCH VIA SGETDB, SRCHFN,  *
                               2261 *                 AND SVOLID.                                         *
                               2262 *        SGETDB - SEARCHES PASSWORD DIRECTORY & PRIMES USER BLOCKS    *
                               2263 *        SRCHFN - SEARCHES USER DIRECTORY FOR SPECIFIED FILE.         *
                               2264 *        TSMLES - DATA MANAGEMENT COMMUNICATIONS REGION               *
                               2265 *                                                                     *
                               2266 *   OTHER                                                             *
                               2267 *      KEDITN AND THE MODULES ASSEMBLED WITH IT WILL BE LOADED INTO   *
                               2268 *      CORE FOLLOWING THE I/O ROUTINES (IE. $$KLD3).  AFTER SYNTAX    *
                               2269 *      CHECKING AND FILE TRANSFER SET-UP ARE COMPLETE, THESE SECTIONS *
                               2270 *      OF KEDITN AND ALL ASSEMBLED SUBROUTINES EXCEPT DL2ICS AND      *
                               2271 *      DL4ICS WILL BE OVERLAID FOR BUFFER USAGE.  THE BUFFER AREA     *
                               2272 *      WILL BE EXPANDED BY THE CONTENTS OF $EXFTR TO USE ALL OF THE   *
                               2273 *      AVAILABLE CORE.                                                *
                               2274 *      FIT - FILE INDEX TABLE                                         *
                               2275 *                                                                     *
                               2276 ***********************************************************************
                               2278 *
                               2279 *                  ENTRY TO KEDITN
                               2280 *
    0C00                       2281        ORG   $$KLD3               LOAD POINT FOR KEDITN
                               2282 *       HDR   #KEDIT,0             PROGRAM HEADER
                               2283 ***********************************************************************
                               2284 *  PROGRAM HEADER FOR DISK LOAD
                               2285 ***********************************************************************
                               2286 *$KEDI  EQU   X'0188'                  DISK ADDR OF #KEDIT
                               2287 *$$KED  EQU   X'0C00'                  CORE LOAD ADDRESS OF #KEDIT
                               2288 *$@KED  EQU   014                      SECTOR CNT OF #KEDIT
    0C00                       2289        ORG   #$$KED                    CORE LOAD ADDRESS
                          0C00 2290 $$$$$$ EQU   *                         FIRST LOCATION IN PROGRAM
    0C00 7BD2C5C4C9E3     0C05 2291        DC    CL6'#KEDIT'               PROGRAM NAME
    0C06 08               0C06 2292        DC    IL1'008'                  PROGRAM NUMBER OF #KEDIT
                          0C07 2293 $KEDI  EQU   *                         ENTRY POINT TO PROGRAM
                               2294 *** END OF EXPANSION ***
                          0C07 2295 KEDITN EQU   *                         ENTRY TO PROGRAM
    0C07 C0 87 0FB3            2296        B     KED500                    GO TO SYNTAX CHECKING SECTION
                               2297 *       MTEXT @@M300=@PRETR
                               2298 ***********************************************************************
                               2299 * PPL'S AND TEXT FOR MESSAGE
                               2300 ***********************************************************************
    0C0B C0               0C0B 2301 @@M300 DC    AL1(@PRETR)               PRINT CONTROL FUNCTION
    0C0C 37               0C0C 2302        DC    IL1'55'                   LENGTH OF MESSAGE
    0C0D 0C0F             0C0E 2303        DC    AL(@CADDR)(@@T300)        ADDR OF MESSAGE
                               2304 *
                          0C0F 2305 @@T300 EQU   *                         LEFT BYTE OF MESSAGE
    0C0F C5D9D9D6D940F5F8 0C3D 2306        DC    CL047'ERROR 580 DUPLICATE DISK LABELS - SPECIFY DISK '
    0C3E D3D6C3C1E3C9D6D5 0C45 2307        DC    CL008'LOCATION'
                               2308 *
                               2309 *  PATCH AREA FOR MESSAGES
                               2310 *
    0C46                  0C54 2311 $$$001 DS    CL15                      MSG EXPANSION PATCH AREA
                               2312 *** END OR EXPANSION ***
                               2313 *
                               2314 *                  FILE TRANSFER SECTION
                               2315 *
                          0D12 2316        USING KEDTBS,@BR                ESTABLISH TRANSFER SECTION BASE
    0C55 4E 00 50 043B         2317 KED100 ALC   KEDD1S(@B1,@BR),$EXFTR    INCR BFR SIZE BY EXPANS'N FACTR
    0C5A 5C 00 77 7B           2318 KEDTNP MVC   KEDSDL(@B1,@BR),KEDSLD(,@BR) SAVE LENGTH OF FILE DATA
                               2319 *
                               2320 *                  TRANSFER DATA AREA OF FILE FIRST
                               2321 *
    0C5E 5F 00 7B 50           2322 KED110 SLC   KEDSLD(@B1,@BR),KEDD1S(,@BR)  DECR FILE LNG BY BUF LNG
    0C62 F2 81 07              2323        JZ    KED120                    ZERO ? GO SET LOOP EXIT
    0C65 F2 84 08              2324        JH    KED130                    MORE TO COME. DON'T SET LOOP XT
    0C68 5E 00 50 7B           2325        ALC   KEDD1S(@B1,@BR),KEDSLD(,@BR)  SET READ CT FOR REST OF FILE
    0C6C 3C 80 0C89            2326 KED120 MVI   KED150+@Q,@NOP            SET EXIT FROM LOOP
    0C70 C0 87 0E36            2327 KED130 B     DL2ICS                    READ IN SAVED FILE
    0C74 0D5F             0C75 2328        DC    AL2(KEDDL1)               * READ DPL
    0C76 5C 00 56 50           2329        MVC   KEDD2S(@B1,@BR),KEDD1S(,@BR)  MOVE READ CT TO WRITE COUNT
    0C7A 5E 00 4F 50           2330        ALC   KEDD1D(@B1,@BR),KEDD1S(,@BR)  INCR DADDR FOR NEXT READ
    0C7E C0 87 0ECF            2331        B     DL4ICS                    WRITE FILE TO WORK FILE
    0C82 0D65             0C83 2332        DC    AL2(KEDDL2)               * WRITE DPL
    0C84 5E 00 55 56           2333        ALC   KEDD2D(@B1,@BR),KEDD2S(,@BR)  INCR DADDR FOR NEXT WRITE
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                               2334 *
                               2335 *                  TRANSFER LOOP CONTROL INSTRUCTION - INITIALIZED TO
                               2336 *                  CONTINUE LOOP - RESET TO GET OUT WHEN FILE COUNT
                               2337 *                  GOES ZERO OR NEGATIVE.
                               2338 *
    0C88 C0 87 0C5E            2339 KED150 BC    KED110,@UCB               CONTINUE LOOP UNTIL DONE
    0C8C C0 87 0D33            2340        B     KED270                    GO CHECK SYSTEM COMMAND
                               2341 *
                               2342 *                  CHECK IF FIT AND I/O SECTOR ARE TO BE COPIED.
                               2343 *                  IF YES, TRANSFER IT OR THEM.
                               2344 *
    0C90 38 20 03D4            2345 KED175 TBN   $INDR1,$PGMDT             PROG. GEN. DATA FILE ?
    0C94 F2 90 12              2346        JF    KED200                    NO, GO GET FIT
    0C97 5C 00 77 7B           2347        MVC   KEDSDL(@B1,@BR),KEDSLD(,@BR)  SAVE FILE LENGTH
    0C9B C0 87 0025            2348        B     $DISKN                    WAIT OR PRIOR WRITE TO
    0C9F 057F             0CA0 2349        DC    AL2($WAITF)               * TO COMPLETE
    0CA1 1C 02 1B02 79         2350        MVC   KEDFIT+@FDLNC(@FLLNC+@FLDBC),KEDUEL(,@BR)  SET FIT HEADER
    0CA6 F2 87 7A              2351        J     KED250                    GO TO WRITE DUMMY FIT
    0CA9 C0 87 0E36            2352 KED200 B     DL2ICS                    READ FIT, AND I/O SECTOR IF
    0CAD 0D6B             0CAE 2353        DC    AL2(KEDDL3)               * BASIC FILE.
    0CAF C0 87 0025            2354        B     $DISKN                    WAIT FOR PRIOR READ TO
    0CB3 057F             0CB4 2355        DC    AL2($WAITF)               * COMPLETE
    0CB5 38 40 03D4            2356        TBN   $INDR1,$KEYDT             DATA FILE ?
    0CB9 F2 10 3D              2357        JT    KED210                    YES, BYPASS I/O SECTOR WRITE
    0CBC 5F 00 5C 5F           2358        SLC   KEDD3S(@B1,@BR),KEDDL4(,@BR)  SET FILE CNT TO FIT LENGTH
    0CC0 75 02 6A              2359        L     KEDD5C(,@BR),@XR          @XR=CADDR OF 1ST I/O SECTOR
    0CC3 BD 00 1F              2360        CLI   KEDISW(,@XR),@ZERO        IS 2 SECTOR SWITCH ON ?
    0CC6 F2 81 07              2361        JE    KED202                    NO, TURN OFF $IOPGS INDR
    0CC9 3A 10 03E0            2362        SBN   $DBGUF,$IOPGS             TURN ON $IOPGS INDR
    0CCD F2 87 1D              2363        J     KED203                    GO WRITE I/O SECTORS
    0CD0 1E 01 0CE0 6A         2364 KED202 ALC   KED201+@OP2,KEDD5C(@CADDR,@BR)  SAVE I/O SECT ADDR     1-5
    0CD5 0C 01 0CDE 0CE0       2365        MVC   KED201+@OP1,KED201+@OP2(@CADDR)  MOVE TO NEXT INST     1-5
    0CDB 0F FF 0000 01FF       2366 KED201 SLC   *-*(KEDEIL),KEDSCT        CLEAR I/O SECTORS            1-5
    0CE1 3B 10 03E0            2367        SBF   $DBGUF,$IOPGS             TURN OFF $IOPGS INDR         1-5
    0CE5 5E 00 7B 81           2368        ALC   KEDSLD(@B1,@BR),KEDCFL(,@BR)  ADD 1 TO DATA LENGTH     1-5
    0CE9 5F 00 4F 81           2369        SLC   KEDD1D(@B1,@BR),KEDCFL(,@BR)  DECR DADDR OF 1ST DATA BLOCK
    0CED C0 87 0025            2370 KED203 B     $DISKN                    WRITE I/O SECTOR(S) TO THE   1-5
    0CF1 0D77             0CF2 2371        DC    AL2(KEDDL5)               * WORK AREA
    0CF3 0C FF 1FFF 00FF       2372 KED205 MVC   KEDPCI(KEDEIL),KEDIOA     SET I/O SCTR FOR COMPLIER MOD.
    0CF9 7D 03 5C              2373 KED210 CLI   KEDD3S(,@BR),#@@#WF       WAS A FULL FIT READ ?
    0CFC F2 81 24              2374        JE    KED250                    YES, BYPASS FIT SET UP
                               2375 *
                               2376 *                  BUILD REMAINDER OF FIT
                               2377 *
                               2378 *       DISK  $WAITF                    WAIT FOR DISK 0. TO COMPLETE
    0CFF C0 87 0025            2379        B     $DISKN                    PERFORM PHYSICAL DISK OP
    0D03 057F             0D04 2380        DC    AL2($WAITF)               DPL ADDRESS
                               2381 *** END OF EXPANSION ***
    0D05 C2 02 1BFC            2382        LA    KEDFIT+@SCTSZ-@FLENT,@XR  SET XR FOR 1 FIT BLOCK READ  1-4
    0D09 7D 01 5C              2383        CLI   KEDD3S(,@BR),@B1          ONLY 1 FIT SECTOR READ
    0D0C F2 81 03              2384        JE    KED230                    YES, BYPASS ADJ'S FOR 2
    0D0F 76 02 7D              2385        A     KEDSSZ(,@BR),@XR          INCR 0,1 FOR 2ND BLOCK READ
    0D12 AC 00 04 00           2386 KED230 MVC   KEDEND(@B1,@XR),@ZERO(,@XR)  MOVE CURR DISP TO NEXT DISP
    0D16 5E 00 04 7C           2387        ALC   KEDEND(@B1,@BR),KEDCND(,@BR)  INCR. DADDR DISP BY ONE
    0D1A BD BC 04              2388        CLI   KEDEND(,@XR),KEDELE       HAS LAST ENTRY BEEN SET
    0D1D E2 02 04              2389        LA    @FLENT(,@XR),@XR          INCR @XR TO NEXT IN CASE NOT
    0D20 D0 01 00              2390        BNE   KED230(,@BR)              NOT SET YET, CONTINUE LOOP
                               2391 *
                               2392 *                  FIT SET UP COMPLETE - WRITE TO WORK FILE
                               2393 *
    0D23 C0 87 0025            2394 KED250 B     $DISKN                    WRITE FIT TO WORK FILE
    0D27 0D71             0D28 2395        DC    AL2(KEDDL4)               *
                               2396 *       SPRNT $WAITF                    WAIT FOR PRINT COMPLETE
    0D29 C0 87 0465            2397        B     $SPRNT                    PRINT ON SYSTEM PRINTER
    0D2D 057F             0D2E 2398        DC    AL2($WAITF)               PPL ADDRESS
                               2399 *** END OF EXPANSION ***
    0D2F C0 87 0C55            2400        B     KED100                    GO WRITE DATA PORTION
                               2401 *
                               2402 *                  CHECK SYSTEM COMMAND - IF 'EDIT', RETURN TO SYSTEM.
                               2403 *                  IF 'RUN' OR 'STEP', PRIME AND & LOAD COMPILER.
                               2404 *
    0D33 38 80 06FF            2405 KED270 TBN   $$XIND,$$$ERN             CALLED BY 'RUN' OR 'STEP' ?
    0D37 C0 90 04A1            2406        BF    $CARPL                    NO, RETURN TO SYSTEM
    0D3B C0 87 048D            2407        B     $UNMSK                    ALLOW INTERRUPTS
    0D3F C0 87 0025            2408        B     $DISKN                    ACCESS 1ST DB FOR COMPILER
    0D43 0D7D             0D44 2409        DC    AL2(KEDDL6)               *
    0D45 3B 02 03C3            2410        SBF   $KEYCD,$IOYES             SET I/O RTN'S NOT IN CORE INDR
    0D49 3B 80 06FF            2411        SBF   $$XIND,$$$ERN             SET OFF EDIT CALLED BY RUN/STEP.
    0D4D 0C 00 03D8 03D0       2412        MVC   $XIND3(@B1),$XIND1        SAVE LAST EXCUTION INDR
    0D53 0C 00 03D0 06FF       2413        MVC   $XIND1(@B1),$$XIND        SET CURRENT EXECUTION INDR
    0D59 C0 87 051E            2414        B     $RLOAD                    ACCESS AND EXECUTE THE
    0D5D 0D83             0D5E 2415        DC    AL2(KEDDL7)               * COMPILER

                               2417 ***********************************************************************
                               2418 *                  FILE TRANSFER DPL'S
                               2419 ***********************************************************************
                               2420 *
                               2421 *                            ACCESS SAVED FILE DATA AREA
                               2422 *
                          0D5F 2423 KEDDL1 EQU   *
    0D5F                  0D5F 2424 KEDD1F DS    CL1                       FUNCTION CODE
    0D5F                       2425        ORG   *-1                       INITIALIZE FOR A
    0D5F 00               0D5F 2426        DC    AL1(@DPOS)                R SEEK ONO OPERATION
    0D60                  0D61 2427 KEDD1D DS    CL2                       DISK ADDR
    0D62                  0D62 2428 KEDD1S DS    CL1                       SECTOR COUNT
    0D62                       2429        ORG   *-1                       INITLZ TO
    0D62 104D             0D63 2430        DC    AL2(@MINCR-KEDBFR+$$ZERO) BUFFER SIZE, IN SECTORS,
    0D63                       2431        ORG   *-1                       IN AN 8K CPU
    0D63 0FB3             0D64 2432        DC    AL2(KEDBFR)               CORE ADDR
                               2433 *
                               2434 *                            WRITE TO WORK FILE DATA AREA
                               2435 *
                          0D65 2436 KEDDL2 EQU   *
    0D65 02               0D65 2437        DC    AL1(@DPUT)                PUT FUNCTION CODE
    0D66                  0D67 2438 KEDD2D DS    CL2                       DISK ADDR
    0D66                       2439        ORG   *-2                       * INITLZ TO FIRST SECTOR
    0D66 0503             0D67 2440        DC    AL2(@WSTBL)               * OF WORK FILE DATA AREA
    0D68                  0D68 2441 KEDD2S DS    CL1                       SECTOR COUNT
    0D69 0FB3             0D6A 2442        DC    AL2(KEDBFR)               CORE ADDS
                               2443 *
                               2444 *                  ACCESS SAVED FIT - THIS DPL WILL BE
                               2445 *                  MODIFIED TO INCLUDE THE I/O SECTOR FOR
                               2446 *                  A BASIC PROGRAM FILE.
                               2447 *
                          0D6B 2448 KEDDL3 EQU   *
    0D6B 01               0D6B 2449        DC    AL1(@DGET)                GET FUNCTION CODE
    0D6C                  0D6D 2450 KEDD3D DS    CL2                       DISK ADDR
    0D6E                  0D6E 2451 KEDD3S DS    CL1                       SECTOR COUNT
    0D6F 1B00             0D70 2452        DC    AL2(KEDFIT)               CORE ADDR
                               2453 *
                               2454 *                  WRITE FIT TO WORK FILE
                               2455 *
                          0D71 2456 KEDDL4 EQU   *
    0D71 02               0D71 2457        DC    AL1(@DPUT)                PUT FUNCTION CODE
    0D72 0500             0D73 2458        DC    AL2(#@#WFT)               FIT WORK FILE ADDR
    0D74 03               0D74 2459        DC    AL1(#@@#WF)               SECTOR COUNT
    0D75 1B00             0D76 2460        DC    AL2(KEDFIT)               FIT CORE ADDR
                               2461 *
                               2462 *                  WRITE I/O SECTOR TO WORK AREA
                               2463 *
                          0D77 2464 KEDDL5 EQU   *
    0D77 02               0D77 2465        DC    AL1(@DPUT)                PUT FUNCTION CODE
    0D78 0459             0D79 2466        DC    AL2(#@#IO1)               I/O SECTOR(S) WORK FILE ADDR
    0D7A 01               0D7A 2467 KEDCIO DC    AL1(#@@#IO)               SECTOR COUNT OF I/O SECTOR
    0D7B 1B00             0D7C 2468 KEDD5C DC    AL2(KEDFIT)               CORE ADDR
                               2469 *
                               2470 *                  READ 1ST DATA BLOCK FOR COMPILER
                               2471 *
                          0D7D 2472 KEDDL6 EQU   *
    0D7D 01               0D7D 2473        DC    AL1(@DGET)                GET FUNCTION CODE
    0D7E 050C             0D7F 2474        DC    AL2(#@#WDB)               DISK ADDR
    0D80 01               0D80 2475        DC    AL1(@B1)                  SECTOR COUNT
    0D81 1E00             0D82 2476        DC    AL2($$WSPB)               CORE ADDR
                               2477 *
                               2478 *                  ACCESS COMPILER
                               2479 *
                          0D83 2480 KEDDL7 EQU   *
    0D83 01               0D83 2481        DC    AL1(@DGET)                GET FUNCTION CODE
    0D84 0080             0D85 2482        DC    AL2(#$BCOM)               DISK ADDR
    0D86 18               0D86 2483        DC    AL1(#$@BCO)               SECTOR COUNT
    0D87 0600             0D88 2484        DC    AL2(#$$BCO)               CORE ADDR
                               2485 *
                               2486 *
    0D89                  0D89 2487 KEDSDL DS    CL1                       SAVE FLD FOR DATA AREA LENGTH
    0D8A                  0D8B 2488 KEDUEL DS    CL2                       SAVE FLD FOR FILE LINE COUNT
    0D8C                  0D8D 2489 KEDSLD DS    CL2                       FILE DATA BLOCK COUNT WORK AREA
    0D8E 0100             0D8F 2490 KEDSSZ DC    XL2'0100'                 SECTOR SIZE
                          0D8E 2491 KEDCND EQU   KEDSSZ-1                  INCR FACTOR FOR NEXT DISP
    0D90 00BD             0D91 2492 KEDCWS DC    AL2(#@@#WD)               MAX DATA SIZE OF WORK FILE
    0D92 0001             0D93 2493 KEDCFL DC    XL2'0001'                 EMPTY WORK FILE LINE COOT
                               2494 *
                          0100 2495 KEDEIL EQU   256                       SECTOR SIZE
                          1B00 2496 KEDFIT EQU   $$FITS-2*KEDEIL           KEDITN CADDR FOR FIT
                          00FF 2497 KEDIOA EQU   255                       DISP TO RIGHT END OR I/O SCTR
                          1FFF 2498 KEDPCI EQU   $$WSPB+KEDIOA+256         ADDR OF I/O SCTR FOR #BCOMP
                          00BC 2499 KEDELE EQU   188                       LAST DADDR DISP VALUE
                          0004 2500 KEDEND EQU   @FLENT                    DISP TO NEXT DADDR DISP
                          0D12 2501 KEDTBS EQU   KED230                    TRANSFER SECTION LOCAL BASE
                          001F 2502 KEDISW EQU   31                        2 SECTOR SWITCH DISPLACEMENT
                               2503 *
                               2504 *                  SAVED FILE COPIED MESSAGES
                               2505 *
    0D94 C0               0D94 2506 KEDPL2 DC    AL1(@PRETR)               PRINT PARAMETER LIST - 2
    0D95 38               0D95 2507        DC    XL1'38'                   *
    0D96 0D98             0D97 2508        DC    AL2(KEDMS2)               *
                          0D98 2509 KEDMS2 EQU   *                         FILE COPIED MESSAGE
    0D98                  0D99 2510 KEDM2A DS    CL2                       * STAR LOCATION IF STAR FILE
    0D98                       2511        ORG   *-2                       ** COPIED, INITLZ TO
    0D98 4040             0D99 2512        DC    CL2'  '                   ** BLANKS
    0D9A                  0DA1 2513 KEDM2N DS    CL8                       * FILE NAME
    0DA2 40               0DA2 2514        DC    CL1' '                    *
    0DA3                  0DBB 2515 KEDM2H DS    CL25                      * FILE HEADER
    0DBC 40               0DBC 2516        DC    CL1' '                    *
    0DBD C3D6D7C9C5C440E3 0DCF 2517        DC    CL19'COPIED TO WORK FILE'
                               2518 *
                          0DD0 2519 KEDMS5 EQU   *                         SIZE AND DATE MESSAIE
    0DD0                  0DD2 2520 KEDM5L DS    CL3                       * NO. OF LINES ON FILE
    0DD3 40D3C9D5C5E26B40 0DDA 2521        DC    CL8' LINES, '             *
    0DDB                  0DDD 2522 KEDM5S DS    CL3                       * NO. OF DISK SECTORS IN FILE
    0DDE 40C4C9E2D240E4D5 0DF1 2523        DC    CL20' DISK UNITS IN FILE.'
    0DF2 40C4C1E3C540D3C1 0E04 2524        DC    CL19' DATE LAST MODIFIED'
                               2525 *
    0E05 406040           0E07 2526        DC    CL3' - '                  *
    0E08                  0E09 2527 KEDM5M DS    CL2                       * MONTH
    0E0A 61               0E0A 2528        DC    CL1'/'                    *
    0E0B                  0E0C 2529 KEDM5D DS    CL2                       * DAY
    0E0D 61               0E0D 2530        DC    CL1'/'                    *
    0E0E                  0E0F 2531 KEDM5Y DS    CL2                       * YEAR
    0E08                       2532        ORG   *-8                       ** INITIALIZE DATE TO
    0E08 F0F161F0F161F7F0 0E0F 2533        DC    CL8'01/01/70'             ** 01/01/70
                               2534 *
    0E10 D2C5E8C2D6C1D9C4 0E17 2535 KEDCKW DC    CL8'KEYBOARD'             CONSTANT FOR MESSAGE NO. 4
                          0008 2536 KEDEKL EQU   8                         LNG OF 'KEYBOARD' WORD
                          0002 2537 KEDEDM EQU   2                         DISP TO MONTH IN ENTRY DATE
                          0002 2538 KEDEA2 EQU   2                         DISP TO 2ND BYTE OF PASSWORD
                          0003 2539 KEDEEL EQU   3                         EBCIDIC LINE&SECTOR COUNT LNG'S
                          0004 2540 KEDEDN EQU   4                         DISP FROM UNITS TO LINES
                          0001 2541 KEDEDA EQU   1                         DISP TO DAY IN ENTRY DATE
                          0D94 2542 KEDPBS EQU   KEDPL2                    PRINT SECTION LOCAL BASE
                               2543 *       MSPTH 30,01                     MESSAGE EXPANSION AREA 1
    0E18                  0E35 2544 $$$$01 DS    CL30                      MESSAGE PATCH AREA
                               2545 *** END OF EXPANSION ***
                          01FF 2546 KEDSCT EQU   KEDEIL+KEDIOA             CLEAR TWO I/O SECTORS        1-5
    0E34                       2547        ORG   *-2                                                    1-5
    0E34 01FF             0E35 2548        DC    AL2(@SCTSZ+255)                                        1-5
                               2549 *
                               2550 *      $DL2P
                               2552+***********************************************************************
                               2553+*  5703-XM1  COPYRIGHT IBM CORP 1970                                  *
                               2554+*            REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE. 120-2083      *
                               2555+*                                                                     *
                               2556+***********************************************************************
                               2557+*STATUS -                                                             *
                               2558+*   VERSION 1 MODIFICATION 0                                          *
                               2559+*                                                                     *
                               2560+*FUNCTION                                                             *
                               2561+*   * DL2ICS CONVERTS A RELATIVE DISK ADDRESS TO A PHYSICAL DISK      *
                               2562+*     ADDRESS AND COMBINES IT WITH A BASE ADDRESS PLACED IN DL2RAD    *
                               2563+*     BY THE CALLER.                                                  *
                               2564+*   * THE RELATIVE DISK ADDRESS IS A TWO BYTE CYLINDER SECTOR COUNT   *
                               2565+*     IN THE CALLERS DISK PARAMETER LIST (DPL).                       *
                               2566+*   * THE COUNT IS A CYLINDER SECTOR DISPLACEMENT FROM THE BASE       *
                               2567+*     ADDRESS PLACED IN DL2RAD                                        *
                               2568+*   * DL2ICS IS USED TO PROCESS DATA ON THE FIXED OR REMOVABLE DISK   *
                               2569+*     ON EITHER DRIVE AND PROVIDES THE INTERFACE TO $DISKN.           *
                               2570+*   * THE PHYSICAL DISK ADDRESS IS PLACED IN A COPY OF THE USERS DPL  *
                               2571+*     IN DL2ICS AND A CALL IS MADE TO $DISKN TO PERFORM THE REQUESTED *
                               2572+*     OPERATION.                                                      *
                               2573+*                                                                     *
                               2574+*ENTRY POINTS                                                         *
                               2575+*   * THE ENTRY IS DL2ICS. THE BASE REGISTER IS SAVED AND RESTORED    *
                               2576+*     ON RETURN. THE INDEX REGISTER IS NOT USED.                      *
                               2577+*   * THE FORMAT OF THE CALLING SEQUENCE IS AS FOLLOWS:               *
                               2578+*        B   DL2ICS                                                   *
                               2579+*        DC  AL2(PARMLT)                                              *
                               2580+*     WHERE PARMLT IS THE ADDR OF THE PARAMETER LIST TO BE PROCESSED. *
                               2581+*                                                                     *
                               2582+*INPUT                                                                *
                               2583+*   * THE INPUT IS A TWO BYTE BASE DISK ADDRESS PLACED IN             *
                               2584+*     DL2RAD AND A SIX BYTE DPL. THE SAME FORMAT AS THE DPL FOR       *
                               2585+*     $DISKN EXCEPT FOR THE DISK ADDRESS WHICH IS A RELATIVE CYLINDER *
                               2586+*     AND SECTOR DISPLACEMENT FROM THE BASE ADDRESS IN DL2RAD.        *
                               2587+*                                                                     *
                               2588+*OUTPUT                                                               *
                               2589+*     NONE.                                                           *
                               2590+*                                                                     *
                               2591+*EXTERNAL REFERENCES                                                  *
                               2592+*     $DISKN - ENTRY TO PHYSICAL DISK ROUTINE IS THE SYSTEM NUCLEUS.  *
                               2593+*                                                                     *
                               2594+*EXITS, NORMAL                                                        *
                               2595+*     NORMAL - EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE POINTER *
                               2596+*     TO THE DPL. THE BASE REGISTER IS RESTORED. THE RETURN ADDRESS   *
                               2597+*     IS THE ADDRESS RECALL REGISTER (ARR) +2.                        *
                               2598+*                                                                     *
                               2599+*EXITS, ERROR                                                         *
                               2600+*     NONE                                                            *
                               2601+*                                                                     *
                               2602+*TABLES/WORK AREAS                                                    *
                               2603+*   * THE CONSTANTS AND WORK AREAS RESIDE AT THE END OF THE EXECUTABLE*
                               2604+*     CODE AND ARE REFERENCED BY A DISPLACEMENT RELATIVE TO THE VALUE *
                               2605+*     IN INDEX REGISTER 1 (@BR).                                      *
                               2606+*   * DL2SEC AND DL2SAD ARE EQUATED TO OPERAND LOCATIONS IN THE       *
                               2607+*     EXECUTABLE CODE TO ELIMINATE EXCESS WORKING STORAGE.            *
                               2608+*                                                                     *
                               2609+*ATTRIBUTES                                                           *
                               2610+*   * DL2ICS IS REUSABLE                                              *
                               2611+*                                                                     *
                               2612+*CHARACTER CODE DEPENDENCY                                            *
                               2613+*     THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR  *
                               2614+*     INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.          *
                               2615+*                                                                     *
                               2616+*NOTES                                                                *
                               2617+*   ERROR PROCEDURES                                                  *
                               2618+*      NONE                                                           *
                               2619+*                                                                     *
                               2620+*   REGISTER USAGE                                                    *
                               2621+*      INDEX REGISTER 1 (@BR) IS SAVED AND RESTORED. THIS REGISTER IS *
                               2622+*      USED DURING EXECUTION. REGISTER 2 (@BR) IS NOT USED.           *
                               2623+*                                                                     *
                               2624+*   SAVED/RESTORED AREAS                                              *
                               2625+*      NONE                                                           *
                               2626+*                                                                     *
                               2627+*   MODIFICATION CONSIDERATIONS                                       *
                               2628+*      NONE                                                           *
                               2629+*                                                                     *
                               2630+*   REQUIRED MODULES                                                  *
                               2631+*     @SYSEQ - COMMON SYSTEM EQUATES.                                 *
                               2632+*     @FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATORS VALUES EQUATES *
                               2633+*                                                                     *
                               2634+*   OTHER                                                             *
                               2635+*      DL2ICS MAY BE USED TO CONVERT THE DISK ADDRESS ONLY AND NOT TO *
                               2636+*      CALL $DISKN IF THE USER MOVES A UCB CODE TO DL2SWH.            *
                               2637+*      THIS OPTION IS NOT STANDARD USAGE.                             *
                               2638+***********************************************************************
                          0E3A 2639+       USING DL2000,@BR                ESTABLISH ADDRESSABILITY
                               2640+*
                          0001 2641+DL2E01 EQU   X'01'                     FIELD LENGTH OF 1
                          0002 2642+DL2E02 EQU   X'02'                     FIELD LENGTH OF 2
                          0018 2643+DL2E18 EQU   X'18'                     HEX TRACK SECTOR COUNT
                          0060 2644+DL2E60 EQU   X'60'                     PHYSICAL SECTOR COUNT
                          0083 2645+DL2TSD EQU   X'83'                     MASK OFF TRACK SPINDLE DISK
                          007C 2646+DL2E7C EQU   X'7C'                     MASK OUT SECTOR COUNT
                          0E36 2647+DL2ICS EQU   *                         ENTRY POINT
    0E36 34 01 0EB7            2648+       ST    DL2900+@OP1,@BR           SAVE OLD BASE
                          0E3A 2649+DL2000 EQU   *                         START PROCESSING
    0E3A C2 01 0E3A            2650+       LA    DL2000,@BR                SET BASE ADORESS
    0E3E 76 08 8A              2651+       A     DL2C01(,@BR),@ARR         BUMP TO RIGHT BYTE OF ADDR
    0E41 74 08 14              2652+       ST    DL2001+@DOP2(,@BR),@ARR   ADDR OF PARAM
    0E44 76 08 8A              2653+       A     DL2C01(,@BR),@ARR         BUMP TO RETURN ADDR
    0E47 74 08 81              2654+       ST    DL2910+@OP1(,@BR),@ARR    SAVE RETURN ADDR
                               2655+*
    0E4A 4C 01 1D 0000         2656+DL2001 MVC   DL2002+@DOP2(@DADDR,@BR),*-* SETUP ADDR OF DPL
    0E4F 5E 01 1D 8C           2657+       ALC   DL2002+@DOP2(@CADDR,@BR),DL2C05(,@BR) DUMP TO RIGHT END
    0E53 4C 05 92 0000         2658+DL2002 MVC   DL2DPL(@DPLNG,@BR),*-*    MOVE USER DPL TO WORK AREA
    0E58 5F 00 8F 86           2659+DL2005 SLC   DL2LST+@DSAD(DL2E01,@BR),DL2C48(,@BR) ADJUST SCTR/CYL
    0E5C F2 82 07              2660+       JM    DL2006                    GO TO RESTORE TO CONTINUE
    0E5F 5E 00 8E 8A           2661+       ALC   DL2LST+@DCYL(DL2E01,@BR),DL2C01(,@BR) BUMP CYLINDER COUNT
    0E63 D0 87 1E              2662+       B     DL2005(,@BR)              BACK FOR NEXT CYLINDER
    0E66 5E 00 8F 86           2663+DL2006 ALC   DL2LST+@DSAD(DL2E01,@BR),DL2C48(,@BR) RESTORE POSITIVE
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                               2664+*
                               2665+*      GET THE LOGICAL SECTOR FROM THE DPL. THE NUMBER IS LEFT ADJUSTED
                               2666+*      TO COMAE IT MTN THE POINTER ESTABLISHED PRIOR TO AN ENTRY.
    0E6A 5C 00 1D 8F           2667+       MVC   DL2SEC(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR NUMBER
    0E6E 7C 00 8F              2668+       MVI   DL2LST+@DSAD(,@BR),@ZERO  CLEAR SECTOR BYTE
                               2669+*
                               2670+*      MOVE THE RELATIVE START TO THE DFL
                               2671+*
    0E71 5E 01 8F 94           2672+       ALC   DL2LST+@DSAD(DL2E02,@BR),DL2RAD(,@BR) DL2RAD TO DPL
    0E75 7D 18 1D              2673+       CLI   DL2SEC(,@BR),DL2E18       IS COUNT OVER A TRACK
    0E78 F2 82 08              2674+       JL    DL2008                    NO GO CHANGE A PHYSICAL ADOR
    0E7B 5E 01 8F 85           2675+       ALC   DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR) BUMP TRACK VALUE
    0E7F 5F 00 1D 88           2676+       SLC   DL2SEC(1,@BR),DL2K18(,@BR) DECR BY TRACK VALUE
    0E83 5E 00 1D 1D           2677+DL2008 ALC   DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT 1
    0E87 5E 00 1D 1D           2678+       ALC   DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT
    0E8B 5C 00 14 8F           2679+       MVC   DL2SAD(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR ADDRESS
                               2680+*
                               2681+*      ZERO OUT THE SECTOR COUNT AND LEAVE THE DISK. SPINDLE AND
                               2682+*      TRACK BITS AS IS TO BE RE INSERTED AFTER THE SECTOR HAS BEEN
                               2683+*      LOCATES.
                               2684+*
    0E8F 7B 7C 8F              2685+       SBF   DL2LST+@DSAD(,@BR),DL2E7C TURN OFF
    0E92 7B 83 14              2686+       SBF   DL2SAD(,@BR),DL2TSD       OFF TRACK SPINDLE DISK
    0E95 5E 00 14 1D           2687+       ALC   DL2SAD(DL2E01,@BR),DL2SEC(,@BR) COMBINE SECTOR COUNTS
    0E99 7D 60 14              2688+DL2010 CLI   DL2SAD(,@BR),DL2E60       TEST IF TRACK CROSSED
    0E9C F2 82 08              2689+       JL    DL2100
                               2690+*
                               2691+*      INCREMENT TRACK BIT. OVERFLOW INTO THE CYLINDER COUNT.
                               2692+*
    0E9F 5E 01 8F 85           2693+       ALC   DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR)
    0EA3 5F 00 14 83           2694+       SLC   DL2SAD(1,@BR),DL2K60(,@BR) DECR BY TRACK VALUE
                               2695+*
    0EA7 5E 00 8F 14           2696+DL2100 ALC   DL2LST+@DSAD(1,@BR),DL2SAD(,@BR) INSERT SECTOR COUNT
                               2697+*
    0EAB F2 80 06              2698+DL2110 JC    DL2900,@NOP               CONVERSION SWITCH
                          0EAC 2699+DL2SWH EQU   DL2110+@Q                 ADDR OF Q CODE FOR SWITCH
    0EAE C0 87 0025            2700+       B     $DISKN                    GO PROCESS I/O
    0EB2 0EC7             0EB3 2701+       DC    AL2(DL2LST)               ADDRESS OF DPL
    0EB4 C2 01 0000            2702+DL2900 LA    *-*,@BR                   RESTORE CALLERS BASE
    0EB8 C0 87 0000            2703+DL2910 B     *-*
                               2704+**********************************************************************
                               2705+*      CONSTANTS
                               2706+**********************************************************************
    0EBC 0060             0EBD 2707+DL2K60 DC    XL2'0060'                 SECTOR COUNT OF 24 LEFT ADJUSTD
    0EBE 0080             0EBF 2708+DL2K80 DC    XL2'0080'                 BIT FOR INCREMENTING TRACK
    0EC0 30               0EC0 2709+DL2C48 DC    IL1'48'                   CYLINDER VALUE FOR 1 DISK
    0EC1 0018             0EC2 2710+DL2K18 DC    XL2'18'                   HEX SECTORS PER TRACK
    0EC3 0001             0EC4 2711+DL2C01 DC    IL2'1'                    CONSTANT FOR REGISTER MODE
    0EC5 0005             0EC6 2712+DL2C05 DC    IL2'5'                    DISP TO RIGHT END OF DPL
                               2713+**********************************************************************
                               2714+*      WORK AREA
                               2715+**********************************************************************
                          0EC7 2716+DL2LST EQU   *                         LIST HIGH END
    0EC7                  0ECC 2717+DL2DPL DS    CL(@DPLNG)                WORKING DPL
                          0EC9 2718+DL2PHY EQU   DL2LST+@DSAD              POINTER TO PHYSICAL DADDR
                          0E4E 2719+DL2SAD EQU   DL2001+@DOP2              SAVE SECTOR BYTE FROM DPI
                          0E57 2720+DL2SEC EQU   DL2002+@DOP2              WORKING SECTOR ADDRESS FIELD
    0ECD                  0ECE 2721+DL2RAD DS    CL(@DADDR)                USER RELATIVE STARTING ADDR.
                          0ECF 2722+DL2END EQU   *                         END OF DL2ICS
                               2723+***                       END OF DL2ICS                            ***
                               2724 *
                               2725 *      $DL4P
                               2727+***********************************************************************
                               2728+* 5703-XM1  COPYRIGHT IBM CORP. 1970                                  *
                               2729+*           REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083       *
                               2730+*                                                                     *
                               2731+***********************************************************************
                               2732+*STATUS                                                               *
                               2733+*   VERSION 1 MODIFICATION 0                                          *
                               2734+*                                                                     *
                               2735+*FUNCTION                                                             *
                               2736+*   * DL4ICS WILL CONVERT A RELATIVE DISK ADDRESS TO A PHYSICAL       *
                               2737+*     DISK ADDRESS AND CALL $DISKN TO PERFORM THE SPECIFIED FUNCTION  *
                               2738+*   * THE DISK ADDRESS IS A ONE BYTE CYLINDER ADDRESS AND A ONE BYTE  *
                               2739+*     SECTOR DISPLACEMENT RELATIVE TO SECTOR 0 ON A CYLINDER          *
                               2740+*     BOUNDARY                                                        *
                               2741+*   * WHEN MORE THAN 1 SECTOR IS PROCESSED, DL4ICS WILL MAKE MULTIPLE *
                               2742+*     CALLS TO $DISKN TO CROSS CYLINDER BOUNDARIES IF REQUIRED.       *
                               2743+*   * IF 1 SECTOR ONLY IS TO BE PROCESSED, THE USER MAY OVERLAY THE   *
                               2744+*     UNUSED CODE BY ORGING HIS NEXT MODULE AT DL4SPT                 *
                               2745+*                                                                     *
                               2746+*ENTRY POINTS                                                         *
                               2747+*     DL4ICS - ENTRY TO PROCESS A 4 SURFACE FILE. THE CALLING         *
                               2748+*              SEQUENCE IS AS FOLLOWS                                 *
                               2749+*                  DSKL4  DPL                                         *
                               2750+*              WHERE DPL IS THE LABEL OF A SIX BYTE DISK PARAMETER    *
                               2751+*              LIST AS DESCRIBED FOR $DISKN EXCEPT FOR THE SECTOR     *
                               2752+*              ADDRESS BYTE.                                          *
                               2753+*                                                                     *
                               2754+*INPUT                                                                *
                               2755+*   * INPUT TO DL4ICS IS THE ADDRESS OF THE DPL TO BE PROCESSED.      *
                               2756+*                                                                     *
                               2757+*OUTPUT                                                               *
                               2758+*   * N/A                                                             *
                               2759+*                                                                     *
                               2760+*EXTERNAL REFENECES                                                   *
                               2761+*     $DISKN - ENTRY TO SYSTEM DISK ROUTINE                           *
                               2762+*                                                                     *
                               2763+*EXITS, NORMAL                                                        *
                               2764+*   * NORMAL RETURN IS TO THE 1ST INSTRUCTION FOLLOWING THE TWO BYTE  *
                               2765+*     ADDRESS POINTING TO THE DPL.                                    *
                               2766+*                                                                     *
                               2767+*EXITS, ERROR                                                         *
                               2768+*   * N/A                                                             *
                               2769+*                                                                     *
                               2770+*TABLES/WORK AREAS                                                    *
                               2771+*   * N/A                                                             *
                               2772+*                                                                     *
                               2773+*ATTRIBUTES                                                           *
                               2774+*   * RELOCATABLE                                                     *
                               2775+*   * REUSABLE                                                        *
                               2776+*                                                                     *
                               2777+*CHARACTER CODE DEPENDENCY                                            *
                               2778+*   * THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR  *
                               2779+*     INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.          *
                               2780+*                                                                     *
                               2781+*NOTES                                                                *
                               2782+*   ERROR PROCEDURES                                                  *
                               2783+*      N/A                                                        *
                               2784+*                                                                     *
                               2785+*   REGISTER USAGE                                                    *
                               2786+*      @BR IS SAVED AND RESTORED ON EXIT, @XR IS NOT USED.  @ARR IS   *
                               2787+*      USED TO PROVIDE THE ADDRESS OF THE PARAMETER.  THE @ARR IS     *
                               2788+*      INCREMENTED BT TWO AND SAVED AS THE RETURN ADDRESS.            *
                               2789+*                                                                     *
                               2790+*   SAVED/RESTORED AREAS                                              *
                               2791+*      N/A                                                            *
                               2792+*                                                                     *
                               2793+*   MODIFICATION CONSIDERATIONS                                       *
                               2794+*      N/A                                                            *
                               2795+*                                                                     *
                               2796+*   REQUIRED MODULES                                                  *
                               2797+*      @SYSEQ - SYSTEM SOFTWARE EQUATES                               *
                               2798+*      @FXDEQ - SYSTEM NUCLEUS EQUATES                                *
                               2799+*                                                                     *
                               2800+*   OTHER                                                             *
                               2801+*      NONE                                                           *
                               2802+***********************************************************************
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                          0ECF 2804+DL4ICS EQU   *                         ENTRY TO DL4ICS
                          0ED3 2805+        USING DL4010,@BR                ESTABLISH BASE REGISTER USAGE
    0ECF 34 01 0F3F            2806+        ST    DL4900+@OP1,@BR           SAVE BASE REGISTER FOR EXIT
                          0ED3 2807+DL4010 EQU   *                         BASE ADDRESSABILITY
    0ED3 C2 01 0ED3            2808+        LA    DL4010,@BR                ESTABLISH BASE
    0ED7 76 08 78              2809+        A     DL4C01(,@BR),@ARR         BUMP TO HIGH END OF ADDR
    0EDA 74 08 14              2810+        ST    DL4020+@DOP2(,@BR),@ARR   SET UP MOVE INSTRUCTION
    0EDD 76 08 78              2811+        A     DL4C01(,@BR),@ARR         BUMP TO RETURN ADDR
    0EE0 74 08 70              2812+        ST    DL4920+@OP1(,@BR),@ARR    SAVE RETURN ADDR
                               2813+*
    0EE3 4C 01 1D 0000         2814+DL4020 MVC   DL4030+@DOP2(@DADDR,@BR),*-* MOVE DPL ADDR INTO MOVE
    0EE8 5E 01 1D 7A           2815+        ALC   DL4030+@DOP2(@CADDR,@BR),DL4C05(,@BR) BUMP TO RIGHT END
    0EEC 4C 05 76 0000         2816+DL4030 MVC   DL4DPL(@DPLNG,@BR),*-*    MOVE USER DPL TO WORK AREA
                               2817+*
    0EF1 7C 00 5E              2818+DL4035 MVI   DL4100+@Q(,@BR),@ZERO     CLEAR TRACK, DISK SET INST
    0EF4 7C 80 67              2819+        MVI   DL4200+@Q(,@BR),@NOP      TURN OFF TWICE INDICATOR
                               2820+*
    0EF7 7D 60 73              2821+DL4040 CLI   DL4SCD(,@BR),DL4E96       TEST IF DISPLACEMENT OVER 95 ?
    0EFA F2 82 0B              2822+        JL    DL4050                    JUMP IF NOT OVER 95
    0EFD 5E 00 72 78           2823+        ALC   DL4CYL(1,@BR),DL4C01(,@BR) INCREMENT CYLINDER COUNT
    0F01 5F 00 73 25           2824+        SLC   DL4SCD(1,@BR),DL4C96(,@BR) DECREMENT DISP BY 96
    0F05 D0 87 24              2825+        B     DL4040(,@BR)              GO BACK CHECK FOR NEXT CYLINDER
                               2826+*
    0F08 7D 30 73              2827+DL4050 CLI   DL4SCD(,@BR),DL4E48       TEST IF DISP ON NEXT DISK ?
    0F0B F2 82 07              2828+        JL    DL4060                    JUMP IF NOT OVER 48
    0F0E 7A 01 5E              2829+        SBN   DL4100+@Q(,@BR),DL4EFD    TURN ON BIT FOR FIXED DISK
    0F11 5F 00 73 36           2830+        SLC   DL4SCD(1,@BR),DL4C48(,@BR) DECREMENT DISP 1 DISK
    0F15 7D 01 74              2831+DL4060 CLI   DL4SCT(,@BR),DL4E01       IS SECTOR COUNT GREATER THEN 1 ?
    0F18 F2 84 33              2832+        JH    DL4SPT                    GO TO SPLIT CALL
    0F1B 7D 18 73              2833+DL4070 CLI   DL4SCD(,@BR),DL4E24       DISPLACEMENT OVER 23 ?
    0F1E F2 82 07              2834+        JL    DL4080                    JUMP NOT OVER 24
    0F21 7A 80 5E              2835+        SBN   DL4100+@Q(,@BR),DL4ETB    SET TRACK BIT ON
    0F24 5F 00 73 49           2836+        SLC   DL4SCD(1,@BR),DL4C24(,@BR) DECR DISP TO NEXT TRACK
    0F28 5E 00 73 73           2837+DL4080 ALC   DL4SCD(1,@BR),DL4SCD(,@BR) SHIFT LEFT 1 PLACE
    0F2C 5E 00 73 73           2838+        ALC   DL4SCD(1,@BR),DL4SCD(,@BR) SHIFT LEFT 1 PLACE
    0F30 7A 00 73              2839+DL4100 SBN   DL4SCD(,@BR),*-*          SET TRACK, DISK BIT
                               2840+*
    0F33 C0 87 0025            2841+        B     $DISKN                    GO PERFORM DISK I/O
    0F37 0F44             0F38 2842+        DC    AL2(DL4LST)               ADDR OF DISK PARAM LIST
                               2843+*
    0F39 F2 00 3C              2844+DL4200 JC    DL4600,*-*                BRANCH OR NOP IF TWICE SET
                               2845+*
    0F3C C2 01 0000            2846+DL4900 LA    *-*,@BR                   RESTORE OLD BASE TO RETURN
    0F40 C0 87 0000            2847+DL4920 B     *-*                       RETURN TO CALLER

                          0F44 2849+DL4LST EQU   *                         LEFT END OF DPL
    0F44                  0F49 2850+DL4DPL DS    CL(@DPLNG)                DPL SAVE AREA
                          0F45 2851+DL4CYL EQU   DL4LST+@DCYL              CYLINDER COUNT BYTE
                          0F46 2852+DL4SCD EQU   DL4LST+@DSAD              DISPLACEMENT SECTOR COUNT
                          0060 2853+DL4E96 EQU   96                        TWO DISK SECTOR COUNT PER CYL
                          0030 2854+DL4E48 EQU   48                        ONE DISK SECTOR COUNT PER CYL
                          0018 2855+DL4E24 EQU   24                        TRACK SECTOR COUNT
                          0001 2856+DL4E01 EQU   01                        VALUE TO TEST SECTOR COUNT
                          0001 2857+DL4EFD EQU   01                        VALUE TO SET FIXED DISK BIT
                          0080 2858+DL4ETB EQU   X'80'                     VALUE TO SET TRACK BIT
    0F4A 0001             0F4B 2859+DL4C01 DC    IL2'1'                    VALUE TO INCR TO CYLINDER
    0F4C 0005             0F4D 2860+DL4C05 DC    IL2'5'                    DISP TO RIGHT END OF DPL
                          0EF8 2861+DL4C96 EQU   DL4040+@Q                 VALUE TO DECR DISPLACEMENT
                          0F1C 2862+DL4C24 EQU   DL4070+@Q                 VALUE OF 1 TRACK
                          0F47 2863+DL4SCT EQU   DL4LST+@DCNT              POINTER TO DPL SECTOR COUNT
                          0F09 2864+DL4C48 EQU   DL4050+@Q                 VALUE TO DECR DISP BY 1 DISK

    0F4E 5C 00 14 74           2866+DL4500 MVC   DL4WRK(1,@BR),DL4SCT(,@BR) PICKUP SECTOR COUNT
                          0F4E 2867+DL4SPT EQU   DL4500                    POSSIBLE OVERLAY REFERENCE
    0F52 5E 00 14 73           2868+       ALC   DL4WRK(1,@BR),DL4SCD(,@BR) BUMP BY DISPLACEMENT
    0F56 7D 30 14              2869+       CLI   DL4WRK(,@BR),DL4E48       TEST FOR CYLINDER OVERLAP
    0F59 D0 04 48              2870+       BNH   DL4070(,@BR)              BRANCH BACK IF NO OVERLAY
    0F5C 5F 00 14 36           2871+       SLC   DL4WRK(1,@BR),DL4C48(,@BR) DECREMENT WORK BY 48
    0F60 5F 00 74 14           2872+       SLC   DL4SCT(1,@BR),DL4WRK(,@BR) SUBTRACT WORK FROM COUNT
    0F64 7C 87 67              2873+       MVI   DL4200+@Q(,@BR),@UCB      SET TWICE SWITCH
    0F67 5C 00 13 73           2874+       MVC   DL4SAV(1,@BR),DL4SCD(,@BR) SAVE SECTOR DISP IN WORK AREA
    0F6B 78 01 5E              2875+       TBN   DL4100+@Q(,@BR),DL4EFD    DISK BIT ON IN Q CODE ?
    0F6E D0 90 48              2876+       BF    DL4070(,@BR)              BRANCH NOT ON
    0F71 5E 00 13 36           2877+       ALC   DL4SAV(1,@BR),DL4C48(,@BR) BUMP TO NEXT DISK
    0F75 D0 87 48              2878+       B     DL4070(,@BR)              RETURN TO CALL I/O
                               2879+*
    0F78 5C 00 73 13           2880+DL4600 MVC   DL4SCD(1,@BR),DL4SAV(,@BR) PICKUP NEXT HALF OF I/O
    0F7C 5E 00 75 74           2881+       ALC   DL4LST+@DBFR1(1,@BR),DL4SCT(,@BR) BUMP CORE ADDRESS
    0F80 5E 00 73 74           2882+       ALC   DL4SCD(1,@BR),DL4SCT(,@BR)
    0F84 5C 00 74 14           2883+       MVC   DL4SCT(1,@BR),DL4WRK(,@BR) MOVE IN NEW SECTOR COUNT
    0F88 D0 87 1E              2884+       B     DL4035(,@BR)              RETURN FOR SECOND PASS
                               2885+*
                          0EE7 2886+DL4WRK EQU   DL4020+@DOP2              1 BYTE WORK AREA FOR SPLIT CALL
                          0EE6 2887+DL4SAV EQU   DL4020+@DOP2-1            1 BYTE WORK AREA FOR SPLIT CALL
                          0F8B 2888+DL4END EQU   *                         DEFINE END OF CODE
                               2889+***                 END OF DL4ICS                           ***
                               2890 *
    0F8B                  0FB2 2892 $$$$$2 DS    CL40                      NON-OVERLAYABLE CODE PATCH AREA
                          0FB3 2893 KEDBFR EQU   *                         START OF FILE TRANSFER BUFFER
                               2894 *
                               2895 *                  SYNTAX CHECKING SECTION AND FILE FINDER
                               2896 *
    0FB3 35 02 03C7            2897 KED500 L     $XRSAV,@XR                PICK UP PARAM. LIST ADDR
                          03C0 2898        USING $NUCBS,@BR                SET FIXED NLCLEUS AREA AS
    0FB7 C2 01 03C0            2899        LA    $NUCBS,@BR                * A BASE
    0FBB 38 80 06FF            2900        TBN   $$XIND,$$$ERN             EDIT CALLED BY RUN OR STEP ?
    0FBF F2 10 0B              2901        JT    KED505                    YES, BYPASS BLANK TEST
    0FC2 C0 87 169C            2902        B     SCANIT                    BYPASS BLANKS
    0FC6 7C 18 0D              2903        MVI   $CAERR(,@BR),@@E139       SET BAD DELIMITER ERROR CODE
    0FC9 C0 81 10EC            2904        BE    KED593                    JUMP TO ERR IF NO BLANK
    0FCD C0 87 17E8            2905 KED505 B     SUFFER                    CHECK FILE SPECIFICATION
    0FD1 C0 82 10FB            2906        BL    KED599                    JUMP TO ERROR ROUTINE IF ERROR
    0FD5 38 80 06FF            2907        TBN   $$XIND,$$$ERN             EDIT CALLED BY RUN OR STEP ?
    0FD9 F2 90 16              2908        JF    KED530                    NO, BYPASS RUN/STEP FILE HANDLNG
    0FDC BD 1E 00              2909        CLI   @ZERO(,@XR),@EOS          IS REF'D CHAR THE EOS
    0FDF C0 01 10E0            2910        BNE   KED590                    NO, INVALID PARM ERROR       1-4
    0FE3 C0 87 1359            2911        B     SFINDF                    FIND SPECIFIED FILE
    0FE7 39 88 19F4            2912        TBF   SMIND1,SMIFNE+SMIPNF      WAS IT FOUND ?
    0FEB F2 10 E8              2913        JT    KED585                    YES, BYPASS EDIT SYNTAX CHECKING
    0FEE C0 87 10F8            2914        B     KED598                    GO TO ERROR RETURN           1-4
                               2915 *
                               2916 *                  CHECK FOR 'EDITED' FILE TYPE
                               2917 *
    0FF2 BD 1E 00              2918 KED530 CLI   @ZERO(,@XR),@EOS          MORE PARAMETERS ?
    0FF5 F2 81 B7              2919        JE    KED570                    NO, GO TO SEARCH FILE
    0FF8 3A 20 1128            2920        SBN   KEDID1,KEDEIG             SET FILE TYPE GIVEN INDR.
    0FFC 34 02 10AB            2921        ST    KEDXRS,@XR                SAVE @XR FOR UP-ARROW POSITION
    1000 8D 08 08 110F         2922        CLC   KEDEPD(KEDEBP,@XR),KEDPRO  'PROCEDURE' SPECIFIED ?     1-4
    1005 F2 01 0E              2923        JNE   KED535                    IF NOT, CHECK BASIC          1-4
    1008 3A 01 1128            2924        SBN   KEDID1,KEDPRE             SET PROCEDURE INDR           1-4
    100C E2 02 09              2925        LA    KEDEBP(,@XR),@XR          POINT PAST SYNTAX            1-4
    100F 3B 80 1128            2926        SBF   KEDID1,KEDEIB             SET OFF BASIC INDR           1-4
    1013 F2 87 81              2927        J     KED553                    BYPASS BASIC CHECK           1-4
    1016 8D 04 04 1102         2928 KED535 CLC   KEDEBD(KEDEBL,@XR),KEDCBW  WAS 'BASIC' SPECIFIED ?     1-4
    101B F2 81 76              2929        JE    KED550                    YES, BYPASS CHECKING FOR DATA
    101E 8D 03 03 1106         2930        CLC   KEDEDD(KEDEDL,@XR),KEDCDW  WAS 'DATA' SPECIFIED ?
    1023 F2 01 33              2931        JNE   KED544                    NO, CHECK FOR 'SHORT' OR 'LONG'
    1026 3B 80 1128            2932        SBF   KEDID1,KEDEIB             SET OFF BASIC INDR
    102A E2 02 04              2933        LA    KEDEDL(,@XR),@XR          INCR @XR PAST 'DATA'
    102D C0 87 169C            2934        B     SCANIT                    BYPASS BLANKS & A COMMA
    1031 F2 82 C7              2935        JL    KED599                    JUMP TO ERR RTRN IF ERROR
    1034 F2 81 6E              2936        JE    KED555                    NODELIM, GO CHECK FOR EOS
    1037 34 02 10AB            2937        ST    KEDXRS,@XR                SAVE @XR FOR UP-ARROW POSITION
    103B 8D 04 04 1114         2938        CLC   KEDESD(KEDESL,@XR),KEDCSW  WAS 'SHORT' SPECIFIED ?
    1040 F2 81 10              2939        JE    KED540                    YES, GO CHECK FOR EOS
    1043 8D 03 03 1118         2940        CLC   KEDELD(KEDELL,@XR),KEDCLW  WAS 'LONG' SPECIFIED ?
    1048 F2 01 5A              2941        JNE   KED555                    NO, GO CHECK FOR EOS
    104B 3C 04 1055            2942        MVI   KED540+@D1,KEDELL         SET ADD TO @XR TO BYPASS 'LONG'
    104F 3B 40 1128            2943        SBF   KEDID1,KEDEIS             SET OFF SHORT PREC. INDR
    1053 E2 02 00              2944 KED540 LA    *-*(,@XR),@XR             INCR @XR PAST PREC. SPECIFICATN
    1053                       2945        ORG   KED540                    * INITLZ TO BYPASS 'SHORT',
    1053 E2 02 05              2946        LA    KEDESL(,@XR),@XR          * CHANGE IF 'LONG' SPECIFIED
    1056 F2 87 3E              2947        J     KED553                    GO CHECK FOR EOS
    1059 8D 04 04 1114         2948 KED544 CLC   KEDESD(KEDESL,@XR),KEDCSW  WAS 'SHORT' SPECIFIED ?
    105E F2 81 10              2949        JE    KED546                    YES, SO CHECK FOR 'DATA'
    1061 8D 03 03 1118         2950        CLC   KEDELD(KEDELL,@XR),KEDCLW  WAS 'LONG' SPECIFIED ?
    1066 F2 01 77              2951        JNE   KED590                    NO, GO SET INVALID PARAM ERROR
    1069 3C 04 1073            2952        MVI   KED546+@D1,KEDELL         SET ADD TO @XR TO BYPASS 'LONG'
    106D 3B 40 1128            2953        SBF   KEDID1,KEDEIS             SET OFF SHORT PREC. INDR
    1071 E2 02 00              2954 KED546 LA    *-*(,@XR),@XR             INCR @XR PAST PREC. SPECIFIED
    1071                       2955        ORG   KED546                    * INITLZ TO BYPASS 'SHORT'
    1071 E2 02 05              2956        LA    KEDESL(,@XR),@XR          * PRECISION, CHANGE IF 'LONG'
    1074 C0 87 169C            2957        B     SCANIT                    BYPASS A DELIMITER
    1078 F2 82 80              2958        JL    KED599                    JUMP TO ERR RTRN IF ERROR
    107B F2 81 5E              2959        JE    KED589                    NO DELIMITER, SO SET ERR CODE
    107E 34 02 10AB            2960        ST    KEDXRS,@XR                SAVE @XR FOR UP-ARROW POSITION
    1082 8D 03 03 1106         2961        CLC   KEDEDD(KEDEDL,@XR),KEDCDW  WAS 'DATA' SPECIFIED ?
    1087 F2 01 56              2962        JNE   KED590                    NO, GO SET INVALID PARAM ERR
    108A 3B 80 1128            2963        SBF   KEDID1,KEDEIB             SET OFF BASIC INDR
    108E E2 02 04              2964        LA    KEDEDL(,@XR),@XR          INCR @XR PAST 'DATA'
    1091 F2 87 03              2965        J     KED553
    1094 E2 02 05              2966 KED550 LA    KEDEBL(,@XR),@XR          INCR @XR PAST 'BASIC'
    1097 C0 87 169C            2967 KED553 B     SCANIT                    BYPASS BLANKS & A COMMA
    109B F2 82 5D              2968        JL    KED599                    GO TO ERR RTRN IF ERROR
    109E F2 81 04              2969        JE    KED555                    NO DELIMITER, GO CHK FOR EOS
    10A1 34 02 10AB            2970        ST    KEDXRS,@XR                RESET POINTER TO NEW PARAMETER
    10A5 BD 1E 00              2971 KED555 CLI   @ZERO(,@XR),@EOS          IS CHAR REFERENCED THE EOD ?
    10A8 C2 02 0000            2972 KED560 LA    *-*,@XR                   RESTORE @XR FOR UP-ARROW
                          10AB 2973 KEDXRS EQU   KED560+@OP1               @XR SAVE CADDR
    10AC F2 01 31              2974        JNE   KED590                    NO, GO TO INVALID PARAM ERR
    10AF C0 87 1359            2975 KED570 B     SFINDF                    GO FIND FILE
    10B3 39 88 19F4            2976        TBF   SMIND1,SMIFNE+SMIPNF      WAS IT FOUND ?
    10B7 F2 10 15              2977        JT    KED580                    YES, SO TEST FOR TYPE SPECIFIED
    10BA C2 01 03C0            2978 SFIERR LA    $NUCBS,@BR                RE-LOAD FIXED AREA BASE
    10BE 38 80 06FF            2979        TBN   $$XIND,$$$ERN             EDIT CALLED BY RUN/STEP?
    10C2 F2 10 33              2980        JT    KED598                    YES, GO TO ERR
    10C5 3D 40 19FB            2981        CLI   SMPSWD+@B1-##LPEN,@BLANK  WAS A PASSWORD SPECIFIED ?
    10C9 F2 01 2C              2982        JNE   KED598                    YES, GO SET FILE NOT FOUND ERR
    10CC F2 87 5A              2983        J     KED600                    GO CLEAR THE WORK FILE
    10CF 38 20 1128            2984 KED580 TBN   KEDID1,KEDEIG             WAS FILE TYPE SPECIFIED ?
    10D3 F2 10 10              2985        JT    KED592                    YES, GO SET CONFLICT ERR
    10D6 7C 80 B6              2986 KED585 MVI   $CIMSK(,@BR),@NOP         MASK OFF INQUIRY REQUEST
    10D9 F2 87 D4              2987        J     KED700                    GO CHECK SAVED FILE STATUS
                               2988 *
                               2989 *                  SYNTAX ERROR HANDLING SECTION
                               2990 *
    10DC 35 02 10AB            2991 KED589 L     KEDXRS,@XR                RESTORE @XR FOR UP-ARROW
    10E0 7C 11 0D              2992 KED590 MVI   $CAERR(,@BR),@@E131       SET INVALID PARAM ERR CODE
    10E3 F2 87 15              2993        J     KED599                    GO TO ERROR EXIT
    10E6 7C 51 0D              2994 KED592 MVI   $CAERR(,@BR),@@E338       SET NAME ALREADY DEF. ERR CODE
    10E9 F2 87 0C              2995        J     KED598                    GO TO ERROR EXIT
    10EC BD 1E 00              2996 KED593 CLI   @ZERO(,@XR),@EOS          IS CHAR THE EOS ?
    10EF F2 01 09              2997        JNE   KED599                    NO, GO TO ERROR EXIT
    10F2 7C 10 0D              2998        MVI   $CAERR(,@BR),@@E130       SET MISSING PARAM ERROR CODE
    10F5 F2 87 03              2999        J     KED599                    GO TO ERROR EXIT
    10F8 E2 02 F4              3000 KED598 LA    @LINSZ(,@XR),@XR          NOT A SYNTAX ERR - NO UP-ARROW
    10FB D0 87 A9              3001 KED599 B     $CAERK(,@BR)              EXIT TO ERRPGM INTERFACE
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                               3003 *
                               3004 *                  CONSTANTS AND EQUATES USED IN SYNTAX AND
                               3005 *                  FILE FINDER SECTION.
                               3006 *
    10FE C2C1E2C9C3       1102 3007 KEDCBW DC    CL5'BASIC'                'BASIC' PARAMETER
    1103 C4C1E3C1         1106 3008 KEDCDW DC    CL4'DATA'                 'DATA' PARAMETER
    1107 D7D9D6C3C5C4E4D9 110F 3009 KEDPRO DC    CL9'PROCEDURE'            'PROCEDURE' PARAMETER
                               3010 *
    1110 E2C8D6D9E3       1114 3011 KEDCSW DC    CL5'SHORT'                'SHORT' PARAMETER
    1115 D3D6D5C7         1118 3012 KEDCLW DC    CL4'LONG'                 'LONG' PARAMETER
                               3013 *       MSPTH 15,03                    KEYWORD PARAMETER PATCH AREA
    1119                  1127 3014 $$$$03 DS    CL15                      MESSAGE PATCH AREA
                               3015 *** END OF EXPANSION ***
                               3016 *
    1128                  1128 3017 KEDID1 DS    CL1                       INDICATOR BYTE 1
    1128                       3018        ORG   KEDID1                    * INITIALIZED FOR
    1128 C0               1128 3019        DC    AL1(KEDEIB+KEDEIS)        *
                               3020 *                  MASKS FOR INDICATOR BYTE 1
                          0080 3021 KEDEIB EQU   X'80'                     '1' - BASIC FILE
                               3022 *                                      '0' - DATA FILE
                          0040 3023 KEDEIS EQU   X'40'                     '1' - SHORT PRECISION DATA FILE
                               3024 *                                      '0' - LONG PRECISION DATA FILE
                          0020 3025 KEDEIG EQU   X'20'                     '1' - TYPE OR PREC. NOT GIVEN
                               3026 *                                      '0' - TYPE OR PREC. GIVEN
                          0001 3027 KEDPRE EQU   X'01'                     '1' - PROCEDURE FILE         1-4
                               3028 *                                      '0' - PROCEDURE NOT GIVEN
                               3029 *
                          0009 3030 KEDEBP EQU   9                         LENGTH OF WORD 'PROCEDURE'   1-4
                          0008 3031 KEDEPD EQU   KEDEBP-1                  DISP TO END OF 'PROCEDURE'   1-4
                          0005 3032 KEDEBL EQU   5                         LENGTH OF WORD 'BASIC'
                          0004 3033 KEDEBD EQU   KEDEBL-1                  DISP TO END CHAR. OF 'BASIC'
                          0004 3034 KEDEDL EQU   4                         LENGTH OF WORD 'DATA'
                          0003 3035 KEDEDD EQU   KEDEDL-1                  DISP TO END CHAR. OF 'DATA'
                          0005 3036 KEDESL EQU   5                         LENGTH OF WORD 'SHORT'
                          0004 3037 KEDESD EQU   KEDESL-1                  DISP TO END CHAR. OF 'SHORT'
                          0004 3038 KEDELL EQU   4                         LENGTH OF WORD 'LOWS'
                          0003 3039 KEDELD EQU   KEDELL-1                  DISP TO END CHAR. OF 'LONG'
                               3040 *
                               3041 *                  CLEAR THE WORK FILE SECTION
                               3042 *
    1129 7C 80 B6              3043 KED600 MVI   $CIMSK(,@BR),@NOP         MASK OFF INQUIRY REQUESTS
    112C 0C 07 11A0 1A0A       3044        MVC   KEDPNM(##LUEN),SMFNAM     MOVE NAME TO CLEAR MSG
    1132 D0 87 A5              3045        B     $SPRNT(,@BR)              PRINT CLEAR MSG
    1135 1170             1136 3046        DC    AL2(KEDPL1)               *
    1137 C0 87 1475            3047        B     GCLEAR                    GO CLEAR THE WORK FILE
    113B 7B 01 16              3048        SBF   $INDR3(,@BR),$DBLOK       CLEAR THE ** PROTECT INDR
    113E 4C 07 83 1A0A         3049        MVC   $WFNME(##LUEN,@BR),SMFNAM  SET WORK FILE NAME
    1143 38 80 1128            3050        TBN   KEDID1,KEDEIB             IS FILE TYPE BASIC ?
    1147 F2 90 06              3051        JF    KED610                    NO, GO SET DATA
    114A 7A 80 14              3052        SBN   $INDR1(,@BR),$BASIC       SET FILE TYPE = BASIC
    114D F2 87 17              3053        J     KED650                    GO TO EXIT
    1150 7A 40 14              3054 KED610 SBN   $INDR1(,@BR),$KEYDT       SET FILE TYPE = DATA
    1153 38 01 1128            3055        TBN   KEDID1,KEDPRE             PROCEDURE FILE ?             1-4
    1157 F2 90 03              3056        JF    KED620                    NO                           1-4
    115A 7A 01 14              3057        SBN   $INDR1(,@BR),$PROCI       SET ON PROCEDURE INDR        1-4
    115D 38 40 1128            3058 KED620 TBN   KEDID1,KEDEIS             IS PRECISION SET SHORT ?     1-4
    1161 F2 10 03              3059        JT    KED650                    YES, GO TO EXIT
    1164 7A 02 14              3060        SBN   $INDR1(,@BR),$PRESN       SET PRECISION - LONG
    1167 D0 87 A5              3061 KED650 B     $SPRNT(,@BR)              WAIT FOR PRINT COMPLETE
    116A 057F             116B 3062        DC    AL2($WAITF)               *
    116C C0 87 04A1            3063        B     $CARPL                    RETURN TO SYSTEM
    1170 C0               1170 3064 KEDPL1 DC    AL1(@PRETR)               PRINT PARAM LIST - 1
    1171 2D               1171 3065        DC    XL1'2D'                   *
    1172 1174             1173 3066        DC    AL2(KEDMSC)               *
                          1174 3067 KEDMSC EQU   *                         WORK FILE CLEARED MSG
    1174 E6D6D9D240C6C9D3 1198 3068        DC    CL37'WORK FILE HAS BEEN CLEARED AND NAMED '
    1199                  11A0 3069 KEDPNM DS    CL8                       * WORK FILE NAME
                               3070 *       MSPT4 15,04                     MESSAGE EXPANSION AREA 2
    11A1                  11AF 3071 $$$$04 DS    CL15                      MESSAGE PATCH AREA
                               3072 *** END OF EXPANSION ***
                               3073 *
                               3074 *                  SAVED FILE CHECKING AND TRANSFER SET-UP SECTION
                               3075 *
    11B0 35 02 1A0C            3076 KED700 L     SMUDEA,@XR                LOAD CADDR OR ENTRY TO @XR
    11B4 B8 80 0D              3077        TBN   ##DUES(,@XR),##MUEP       IS SAVED FILE A BASIC FILE
    11B7 F2 10 33              3078        JT    KED750                    YES, BYPASS DATA FILE CHECKING
    11BA 38 80 06FF            3079        TBN   $$XIND,$$$ERN             EDIT CALLED BY RUN ?
    11BE C0 10 12EC            3080        BT    KED890                    YES, GO SET FILE TYPE ERROR CODE
    11C2 B8 20 0D              3081        TBN   ##DUES(,@XR),##MUEG       PROG. GEN'D DATA FILE ?
    11C5 F2 90 0C              3082        JF    KED710                    NO, BYPASS SIZE CHECK
    11C8 8D 01 0B 0D91         3083        CLC   ##DUEF(##LUEF,@XR),KEDCWS  WILL FILE FIT IN THE WORK FILE
    11CD C0 84 12F3            3084        BH    KED892                    NO, GO SET SIZE ERR CODE
    11D1 F2 87 06              3085        J     KED715                    GO SET DATA FILE TYPE
    11D4 0C 07 131C 0E17       3086 KED710 MVC   KEDM4T(KEDEKL),KEDCKW     MOVE KEYBD DATA FILE TO MESSAGE
    11DA 6C 00 14 0D           3087 KED715 MVC   $INDR1(@B1,@BR),##DUES(,@XR)  SET DATA TYPE AND PRECISION
    11DE B8 02 0D              3088        TBN   ##DUES(,@XR),##MUEV       SHORT PRECISION ?
    11E1 F2 10 0D              3089        JT    KED760                    NO, GO SET LONG PRECISION
    11E4 0C 04 1338 1114       3090        MVC   KEDM4P,KEDCSW(KEDESL)     MOVE SHORT TO MESSAGE
    11EA F2 87 04              3091        J     KED760                    SO CHECK PROTECT STATUS
    11ED 6C 00 14 0D           3092 KED750 MVC   $INDR1(@B1,@BR),##DUES(,@XR)  SET BASIC FILE TYPE
    11F1 7B 1C 14              3093 KED760 SBF   $INDR1(,@BR),$WSIND+$FITIN+$WFLOK  INITLZ WORK FILE INDR'S
    11F4 7B 01 16              3094        SBF   $INDR3(,@BR),$DBLOK       INITLZ WORK FILE SAVE INDR OFF
    11F7 3D 5C 19FB            3095 KED765 CLI   SMPSWD+@B1-##LPEN,@ASTER  IS FILE A STAR FILE ?
    11FB F2 01 21              3096        JNE   KED780                    NO, SO SET UP MSG 1
    11FE 3C 5C 0D99            3097        MVI   KEDM2A,@ASTER             SET STAR IN MSG 1
    1202 3D 5C 19FC            3098        CLI   SMPSWD+KEDEA2-##LPEN,@ASTER  IS FILE A TWO STAR FILE ?
    1206 F2 01 0D              3099        JNE   KED770                    NO, GO CHECK IF PROTECTED
    1209 3C 5C 0D98            3100        MVI   KEDM2A-@B1,@ASTER         SET 2ND STAR IN MSG 1
    120D B8 08 0D              3101        TBN   ##DUES(,@XR),##MUER       IS FILE NOTECTED ?
    1210 F2 90 0C              3102        JF    KED780                    NO, SO SET UP MSG 1
    1213 7A 01 16              3103        SBN   $INDR3(,@BR),$DBLOK       SET FILE MAY BE SAVED INDR ON
    1216 B8 08 0D              3104 KED770 TBN   ##DUES(,@XR),##MUER       IS FILE PROTECTED ?
    1219 F2 90 03              3105        JF    KED780                    NO, GO SET UP MSG 1
    121C 7A 08 14              3106        SBN   $INDR1(,@BR),$WFLOK       YES, SET WORK FILE 'LOK' INDR.
    121F 2C 07 0DA1 07         3107 KED780 MVC   KEDM2N,##DUEN(##LUEN,@XR)  MOVE FILE NAME TO MSG 1
    1224 6C 07 83 07           3108        MVC   $WFNME(,@BR),##DUEN(##LUEN,@XR)  SET WORK FILE NAME
    1228 2C 18 0DBB 2B         3109        MVC   KEDM2H,##DUEH(##LUEH,@XR)  MOVE FILE HEADER TO MSG 1
    122D D0 87 A5              3110        B     $SPRNT(,@BR)              PRINT SAVED FILE COPIED
    1230 0D94             1231 3111        DC    AL2(KEDPL2)               * MESSAGE 1
                          0D12 3112        USING KEDTBS,@BR                SET LOCAL BASE FOR
    1232 C2 01 0D12            3113        LA    KEDTBS,@BR                * TRANSFER SECTION
    1236 6C 01 7B 0B           3114        MVC   KEDSLD(##LUEF,@BR),##DUEF(,@XR)  MOVE FILE LENGTH TO COUNT
    123A 6C 01 4F 09           3115        MVC   KEDD1D(##LAAA,@BR),##DUEA(,@XR)  MOVE FILE DADDR TO DPL
                               3116 *       DSKL2 KEDDL1                   START SEEK TO LIBRARY FILE
    123E C0 87 0E36            3117        B     DL2ICS                    PERFORM RELATIVE DISK OP
    1242 0D5F             1243 3118        DC    AL2(KEDDL1)               DPL ADDRESS
                               3119 *** END OF EXPANSION ***
    1244 7C 01 4D              3120        MVI   KEDD1F(,@BR),@DGET        SET DPL FUNC CODE FOR A READ
    1247 6C 01 79 0F           3121        MVC   KEDUEL(##LUEL,@BR),##DUEL(,@XR)  SAVE NO. LINES ON FILE
    124B B8 20 0D              3122        TBN   ##DUES(,@XR),##MUEG       PROG GEN DATA FILE ?
    124E F2 10 4E              3123        JT    KED800                    YES, BYPASS REST OF SET-UP
    1251 6E 00 4F 0C           3124        ALC   KEDD1D(##LUEI,@BR),##DUEI(,@XR)  INCR DADDR PAST FIT
    1255 6C 00 5C 0C           3125        MVC   KEDD3S(##LUEI,@BR),##DUEI(,@XR)  MOVE FIT LNG TO FIT DPL
    1259 6F 00 7B 0C           3126        SLC   KEDSLD(##LUEI,@BR),##DUEI(,@XR)  DECR FILE LNG BY FIT LNG
    125D 6C 01 5B 09           3127        MVC   KEDD3D(##LAAA,@BR),##DUEA(,@XR)  MOVE DADDR TO FIT DPL
    1261 B8 40 0D              3128        TBN   ##DUES(,@XR),##MUEK       KEYBRD DATA FILE ?
    1264 F2 10 29              3129        JT    KED790                    YES, BYPASS REST OF SET-UP   1-4
    1267 7C 02 68              3130        MVI   KEDCIO(,@BR),#@@#SC       SET UP FOR 2 I/O SECTORS
    126A 5E 00 4F 68           3131        ALC   KEDD1D(@B1,@BR),KEDCIO(,@BR)  INCA DADDR PAST I/O SECTOR
    126E 5F 00 7B 68           3132        SLC   KEDSLD(@B1,@BR),KEDCIO(,@BR)  DECR FILE LNG BY I/O LNG
    1272 5E 00 5C 68           3133        ALC   KEDD3S(@B1,@BR),KEDCIO(,@BR)  INCR SCTR CNT OF FIT DPL
    1276 6E 00 69 0C           3134        ALC   KEDD5C-@B1(##LUEI,@BR),##DUEI(,@XR)  SET I/O SCTR CADDR
    127A 1E 01 0CF8 6A         3135        ALC   KED205+@OP2,KEDD5C(@CADDR,@BR)  SET CADDR FOR I/O SCTR MOV
    127F 38 80 06FF            3136        TBN   $$XIND,$$$ERN             EDIT CALLED BY RUN/STEP ?
    1283 C0 10 0C90            3137        BT    KED175                    YES, BYPASS REST
                               3138 *
                               3139 *                  COMMAND WAS 'EDIT' - DISPLAY REMAINDER OF
                               3140 *                  COPIED MESSAGES
                               3141 *
    1287 C0 87 0465            3142        B     $SPRNT                    PRINT 'BASIC' FILE MESSAGE
    128B 12FB             128C 3143        DC    AL2(KEDPL3)               *
    128D F2 87 15              3144        J     KED810                    BYPASS DATA TYPE MESSAGE
    1290 B8 01 0D              3145 KED790 TBN   ##DUES(,@XR),$PROCI       PROCEDURE FILE ?             1-4
    1293 F2 90 09              3146        JF    KED800                    IF NOT, PRINT 'DATA' MSG     1-4
    1296 C0 87 0465            3147        B     $SPRNT                    PRINT PROCEDURE MSG          1-4
    129A 1355             129B 3148        DC    AL2(KEDPL6)               PPL OF PRINT MSG             1-4
    129C F2 87 06              3149        J     KED810                    GO CHECK FILE                1-4
    129F C0 87 0465            3150 KED800 B     $SPRNT                    PRINT 'DATA' FILE MESSAGE
    12A3 1311             12A4 3151        DC    AL2(KEDPL4)               *
                               3152 *
                               3153 *                  CONVERT NO. OR LINES AND NO. OF DISK UNITS IN
                               3154 *                  THE FILE AND THE DATE LAST MODIFIED TO EBCDIC
                               3155 *
                          0D94 3156        USING KEDPBS,@BR                SET LOCAL BASE FOR SETTING UP
    12A5 C2 01 0D94            3157 KED810 LA    KEDPBS,@BR                * MESSAGE
    12A9 68 02 74 10           3158        MNZ   KEDM5M-@B1(,@BR),##DUED-KEDEDM(,@XR)  MOVE IN MONTH
    12AD 68 03 75 10           3159        MNN   KEDM5M(,@BR),##DUED-KEDEDM(,@XR)      *
    12B1 68 02 77 11           3160        MNZ   KEDM5D-@B1(,@BR),##DUED-KEDEDA(,@XR)  MOVE IN DAY
    12B5 68 03 78 11           3161        MNN   KEDM5D(,@BR),##DUED-KEDEDA(,@XR)      *
    12B9 58 02 7A 12           3162        MNZ   KEDM5Y-@B1(,@BR),##DUED(,@BR)         MOVE IN YEAR
    12BD 68 03 7B 12           3163        MNN   KEDM5Y(,@BR),##DUED(,@XR)             *
    12C1 E2 02 0A              3164        LA    ##DUEF-@B1(,@XR),@XR      CONVERT NO. OF DISK UNITS TO
    12C4 C0 87 1658            3165        B     C2DEC5                    * EBCDIC AND MOVE TO
    12C8 4C 02 49 1696         3166        MVC   KEDM5S(KEDEEL,@BR),C2DVAL * MESSAGE
    12CD 8F 01 05 0D93         3167        SLC   KEDEDN+@B1(##LUEL,@XR),KEDCFL  DECR NO. OF LINE FOR EOF RD
    12D2 E2 02 04              3168        LA    KEDEDN(,@XR),@XR          CONVERT NO. OF LINE ON FILE TO
    12D5 C0 87 1658            3169        B     C2DEC5                    * EBCDIC AND MOVE TO
    12D9 4C 02 3E 1696         3170        MVC   KEDM5L(KEDEEL,@BR),C2DVAL * MESSAGE
    12DE C0 87 0465            3171        B     $SPRNT                    PRINT LINE AND DISK UNIT COUNTS
    12E2 1343             12E3 3172        DC    AL2(KEDPL5)               * AND DATE LAST MODIFIED
    12E4 C2 01 0D12            3173        LA    KEDTBS,@BR
    12E8 C0 87 0C90            3174        B     KED175
                               3175 *
                               3176 *                  SAVED FILE ERROR HANDLING SECTION
                               3177 *
    12EC 3C 30 03CD            3178 KED890 MVI   $CAERR,@@E227             SET ERR CODE DATA FILE-RUN/STEP
    12F0 F2 87 04              3179        J     KED899                    GO TO ERROR EXIT
    12F3 3C 4B 03CD            3180 KED892 MVI   $CAERR,@@E315             SET ERR CODE PGM. DATA FILE >189
    12F7 C0 87 0469            3181 KED899 B     $CAERK                    GO TO ERRPGM INTERFACE
                               3182 *
                               3183 *                  FILE TYPE MESSAGES
                               3184 *
    12FB C0               12FB 3185 KEDPL3 DC    AL1(@PRETR)               PRINT PARAM LIST - 3
    12FC 12               12FC 3186        DC    XL1'12'
    12FD 12FF             12FE 3187        DC    AL2(KEDMS3)               *
                          12FF 3188 KEDMS3 EQU   *                         BASIC FILE TYPE MESSAGE
    12FF C2C1E2C9C340D7D9 1310 3189        DC    CL18'BASIC PROGRAM FILE'  *
    1311 C0               1311 3190 KEDPL4 DC    AL1(@PRETR)               PRINT PARAM LIST - 4
    1312 2E               1312 3191        DC    XL1'2E'                   *
    1313 1315             1314 3192        DC    AL2(KEDMS4)               *
                          1315 3193 KEDMS4 EQU   *                         DATA FILE TYPE MESSAGE
    1315                  131C 3194 KEDM4T DS    CL8                       * TYPE OF DATA FILE
    1315                       3195        ORG   *-8                       ** INITIALIZED TO
    1315 D7D9D6C7D9C1D440 131C 3196        DC    CL8'PROGRAM '             ** 'PROGRAM'
    131D 40               131D 3197        DC    CL1' '                    *
    131E C7C5D5C5D9C1E3C5 1326 3198        DC    CL9'GENERATED'            *
    1327 40               1327 3199        DC    CL1' '                    *
    1328 C4C1E3C1         132B 3200        DC    CL4'DATA'                 *
    132C 40               132C 3201        DC    CL1' '                    *
    132D C6C9D3C5         1330 3202        DC    CL4'FILE'                 *
    1331 406040           1333 3203        DC    CL3' - '                  *
    1334                  1338 3204 KEDM4P DS    CL5                       * PRECISION OF DATA FILE
    1334                       3205        ORG   *-5                       ** INITIALIZED TO
    1334 40D3D6D5C7       1338 3206        DC    CL5' LONG'                ** 'LONG'
    1339 40               1339 3207        DC    CL1' '                    *
    133A D7D9C5C3C9E2C9D6 1342 3208        DC    CL9'PRECISION'            *
                               3209 *      SPACE
    1343 C0               1343 3210 KEDPL5 DC    AL1(@PRETR)               PRINT PARAM LIST - 5
    1344 40               1344 3211        DC    XL1'40'                   *
    1345 0DD0             1346 3212        DC    AL2(KEDMS5)               *
                          1347 3213 KEDMS6 EQU   *                         START OF PROCEDURE MSG       1-4
    1347 D7D9D6C3C5C4E4D9 1354 3214        DC    CL14'PROCEDURE FILE'      ** 'PROCEDURE FILE'          1-4
                               3215 *      SPACE
    1355 C0               1355 3216 KEDPL6 DC    AL1(@PRETR)               PRINT CR FUNCTION            1-4
    1356 0E               1356 3217        DC    IL1'14'                   NO. CHARS IN MSG             1-4
    1357 1347             1358 3218        DC    AL2(KEDMS6)               START OF MESSAGE             1-4
                               3219 *
                               3220 *                  END OF SAVED FILE LOAD MESSAGES
                               3221 *
                               3222 *      $FIND
                               3224+***********************************************************************
                               3225+*  5703-XM1    COPYRIGHT IBM CORP. 1970                               *
                               3226+*              REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083    *
                               3227+*                                                                     *
                               3228+***********************************************************************
                               3229+*STATUS                                                               *
                               3230+*   VERSION 1 MODIFICATION 0                                          *
                               3231+*                                                                     *
                               3232+*FUNCTION                                                             *
                               3233+*   * SFINDF IS A CONTROL MODULE USED TO LOCATE A SPECIFIED PASSWORD  *
                               3234+*     AND/OR FILENAME.                                                *
                               3235+*   * IF THE FILENAME, PASSWORD, AND VOLUME-ID ARE ALL EXPLICITLY     *
                               3236+*     SPECIFIED. A CALL IS ISSUED TO SVOLID, SGETDB AND SRCHFN TO     *
                               3237+*     SEARCH FOR THE REQUIRED FILE IN THE FILE LIBRARY SPECIFIED.     *
                               3238+*     IF THE PASSWORD OR VOLUME-ID IS NOT EXPLICITLY DEFINED, SFINDF  *
                               3239+*     WILL DEFAULT TO THE CURRENT USER SPECIFICATIONS, IF THEY EXIST, *
                               3240+*     FOR THE MISSING PARAMETERS AND THEN ISSUE THE REQUIRED CALLS    *
                               3241+*     TO SGETDS AND/OR SRCHFN TO LOCATE THE FILE.                     *
                               3242+*   * IF A ONE OR TWO-STAR FILENAME IS SPECIFIED, THE SPECIFIED DISK, *
                               3243+*     OR ALL DISKS ON THE SYSTEM WILL BE SEARCHED IN AN ATTEMPT TO    *
                               3244+*     LOCATE THE FILE. THE CALLER MAY SET AN INDICATOR TO TERMINATE   *
                               3245+*     THE SEARCH AFTER A GIVEN NUMBER OF DISKS HAVE BEEN SEARCHED.    *
                               3246+*                                                                     *
                               3247+*ENTRY POINTS                                                         *
                               3248+*   * THE ENTRY POINT IS SFINDF.                                      *
                               3249+*   * THE CALLING SEQUENCE IS AS FOLLOWS:                             *
                               3250+*            B     SFINDF                                             *
                               3251+*                                                                     *
                               3252+*INPUT                                                                *
                               3253+*   * THE FOLLOWING INFORMATION MUST BE SET UP IN TSMLES BEFORE       *
                               3254+*     CALLING SFINDF.                                                 *
                               3255+*        * SMPSWD  MUST CONTAIN SPECIFIED PASSWORD                    *
                               3256+*        * SMVOID  MUST CONTAIN SPECIFIED VOLUME                      *
                               3257+*        * SMFNAM  MUST CONTAIN SPECIFIED FILENAME                    *
                               3258+*   * THE FOLLOWING SWITCHES ARE PROVIDED TO HANDLE ONE OR TWO-STAR   *
                               3259+*     FILES:                                                          *
                               3260+*        * SFIVOL - IF @NOP IS SET SVOLID WILL NOT BE CALLED. SVOLID  *
                               3261+*                   IS NOT REUSABLE AND THIS SWITCH MUST BE SET BEFORE*
                               3262+*                   SFINDF IS CALLED A SECOND TIME.                   *
                               3263+*        * SFISTR - IF @NOP IS SET ONLY 1 DISK WILL BE SEARCHED       *
                               3264+*        * SFIFND - IF @NOP SET WITH SFIVOL ONLY THE NUMBER OF DISKS  *
                               3265+*                   SPECIFIED IN SFINTR WILL BE SEARCHED.             *
                               3266+*                                                                     *
                               3267+*OUTPUT                                                               *
                               3268+*   * THE OUTPUT FROM SFINDF IS SET IN TSMLES, THE POINTERS AND USER  *
                               3269+*     DIRECTORIES REQUIRED ARE INITALIZED.                            *
                               3270+*                                                                     *
                               3271+*EXTERNAL REFERENCES                                                  *
                               3272+*        TSMLES - (SMALES) DATA MANAGEMENT SAVE AREAS AND BUFFERS.    *
                               3273+*        $VOLID - CORE RESIDENT VOLID TABLE.                          *
                               3274+*        $USRDR - DISPLACEMENT TO CURRENT USER DIRECTORY.             *
                               3275+*        $FILIB - CURRENT USER FILE LIBRARY DISK ADDRESS.             *
                               3276+*        DL2ICS - TWO TRACK LOGICAL IOCS.                             *
                               3277+*        SRCHFN - SEARCH USER DIRCTY BLOCK.                           *
                               3278+*        SGETDB - SEARCH PASSWORD DIRCTY.                             *
                               3279+*        SVOLID - SEARCH VOL-ID TABLE.                                *
                               3280+*        $CAERR - SAVE AREA FOR SYSTEM ERROR MESSAGT CODE.            *
                               3281+*                                                                     *
                               3282+*EXITS, NORMAL                                                        *
                               3283+*   * NORMAL RETURN IS TO THE CALLER FOLLOWING THE BRANCH TO SFINDF.  *
                               3284+*                                                                     *
                               3285+*EXITS, ERROR                                                         *
                               3286+*   * THE ERROR RETURN IS TO SFIERR WHICH MUST BE DEFINED BY THE      *
                               3287+*     CALLER.                                                         *
                               3288+*                                                                     *
                               3289+*TABLES/WORKAREAS                                                     *
                               3290+*   * N/A                                                             *
                               3291+*                                                                     *
                               3292+*ATTRIBUTES                                                           *
                               3293+*   * RELOCATABLE                                                     *
                               3294+*   * RE-USABLE                                                       *
                               3295+*                                                                     *
                               3296+*CHARACTER CODE DEPENDENCY                                            *
                               3297+*   * THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR  *
                               3298+*     INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.          *
                               3299+*                                                                     *
                               3300+*NOTES                                                                *
                               3301+*   ERROR PROCEDURES                                                  *
                               3302+*      IF A FILE-SPEC WAS NOT ENTERED AND A CURRENT USER IS NOT IN    *
                               3303+*      AFFECT.  THE ERROR EXIT TO SFIERR IS TAKEN.                    *
                               3304+*   REGISTER USAGE                                                    *
                               3305+*      @BR AND @XR ARE SAVED AND RESTORED. DURING EXECUTION @BR IS    *
                               3306+*      USED AS A BASE REGISTER AND @XR IS USED TO POINT TO $NUCBS.    *
                               3307+*   SAVED/RESTORED AREAS                                              *
                               3308+*      N/A                                                            *
                               3309+*   MODIFICATION CONSIDERATIONS                                       *
                               3310+*      N/A                                                            *
                               3311+*   REQUIRED MODULES                                                  *
                               3312+*        @SYSEQ - SYSTEM SOFTWARE EQUATES.                            *
                               3313+*        @FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATOR VALUES.      *
                               3314+*        TSMLES - DATA MANAGEMENT SAVE AREAS AND BUFFERS.             *
                               3315+*        $VOLID - SEARCH VOLUME-ID SUBROUTINE.                        *
                               3316+*        SRCHFN - SEARCH FOR FILENAME SUBROUTINES.                    *
                               3317+*        SGETDB - SEARCH PASSWORD DIRECTORY SUBROUTINE.               *
                               3318+*        DL2ICS - TWO TRACK DISK LOGICAL IOCS.                        *
                               3319+*   OTHER                                                             *
                               3320+*     N/A                                                             *
                               3321+***********************************************************************


                               3323+*
                               3324+*                  EQUATES USED IN THIS SUBROUTINE
                               3325+*
                          1359 3326+SFINDF EQU   *                         START OF MODULE
    1359 34 01 1466            3327+       ST    SFISBR,@BR                SAVE @BR
    135D C2 01 1397            3328+       LA    SFIBSE,@BR                SET LOCAL BASE
                          1397 3329+       USING SFIBSE,@BR                *
    1361 74 08 D3              3330+       ST    SFIEXT(,@BR),@ARR         SAVE RETURN ADDR
    1364 74 02 CB              3331+       ST    SFISXR(,@BR),@XR          SAVE @XR
    1367 C2 02 03C0            3332+       LA    $NUCBS,@XR                SET NUCLEUS BASE
                          03C0 3333+       USING $NUCBS,@XR                *
    136B 3D 40 19FB            3334+       CLI   SMPSWD-##LPEN+@B1,@BLANK  WAS A PASSWD SPECIFIED ?
    136F F2 81 98              3335+       JE    SFI500                    NO, GO CHECK LOGON STATUS
    1372 3D 40 1605            3336+       CLI   SMVOID-$VOLID+@B1,@BLANK  WAS A VOL-ID SPECIFIED ?
    1376 F2 81 07              3337+       JE    SFI100                    NO, GO CHECK LOGON STATUS
    1379 C0 87 03F6            3338+SFI050 B     $VOLID                    RESOLVE SPECIFIED VOL-ID
                          137A 3339+SFIVOL EQU   SFI050+@Q                 SET TO A NOP FOR SUCCESSIVE USE
    137D F2 87 75              3340+       J     SFI350                    GO TO GET DIRECTORY
                               3341+*
                               3342+*                  PASSWORD WAS SPECIFIED, BUT VOL-ID WAS NOT
                               3343+*
    1380 3D 5C 19FB            3344+SFI100 CLI   SMPSWD-##LPEN+@B1,SFIAST  IS PASSWORD AN '*' ?
    1384 F2 01 63              3345+       JNE   SFI320                    NO, GO CHK FOR FILE LIBR DADDR
    1387 7C 00 D4              3346+       MVI   SFICTR(,@BR),@ZERO        YES, INITLZ LOOP CTR TO ZERO
    138A 7C 00 DB              3347+       MVI   SFITTC(,@BR),@ZERO        INITLZ THIS TIME COUNTER
    138D BD 00 19              3348+       CLI   $FILIB-@B1(,@XR),@ZERO    CURRENT USER IN FORCE ?
    1390 F2 01 5D              3349+       JNE   SFI340                    YES, GO TRY THAT FIRST
    1393 3A 08 19F4            3350+       SBN   SMIND1,SMIPNF             SET PASSWORD NOT FOUND INDR.
                               3351+*
                               3352+*                  THE FOLLOWING ROUTINE WILL SEARCH ALL DISKS ON THE
                               3353+*                  SYSTEM FOR THE SPECIFIED ONE OR TWO STAR FILE
                               3354+*
    1397 7D 01 D4              3355+SFI200 CLI   SFICTR(,@BR),@B1          CHECK THE DISK POINTER
    139A F2 82 1A              3356+       JL    SFI220                    GO CHECK F1
    139D F2 81 28              3357+       JE    SFI230                    GO CHECK F2
    13A0 7D 03 D4              3358+       CLI   SFICTR(,@BR),SFIE03
    13A3 F2 82 33              3359+       JL    SFI240                    GO CHECK R1
                               3360+*
    13A6 BD 00 4C              3361+SFI210 CLI   $VOLR2+SFIE06(,@XR),@ZERO DOES R2 CONTAIN A FILE LIBR
    13A9 F2 81 AC              3362+       JE    SFI545                    NO, NO MORE TO CHK, GO RETURN
    13AC 2C 01 1A0E 4D         3363+       MVC   SMBFDA(@DADDR),$VOLR2+SFIE07(,@XR) SET LIBR DADDR FOR
    13B1 7C FE D4              3364+       MVI   SFICTR(,@BR),SFIEFE       * SEARCH AND INCR DISK POINTER
    13B4 F2 87 3E              3365+       J     SFI350                    GO TO SEARCH
                               3366+*
    13B7 BD 00 44              3367+SFI220 CLI   $VOLF1+SFIE06(,@XR),@ZERO DOES F1 CONTAIN A FILE LIBR
    13BA F2 81 0B              3368+       JE    SFI230                    NO, GO CHECK F2
    13BD 2C 01 1A0E 45         3369+       MVC   SMBFDA,$VOLF1+SFIE07(@DADDR,@XR) SET LIBR DADDR FOR SEWN
    13C2 7C 01 D4              3370+       MVI   SFICTR(,@BR),@B1          INCR DISK POINTER
    13C5 F2 87 2D              3371+       J     SFI350                    SO TO SEARCH
                               3372+*
    13C8 BD 00 54              3373+SFI230 CLI   $VOLF2+SFIE06(,@XR),@ZERO DOES F2 CONTAIN A FILE LIBR
    13CB F2 81 0B              3374+       JE    SFI240                    NO, SO CHECK R1
    13CE 2C 01 1A0E 55         3375+       MVC   SMBFDA,$VOLF2+SFIE07(@DADDR,@XR) SET LIBR DADDR FOR SEACH
    13D3 7C 02 D4              3376+       MVI   SFICTR(,@BR),SFIE02       INCR DISK POINTER
    13D6 F2 87 1C              3377+       J     SFI350                    GO TO SEARCH
                               3378+*
    13D9 BD 00 3C              3379+SFI240 CLI   $VOLR1+SFIE06(,@XR),@ZERO DOES R1 CONTAIN A FILE LIBR
    13DC D0 81 0F              3380+       BE    SFI210(,@BR)              NO, GO CHECK R2
    13DF 2C 01 1A0E 3D         3381+       MVC   SMBFDA,$VOLR1+SFIE07(@DADDR,@XR) SET LIBR DADDR FOR SEARC
    13E4 7C 03 D4              3382+       MVI   SFICTR(,@BR),SFIE03       INCR DISK POINTER
    13E7 F2 87 0B              3383+       J     SFI350                    GO TO SEARCH
                               3384+*
                               3385+*                  PASSWORD SPECIFIED, BUT VOLUME ID WAS NOT.
                               3386+*                  CHECK FOR CURRENT USER
                               3387+*
    13EA BD 00 19              3388+SFI320 CLI   $FILIB-@B1(,@XR),@ZERO    CURRENT USER SPEC IN FORCE
    13ED F2 81 20              3389+       JE    SFI505                    NO, GO TO ERR ROUTINE
    13F0 2C 01 1A0E 1A         3390+SFI340 MVC   SMBFDA(@DADDR),$FILIB(,@XR) YES, SET TO USER LIBR
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                               3391+*
                               3392+*                  SO SEARCH FOR SPECIFIED PASSWORD
                               3393+*
    13F5 C0 87 151B            3394+SFI350 B     SGETDB                    SEARCH FOR PASSWORD
    13F9 38 08 19F4            3395+       TBN   SMIND1,SMIPNF             WAS PASSWORD FOUND
    13FD F2 10 3B              3396+       JT    SFI540                    NO, GO TEST STAR COUNTER
    1400 38 10 19F4            3397+       TBN   SMIND1,SMIPDS             PASSWORD DIRCTY ONLY REQ'SED
    1404 F2 10 58              3398+       JT    SFI550                    YES, GO RETURN TO USER
    1407 F2 87 26              3399+       J     SFI520                    NO, GO SEARCH FOR FILENAME
                               3400+*
                               3401+*                  ONLY FILENAME SPECIFIED, CHECK FOR CURRENT USER
                               3402+*
    140A BD 00 19              3403+SFI500 CLI   $FILIB-@B1(,@XR),@ZERO    CURRENT USER SPEC IN FORCE
    140D F2 01 07              3404+       JNE   SFI510                    YES, BYPASS ERROR MESSAGE
    1410 BC 21 0D              3405+SFI505 MVI   $CAERR(,@XR),@@E200       SET NO CURRENT USER ERROR CODE
    1413 C0 87 10BA            3406+       B     SFIERR                    GO TO ERROR RETURN
                               3407+*
                               3408+*                  GET FIRST USER DIRECTORY BLOCK
                               3409+*
    1417 2C 01 0ECE 1A         3410+SFI510 MVC   DL2RAD,$FILIB(@DADDR,@XR) SET DL2ICS BASE DADDR
    141C 2C 01 1A0E 1A         3411+       MVC   SMBFDA,$FILIB(@DADDR,@XR) SET LIBR DADDR TO COMMON AREA
    1421 6C 01 D7 1C           3412+       MVC   SFIRDA(,@BR),$USRDR(@DADDR,@XR) SET DL2ICS RELATIVE DADDR
    1425 C0 87 0E36            3413+       B     DL2ICS                    GO READ USER DIRECTORY BLOCK
    1429 146C             142A 3414+       DC    AL2(SFIDPL)               * CADDR OF DPL
    142B 2C 01 1A1E 1C         3415+       MVC   SMFUDA,$USRDR(@DADDR,@XR) PRESERVE 1ST BLOCK REL. DADDR
                               3416+*
                               3417+*                  SEARCH USER DIRECTORY BLOCK FOR FILENAME
                               3418+*
    1430 C0 87 15A7            3419+SFI520 B     SRCHFN                    GO TO SEARCH ROUTINE
    1434 38 80 19F4            3420+       TBN   SMIND1,SMIFNE             WAS NAME FOUND
    1438 F2 10 24              3421+       JT    SFI550                    YES, SO RETURN
                               3422+*
                               3423+*                  PASSWORD OR FILENAME NOT FOUND
                               3424+*
    143B 7D FE D4              3425+SFI540 CLI   SFICTR(,@BR),SFIEFE       ONE OR TWO STAR FILE WITH MORE
    143E F2 84 1E              3426+       JH    SFI550                    * DISKS TO SEARCH ? NO, GET OUT
    1441 D0 82 00              3427+SFI542 BC    SFI200(,@BR),@BL          * YES, GO SEARCH
                          1442 3428+SFISTR EQU   SFI542+@Q                 * NOP FOR 1ST * OR ** SEARCHED
    1444 F2 87 11              3429+SFI543 JC    SFI545,@UCB               BYPASS TRY CONTROL UNLESS
                          1445 3430+SFIFND EQU   SFI543+@Q                 * Q-CODE CHANGED TO A NOP
    1447 7D 06 DC              3431+       CLI   SFINTR(,@BR),SFIETD       IS TRY COUNTER AT MAX ?
    144A F2 02 0B              3432+       JNL   SFI545                    YES, SO SET ERROR CODE
    144D 5E 00 DB DD           3433+       ALC   SFITTC(,@BR),SFIONE(,@BR) INCR THIS TRY COUNTER
    1451 5D 00 DB DC           3434+       CLC   SFITTC(,@BR),SFINTR(1,@BR) THIS TRY = TRYS REQUIRED ?
    1455 D0 01 00              3435+       BNE   SFI200(,@BR)              NO, GO TRY THE NEXT DISK
    1458 BC 26 0D              3436+SFI545 MVI   $CAERR(,@XR),@@E213       SET * OR ** NOT FOUND CODE
    145B 3A 80 19F4            3437+       SBN   SMIND1,SMIFNE             SET ON FILE NOT FOUND INDR.
                               3438+*
                               3439+*                  RETURN TO USER
                               3440+*
    145F C2 02 0000            3441+SFI550 LA    *-*,@XR                   RELOAD @XR
                          1462 3442+SFISXR EQU   SFI550+@OP1               *
    1463 C2 01 0000            3443+SFI560 LA    *-*,@BR                   RELOAD @BR
                          1466 3444+SFISBR EQU   SFI560+@OP1               *
    1467 C0 87 0000            3445+SFI570 B     *-*                       RETURN TO THE USER
                          146A 3446+SFIEXT EQU   SFI570+@OP1               *
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                               3447+*
                               3448+*                  CONSTANTS AND SAVE AREAS
                               3449+*
    146B                  146B 3450+SFICTR DS    XL1                       COUNTER USED TO CONTROL THE
    146B                       3451+       ORG   *-1                       * SEARCH FOR A STAR FILE
    146B FF               146B 3452+       DC    AL1(SFIEFF)               INITLZ'D FOR NO SEARCH
    146C 01               146C 3453+SFIDPL DC    AL1(@DGET)                DPL TO READ USER DIRCTY BLOCK 1
    146D                  146E 3454+SFIRDA DS    XL2                       * RELATIVE DISK ADDRESS
    146F 02               146F 3455+       DC    XL1'02'                   * SECTOR COUNT
    1470 1A23             1471 3456+       DC    AL2(SMUDB1)               * CORE BUFFER ADDRESS
    1472                  1472 3457+SFITTC DS    CL1                       THIS TRY COUNTER
    1473                  1473 3458+SFINTR DS    CL1                       NUMBER OF TRYS REQUIRED COUNTER
    1473                       3459+       ORG   SFINTR                    INITLZ NUMBER CF TRYS REQUIRED
    1473 00               1473 3460+       DC    XL1'0'                    * COUNTER TO ZERO
    1474 01               1474 3461+SFIONE DC    XL1'1'                    COUNTER INCREMENT
                               3462+*
                               3463+*                  EQUATES
                               3464+*
                          10BA 3465+SVOERR EQU   SFIERR                    SVOLID ERROR RETURN ADDRESS
                          005C 3466+SFIAST EQU   C'*'                      STAR LIBR TEST CHARACTER
                          0002 3467+SFIE02 EQU   X'02'                     STAR COUNTER TEST R1 CODE
                          0003 3468+SFIE03 EQU   X'03'                     STAR COUNTER TEST R2 CODE
                          00FE 3469+SFIEFE EQU   X'FE'                     STAR COUNTER COMPLETE CODE
                          00FF 3470+SFIEFF EQU   X'FF'                     NOT A * OR ** FILE COUNTER CODE
                          0006 3471+SFIE06 EQU   X'06'                     DISP TO LIBR DADDR BYTE 0
                          0007 3472+SFIE07 EQU   X'07'                     DISP TO LIBR DADDR BYTE 1
                          1397 3473+SFIBSE EQU   SFI200                    LOCAL BASE ADDRESS
                          1474 3474+SFIEND EQU   *-1                       LAST BYTE OF SFINDF
                          0006 3475+SFIETD EQU   6                         MAX TRY REQUIRED COUNTER VALUE
                          0001 3476+       DROP  @BR
                          0002 3477+       DROP  @XR
                               3478+***                       END OF SFINDF                            ***
                               3479 *
                               3481 ************************************************************************
                               3482 *  5703-XM1 COPYRIGHT IBM CORP. 1970                                   *
                               3483 *           REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083       *
                               3484 *                                                                      *
                               3485 ************************************************************************
                               3486 *STATUS                                                                *
                               3487 *   VERSION 1 MODIFICATION 0                                           *
                               3488 *                                                                      *
                               3489 *FUNCTION                                                              *
                               3490 *   GCLEAR BUILDS AN 'EMPTY' FILE INDEX TABLE (FIT), AND PLACES AN     *
                               3491 *   END-OF-FILE RECORD IN THE FIRST DATA SECTOR OR THE WORK FILE.      *
                               3492 *   IT ALSO ZEROS THE I/O INFORMATION SECTOR ON DISK AND SETS THE      *
                               3493 *   WORK FILE STATUS INDICATORS IN THE NUCLEUS.                        *
                               3494 *                                                                      *
                               3495 *ENTRY POINTS                                                          *
                               3496 *        GCLEAR - FIRST INSTRUCTION IN MODULE                          *
                               3497 *                                                                      *
                               3498 *INPUT                                                                 *
                               3499 *   N/A                                                                *
                               3500 *                                                                      *
                               3501 *OUTPUT                                                                *
                               3502 *   N/A                                                                *
                               3503 *                                                                      *
                               3504 *EXTERNAL REFERENCES                                                   *
                               3505 *        $$FITS - STANDARD CORE ADDRESS OF FILE INDEX TABLE            *
                               3506 *        $DISKN - ENTRY TO SYSTEM NUCLEUS PHYSICAL DISK ROUTINE        *
                               3507 *        $TABLN - CADDR OF AUTOMATIC LINE NUMBER                       *
                               3508 *        $INDR1 - NUCLEUS STATUS INDR                                  *
                               3509 *        $FITIN - FIT SECTORS INDR MASK IN $INDR1                      *
                               3510 *        $WSIND - WORKING STORAGE INDR MASK IN $INDR1                  *
                               3511 *        $WFNME - ADDR OF WORK FILE NAME IN SYSTEM NUCLEUS             *
                               3512 *        $WFDEF - WORK FILE DEFINED INDR IN SWFNME                     *
                               3513 *                                                                      *
                               3514 *EXITS, NORMAL                                                         *
                               3515 *   NEXT SEQUENTIAL INSTRUCTION AFTER BRANCH TO GCLEAR                 *
                               3516 *                                                                      *
                               3517 *EXITS, ERROR                                                          *
                               3518 *   N/A                                                                *
                               3519 *                                                                      *
                               3520 *TABLES/WORK, AREAS                                                    *
                               3521 *   CONSTANTS, DPL'S, AND WORK AREAS RESIDE AT THE END OF THE          *
                               3522 *   EXECUTABLE CODE AND ARE REFERENCED VIA A DISPLACEMENT RELATIVE     *
                               3523 *   TO THE VALUE IN THE INDEX REGISTER (@BR).                          *
                               3524 *                                                                      *
                               3525 *ATTRIBUTES                                                            *
                               3526 *   N/A                                                                *
                               3527 *                                                                      *
                               3528 *CHARACTER CODE DEPENDENCY                                             *
                               3529 *   CHARACTER CODE DEPENDENCY CLASS - C                                *
                               3530 *   THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-  *
                               3531 *   TION 0F THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE  *
                               3532 *   USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-    *
                               3533 *   DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN   *
                               3534 *   A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE    *
                               3535 *   SPECIAL CONSIDERATION FOR TN1S MODULE:                             *
                               3536 *   *  @EOFTC - DC AS CONSTANT - PART OF @SYSEQ                        *
                               3537 *   *  @EOF   - DC AS CONSTANT - PART OF @SYSEQ                        *
                               3538 *   *  AUTOMATIC LINE NUMBER - DC AS A CONSTANT                        *
                               3539 *                                                                      *
                               3540 *NOTES                                                                 *
                               3541 *   ERROR PROCEDURES                                                   *
                               3542 *      N/A                                                             *
                               3543 *                                                                      *
                               3544 *   RESISTER USAGE                                                     *
                               3545 *      INDEX RESISTER 1 (@BR) IS SAVED AND RESTORED FOR THE USING      *
                               3546 *      MODULE SO THAT IT MAY BE USED TO ESTABLISH BASE ADDRESSIBILITY *
                               3547 *      INDEX REGISTER 2 (@XR) IS ALSO SAVED AND RESTORED SO THAT IT    *
                               3548 *      CAN BE USED TO INDEX THROUGH THE CREATION OF THE FIT.           *
                               3549 *                                                                      *
                               3550 *   SAVED/RESTORED AREAS                                               *
                               3551 *      N/A                                                             *
                               3552 *                                                                      *
                               3553 *   MODIFICATION CONSIDERATIONS                                        *
                               3554 *      N/A                                                             *
                               3555 *                                                                      *
                               3556 *   REQUIRED MODULES                                                   *
                               3557 *      @CANEQ - COMMON CORE LOCATIONS OUTSIDE NUCLEUS                  *
                               3558 *      @FXDEQ - SYSTEM NUCLELS ADDRESSES AND INDR                      *
                               3559 *      @SYSEQ - COMMON SYSTEM EQUATES                                  *
                               3560 *      @WKAEQ - SYSTEM WORK AREA EQUATES                               *
                               3561 *                                                                      *
                               3562 *   OTHER                                                              *
                               3563 *      NONE                                                            *
                               3564 ************************************************************************
                               3566 ***********************************************************************
                               3567 *
                               3568 *            GCLEAR MODULE EQUATES
                               3569 *
                               3570 ***********************************************************************
                               3571 *
                          0000 3572 GCLS00 EQU   0                         DISPLACEMENT OF 0
                          0001 3573 GCLS01 EQU   1                         DISPLACEMENT OF 1
                          0004 3574 GCLS04 EQU   4                         DISPLACEMENT OF 4
                          0013 3575 GCLS19 EQU   19                        DISPLACEMENT
                               3576 *
                          0001 3577 GCLN01 EQU   1                         LENGTH CODE OF 1
                          0002 3578 GCLN02 EQU   2                         LENGTH CODE OF 2
                          0004 3579 GCLN04 EQU   4                         LENGTH CODE OF 4
                          0007 3580 GCLN07 EQU   7                         LENGTH CODE OF 7
                          0014 3581 GCLN20 EQU   20                        LENGTH CODE OF 20
                          00FF 3582 GCL255 EQU   255                       LENGTH CODE OF 255
                               3583 *
                          1D00 3584 GCLFAD EQU   $$FITS                    CORE ADDR OF FIT
                               3585 *
                          1DFF 3586 GCLSCT EQU   $$FITS+GCL255             CADDR OF SECTOR ZEROED FOR I/O
                               3587 *                                      * INFORMATION SECTOR
                          1EFF 3588 GCLPG2 EQU   GCLSCT+GCL255+1           CADDR OF 2ND SECTOR ZEROED FOR
                               3589 *                                      * I/O INFORMATION
                          1DFE 3590 GCLSC1 EQU   GCLSCT-1                  DISPLACEMENT OF MINUS ONE
                               3591 *                                      * FOR ZEROING SCSCTR
                          1EFE 3592 GCLSC2 EQU   GCLPG2-1                  DISPLACEMENT OF MINUS ONE
                               3593 *                                      * FOR ZEROING 2ND SECTOR
                               3595 ***********************************************************************
                               3596 *
                               3597 *            INITIALIZE REGISTERS FOR GCLEAR AND SAVE REGISTERS
                               3598 *            FOR CALLING ROLTINE
                               3599 *
                               3600 ***********************************************************************
                               3601 *
                               3602 *GCLEAR  ENTER BASE-GCLBSE,EXIT-GCLND,@BR,@XR,@ARR
                          1483 3603        USING GCLBSE,@BR                BASE ADDRESS SPECIFICATION
                          1475 3604 GCLEAR EQU   *                         MODULE ENTRY POINT
    1475 34 01 14DA            3605        ST    GCLND0+@OP1,@BR           SAVE @BR
    1479 C2 01 1483            3606        LA    GCLBSE,@BR                LOAD BASE RESISTER
    147D 74 02 5B              3607        ST    GCLND1+@OP1(,@BR),@XR     SAVE @XR
    1480 74 08 5F              3608        ST    GCLND2+@OP1(,@BR),@ARR    SAVE RETURN ADDRESS
                               3609 *** END OF EXPANSION ***
                          1483 3610 GCLBSE EQU   *                         BASE ADDR

                               3612 ***********************************************************************
                               3613 *
                               3614 *            INITIALIZE I/O INFORMATION SECTOR
                               3615 *
                               3616 ***********************************************************************
                               3617 *
    1483 3C 00 1DFF            3618        MVI   GCLSCT,@ZERO              ZERO OUT A SECTOR OF CORE FOR
    1487 0C FE 1DFE 1DFF       3619        MVC   GCLSC1(GCL255),GCLSCT     * I/O INFORMATION SECTOR
    148D 3C 00 1EFF            3620        MVI   GCLPG2,@ZERO              ZERO OUT 2ND SECTOR OF CORE FOR
    1491 0C FE 1EFE 1EFF       3621        MVC   GCLSC2(GCL255),GCLPG2     * I/O INFORMATION SECTOR(S)
                               3622 *
                               3623 *       DISK  GCLPP2                    WRITE I/O SECTOR
    1497 C0 87 0025            3624        B     $DISKN                    PERFORM PHYSICAL DISK OP
    149B 1514             149C 3625        DC    AL2(GCLDP2)               DPL ADDRESS
                               3626 *** END OF EXPANSION ***

                               3628 ***********************************************************************
                               3629 *
                               3630 *            WRITE EOF CONSTANT - LINK CODE, EOF RECORD, AND
                               3631 *            NULL SEGMENT - TO DATA
                               3632 *
                               3633 ***********************************************************************
                               3634 *
                               3635 *GCL150 DISK  GCLDP0                    WRITE EOF CONSTANT
    149D C0 87 0025            3636 GCL150 B     $DISKN                    PERFORM PHYSICAL DISK OP
    14A1 1508             14A2 3637        DC    AL2(GCLDP0)               DPL ADDRESS
                               3638 *** END OF EXPANSION ***
                               3640 ***********************************************************************
                               3641 *
                               3642 *            CREATE ENTIRE FIT IN CORE AND WRITE TO DISK
                               3643 *
                               3644 ***********************************************************************
                               3645 *
    14A3 C2 02 1D13            3646 GCL200 LA    GCLFAD+GCLS19,@XR         ADDR SECOND FIT ENTRY IN CORE
    14A7 9C 13 00 80           3647        MVC   GCLS00(GCLN20,@XR),GCLFT2(,@BR)  INITIALIZE 1ST 20 BYTES
                               3648 *                                      * OF FIT
    14AB F2 87 03              3649 GCL250 J     GCL350                    BYPASS FIRST INDEX THROUGH RIT
    14AE E2 02 04              3650 GCL300 LA    GCLS04(,@XR),@XR          INCRENENT XR BY FOUR
    14B1 AC 03 04 00           3651 GCL350 MVC   GCLS04(GCLN04,@XR),GCLS00(,@XR)  CREATE NEXT FIT ENTRY
    14B5 9E 00 01 88           3652        ALC   GCLS01(GCLN01,@XR),GCLCT1(,@BR)  INCREMENT RELATIVE DADDR
    14B9 5F 00 97 88           3653        SLC   GCLCNT(GCLN01,@BR),GCLCT1(,@BR)  END OF FIT CREATION ?
    14BD D0 01 2B              3654        BNZ   GCL300(,@BR)              NO, CREATE NEXT ENTRY
                               3655 *       DISK  GCLOP1                    WRITE FIT
    14C0 C0 87 0025            3656        B     $DISKN                    PERFORM PHYSICAL DISK OP
    14C4 150E             14C5 3657        DC    AL2(GCLDP1)               DPL ADDRESS
                               3658 *** END OF EXPANSION ***

                               3660 ***********************************************************************
                               3661 *
                               3662 *            INITIALIZE HORK FILE INDICATORS IN SYSNUC
                               3663 *
                               3664 ***********************************************************************
                               3665 *
    14C6 1C 03 03CB 84         3666        MVC   $TABLN(GCLN04),GCLINE(,@BR) IT AUTOMATIC LINE NUMBER
    14CB 3C 14 03D4            3667        MVI   $INDR1,$FITIN+$WSIND      SET NUCLEUS INDRS
    14CF 3B 10 03E0            3668        SBF   $DBGUF,$IOPGS             CLEAR I/O RECORD INDICATOR
    14D3 3B 40 0443            3669        SBF   $WFNME,$WFDEF             ZERO OUT WORK FILE NAME IN
                               3670 *                                      * SYSTEM NUCLEUS
                               3671 ***********************************************************************
                               3672 *
                               3673 *            END OF MODULE PROCESSING
                               3674 *
                               3675 ***********************************************************************
                               3676 *
                               3677 *GCLND  EXIT  @BR,@XR,RETURN
    14D7 C2 01 0000            3678 GCLND0 LA    *-*,@BR                   RESTORE @BR
    14DB C2 02 0000            3679 GCLND1 LA    *-*,@XR                   RESTORE @XR
    14DF C0 87 0000            3680 GCLND2 B     *-*                       RETAN TO CALLING PROGRAM
                               3681 *** END OF EXPANSION ***
                               3683 ***********************************************************************
                               3684 *
                               3685 *            DATA CONSTANTS AND WORK AREAS
                               3686 *
                               3687 ***********************************************************************
                               3688 *
                          14E3 3689 GCLEOF EQU   *
    14E3 00000800002710   14E9 3690        DC    XL7'00000800002710'       EOF CONSTANT AND
    14EA 75               14EA 3691        DC    AL1(@EOFTC)               * LINK CODE
    14EB 1C               14EB 3692        DC    AL1(@EOF)                 * EOF CONSTANT AND
    14EC 80000000         14EF 3693        DC    XL4'80000000'             * NULL SEGMENT SOF
                               3694 *
                          14F0 3695 GCLFT1 EQU *
    14F0 0100010000000000 14FB 3696        DC    XL12'010001000000000001D0B1D0F'  FIRST FIT ENTRY
                               3697 *
    14FC 002710F701FFFFFF 1503 3698 GCLFT2 DC    XL08'002710F701FFFFFF'    SECOND FIT ENTRY
                               3699 *
    1504 F0F1F0F0         1507 3700 GCLINE DC    DL4'0100'                 AUTOMATIC LINE NUMBER
                               3701 *
                               3702 *CLDP0 $DPL  FUNC-@DPUT,DADDR-#@#WDB,CNT-@B1,CADDR-GCLEOF
                          1508 3703+GCLDP0 EQU   *                         DISK PARAMETER LIST
    1508 02               1508 3704+       DC    AL1(@DPUT)                REQUESTED FUNCTION
    1509 050C             150A 3705+       DC    AL2(#@#WDB)               DISK ADDRESS
    150B 01               150B 3706+       DC    AL1(@B1)                  SECTOR COUNT
    150C 14E3             150D 3707+       DC    AL2(GCLEOF)               BUFFER ADDRESS
                               3708+*** END OF EXPANSION ***
                               3709 *
                               3710 *CLDP1 $DPL  FUNC-@DPUT,DADDR-#@#WFT,CNT-#@@#WF,CADDR-GCLFAD
                          150E 3711+GCLDP1 EQU   *                         DISK PARAMETER LIST
    150E 02               150E 3712+       DC    AL1(@DPUT)                REQUESTED FUNCTION
    150F 0500             1510 3713+       DC    AL2(#@#WFT)               DISK ADDRESS
    1511 03               1511 3714+       DC    AL1(#@@#WF)               SECTOR COUNT
    1512 1D00             1513 3715+       DC    AL2(GCLFAD)               BUFFER ADDRESS
                               3716+*** END OF EXPANSION ***
                               3717 *
                               3718 *CLDP2 $DPL  FUNC-@DPUT,DADDR-#@#IO1,CNT-#@@#SC,CADDR-GCLFAD
                          1514 3719+GCLDP2 EQU   *                         DISK PARAMETER LIST
    1514 02               1514 3720+       DC    AL1(@DPUT)                REQUESTED FUNCTION
    1515 0459             1516 3721+       DC    AL2(#@#IO1)               DISK ADDRESS
    1517 02               1517 3722+       DC    AL1(#@@#SC)               SECTOR COUNT
    1518 1D00             1519 3723+       DC    AL2(GCLFAD)               BUFFER ADDRESS
                               3724+*** END OF EXPANSION ***
                               3725 *
                          150B 3726 GCLCT1 EQU   GCLDP0+@DCNT              COUNT
    151A                  151A 3727 GCLCNT DS    CL1                       1 BYTE COUNTER
    151A                       3728        ORG   *-1
    151A BB               151A 3729        DC    XL1'BB'                   INITIAL COUNT OF 187 LOOPS TO
                               3730 *                                      * CREATE ENTIRE FIT
                               3732 ***********************************************************************
                               3733 *  5703-XM1 COPYRIGHT IBM CORP. 1970                                  *
                               3734 *           REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083      *
                               3735 *                                                                     *
                               3736 ***********************************************************************
                               3737 *STATUS                                                               *
                               3738 *   VERSION 1 MODIFICATION 0                                          *
                               3739 *                                                                     *
                               3740 *FUNCTION                                                             *
                               3741 *   * SGETDB PROVIDES TWO PRIMARY FUNCTIONS. IT WILL SEARCH THE       *
                               3742 *     PASSWORD DIRECTORY FOR A SPECIFIED PASSWORD ONLY, OR IF         *
                               3743 *     INDICATED WILL GO AND READ IN THE FIRST USER BLOCK ASSOCIATED   *
                               3744 *     WITH THAT PASSWORD.                                             *
                               3745 *   * IF THE PASSWORD SEARCH ONLY IS REQUESTED A SWITCH IS SET TO     *
                               3746 *     INHIBIT READING THE DIRECTORY ON SUBSEQUENT ENTRIES.            *
                               3747 *   * THE ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET IN $CAERR.  *
                               3748 *     IF THE PASSWORD IS OR IS NOT FOUND THE INDICATOR IN SMIND1 IS   *
                               3749 *     SET APPROPRIATLEY.                                              *
                               3750 *                                                                     *
                               3751 *ENTRY POINTS                                                         *
                               3752 *     SGETDB - ENTRY TO SEARCH PASSWORD DIRECTORY AND GET             *
                               3753 *              ASSOCIATED USER DIRECTORY. THE CALLING SEQUENCE IS     *
                               3754 *              AS FOLLOWS:                                            *
                               3755 *                    B    SGETDB                                      *
                               3756 *                                                                     *
                               3757 *INPUT                                                                *
                               3758 *   * THE BASE ADDRESS OF THE LIBRARY MUST BE IN SMBFDA IN TSMLES.    *
                               3759 *   * THE PASSWORD MUST BE IN SMPSWD.                                 *
                               3760 *   * IF THE PASSWORD DIRECTORY IS TO BE SEARCHED ONLY, THEN SMIPDS   *
                               3761 *     IN SMIND1 MUST BE SET TO 1.  IF THE FIRST USER DIRECTORY BLOCK  *
                               3762 *     ASSOCIATED WITH THE SPECIFIED PASSWORD IS TO BE READ IN THEN    *
                               3763 *     SMIPDS MUST BE SET TO 0.                                        *
                               3764 *                                                                     *
                               3765 *OUTPUT                                                               *
                               3766 *   * IF THE SPECIFIED PASSWORD IS FOUND THE ADDRESS OF THE LEFT BYTE *
                               3767 *     OF THE ENTRY IS PLACED IN SMPEAD, SMIPNF IN SMIND1 IS SET TO 0, *
                               3768 *     AND THE USER DIRECTORY RDADDR IS PLACED IN SMFUDA.              *
                               3769 *   * IF THE USER DIRECTORY WAS REQUESTED, THE READ OPERATION IS      *
                               3770 *     STARTED BUT NO WAIT IS PERFORMED. THE USER DIRECTORIES OVERLAYS *
                               3771 *     THE PASSWORD DIRECTORIES IN CORE.                               *
                               3772 *     IF THE SPECIFIED PASSWORD WAS NOT FOUND SMIPNF IS SET TO 1,     *
                               3773 *     AND THE ADDRESS FOR THE NEXT AVAILABLE ENTRY IS IN SMPEAD.      *
                               3774 *                                                                     *
                               3775 *EYTERNAL REFERENCES                                                  *
                               3776 *         SCAERR - LOCATION FOR SYSTEM ERROR CODE                     *
                               3777 *         SMIND1 - DATA MANAGEMENT INDICATOR                          *
                               3778 *         DL2RAD - LOCATION OF FILE PHYSICAL BASE ADDRESS             *
                               3779 *         SMBFDA - LOCATION OF LIBRARY BASE ADDRESS                   *
                               3780 *         DL2ICS - ENTRY TO DISK I/O ROUTINE                          *
                               3781 *         SDISKN - ENTRY TO SYSTEM DISK IOCS                          *
                               3782 *         $WAITF - LOCATION OF COMMON I/O WAIT FUNCTIOW               *
                               3783 *         SMPSWD - LOCATION PASSWORD ARGUMENT                         *
                               3784 *         SMPEAD - LOCATION OF RAWORD ENTRY ADDRESS                   *
                               3785 *         SMFUDA - LOCATION OF USER DIRECTORY RDADDR                  *
                               3786 *                                                                     *
                               3787 *EXITS, NORMAL                                                        *
                               3788 *   * NORMAL EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE BRANCH TO *
                               3789 *     SGETDB                                                          *
                               3790 *                                                                     *
                               3791 *EXITS, ERROR                                                         *
                               3792 *   * NONE                                                            *
                               3793 *                                                                     *
                               3794 *TABLES/WORKAREAS                                                     *
                               3795 *   * NONE                                                            *
                               3796 *                                                                     *
                               3797 *ATTRIBUTES                                                           *
                               3798 *   * RELOCATABLE                                                     *
                               3799 *   * REUSABLE                                                        *
                               3800 *                                                                     *
                               3801 *CHARACTER CODE DEPENDENCY                                            *
                               3802 *   * THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR   *
                               3803 *     INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.          *
                               3804 *                                                                     *
                               3805 *NOTES                                                                *
                               3806 *   ERROR PROCEDURES                                                  *
                               3807 *      THE ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET BUT SGETDB *
                               3808 *      DETECTS NO PARTICULAR ERROR. THE CONDITION AS TO IF THE        *
                               3809 *      PASSWORD WAS OR WAS NOT FOUND IS INDICATED HOWEVER.            *
                               3810 *   REGISTER USAGE                                                    *
                               3811 *      @BR AND @XR ARE SAVED AND RESTORED. @BR IS USED AS A BASE      *
                               3812 *      REGISTER AND @XR IS USED AS AN INDEX TO THE PASSWORD DIRCTY.   *
                               3813 *      @ARR IS USED TO PROVIDE THE RETURN ADDRESS.                    *
                               3814 *   SAVED/RESTORIED AREAS                                             *
                               3815 *      N/A                                                            *
                               3816 *   MODIFICATION CONSIDERATIONS                                       *
                               3817 *      IN USING SGETDB THE USER MUST TAKE INTO CONSIDERATION THAT     *
                               3818 *      SGETDB DOES NOT WAIT FOR THE USER DIRECTORY BLOCK TO BE IN     *
                               3819 *      CORE BEFORE RETURNING.                                         *
                               3820 *   REQUIRED MODULES                                                  *
                               3821 *         @SYSEQ - SYSTEM SOFTWARE EQUATES                            *
                               3822 *         @FXDEQ - NUCLEUS EQUATES                                    *
                               3823 *         #DIREQ - LIBRARY DIRECTORY EQUATES                          *
                               3824 *         DL2ICS - DISK IOCS                                          *
                               3825 *         TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA                *
                               3826 *   OTHER                                                             *
                               3827 *      N/A                                                            *
                               3828 ***********************************************************************
                               3830 *SGETDB ENTER BASE-SGETDB,EXIT-SGE90,@BR,@XR,@ARR
                          151B 3831        USING SGETDB,@BR                BASE ADDRESS SPECIFICATION
                          151B 3832 SGETDB EQU   *                         MODULE ENTRY POINT
    151B 34 01 1593            3833        ST    SGE900+@OP1,@BR           SAVE @BR
    151F C2 01 151B            3834        LA    SGETDB,@BR                LOAD BASE REGISTER
    1523 74 02 7C              3835        ST    SGE901+@OP1(,@BR),@XR     SAVE @XR
    1526 74 08 80              3836        ST    SGE902+@OP1(,@BR),@ARR    SAVE RETURN ADDRESS
                               3837 *** END OF EXPANSION ***
    1529 3C 23 03CD            3838        MVI   $CAERR,@@E210             PASSWORD NOT ON DISK
    152D 3B 08 19F4            3839        SBF   SMIND1,SMIPNF             INITIALIZE INDICATOR TO FOUND
    1531 F2 80 15              3840 SGE050 JC    SGE055,@NOP               SET SWITCH FOR 2ND ENTRY
    1534 7C 87 17              3841        MVI   SGE050+@Q(,@BR),@UCB      TURN SWITCH ON FOR NEXT ENTRY
    1537 0C 01 0ECE 1A0E       3842        MVC   DL2RAD,SMBFDA             STUFF IN THE BASE ADDR
    153D C0 87 0E36            3843        B     DL2ICS                    CALL DISK I/O ROUTINE
    1541 159C             1542 3844        DC    AL2(SGEDPL)               POINTER TO PARAMETER LIST
    1543 C0 87 0025            3845        B     $DISKN                    WAIT FOR DIRCTY TO LOAD
    1547 057F             1548 3846        DC    AL2($WAITF)               WAIT...

    1549 75 02 86              3848 SGE055 L     SGEDPL+@DBFR2(,@BR),@XR   PASSWORD BUFFER CADDR
    154C 6C 00 89 00           3849        MVC   SGECNT(1,@BR),##DPHC(,@XR)  ENTRY COUNT TO WORK
    1550 E2 02 04              3850        LA    ##DPE1(,@XR),@XR          BUMP TO FIRST PASSWORD
                               3851 *
    1553 2D 07 1A02 07         3852 SGE060 CLC   SMPSWD(##LPEN),##DPEN(,@XR)  LOOK AT PSWD ENTRY
    1558 F2 81 0E              3853        JE    SGE070                    FOUND THE PSWD
    155B E2 02 0C              3854        LA    ##LPE(,@XR),@XR           BUMP TO LOOK AT NEXT ENTRY
    155E 5F 00 89 8B           3855        SLC   SGECNT(1,@BR),SGEC01(,@BR)  DECR ENTRY COUNT
    1562 D0 01 38              3856        BNE   SGE060(,@BR)              BACK FOR LOOK AT ENTRY
    1565 3A 08 19F4            3857        SBN   SMIND1,SMIPNF             NOT FOUND INDICATOR
                               3858 *
                               3859 *            THE PASSWORD OR DIRCTY END FOUND. SAVE THE POINTERS.
                               3860 *
    1569 34 02 1A1C            3861 SGE070 ST    SMPEAD,@XR                SAVE ENTRY ADDRESS
    156D 2C 01 1A1E 09         3862        MVC   SMFUDA(@DADDR),##DPEA(,@XR)  POSSIBLE USER DADDR OF ALM
    1572 38 10 19F4            3863        TBN   SMIND1,SMIPDS             TEST SEARCW BIT ONLY OW
    1576 F2 10 17              3864        JT    SGE900                    SEARCH ONLY SO EXIT
    1579 7D 00 89              3865        CLI   SGECNT(,@BR),@ZERO        TEST COUNT IF ENTRY FOUND
    157C F2 81 11              3866        JE    SGE900                    JUMP MOT FOUND
                               3867 *
    157F 6C 01 83 09           3868 SGE080 MVC   SGEDPL+@DSAD(@DADDR,@BR),##DPEA(,@XR)  BLK ADDR TO DPL
    1583 C0 87 0E36            3869        B     DL2ICS                    CALL TO READ USER DIRCTY
    1587 159C             1588 3870        DC    AL2(SGEDPL)               POINTER TO PARAMETER LIST
                               3871 *
    1589 7C 80 17              3872        MVI   SGE050+@Q(,@BR),@NOP      TURN OFF SKIP INSTR
    158C 5C 01 83 88           3873        MVC   SGEDPL+@DSAD(@DADDR,@BR),SGERAD(,@BR) RESTORE DSAD PSWD
                               3874 *
                               3875 *SGE90  EXIT  @BR,@XR,RETURN
    1590 C2 01 0000            3876 SGE900 LA    *-*,@BR                   RESTORE @BR
    1594 C2 02 0000            3877 SGE901 LA    *-*,@XR                   RESTORE @XR
    1598 C0 87 0000            3878 SGE902 B     *-*                       RETURN TO CALLING PROGRAM
                               3879 *** END OF EXPANSION ***
                               3880 *
                               3881 *            DPL TO READ IN THE PASSWORD DIRCTY
                               3882 *
                               3883 *GEDPL $DPL  FUNC-@DGET,DADDR-##RP,CNT-##LP,CADDR-SMPDB1
                          159C 3884+SGEDPL EQU   *                         DISK PARAMETER LIST
    159C 01               159C 3885+       DC    AL1(@DGET)                REQUESTED FUNCTION
    159D 0001             159E 3886+       DC    AL2(##RP)                 DISK ADDRESS
    159F 04               159F 3887+       DC    AL1(##LP)                 SECTOR COUNT
    15A0 1A23             15A1 3888+       DC    AL2(SMPDB1)               BUFFER ADDRESS
                               3889+*** END OF EXPANSION ***
                               3890 *
    15A2 0001             15A3 3891 SGERAD DC    AL2(##RP)                 RELATIVE DADDR OF DIRCTY
    15A4                  15A4 3892 SGECNT DS    CL1                       SAVE AREA FOR ENTRY COUNT
    15A5 0001             15A6 3893 SGEC01 DC    IL2'1'                    CONSTANT 1 FOR ADDR MODIF.ATION
                               3894 *
                          15A7 3895 SSEEND EQU   *                         END ADDR OR SGETDB
```

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3897 ***********************************************************************
3898 *  5703-XM1 COPYRIGHT IBM CORP. 1970                                  *
3899 *           REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083      *
3900 *                                                                     *
3901 ***********************************************************************
3902 *STATUS                                                               *
3903 *   VERSION 1 MODIFICATION 0                                          *
3904 *                                                                     *
3905 *FUNCTION                                                             *
3906 *   * SRCHFN SEARCHES A USER DIRECTORY FOR A SPECIFIED FILENAME. IT IS*
3907 *     ASSUMED THAT THE DIRECTORY TO BE SEARCHED HAS BEEN READ INTO    *
3908 *     CORE AT SMUDBI IN TSMLES. IF THE DIRECTORY IS LINKED TO AN      *
3909 *     ADDITIONAL BLOCK IT IS READ IN TO THE SECONDARY BUFFER WHILE    *
3910 *     THE PRIMARY BLOCK IS SEARCHED.                                  *
3911 *   * THE ADDRESS OF THE ENTRY OR THE ADDRESS FOR A NEW ENTRY IS      *
3912 *     PLACED IN SMUDEA. THE ADDRESS OF THE ACTIVE DIRECTORY IS PLACED *
3913 *     IN SMUDBA. IF THE NAME WAS NOT FOUND SMIFNE IS SET TO 1 IN      *
3914 *     SMIND1. IF THE NAME WAS FOUND THE INDICATOR IS SET TO 0.        *
3915 *                                                                     *
3916 *ENTRY POINTS                                                         *
3917 *     SRCHFN - ENTRY TO SEARCH FOR A FILENAME. THE CALLING SEQUENCE   *
3918 *              IS AS FOLLOWS:                                         *
3919 *                    B    SRCHFN                                      *
3920 *                                                                     *
3921 *INPUT                                                                *
3922 *     THE USER DIRECTORY BLOCK MUST BE READ INTO SMUDB1 IN TSMLES.    *
3923 *     THE NAME OF THE ENTRY TO SEARCH FOR MUST BE IN SMFNAM IN TSMLES *
3924 *                                                                     *
3925 *OUTPUT                                                               *
3926 *   * IF THE FILE NAME IS FOUND THE ADDRESS OF THE ENTRY IS SET IN    *
3927 *     SMUDEA. THE ADDRESS OF THE BUFFER CONTAINING THE ENTRY IS IN    *
3928 *     SMUDBA, AND THE INDICATOR BIT SMIFNE IN SMIND1 IS SET TO 0.     *
3929 *   * IF THE FILE NAME WAS NOT FOUND SMUDEA CONTAINS THE ADDRESS OF   *
3930 *     WHERE THE NEXT ENTRY MAY BE MADE IN THE DIRECTORY. SMUDBA       *
3931 *     CONTAINS THE ADDRESS OF THE BUFFER CONTAINING THE LAST BLOCK,   *
3932 *     AND SMIFNE IS SET TO 1 IN SMIND1.                               *
3933 *   * SMUDEA CONTAINS THE ADDRESS OF THE LEFTMOST BYTE OF THE FIELD,  *
3934 *   * THE ERROR CODE FOR FILE NOT FOUND IS ALWAYS MOVED TO $CAERR,    *
3935 *                                                                     *
3936 *EXTERNAL REFERENCES                                                  *
3937 *        $CAERR - LOCATION OF ERROR CODE INDICATOR.                   *
3938 *        $DISKN - ENTRY TO DISK IOCS.                                 *
3939 *        $WAITF - ADDRESS OF COMMON I/O WAIT FUNCTION.                *
3940 *        DL2ICS - ENTRY TO DISK LOGICAL IOCS.                         *
3941 *        SMFNAM - ADDRESS OF FILENAME SAVE AREA                       *
3942 *        SMUDEA - ADDRESS OF USER DIRECTORY ENTRY ADDRESS.            *
3943 *        SMUDBA - ADDRESS OF USER DIRECTORY BUFFER ADDRESS.           *
3944 *        SMDAAD - LOCATION OF RELATIVE DISK ADDRESS OF ACTIVE BUFFER. *
3945 *        SMIFNE - VALUE OF NOT FOUND INDICATOR.                       *
3946 *        SMIND1 - LOCATION INDICATOR 1.                               *
3947 *        SMUDB1 - ADDRESS OF DIRECTORY BLOCK BUFFER.                  *
3948 *        SMUDB2 - ADDRESS OF DIRECTORY BLOCK BUFFER.                  *
3949 *                                                                     *
3950 *EXITS, NORMAL                                                        *
3951 *   * THE REGISTER @BR @XR ARE RESTORED AND THE EXIT IS TO THE        *
3952 *     ADDRESS SAVED FROM THE @ARR REGISTER.                           *
```

```
                               3953 *EXITS, ERROR                                                         *
                               3954 *   * NONE.                                                           *
                               3955 *                                                                     *
                               3956 *TABLES/WORKAREAS                                                     *
                               3957 *   * NONE                                                            *
                               3958 *                                                                     *
                               3959 *ATTRIBUTES                                                           *
                               3960 *   * RELOCATABLE                                                     *
                               3961 *                                                                     *
                               3962 *CHARACTER CODE DEPENDENCY                                            *
                               3963 *   CHARACTER CODE DEPENDENCY CLASS - C                               *
                               3964 *   THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA- *
                               3965 *   TION 0F THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE*
                               3966 *   USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-   *
                               3967 *   DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN  *
                               3968 *   A CORRECT MODULE FOR THE NEW DEFINITIONS.                         *
                               3969 *                                                                     *
                               3970 *NOTES                                                                *
                               3971 *   ERROR PROCEDURES                                                  *
                               3972 *      NONE                                                           *
                               3973 *   RESISTER USAGE                                                    *
                               3974 *      @BR AND @XR ARE SAVED ON ENTRY AND RESTORED AT EXIT. @ARR IS   *
                               3975 *      USED AS THE RETURN ADDRESS.                                    *
                               3976 *   SAVED/RESTORED AREAS                                              *
                               3977 *      NONE                                                           *
                               3978 *   MODIFICATION CONSIDERATIONS                                       *
                               3979 *      NONE                                                           *
                               3980 *   REQUIRED MODULES                                                  *
                               3981 *        @SYSEQ - SYSTEM SOFTWARE EQUATES.                            *
                               3982 *        @DIREQ - LIBRARY DIRECTORY EQUATES.                          *
                               3983 *        @FXDEQ - SYSTEM NUCLEUS EQUATES.                             *
                               3984 *        DL2ICS - LOGICAL DISK IOCS.                                  *
                               3985 *        TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA                 *
                               3986 *   OTHER                                                             *
                               3987 *      N/A                                                            *
                               3988 ***********************************************************************
```

```
                          15A7 3990 SRCHFN EQU   *                          ENTRY TO SEARCH FILENAME
    15A7 34 01 1631            3991        ST    SRC900+@OP1,@BR            SAVE BASE REGISTER
                          15AB 3992        USING SRC010,@BR
    15AB C2 01 15AB            3993 SRC010 LA    SRC010,@BR                 SET BASE ADDR
    15AF 74 02 8A              3994        ST    SRC910+@OP1(,@BR),@XR      SAVE INDEX REG
    15B2 74 08 8E              3995        ST    SRC920+@OP1(,@BR),@ARR     SAVE RETURN ADDR
    15B5 3C 24 03CD            3996        MVI   $CAERR,@@E211              FILE NOT FOUND
    15B9 5C 01 9B A1           3997        MVC   SRCBF1(@CADDR,@BR),SRCBA1(,@BR)  INITIALIZE OLF POINTER
    15BD 5C 01 9D A3           3998        MVC   SRCBF2(@CADDR,@BR),SRCBA2(,@BR)  ALTERNATE BUFFER
    15C1 5C 01 9F 9B           3999        MVC   SRCACT(@CADDR,@BR),SRCBF1(,@BR)  SET ACTIVE BUFFER

    15C5 C0 87 0025            4001 SRC020 B     $DISKN                     WAIT FOR USER BLOCK
    15C9 057F             15CA 4002        DC    AL2($WAITF)                WAIT OP DPL
                               4003 *
    15CB 7C 87 5E              4004        MVI   SRC055+@Q(,@BR),@UCB       RESET NOP FOR LINKED DIRCTY
    15CE 75 02 9F              4005        L     SRCACT(,@BR),@XR           PICKUP POINTER TO ACTIVE BUFFER
                               4006 *
                               4007 *            BLOCK LINK SHOULD ALWAYS BE GREATER THAN 1 IF IT IS
                               4008 *            PRESENT. IF NOT THE LINK BYTE SHOULD BE ZERO.
                               4009 *
    15D1 9D 01 03 A6           4010        CLC   ##DUHB(@DADDR,@XR),SRCC01(,@BR)  TEST LIVE FIELD
    15D5 F2 82 11              4011        JL    SRC030                           JUMP NOT LINKED
    15D8 5C 01 AC 9D           4012        MVC   SRCBFR(@DADDR,@BR),SRCBF2(,@BR)  GET ALTERNATE BUFFER ADDR
    15DC 6C 01 A9 03           4013        MVC   SRCDAD(@DADDR,@BR),##DUHB(,@XR)  SET LINK TO MEXT BLOCK
    15E0 C0 87 0E36            4014        B     DL2ICS                     READ NEXT BLOCK
    15E4 1652             15E5 4015        DC    AL2(SRCDPL)                POINTER TO DPL
                               4016 *
    15E6 7C 80 5E              4017        MVI   SRC055+@Q(,@BR),@NOP       SET SWITCH FOR LINKED BLOCK
    15E9 6C 00 A4 04           4018 SRC030 MVC   SRCCNT(1,@BR),##DUHC(,@XR)  GET ENTRY COUNT
    15ED E2 02 0C              4019        LA    ##DUEI(,@XR),@XR           BUMP TO FIRST ENTRY
    15F0 7D 00 A4              4020        CLI   SRCCNT(,@BR),@ZERO         IS STARTING COUNT ZERO ?
    15F3 D0 81 5D              4021        BE    SRC055(,@BR)               YES, RETURN NOT FOUND
    15F6 8D 07 07 1A0A         4022 SRC035 CLC   ##DUEN(##LUEN,@XR),SMFNAM   LOOK AT ENTRY
    15FB F2 81 1C              4023        JE    SRC040                     JUMP IF THE NAME IS FOUND
    15FE E2 02 32              4024        LA    ##LUE(,@XR),@XR            BUMP THE POINTER FOR NEXT ENTRY
    1601 5F 00 A4 A6           4025        SLC   SRCCNT(1,@BR),SRCC01(,@BR)  DECR ENTRY COUNTER
    1605 D0 01 4B              4026        BNE   SRC035(,@BR)               BACK TO TEXT NEXT ENTRY
    1608 F2 00 2F              4027 SRC055 JC    SRC060,*-*                 LINK SWITCH
    160B 5C 01 9B 9D           4028        MVC   SRCBF1(@CADDR,@BR),SRCBF2(,@BR)  SWITCH BUFFERS
    160F 5C 01 9D 9F           4029        MVC   SRCBF2(@CADDR,@BR),SRCACT(,@BR)  *
    1613 5C 01 9F 9B           4030        MVC   SRCACT(@CADDR,@BR),SRCBF1(,@BR)  SET ACTIVE BUFFER
    1617 D0 87 1A              4031        B     SRC020(,@BR)               GO BACK TO NEXT BUFFER
                               4032 *
                               4033 *            FILENAME HAS BEEN FOUND.
                               4034 *
    161A 34 02 1A0C            4035 SRC040 ST    SMUDEA,@XR                 SAVE ENTRY ADDR
    161E 3B 80 19F4            4036        SBF   SMIND1,SMIFNE              TURN OFF NOT FOUND INDICATOR
    1622 75 02 9F              4037 SRC050 L     SRCACT(,@BR),@XR           GET CADDR OF ACTIVE BUFFER
    1625 34 02 1A10            4038        ST    SMUDBA,@XR                 SAVE CADDR IN SMALES
    1629 2C 01 1A22 01         4039        MVC   SMDAAD,##DUHA(@DADDR,@XR) SAVE RDADDR OF ACTIVE DIRCTY
    162E C2 01 0000            4040 SRC900 LA    *-*,@BR                    RESTORE CALLERS BASE
    1632 C2 02 0000            4041 SRC910 LA    *-*,@XR                    RESTORE INDEX
    1636 C0 87 0000            4042 SRC920 B     *-*                        RETURN

                               4044 *
                               4045 *            FILENAME WAS NOT FOUND. SAVE ADDR FOR NEXT ENTRY AND
                               4046 *            SET THE INDICATOR.
                               4047 *
    163A 34 02 1A0C            4048 SRC060 ST    SMUDEA,@XR                SAVE ADDR FOR NEXT ENTRY
    163E 3A 80 19F4            4049        SBN   SMIND1,SMIFNE             TURN ON NOT FOUND INDICATOR
    1642 D0 87 77              4050        B     SRC050(,@BR)              GO TO RETURN
```

```
                               4052 *
                               4053 *            CONSTANTS AND WORK AREA
                               4054 *
    1645                 1646 4055 SRCBF1 DS    CL(@CADDR)                WORK AREA PRIMARY BUFFER ADDR
    1647                 1648 4056 SRCBF2 DS    CL(@CADDR)                WORK AREA SECONDARY BUFFER ADDR
    1649                 164A 4057 SRCACT DS    CL(@CADDR)                SAVE AREA FOR ACTIVE BUFFER
    164B 1A23            164C 4058 SRCBA1 DC    AL2(SMUDB1)               ADDRESS OF USED DIRCTY BLUFFER 1
    164D 1C23            164E 4059 SRCBA2 DC    AL2(SMUDB2)               ADDRESS OF DIRCTY BUFFER 2
    164F                 164F 4060 SRCCNT DS    CL1                       WORK AREA FOR ENTRY COUNT
    1650 0001            1651 4061 SRCC01 DC    IL2'1'                    CONSTANT TO DECR ENTRY COUNT
                          1652 4062 SRCDPL EQU   *                         DEFINE LEFT END OF DPL
    1652 01              1652 4063 SRCGET DC    AL1(@DGET)                READ OP CODE
    1653                 1654 4064 SRCDAD DS    CL(@DADDR)                RELATIVE ADDR OF BLOCK
    1655 02              1655 4065 SRCSCT DC    AL1(##LU)                 SECTOR COUNT FOR BLOCK
    1656                 1657 4066 SRCBFR DS    CL(@CADDR)                BUFFER ADDR OF BLOCK
```

```
                               4068 ***********************************************************************
                               4069 * SERIALLY REUSABLE SUBROUTINE TO CONVERT A 2 BYTE BINARY VALUE TO A *
                               4070 * 5 BYTE POSITIVE DECIMAL NUMBER                                      *
                               4071 * ON ENTRY @XR POINTS TO THE LEFT BYTE OF THE BINARY VALUE.           *
                               4072 * ON RETURN C2DVAL IS THE RIGHT BYTE OF THE FIVE BYTE DECIMAL VALUE  *
                               4073 * WITH LEADING ZEROS WHICH MAY BE MODIFIED BY THE USER IN ANY WAY IN *
                               4074 * ITS LOCATION.                                                       *
                               4075 * THE TWO BYTE BINARY VALUE IS NOT ALTERED.                           *
                               4076 * @XR IS NOT ALTERED.  @BR IS SAVED AND RESTORED                      *
                               4077 ***********************************************************************
                               4078 *C2DEC5 ENTER BASE=C2DEC5,EXIT=C2D05,@BR,,@ARR
                          1658 4079        USING C2DEC5,@BR                BASE ADDRESS SPECIFICATION
                          1658 4080 C2DEC5 EQU   *                         MODULE ENTRY POINT
    1658 34 01 168C            4081        ST    C2D050+@OP1,@BR           SAVE @BR
    165C C2 01 1658            4082        LA    C2DEC5,@BR                LOAD BASE REGISTER
    1660 74 08 38              4083        ST    C2D052+@OP1(,@BR),@ARR    SAVE RETURN ADDRESS
                               4084 *** END OF EXPANSION ***
                               4085 * INITIALIZE DECIMAL INCREMENTER AND DECIMAL SUM TO 1 AND 0 RESP
    1663 54 90 43 39           4086        ZAZ   C2D903(C2D903-C2D901,@BR),C2D901(C2D902-C2D901,@BR)
    1667 7C 01 17              4087        MVI   C2D030+@D1(,@BR),@B1      INITIALIZE DISP TO BYTE ONE
    166A 7C 01 16              4088 C2D020 MVI   C2D030+@Q(,@BR),@B1       INIT TEST TO BIT 7
                               4089 *
    166D B8 00 00              4090 C2D030 TBN   *-*(,@XR),*-*             IF THIS BIT IS OFF
    1670 F2 90 04              4091        JF    C2D040                    * BR AROUND SUM INCR
                               4092 * INCREMENT DECIMAL SUM BY DECIMAL VALUE OF THIS BIT
    1673 56 04 3E 43           4093        AZ    C2DVAL(C2D903-C2DVAL,@BR),C2D903(C2D903-C2DVAL,@BR)
                               4094 * DOUBLE DECIMAL VALUE OF INCREMENT TO VALUE OF NEXT BIT
    1677 56 04 43 43           4095 C2D040 AZ    C2D903(C2D903-C2DVAL,@BR),C2D903(C2D903-C2DVAL,@BR)
    167B 5E 00 16 16           4096        ALC   C2D030+@Q(1,@BR),C2D030+@Q(,@BR)  SHIFT BIT MASK LEFT ONE
    167F D0 20 15              4097        BNOL  C2D030(,@BR)              CONTINUE LOOP UNLESS ALL BITS
                               4098 *
    1682 5F 00 17 13           4099        SLC   C2D030+@D1(1,@BR),C2D020+@Q(,@BR)  DECR DISP TO BYTE 0
    1686 D0 81 12              4100        BZ    C2D020(,@BR)              FALL THROUGH IF UNDERFLOW
                               4101 *C2DOS  EXIT @BR,,RETURN
    1689 C2 01 0000            4102 C2D050 LA    *-*,@BR                   RESTORE @BR
    168D C0 87 0000            4103 C2D052 B     *-*                       RETURN TO CALLING PROGRAM
                               4104 *** END OF EXPANSION ***
                               4105 *
                               4106 *      WORK AREA
                               4107 *
    1691 F1               1691 4108 C2D901 DC    DL1'1'                    INIT WORK AREA
                          1692 4109 C2D902 EQU   *                         FIRST BYTE OF DECIMAL VALUE
    1692                  1696 4110 C2DVAL DS    CL5                       DECIMAL VALUE
    1697                  169B 4111 C2D903 DS    CL5                       INCREMENTER
                               4112 *
                               4113 *      $CANI
                               4115+***********************************************************************
                               4116+*  5703-XM1    COPYRIGHT IBM CORP. 1970                               *
                               4117+*              REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083    *
                               4118+*                                                                     *
                               4119+***********************************************************************
                               4120+*STATUS                                                               *
                               4121+*   VERSION 1 MODIFICATION 0                                          *
                               4122+*                                                                     *
                               4123+*FUNCTION                                                             *
                               4124+*   THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND       *
                               4125+*   RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER.   *
                               4126+*                                                                     *
                               4127+*ENTRY POINTS                                                         *
                               4128+*   * THE ENTRY POINT IS SCANIT.                                      *
                               4129+*   * THE CALLING SEQUENCE IS AS FOLLOWS:                             *
                               4130+*            B     SCANIT                                             *
                               4131+*     WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE     *
                               4132+*     EXAMINED.                                                       *
                               4133+*                                                                     *
                               4134+*INPUT                                                                *
                               4135+*   NONE                                                              *
                               4136+*                                                                     *
                               4137+*OUTPUT                                                               *
                               4138+*   NONE                                                              *
                               4139+*                                                                     *
                               4140+*EXTERNAL REFERENCES                                                  *
                               4141+*   $CAERR - ERROR CODE SAVE AREA                                     *
                               4142+*                                                                     *
                               4143+*EXITS, NORMAL                                                        *
                               4144+*   NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO    *
                               4145+*   SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN  *
                               4146+*   A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR  *
                               4147+*   MORE DELIMITERS WERE SCANNED.                                     *
                               4148+*                                                                     *
                               4149+*EXITS, ERROR                                                         *
                               4150+*   ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO     *
                               4151+*   SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW         *
                               4152+*   CONDITION.                                                        *
                               4153+*                                                                     *
                               4154+*TABLES/WORKAREAS                                                     *
                               4155+*   * SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED          *
                               4156+*   * SCAMMA - LOC WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO     *
                               4157+*     TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA    *
                               4158+*     INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS.     *
                               4159+*                                                                     *
                               4160+*ATTRIBUTES                                                           *
                               4161+*   RELOCATABLE AND RE-USABLE                                         *
                               4162+*                                                                     *
                               4163+*CHARACTER CODE DEPENDENCY                                            *
                               4164+*   THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR    *
                               4165+*   INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.            *
                               4166+*                                                                     *
                               4167+*NOTES                                                                *
                               4168+*   ERROR PROCEDURES                                                  *
                               4169+*      THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE  *
                               4170+*      A CARRIAGE-RETURN CODE FOLLOWS A COMMA.  UPON RETURN TO THE    *
                               4171+*      CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE      *
                               4172+*      ERROR CODE IS SET IN $CAERR, AND MG WILU BE POINTING TO THE    *
                               4173+*      CARRIAGE-RETURN CHARACTER.                                     *
                               4174+*                                                                     *
                               4175+*   REGISTER USAGE                                                    *
                               4176+*      REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING    *
                               4177+*      SCANNED FOR DELIMETERS.                                        *
                               4178+*                                                                     *
                               4179+*   SAVED/RESTORED AREAS                                              *
                               4180+*      UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS   *
                               4181+*      THE RETURN ADDRESS.                                            *
                               4182+*                                                                     *
                               4183+*   MODIFICATION CONSIDERATIONS                                       *
                               4184+*      NONE                                                           *
                               4185+*                                                                     *
                               4186+*   REQUIRED MODULES                                                  *
                               4187+*      * @SYSEQ - COMMON SYSTEM EQUATES                               *
                               4188+*      * @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES                     *
                               4189+*                                                                     *
                               4190+*   OTHER                                                             *
                               4191+*      SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS      *
                               4192+*      MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS.  *
                               4193+*      THE INSTRUCTION TO DO THIS IS AS FOLLOWS:                      *
                               4194+*            MVI   SCAMMA,SCACOM                                      *
                               4195+*                                                                     *
                               4196+*      TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE  *
                               4197+*      MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION:              *
                               4198+*            MVI   SCAMMA,SCACOF                                      *
                               4199+*                                                                     *
                               4200+***********************************************************************


                               4202+*
                               4203+*                  EQUATES USED IN THIS SUBROUTINE
                               4204+*
                          0001 4205+SCAINC EQU   1                         TO INCREMENT POINTER
                          0001 4206+SCACOM EQU   @BNE                      SWITCH TO ALLOW SCANNING COMMA
                          0087 4207+SCACOF EQU   @UCB                      SWITCH TO SET OFF THE INDICATON
                               4208+*                                      * FOR SCANNING A COMMA
                          169C 4209+SCANIT EQU   *                         ENTRY POINT TO THIS SUBROUTINE
    169C 34 08 16D8            4210+       ST    SCA500+@OP1,@ARR          SAVE RETURN ADDRESS
    16A0 34 02 16DA            4211+       ST    SCASVE,@XR                SAVE POINTER VALUE
    16A4 3C 04 03CD            4212+       MVI   $CAERR,@@E110             SET ERROR CODE
    16A8 F2 87 03              4213+       J     SCA200                    GO TO PROCESS
    16AB E2 02 01              4214+SCA100 LA    SCAINC(,@XR),@XR          INCREMENT POINTER TO NEXT CHAR
    16AE BD 40 00              4215+SCA200 CLI   0(,@XR),@BLANK            IS THIS CHAR BLANK ?
    16B1 C0 81 16AB            4216+       BE    SCA100                    YES, FETCH NEXT ONE
    16B5 BD 6B 00              4217+       CLI   0(,@XR),@COMMA            IS IT A COMMA ?
    16B8 F2 87 10              4218+SCA250 JC    SCA400,@UCB               UCS TO RETURN -- OR NOP IF
                               4219+*                                      * SCAMMA IS ACTIVE AND CHAR
    16BB E2 02 01              4220+SCA300 LA    SCAINC(,@XR),@XR          INCREMENT POINTER TO NEXT CHAR
    16BE BD 40 00              4221+       CLI   0(,@XR),@BLANK            IS THIS CHAR A BLANK ?
    16C1 C0 81 16BB            4222+       BE    SCA300                    YES, FETCH NEXT ONE
    16C5 BD 1F 00              4223+       CLI   0(,@XR),@EOS+1            IS THIS EOS ?
    16C8 F2 82 0A              4224+       JL    SCA500                    IF NOT, SKIP ERROR ROUTINE
    16CB 34 02 16DC            4225+SCA400 ST    SCACNT,@XR                SAVE NEW POINTER VALUE
    16CF 0F 01 16DC 16DA       4226+       SLC   SCACNT(2),SCASVE          SET PSR TO EQUAL IF POINTER
                               4227+*                                      * NOT ADVANCED
    16D5 C0 87 0000            4228+SCA500 B     *-*                       YES, RETURN
                          16B9 4229+SCAMMA EQU   SCA250+@Q                 TO SET SCAN COMMA INDICATOR
                               4230+*
                               4231+*                  SAVE AREA
                               4232+*
                          16D9 4233+SCASV1 EQU   *                         FIRST BYTE OF SCASVE
    16D9                  16DA 4234+SCASVE DS    CL2                       ORIGINAL POINTER VALUE SAVE
    16DB                  16DC 4235+SCACNT DS    CL2                       SAVE AREA FOR TOTAL CHAR SCAN
                               4236+***                       END OF SCANIT                            ***
                               4237 *
                               4238 *      $VOLI
                               4240+***********************************************************************
                               4241+* 5703-XM1  COPYRIGHT IBM CORP. 1970                                  *
                               4242+*           REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE  120-2083       *
                               4243+*                                                                     *
                               4244+***********************************************************************
                               4245+*STATUS                                                               *
                               4246+*   VERSION 1 MODIFICATION 0                                          *
                               4247+*                                                                     *
                               4248+*FUNCTION                                                             *
                               4249+*   THE FUNCTION OF SVOLID IS TO SEARCH THE CORE RESIDENT TABLE OF    *
                               4250+*   VOLUME ID'S ON THE SYSTEM FOR A SPECIFIED VOLUME ID. IF THE       *
                               4251+*   VOLUME IS NOT FOUND, AN ERROR CODE WILL BE PUT IN $CAERR AND AN   *
                               4252+*   EXIT TO $VOERR IN THE CALLING ROUTINE WILL BE TAKEN. IF MORE      *
                               4253+*   THAN ONE VOLUME WITH THE SAME VOL-ID IS FOUND ON THE SYSTEM, THE  *
                               4254+*   USER OF THE SYSTEM IS REQUESTED TO INDICATE WHICH DRIVE AND DISK  *
                               4255+*   IS TO BE USED. IF THE USER IS UNABLE TO RESOLVE THE CONFLICT,     *
                               4256+*   THE COMMAND IS REJECTED. IF THE INPUT SOURCE IS NOT THE KEYBOARD, *
                               4257+*   THE COMMAND IS REJECTED. OTHERWISE THE FILE LIBRARY ADDRESS OF    *
                               4258+*   THE RESOLVED VOLUME IS PLACED IN SMBFDA IN THE TSMLES COMMUNICA-  *
                               4259+*   TIONS REGION, AND A NORMAL RETURN IS TAKEN.                       *
                               4260+*                                                                     *
                               4261+*ENTRY POINTS                                                         *
                               4262+*   $VOLID - THE FIRST EXECUTABLE INSTRUCTION. IT IS ASSUMED THAT     *
                               4263+*   SMVOID IN TSMLES HAS BEEN PRIMER. ALSO, IF THE VM OPTION OF       *
                               4264+*   SVOLID HAS BEEN ASSEMBLED FOR EXECUTION TIME USAGE.               *
                               4265+*   THE FIELDS SVOIOF AND SVODSK SHOULD BE PRIMED WITH THE GET/PUT    *
                               4266+*   GET/PUT FILENAME AND DISK FILENAME, RESPETIVELY.                  *
                               4267+*                                                                     *
                               4268+*INPUT                                                                *
                               4269+*   INPUT TO SVOLID IS THE SPECIFIED VOL-ID IN THE TSMLES REGION -    *
                               4270+*   SMVOID.                                                           *
                               4271+*                                                                     *
                               4272+*OUTPUT                                                               *
                               4273+*   OUTPUT FROM SVOLID IS THE FILE LIBRARY ADDRESS OF THE RESOLVED    *
                               4274+*   SPECIFIED VOL-ID - PLACED IN SMBFDA.                              *
                               4275+*                                                                     *
                               4276+*EXTERNAL REFERENCES                                                  *
                               4277+*       SVOBUF - TEMPORARY SECTOR BUFFER SAVE AREA - USER SUPPLIED    *
                               4278+*       SVOERR - ERROR EXIT ADDR FROM SVOLID                          *
                               4279+*       TSMLES - DATA MANAGEMENT COMMUNICATIONS REGION                *
                               4280+*       $$ILHD - FIRST BYTE OF INPUT LINE HEADER                      *
                               4281+*       $$XIND - EXECUTION INDR PASS AREA                             *
                               4282+*       $$INND - LAST CHARACTER OF INPUT LINE BUFFER                  *
                               4283+*       $$INLN - FIRST CHARACTER OF INPUT LINE BUFFER                 *
                               4284+*       $$PRES - ENTRY TO ENABLE KEYBOARD                             *
                               4285+*       $VOLID - ADDR IN SYSTEM NUCLEUS - VOLUME ID TABLE             *
                               4286+*       $CAERR - ADDR IN SYSTEM NUCLEUS - ERROR CODE SAVE AREA        *
                               4287+*       $KEYCD - INDR BYTE CONTAINING KEYBOARD INDR IN SYSTEM NUCLEUS *
                               4288+*       $CARDI - MASK IN SKEYCD - CARD INPUT MODE                     *
                               4289+*       $SPRNT - ADDR IN SYSTEM NUCLEUS-SYSTEM PRINTER IOCR INTERFACE *
                               4290+*       $CIMSK - ADDR IN SYSTEM NUCLEUS-IR MASK ROUTINE INDR          *
                               4291+*       $WAITF - ADDR IN SYSTEM NUCLEUS-DISK WAITS DPL                *
                               4292+*       $KYBSY - MASK IN $KEYCD - KEYBOARD BUSY                       *
                               4293+*       $TRUNK - MASK IN $KEYCD - TRUNCATED LINE INDR                 *
                               4294+*       $UNHSK - ADDR IN SYSTEM NUCLEUS-ENTRY TO UNMASK IR            *
                               4295+*                                                                     *
                               4296+*EXITS, NORMAL                                                        *
                               4297+*   NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE.                      *
                               4298+*                                                                     *
                               4299+*EXITS, ERROR                                                         *
                               4300+*   $VOERR - ERROR EXIT ROUTINE IN CALL ROUTINE.                      *
                               4301+*   (NOTE: ERROR PROCEDURES).                                         *
                               4302+*                                                                     *
                               4303+*TABLES/WORK AREAS                                                    *
                               4304+*   CONSTANTS, PPL'S. AND WORK AREAS WHICH ARE ADDRESSED BY THE BASE  *
                               4305+*   REGISTER (@BR) ARE LOCATED TO BE REFERENCED AS SUCH. THOSE        *
                               4306+*   WHICH ARE NOT ADDRESSED BY A BASE REGISTER ARE LOCATED AT THE     *
                               4307+*   END OF THE MODULE.                                                *
                               4308+*                                                                     *
                               4309+*ATTRIBUTES                                                           *
                               4310+*   RELOCATABLE: CONDITIONALLY REUSABLE (SEE OTHER).                  *
                               4311+*                                                                     *
                               4312+*CHARACTER CODE DEPENDENCY                                            *
                               4313+*   CHARACTER CODE DEPENDENCY CLASS - C                               *
                               4314+*   THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA- *
                               4315+*   TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE *
                               4316+*   USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE    *
                               4317+*   DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN  *
                               4318+*   A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE   *
                               4319+*   SPECIAL CONSIDERATIONS FOR THIS MODULE:                           *
                               4320+*   * CHARACTER CONSTANT FOR DECIMAL L(ONE)   INTERNAL EQUATE         *
                               4321+*   * CHARACTER CONSTANT FOR DECIMAL 2(TWO)   INTERNAL EQUATE         *
                               4322+*   * @BLANK   PART OF @SYSEQ - FOR SYNTAX CHECK                      *
                               4323+*   * @CHARR   PART OF @SYSEQ   FOR SYNTAX CHECK                      *
                               4324+*   * @CHARF - PART OF @SYSEQ - FOR SYNTAX CHECK                      *
                               4325+*   * @EOS   - PART OF @SYSEQ - FOR SYNTAX CHECK                      *
                               4326+*                                                                     *
                               4327+*NOTES                                                                *
                               4328+*   ERROR PROCEDURES                                                  *
                               4329+*     THE FOLLOWING CONDITIONS WILL CAUSE AN ERROR CODE TO BE PLACED  *
                               4330+*     IN SCAERR AND AN EXIT BRANCH TO BE TAKEN TO SVOERR:             *
                               4331+*     * THE SPECIFIED VOLUME ID IS NOT ON THE SYSTEM.                 *
                               4332+*     * DUPLICATE VOLUME ID'S ARE RTLADO. AND INPUT IS NOT FROM       *
                               4333+*       THE KEYBOARD.                                                 *
                               4334+*     * THE SPECIFIED PHYSICAL ID FROM THE KEYBOARD DOES NOT CONTAIN  *
                               4335+*       ONE OF THE MULTIPLY DEFINED VOLUME ID'S.                      *
                               4336+*     * THE SPECIFIEC OR RESOLVED VOLUME DOES NOT CONTAIN A LIBRARY   *
                               4337+*       AREA.                                                         *
                               4338+*                                                                     *
                               4339+*   REGISTER USAGE                                                    *
                               4340+*     INDEX REGISTER 1 (@BR) IS USED PRIMARILY AS A BASE REGISTER     *
                               4341+*     AND SECONDLY AS AN INDEX IN THE VOL ID TABLE.                   *
                               4342+*     INDEX REGISTER 2 (@XR) IS USED PRIMARILY AS AN INDEX REGISTER   *
                               4343+*     IN THE VOL-ID TABLE. AND SECONDLY AS AN INDEX TO SYNTAX CHECK   *
                               4344+*     KEYBOARD INPUT WHEN VOLUMES ARE MULTIPLY DEFINED.               *
                               4345+*                                                                     *
                               4346+*   SAVED/RESTORED AREAS                                              *
                               4347+*     N/A                                                             *
                               4348+*                                                                     *
                               4349+*   MODIFICATION CONSIDERATIONS                                       *
                               4350+*     * VOLID'S SEARCH OF THE VOL-ID TABLE (SVOLID) IS TOTALLY        *
                               4351+*       DEPENDENT ON THE FORMAT OF THE TABLE AS IT EXISTS; ESPECIALLY *
                               4352+*       THE NUMBER OF ENTRIES WHICH NOW EXIST (IE. FOUR).             *
                               4353+*                                                                     *
                               4354+*   REQUIRED MODULES                                                  *
                               4355+*       @CANEQ - COMMON CORE LOCATIONS OUTSIDE SYSTEM NUCLEUS         *
                               4356+*       @DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES                     *
                               4357+*       @ERMEQ - ERROR MESSAGE EQUATES                                *
                               4358+*       @FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS      *
                               4359+*       @SYSEQ - COMMON SYSTEM SOFTWARE EQUATES                       *
                               4360+*       TSMLES - DATA MANAGEMENT COMMUNICATION REGIONS                *
                               4361+*                                                                     *
                               4362+*   OTHER                                                             *
                               4363+*     SVOLID MAY BE RE-USED IF THE CALL ROUTINE WILL PRIME 'SVOCT1'   *
                               4364+*     WITH A '4', AND 'SVOCT2' WITH A '0' BEFORE EACH RE-ENTRY.       *
                               4365+*     BOTH OF THESE FIELDS ARE 1 BYTE LONG AND CONTIGUOUS, RESPEC-    *
                               4366+*     TIVELY. (IE. CAN BE INITIALIZED WITH 'MVC' OF X'0400').         *
                               4367+***********************************************************************
                               4369+***********************************************************************
                               4370+*
                               4371+*       SVOLID MODULE EQUATES
                               4372+*
                               4373+***********************************************************************
                               4374+*
                          0001 4375+SVOLN1 EQU   1                         LENGTH CODE OF ONE
                          00F1 4376+SVO001 EQU   X'F1'                     CONSTANT OF 1 FOR COMPARE
                          00F2 4377+SVO002 EQU   X'F2'                     CONSTANT OF 2 FOR COMPARE
                          0100 4378+SVOINP EQU   $$XIND-$$ILHD+@B1         LENGTH INPUT BUFFER
                          00FF 4379+SVOEND EQU   $$XIND-$$ILHD             DISP TO END OF SVOBUF

                               4381+***********************************************************************
                               4382+*
                               4383+*       INITIALIZATION OF MODULE
                               4384+*
                               4385+***********************************************************************
                               4386+*
                          16DD 4387+SVOLID EQU   *                         ENTRY POINT
                          16EF 4388+       USING SVOBSE,@BR                BASE ADDRESS
    16DD 34 01 1729            4389+       ST    SVO274+@OP1,@BR           SAVE BASE CONTENTS
    16E1 C2 01 16EF            4390+       LA    SVOBSE,@BR                LOAD BASE ADDRESS
    16E5 74 02 3E              4391+       ST    SVO276+@OP1(,@BR),@XR     SAVE INDEX REGISTER
    16E8 74 08 46              4392+       ST    SVO290+@OP1(,@BR),@ARR    SAVE RETURN ADDR

                               4394+***********************************************************************
                               4395+*
                               4396+*       SEARCH VOL-ID TABLE
                               4397+*
                               4398+***********************************************************************
                               4399+*
    16EB C2 02 16E2            4400+       LA    SVOLID+@VOLID-@B1,@XR     LOAD XR AS POINTER INTO NUCLEUS
                          16EF 4401+SVOBSE EQU   *
    16EF 8D 05 00 19FA         4402+SVO100 CLC   @ZERO(@VOLID,@XR),SMVOID  IS THIS THE VOL-ID ?
    16F4 D0 01 11              4403+       BNE   SVO200(,@BR)              NO, CHECK NEXT ENTRY
    16F7 1C 01 1A0E 02         4404+       MVC   SMBFDA(@DADDR),@DADDR(,@BR) SAVE DADDR-DUPLICATE CHECK
    16FC 5E 00 48 49           4405+       ALC   SVOCT2(SVOLN1,@BR),SVOONE(,@BR) INCREMENT COUNT
    1700 E2 02 08              4406+SVO200 LA    @VOLID+@DADDR(,@XR),@XR   INCREMENT XR
    1703 5F 00 47 49           4407+       SLC   SVOCT1(SVOLN1,@BR),SVOONE(,@BR) IS THE LAST ENTRY ?
    1707 D0 01 00              4408+       BNZ   SVO100(,@BR)              NO, CHECK NEXT ONE
```

```
                               4410+***********************************************************************
                               4411+*
                               4412+*            PROCESS ENTRY IF FOUND
                               4413+*
                               4414+***********************************************************************
                               4415+*
    170A 7D 02 48              4416+       CLI   SVOCT2(,@BR),@D1          WAS AN ID FOUND ?
    170D 3C 29 03CD            4417+       MVI   $CAERR,@@E217             ERROR - NO ID FOUND
    1711 D0 82 33              4418+       BL    SVO270(,@BR)              NO, ERROR EXIT
    1714 D0 84 4A              4419+       BH    SVO300(,@BR)              MORE THAN 1 ID

                               4421+***********************************************************************
                               4422+*
                               4423+*            CHECK DISK ADDR OF LIBRARY
                               4424+*
                               4425+***********************************************************************
                               4426+*
    1717 3D 00 1A0D            4427+SVO260 CLI   SMBFDA-@B1,@ZERO          IS THERE A LIBRARY ?
    171B F2 01 08              4428+       JNE   SVO274                    YES, RETURN
    171E 3C 54 03CD            4429+       MVI   $CAERR,@@E351             ERROR - NO LIBRARY
    1722 3C 87 172F            4430+SVO270 MVI   SVO280+@Q,@UCB            SET ERROR EXIT

                               4432+***********************************************************************
                               4433+*
                               4434+*            END OF MODULE PROCESSING
                               4435+*
                               4436+***********************************************************************
                               4437+*
    1726 C2 01 0000            4438+SVO274 LA    *-*,@BR                   RESTORE BASE REGISTER
    172A C2 02 0000            4439+SVO276 LA    *-*,@XR                   RESTORE INDEX REGISTER
                               4440+*
    172E C0 80 10BA            4441+SVO280 BC    SVOERR,@NOP               ERROR EXIT
    1732 C0 87 0000            4442+SVO290 B     *-*                       RETURN
```

```
                               4444+***********************************************************************
                               4445+*
                               4446+*            DATA CONSTANTS, BUFFERS, WORK AREAS AND SAVE AREAS
                               4447+*
                               4448+***********************************************************************
                               4449+*
    1736                 1736 4450+SVOCT1 DS    CL1                       COUNTER - NUMBER OF DISKS - 4
    1736                      4451+       ORG   SVOCT1                    RESET FOR INITIALIZATION
    1736 04              1736 4452+       DC    XL1'04'                   INITIALIZED TO 4
    1737                 1737 4453+SVOCT2 DS    CL1                       COUNTER - DUPLICATE DISK LABELS
    1737                      4454+       ORG   SVOCT2                    RESET FOR INITIALIZATION
    1737 00              1737 4455+       DC    XL1'00'                   INITIALIZED TO ZERO
    1738 01              1738 4456+SVOONE DC    XL1'01'                   INITIALIZED TO 1 FOR COUNTER

                               4458+***********************************************************************
                               4459+*
                               4460+*            PROCESS MULTIPLE ENTRIES
                               4461+*
                               4462+***********************************************************************
                               4463+*
    1739 38 01 03C3            4464+SVO300 TBN   $KEYCD,$CARDI             IS KEYBOARD INPUT MODE ?
    173D 3C 25 03CD            4465+SVO310 MVI   $CAERR,@@E212             KEYBOARD NOT INPUT MODE
    1741 D0 10 33              4466+SVO315 BT    SVO270(,@BR)              NO ERROR EXIT
```

```
                               4468+************************************************************************
                               4469+*
                               4470+*            ASK USER FOR DRIVE CLARIFICATION
                               4471+*
                               4472+************************************************************************
                               4473+*
                          1744 4474+SVO320 EQU   *                         PRINT MESSAGES
    1744 C0 87 0465            4475+       B     $SPRNT                    PRINT MESSAGE
    1748 0C0B             1749 4476+       DC    AL2(@@M300)               ERROR MESSAGE PPL
                               4477+*
    174A 0C 00 176D 0476       4478+       MVC   SVO335+@VQ(@B1),$CIMSK    OBTAIN CURRENT MASK STATUS
    1750 C0 87 0465            4479+       B     $SPRNT                    WAIT FOR PRINT
    1754 057F             1755 4480+       DC    AL2($WAITF)               ADDR OF PPL

                               4482+************************************************************************
                               4483+*
                               4484+*            MODIFY INPUT BUFFER FOR ACCEPTANCE OF INPUT ANSWER
                               4485+*
                               4486+************************************************************************
                               4487+*
                          1756 4488+SVO330 EQU   *                         ENABLE INPUT ROUTINE
                               4489+*  SET FOR JUMP AFTER INITIAL SAVE OF INPUT BUFFER
    1756 F2 80 09              4490+       JC    SVO333,@NOP               SAVE SWITCH
    1759 0C FF 1B22 06FF       4491+       MVC   SVOBUF+SVOEND(SVOINP),$$XIND SAVE INPUT BUFFER
    175F 7C 87 68              4492+       MVI   SVO330+@Q(,@BR),@UCB      SET SWITCH TO BYPASS SAVE
    1762 3C 40 06FA            4493+SVO333 MVI   $$INND,@BLANK             CLEAR INPUT BUFFER
    1766 0C F2 06F9 06FA       4494+       MVC   $$INND-@B1($$INND-$$INLN),$$INND
    176C C0 01 048D            4495+SVO335 BC    $UNMSK,@VQ                BRANCH IF UNMASKED
    1770 C0 87 0890            4496+       B     $$PRES                    GET USER'S RESRONSE
    1774 38 10 03C3            4497+SVO350 TBN   $KEYCD,$KYBSY             IS KEYBOARD BUSY ?
    1778 C0 10 1774            4498+       BT    SVO350                    YES, WAIT
    177C C0 87 0465            4499+       B     $SPRNT                    WAIT FOR PRINTER RETURN
    1780 057F             1781 4500+       DC    AL2($WAITF)               ADDR OF PPL
```

```
                               4502+***********************************************************************
                               4503+*
                               4504+*            VERIFY VOL-ID ON DRIVE SPECIFIED
                               4505+*
                               4506+***********************************************************************
                               4507+*
    1782 C2 02 0606            4508+       LA    $$INLN-@B1,@XR            ADDR FIRST RESPONSE BYTE
    1786 C2 01 16E2            4509+       LA    SVOLID+@VOLID-@B1,@BR     REFERENCE POINT FOR THE VOLID
                               4510+*
    178A E2 02 01              4511+SVO360 LA    @B1(,@XR),@XR             INDEX BY BLANK
    178D BD 40 00              4512+       CLI   @ZERO(,@XR),@BLANK        IS IT A BLANK ?
    1790 C0 81 178A            4513+       BE    SVO360                    YES, CHECK NEXT BYTE
                               4514+*
    1794 BD F1 01              4515+       CLI   @B1(,@XR),SVO001          IS IT DRIVE 1 ?
    1797 F2 81 0A              4516+       JE    SVO400                    YES, CHECK DISK TYPE
    179A BD F2 01              4517+       CLI   @B1(,@XR),SVO002          IS IT DRIVE 2 ?
    179D C0 01 1744            4518+       BNE   SVO320                    NO, ASK USER AGAIN
    17A1 D2 01 10              4519+       LA    2*@VOLID+2*@DADDR(,@BR),@BR SET INDEX FOR DRIVE 2
    17A4 BD D9 00              4520+SVO400 CLI   @ZERO(,@XR),@CHARR        IS IT REMOVABLE ?
    17A7 F2 81 0A              4521+       JE    SVO440
    17AA BD C6 00              4522+       CLI   @ZERO(,@XR),@CHARF        IS IT FIXED ?
    17AD C0 01 1744            4523+       BNE   SVO320                    ASK AGAIN
    17B1 D2 01 08              4524+       LA    @VOLID+@DADDR(,@BR),@BR   SET INDEX FOR FIXED
    17B4 E2 02 01              4525+SVO440 LA    @B1(,@XR),@XR             INCREMENT TO NEXT BYTE
    17B7 E2 02 01              4526+SVO445 LA    @B1(,@XR),@XR             INCREMENT TO NEXT BYTE
    17BA BD 40 00              4527+       CLI   @ZERO(,@XR),@BLANK        IS IT A BLANK ?
    17BD C0 81 17B7            4528+       BE    SVO445                    YES, CHECK NEXT BYTE
                               4529+*
    17C1 BD 1E 00              4530+       CLI   @ZERO(,@XR),@EOS          AT EOS ?
    17C4 C0 01 1744            4531+       BNE   SVO320                    ASK AGAIN
                               4532+*
    17C8 0C FF 06FF 1B22       4533+       MVC   $$XIND(SVOINP),SVOBUF+SVOEND RESTORE INPUT
    17CE 4D 05 00 19FA         4534+SVO450 CLC   @ZERO(@VOLID,@BR),SMVOID  IS IT THE VOLID ?
    17D3 3C 28 03CD            4535+       MVI   $CAERR,@@E216             VOLUME NOT ON THAT DRIVE
    17D7 C0 01 1722            4536+       BNE   SVO270                    NO, ERROR EXIT
```

```
                               4538+***********************************************************************
                               4539+*
                               4540+*            SAVE VOL-ID LIBRARY ADDR
                               4541+*
                               4542+***********************************************************************
                               4543+*
    17DB 1C 01 1A0E 02         4544+       MVC   SMBFDA(@DADDR),@DADDR(,@BR) SAVE LIBRARY ADDR
    17E0 3B 80 03C3            4545+       SBF   $KEYCD,$TRUNK             SET OFF RM EXCEEDED INDR
    17E4 C0 87 1717            4546+       B     SVO260                    NORMAL EXIT
                               4547+***                       END OF SVOLID                             ***
                               4548 *
                               4549 *      $UFFE
```

```
4551+***********************************************************************
4552+* 5703-XM1  COPYRIGHT IBM CORP. 1970                                  *
4553+*           REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE  120-2083       *
4554+*                                                                     *
4555+***********************************************************************
4556+*STATUS                                                               *
4557+*   VERSION 1 MODIFICATION 0                                          *
4558+*                                                                     *
4559+*FUNCTION                                                             *
4560+*   THE FUNCTION OF SUFFER IS TO SYNTAX CHECK A FILE SPECIFICATION    *
4561+*   AND SCAN TO THE FIRST NON-DELIMITER FOLLOWING A VALID ONE.        *
4562+*   A SPECIFICATION CAN CONSIST OF ANY OF THE FOLLOWING:              *
4563+*   *   FILENAME / PASSWORD / VOL-D                                   *
4564+*   *   FILENAME / PASSWORD                                           *
4565+*   *   FILENAME                                                      *
4566+*   *   **FILENAME / VOL-ID                                           *
4567+*   *   **FILENAME                                                    *
4568+*   *   *FILENAME / VOL-ID                                            *
4569+*   *   *FILENAME                                                     *
4570+*                                                                     *
4571+*ENTRY POINTS                                                         *
4572+*   SUFFER - FIRST LOCATION IN PROGRAM. SUFFER EXPECTS INDEX          *
4573+*            REGISTER 2 (@XR) TO BE ADDRESSING THE LEFTMOST CHARACTER *
4574+*            OF THE FILE SPECIFICATION. THE CALLING SEQUENCE IS:      *
4575+*                    B     SUFFER                                     *
4576+*                                                                     *
4577+*INPUT                                                                *
4578+*   INPUT TO SUFFER IS INDE, REGISTER 2 (@XR) ADDRESSING THE LEFTMOST *
4579+*   CHARACTER OF THE FILE-SPECIFICATION TO BE SYNTAX CHECKED.         *
4580+*                                                                     *
4581+*OUTPUT                                                               *
4582+*   OUTPUT FROM SUFFER UPON NORMAL EXIT IS INDEX REGISTER 2 (@XR)     *
4583+*   ADDRESSING THE FIRST NON-DELIMITER FOLLOWING THE FILE SPECIFICA-  *
4584+*   TION. THE FILENAME WILL BE SAVED IN SMFNAM IN TSMLES. THE PASS-   *
4585+*   WORD IF SPECIFIED WILL BE SAVED IN SMPSWD 1N TSMLES, OTHERWISE IT *
4586+*   WILL BE BLANKS. (NOTE: ** OR * FILENAMES, WHEN SPECIFIED, WILL    *
4587+*   CAUSE THE *'S TO BE SAVED IN SMPSWD). THE VOL-ID, IF SPECIFIED,   *
4588+*   WILL BE SAVED IN SMVOID IN TSMLES, OTHERWISE A BLANK IS MOVED     *
4589+*   TO SMVOID AS AN INDICATOR.                                        *
4590+*   OUTPUT FROM SUFFER UPON ERROR EXIT IS INDEX REGISTER 2 (@XR)      *
4591+*   ADDRESSING THE INVALID CHARACTER (SEE EXITS,ERROR). THE PROGRAM   *
4592+*   STATUS REGISTER (@PSR) WILL CONTAIN A LOW CONDITION CODE.         *
4593+*                                                                     *
4594+*EXTERNAL REFERENCES                                                  *
4595+*        SALPHR - ADDR IN SALPHA - SYNTAX CHECKED PARAMETER           *
4596+*        SALPH6 - ENTRY TO SALPHA - SYNTAX CHECK VOL-ID               *
4597+*        SALPH8 - ENTRY TO SALPHA - SYNTAX CHECK PASSWORD; FILENAME   *
4598+*        SAL375 - SAVE AREA IN SALPHA - ERROR POINTER SAVE AREA       *
4599+*        SCANIT - DELIMITER SCAN MODULE                               *
4600+*        SCAMMA - SWITCH IN SCANIT - DELIMITER SCAN TYPE INDR         *
4601+*        SCACOF - MASK IN SCANIT TO BYPASS BLANKS ONLY                *
4602+*        SCACOM - MASK IN SCANIT - BYPASS 1 COMMA                     *
4603+*        SCACNT - COUNTER IN SCANIT - NUMBER OF SCANNED BLANKS        *
4604+*        TSMLES - DATA MANAGEMENT COMMUNICATIONS REGIONS              *
4605+*        $CAERR - ADDR IN SYSTEM NUCLEUS-ERROR CODE SAVE AREA         *
4606+*                                                                     *
```

```
                               4607+*EXITS, NORMAL                                                        *
                               4608+*   NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE. INDEX REGISTER      *
                               4609+*   2 (@XR) WILL BE ADDRESSING THE FIRST NON-DELIMITER FOLLOWING     *
                               4610+*   THE FILE SPECIFICATION. THE PROGRAM STATUS REGISTER (@PSR)        *
                               4611+*   WILL CONTAIN A NON-LOW CONDITION CODE.                            *
                               4612+*                                                                     *
                               4613+*EXITS, ERROR                                                         *
                               4614+*   NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE. INDEX REGISTER      *
                               4615+*   2 (@XR) WILL BE ADDRESSING THE LEFTMOST BYTE OF AN INVALID        *
                               4616+*   PARAMETER OR WILL BE ADDRESSING AN INVALID DELIMITER IN THE      *
                               4617+*   FILE SPECIFICATION. THE PROGRAM STATUS REGISTER (@PSR)            *
                               4618+*   WILL CONTAIN A LOW CONDITION CODE.                                *
                               4619+*   T                                                                 *
                               4620+*TABLES/WORK AREAS                                                    *
                               4621+*   SUFFER DOES NOT CONTAIN ANY TABLES OR WORK AREAS.                 *
                               4622+*                                                                     *
                               4623+*ATTRIBUTES                                                           *
                               4624+*   RELOCATABLE,REUSABLE                                              *
                               4625+*                                                                     *
                               4626+*CHARACTER CODE DEPENDENCY                                            *
                               4627+*   CHARACTER CODE DEPENDENCY CLASS - C                               *
                               4628+*   THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA- *
                               4629+*   TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE     *
                               4630+*   USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO  THAT RE-  *
                               4631+*   DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN  *
                               4632+*   A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE   *
                               4633+*   SPECIAL CONSIDERATIONS FOR THIS MODULE:                           *
                               4634+*      * @ASTER - PART OF @SYSEQ                                      *
                               4635+*      * @SLASH - PART OF @SYSEQ                                      *
                               4636+*      * @COMMA - PART OF @SYSEQ                                      *
                               4637+*      * @EOS   - PART OF @SYSEQ                                      *
                               4638+*      * @BLANK - PART OF @SYSEQ                                      *
                               4639+*      * CHARACTER LEFT PARENTHESIS - C'('                            *
                               4640+*                                                                     *
                               4641+*NOTES                                                                *
                               4642+*   ERROR PROCEDURES                                                  *
                               4643+*      THE FOLLOWING ERROR CONDITIONS WILL CAUSE SUFFER TO RETURN A   *
                               4644+*      LOW CONDITION CODE TO THE CALL ROUTINE AND INDEX REGISTER 2    *
                               4645+*      (@XR) ADDRESSING THE ERROR:                                    *
                               4646+*         * ANY ERROR RETURNED FROM SALPHA (NOTE SALPHA ERRORS).     *
                               4647+*         * ANY ERROR RETURNED FROM SCANIT (NOTE SCANIT ERRORS).     *
                               4648+*         * ANY INVALID DELIMITER FOLLOWING THE SPECIFICATION         *
                               4649+*         * ANY INVALID PARAMETER WITHIN THE SPECIFICATION.           *
                               4650+*         NOTE MODIFICATION CONSIDERATIONS.                           *
                               4651+*                                                                     *
                               4652+*   REGISTER USAGE                                                    *
                               4653+*      INDEX RESISTER 1 (@BR) IS SAVED AND RESTORED FOR THE CALL      *
                               4654+*      ROUTINE AND USED AS A BASE FOR ADDRESSING WITHIN THE MODULE.   *
                               4655+*      INDEX REGISTER 2 (@XR) IS USED AS AN INDEX TO SCAN THE FILE    *
                               4656+*      SPECIFICATION.                                                 *
                               4657+*                                                                     *
                               4658+*   SAVED/RESTORED AREAS                                              *
                               4659+*      N/A                                                            *
                               4660+*                                                                     *
                               4661+*   MODIFICATION CONSIDERATIONS                                       *
                               4662+*      SUFFER'S NORMAL DELIMITER SCAN UPON EXIT ALLOWS ONLY BLANKS    *
                               4663+*      AND 1 COMMA FOLLOWING THE FILE-SPECIFICATION. AN EXCEPTION     *
                               4664+*      TO THIS USE (UTILIZED BY THE MODULE KALLOC) IS THE OPTION OF   *
                               4665+*      HAVING A LEFT PARENTHESIS IE. '(' FOLLOWING THE FILE SPECI-    *
                               4666+*      FICATION INSTEAD OF A COMMA. THIS USE IS EFFECTED BY           *
                               4667+*      MODIFYING THE Q-CODE OF THE INSTRUCTION LABELED SUF625 WITH A  *
                               4668+*      BRANCH EQUAL CONDITION CODE.                                   *
                               4669+*                                                                     *
                               4670+*   REQUIRED MODULES                                                  *
                               4671+*      SALPHA - FILENAME, PASSWORD, VOL-ID ALPHAMERIC SYNTAX CHECKER  *
                               4672+*      SCANIT - DELIMITER SCAN ROLTINE                                *
                               4673+*      TSMLES - DATA MANAGEMENT COMMUNICATION REGIONS                 *
                               4674+*      @DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES                      *
                               4675+*      @ERMEQ - ERROR MESSAGE EQUATES                                 *
                               4676+*      @FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS       *
                               4677+*      @SYSEQ - COMMON SYSTEM SOFTWARE EQUATES                        *
                               4678+*                                                                     *
                               4679+*   OTHER                                                             *
                               4680+*      N/A                                                            *
                               4681+***********************************************************************
                               4683+***********************************************************************
                               4684+*
                               4685+*            INITIALIZATION OF MODULE
                               4686+*
                               4687+***********************************************************************
                               4688+*
                               4689+*SUFFER ENTER BASE-SUFBSE,EXIT-SUFND,@BR,,@ARR
                          181B 4690+       USING SUFBSE,@BR                BASE ADDRESS SPECIFICATION
                          17E8 4691+SUFFER EQU   *                         MODULE ENTRY POINT
    17E8 34 01 18AC            4692+       ST    SUFND0+@OP1,@BR           SAVE @BR
    17EC C2 01 181B            4693+       LA    SUFBSE,@BR                LOAD BASE REGISTER
    17F0 74 08 95              4694+       ST    SUFND2+@OP1(,@BR),@ARR    SAVE RETURN ADDRESS
                               4695+*** END OF EXPANSION ***

                               4697+***********************************************************************
                               4698+*
                               4699+*            INITIALIZE FIELDS IN TSMLES
                               4700+*
                               4701+***********************************************************************
                               4702+*
    17F3 3C 40 1A02            4703+       MVI   SMPSWD,@BLANK             BLANK ALL OF PASSWORD FIELD
    17F7 0C 06 1A01 1A02       4704+       MVC   SMPSWD-@B1(##LPEN-@B1),SMPSWD
    17FD 3C 40 19F5            4705+       MVI   SMVOID-@VOLID+@B1,@BLANK  BLANK FIRST BYTE OR VOL-1D

                               4707+***********************************************************************
                               4708+*
                               4709+*            CHECK FOR AND PROCESS POOLED AND IBM FILENAMES
                               4710+*
                               4711+***********************************************************************
                               4712+*
    1801 BD 5C 00              4713+       CLI   @ZERO(,@XR),@ASTER        ASTERISK IN FILENAME ?
    1804 F2 01 14              4714+       JNE   SUF100                    NO, PROCESS FILENAME
    1807 3C 5C 19FB            4715+       MVI   SMPSWD-##DPEN,@ASTER      SAVE * IN SMPSWD
    180B E2 02 01              4716+       LA    @B1(,@XR),@XR             INCREMENT XR BY ONE
    180E BD 5C 00              4717+       CLI   @ZERO(,@XR),@ASTER        ASTERISK IN FILENAME ?
    1811 F2 01 07              4718+       JNE   SUF100                    NO, PROCESS FILENAME
    1814 3C 5C 19FC            4719+       MVI   SMPSWD-##DPEN+@B1,@ASTER  SAVE * IN SMPSWD
    1818 E2 02 01              4720+       LA    @B1(,@XR),@XR             INCREMENT XR BY ONE

                               4722+***********************************************************************
                               4723+*
                               4724+*            PROCESS FILENAME
                               4725+*
                               4726+***********************************************************************
                               4727+*
                          181B 4728+SUFBSE EQU   *                         BASE ADDR IN MODULE
    181B 3C 87 16B9            4729+SUF100 MVI   SCAMMA,SCACOF             PRIME SCANIT
    181F C0 87 18B1            4730+       B     SALPH8                    SYNTAX CHECK FILENAME
    1823 D0 82 85              4731+       BL    SUF750(,@BR)              TAKE ERROR EXIT
    1826 0C 07 1A0A 1977       4732+       MVC   SMFNAM(##LUEN),SALPHR+##DUEN SAVE FILENAME
    182C BD 61 00              4733+       CLI   @ZERO(,@XR),@SLASH        IS A SLASH DELIMITER PRESENT ?
    182F F2 01 35              4734+       JNE   SUF600                    NO, RETURN TO USER
    1832 3D 5C 19FB            4735+       CLI   SMPSWD-##DPEN,@ASTER      SHOULD A PASSWORD BE CHECKED?
    1836 F2 81 1A              4736+       JE    SUF200                    NO, CHECK VOL-ID

                               4738+***********************************************************************
                               4739+*
                               4740+*            PROCESS PASSWORD
                               4741+*
                               4742+***********************************************************************
                               4743+*
    1839 E2 02 01              4744+       LA    @B1(,@XR),@XR             INCREMENT XR BY ONE
    183C C0 87 169C            4745+       B     SCANIT                    BYPASS BLANKS
    1840 C0 87 18B1            4746+       B     SALPH8                    SYNTAX CHECK PASSWORD
    1844 D0 82 85              4747+       BL    SUF750(,@BR)              TAKE ERROR EXIT
    1847 0C 07 1A02 1977       4748+       MVC   SMPSWD(##LPEN),SALPHR+##DPEN SAVE PASSWORD
    184D BD 61 00              4749+       CLI   @ZERO(,@XR),@SLASH        IS SLASH DELIMITER PRESENT ?
    1850 F2 01 14              4750+       JNE   SUF600                    NO, RETURN TO USER

                               4752+***********************************************************************
                               4753+*
                               4754+*            PROCESS VOL-ID
                               4755+*
                               4756+***********************************************************************
                               4757+*
    1853 E2 02 01              4758+SUF200 LA    @B1(,@XR),@XR             INCREMENT XR BY ONE
    1856 C0 87 169C            4759+       B     SCANIT                    BYPASS BLANKS
    185A C0 87 18B5            4760+       B     SALPH6                    SYNTAX CHECK VOL-ID
    185E D0 82 85              4761+SUF400 BL    SUF750(,@BR)              TAKE ERROR EXIT
    1861 0C 05 19FA 1975       4762+       MVC   SMVOID(@VOLID),SALPHR+@VOLID-@B1 SAVE VALID
    1867 BD 4D 00              4763+SUF600 CLI   @ZERO(,@XR),C'('          IS THIS '(' ?
    186A F2 80 39              4764+SUF625 JC    SUF800,@NOP               JUMP IF '(' VALID ADJACENT
    186D 3D 00 16DC            4765+       CLI   SCACNT,@ZERO              ANY BLANKS SCANNED ?
    1871 F2 01 0C              4766+       JNE   SUF650                    YES, CONTINUE DELIMITER SCAN
    1874 BD 1E 00              4767+       CLI   @ZERO(,@XR),@EOS          IS IT EOS ?
    1877 F2 81 2C              4768+       JE    SUF800                    YES, RETURN
    187A BD 6B 00              4769+       CLI   @ZERO(,@XR),@COMMA        IS IT A COMMA ?
    187D F2 01 18              4770+       JNE   SUF680                    NO, ERROR EXIT
                               4771+*
    1880 34 02 1905            4772+SUF650 ST    SAL375+@OP1,@XR           SAVE ERROR POINTER
    1884 3C 01 16B9            4773+       MVI   SCAMMA,SCACOM             MODIFY SCANIT TO BYPASS COMMA
    1888 C0 87 169C            4774+       B     SCANIT                    BYPASS DELIMITERS
    188C F2 82 11              4775+       JL    SUF750                    ERROR - RETURN

                               4777+***********************************************************************
                               4778+*
                               4779+*            MODIFY PSR FOR ERROR INDICATION
                               4780+*
                               4781+***********************************************************************
                               4782+*
    188F BD 4D 00              4783+       CLI   @ZERO(,@XR),C'('          IS IT '(' ?
    1892 F2 01 11              4784+       JNE   SUF800                    NO, RETURN
    1895 7C 18 7E              4785+       MVI   SUF680+@Q(,@BR),@@E139    INVALID DELIMITER
    1898 3C 00 03CD            4786+SUF680 MVI   $CAERR,*-*                ERROR CODE
    1898                       4787+       ORG   SUF680                    INITIALIZE INSTRUCTION
    1898 3C 11 03CD            4788+       MVI   $CAERR,@@E131             INVALID PARAMETER
                               4789+*
    189C 35 02 1905            4790+       L     SAL375+@OP1,@XR           RESTORE ERROR POINTER
    18A0 75 04 44              4791+SUF750 L     SUF400+@Q(,@BR),@PSR      LOAD CONDITION LOW INTO PSR
    18A3 F2 87 03              4792+SUF780 J     SUFND0                    ERROR EXIT

                               4794+***********************************************************************
                               4795+*
                               4796+*            END OF MODULE PROCESSING
                               4797+*
                               4798+***********************************************************************
                               4799+*
    18A6 75 04 89              4800+SUF800 L     SUF780+@Q(,@BR),@PSR      LOAD CODE FOR NORMAL EXIT
                               4801+*SUFND  EXIT  @BR,,RETURN
    18A9 C2 01 0000            4802+SUFND0 LA    *-*,@BR                   RESTORE @BR
    18AD C0 87 0000            4803+SUFND2 B     *-*                       RETURN TO CALLING PROGRAM
                               4804+*** END OF EXPANSION ***
                               4805+***                       END OF SUFFER                             ***
                               4806 *
                               4807 *      $ALPH
                               4809+***********************************************************************
                               4810+*  5703-XM1    COPYRIGHT IBM CORP. 1970                               *
                               4811+*              REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083    *
                               4812+*                                                                     *
                               4813+***********************************************************************
                               4814+*STATUS                                                               *
                               4815+*   VERSION 1 MODIFICATION 0                                          *
                               4816+*                                                                     *
                               4817+*FUNCTION                                                             *
                               4818+*   THE FUNCTION OF SALPHA IS TO SYNTAX CHECK AN 8 CHARACTER OR 6     *
                               4819+*   CHARACTER ALPHAMERIC PARAMETER DETERMINED BY THE ENTRY POINT,     *
                               4820+*   SALPH8 OR SALPH6 RESPECTIVELY. ENTRY AT SALPHA IMPLIES A REQUEST  *
                               4821+*   THAT THE FIRST CHARACTER BE ALPHABETIC. A SYNTACTICALLY CORRECT   *
                               4822+*   PARAMETER WILL BE SAVED AT SALPHR (LEFTMOST BYTE ADDRESS), THE    *
                               4823+*   COUNT OF THE NUMBER OF VALID CMARACTERS, IF NEEDED, IS FOOD IN    *
                               4824+*   SALCNT. UPON ENTRY, SALPHA REQUIRES INDEX RESISTER 2 (OM TO BE    *
                               4825+*   ADDRESSING THE FIRST CHARACTER 0, THE PARAMETER TO BE SYNTAX      *
                               4826+*   CHECKED. UPON NORMAL RETURN INDEX REGISTER 2 (@XR) WILL BE        *
                               4827+*   ADDRESSING THE FIRST NON-DELIMITER FOLLOWING THE PARAMETER (NOTE  *
                               4828+*   INPUT),                                                           *
                               4829+*                                                                     *
                               4830+*ENTRY POINTS                                                         *
                               4831+*   * SALPH8 - ENTRY POINT TO SYNTAX CHECK AN EIGHT CHARACTER         *
                               4832+*              ALPHAMERIC PARAMETER WHOSE FIRST CHARACTER MUST BE     *
                               4833+*              ALPHABETIC.                                            *
                               4834+*   * SALPH6 - ENTRY POINT TO SYNTAX CHECK A SIX CHARACTER            *
                               4835+*              ALPHAMERIC PARAMETER WHICH HAS NO RESTRICTIONS ON      *
                               4836+*              THE TYPE OF THE FIRST CHARACTER. (NOTE MODIFICA-       *
                               4837+*              TION CONSIDERATIONS)                                   *
                               4838+*                                                                     *
                               4839+*INPUT                                                                *
                               4840+*   UPON ENTRY TO SALPHA, AT EITHER ENTRY POINT, INDEX REGISTER 2     *
                               4841+*   (@XR) SHOULD BE ADDRESSING THE LEFTMOST CHARACTER OF THE PARAMETER*
                               4842+*   TO BE SYNTAX CHECKED. ALSO, THE SWITCH 'SCAMMA' IN SCANIT SHOULD  *
                               4843+*   BE SET FOR THE TYPE OF DELIMITER SCAN REQUESTED AFTER THE SYNTAX  *
                               4844+*   CHECK. (IE. BLANKS ONLY OR BLANKS WITH 1 COMMA).                  *
                               4845+*                                                                     *
                               4846+*OUTPUT                                                               *
                               4847+*   OUTPUT FROM SALPHA INCLUDES THE SYNTAX CHECKED PARAMETER AT SALPHR*
                               4848+*   (LEFTMOST BYTE OF SAVE AREA) AND THE COUNT OF VALID CHARACTERS    *
                               4849+*   IN SALCNT, AND INDEX REGISTER 2 (@XR) WILL BE POINTING AT THE     *
                               4850+*   FIRST NON-DELIMITER AFTER THE PARAMETER. THE ONLY EXCEPTION TO    *
                               4851+*   THIS IS UPON DETECTION OF AN ERROR (SEE ERROR EXITS AND PROC.)    *
                               4852+*                                                                     *
                               4853+*EXTERNAL REFERENCES                                                  *
                               4854+*        SCANIT - DELIMITER SCAN MODULE                               *
                               4855+*        $CAERR - ADDR IN SYSTEM NUCLEUS-ERROR CODE SAVE AREA         *
                               4856+*                                                                     *
                               4857+*EXITS, NORMAL                                                        *
                               4858+*   NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE WITH INDEX            *
                               4859+*   REGISTER 2 (@XR) POINTING TO THE NEXT NON-DELIMITER               *
                               4860+*   FOLLOWING THE PARAMETER AND WITH A NON-LOW CONDITION CODE         *
                               4861+*   IN THE PROGRAM STATUS RESISTER (@PSR),                            *
                               4862+*                                                                     *
                               4863+*EXITS, ERROR                                                         *
                               4864+*   NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE WILH INDEX            *
                               4865+*   REGISTER 2 (@XR) POINTING TO THE LEFTMOST CHARACTER OF THE        *
                               4866+*   INVALID PARAMETER AND WITH A LOW CONDITION CODE IN THE            *
                               4867+*   PROGRAM STATUS REGISTER (@PSR),                                   *
                               4868+*                                                                     *
                               4869+*TABLES/WORK AREAS                                                    *
                               4870+*   ALL OF THE CONSTANTS AND WORK AREAS IN SALPHA ARE LOCATED AT THE  *
                               4871+*   END OF THE MODULE AND ARE ADDRESSED BY INDEX REGISTER 1 (RBR).    *
                               4872+*                                                                     *
                               4873+*ATTRIBUTES                                                           *
                               4874+*   REUSABLE, RELOCATABLE                                             *
                               4875+*                                                                     *
                               4876+*CHARACTER CODE DEPENDENCY                                            *
                               4877+*   CHARACTER CODE DEPENDENCY CLASS - E                               *
                               4878+*   THE OPERATION OF THIS MODULE DEPENDS UPON THE FOLLOWING PROPERTIES*
                               4879+*   OF THE INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET:     *
                               4880+*   * THE FOLLOWING SPECIAL ALPHABETIC CHARACTERS ARE PART OF         *
                               4881+*     @SYSEQ AND ARE SPECIFICALLY COMPARED FOR:                       *
                               4882+*       * @DOLAR                                                      *
                               4883+*       * @NUMBR                                                      *
                               4884+*       * @ASIGN                                                      *
                               4885+*   * THE REMAINING-ALPHABETIC CHARACTERS ARE DEFINED TO BE           *
                               4886+*     INCLUSIVELY IN THE RANGE DEFINED BY THE FOLLOWING IN @SYSEQ:    *
                               4887+*       * @CHARA                                                      *
                               4888+*       * @CHARZ                                                      *
                               4889+*                                                                     *
                               4890+*   THE DECIMAL NUMBERS FALL INTO THE CATEGORY OF BEING GREATER       *
                               4891+*   THAN AN @CHARZ (IE. THIS IS DEFAULTED TO BY CHECKING METHOD)      *
                               4892+*   THE SPECIFIC INSTRUCTIONS WHICH REQUIRE MODIFICATION IF THESE     *
                               4893+*   PROPERTIES OF THE CHARACTER SET ARE CHANGED MAY BE IDENTIFIED BY: *
                               4894+*     * SAL200 - FOR THE THREE SPECIAL CHARACTERS                     *
                               4895+*     * SAL250 - FOR THE REMAINING ALPHABETIC RANGE                   *
                               4896+*     * SAL425 - BRANCHES 'TO' THIS LOCATION IMPLY DEFAULT TO NUMERIC *
                               4897+*                                                                     *
                               4898+*NOTES                                                                *
                               4899+*   ERROR PROCEDURES                                                  *
                               4900+*     THE FOLLOWING ERROR CONDITIONS WILL RESULT IN AN ERROR CODE     *
                               4901+*     BEING SET IN $CAERR AND AN ERROR EXIT BEING MADE (SEE EDITS,    *
                               4902+*     ERROR):                                                         *
                               4903+*     * A NON-ALPHABETIC FIRST CHARACTER WHEN ENTRY WAS AT            *
                               4904+*       SALPH8.                                                       *
                               4905+*     * A NON-ALPHAMERIC CHARACTER EMBEDDED IN A PARAMETER WHICH      *
                               4906+*       SALPH8 WAS CALLED TO CHECK.                                   *
                               4907+*     * A NON-ALPHAMERIC CHARACTER BEING FIRST OR EMBEDDED IN A       *
                               4908+*       PARAMETER WHICH SALPH6 WAS CALLED TO CHECK.                   *
                               4909+*     * A PARAMETER OF GREATER THAN EIGHT CHARACTERS WHEN ENTRY       *
                               4910+*       WAS AT SALPH8.                                                *
                               4911+*     * A PARAMETER OF GREATER THAN SIX CHARACTERS WHEN ENTRY         *
                               4912+*       WAS AT SALPH6.                                                *
                               4913+*                                                                     *
                               4914+*   REGISTER USAGE                                                    *
                               4915+*     INDEX REGISTER 1 (@BR) IS USED AS A BASE REGISTER THROUGHOUT    *
                               4916+*     THE EXEQUTION OF THE MODULE. IT IS SAVED FOR THE CALL PROGRAM   *
                               4917+*     UPON ENTRY AND RESTORED UPON EXIT.                              *
                               4918+*     INDEX REGISTER 2 (@XR) IS USED AS A PARAMETER PASSING REGISTER. *
                               4919+*     UPON ENTRY IT CONTAINS THE ADDRESS OF THE LEFTMOST BYTE OF      *
                               4920+*     PARAMETER TO BE SYNTAX CHECKED AND UPON EXIT IT CONTAINS THE    *
                               4921+*     ADDRESS OR THE FIRST NON-DELIMITER FOLLOWING THE PARAMETEP.     *
                               4922+*     (NOTE ERROR EXITS AND PROCEDURES),                              *
                               4923+*                                                                     *
                               4924+*   SAVED/RESTORED AREAS                                              *
                               4925+*     N/A                                                             *
                               4926+*                                                                     *
                               4927+*   MODIFICATION CONSIDERATIONS                                       *
                               4928+*     BECAUSE OF ITS CHARACTER CODE DEPENDENCY AND PARAMETER LENGTH   *
                               4929+*     QUALIFICATIONS, ONE MUST TAKE SPECIAL CARE IN MODIFYING SALPHA, *
                               4930+*     ESPECIALLY THE CONSTANTS AND WORK AREAS AND THEIR RE-INITIAL,   *
                               4931+*     IZATION. SALPHA IS MOST COMMONLY USED TO SYNTAX FILENAMES,      *
                               4932+*     PASSWORDS, AND VOL-IDS AND IS THEREFORE USED BY THE MODULE      *
                               4933+*     SUFFER (FILE SPECIFICATION SYNTAX CHECKER). THEREFORE, ANY      *
                               4934+*     SIGNIFICANT CHANGE IN SALPHA WILL REQUIRE AN INVESTIGATION INTO *
                               4935+*     ITS USE AND IMPACT ON SUFFER.                                   *
                               4936+*        SPECIAL NOTE: AN IRREGULAR USE OF SALPHA WHICH CAN BE        *
                               4937+*        EFFECTED IS THE SYNTAY CHECK OF A PARAMETER WITH A MAXIMUM   *
                               4938+*        OF 10 CHARACTERS. THIS IS DONE BY MODIFYING THE Q-CODE OF    *
                               4939+*        THE INSTRUCTION AT SAL450 PRIOR TO ENTRANCE AT SALPH6, WITH  *
                               4940+*        X'0A' OR ITS EQUIVALENT. (NOTE: ONE SUCH MODULE WHICH        *
                               4941+*        USES THIS OPTION IS UINITL)                                  *
                               4942+*                                                                     *
                               4943+*   REQUIRED MODULES                                                  *
                               4944+*     SCANIT - DELIMITER SCAN ROUTINE                                 *
                               4945+*     @DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES                       *
                               4946+*     @ERMEQ - ERROR MESSAGE EQUATES                                  *
                               4947+*     @FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS        *
                               4948+*     @SYSEQ - COMMON SYSTEM SOFTWARE EQUATES                         *
                               4949+*                                                                     *
                               4950+*   OTHER                                                             *
                               4951+*     N/A                                                             *
                               4952+***********************************************************************

                               4954+***********************************************************************
                               4955+*
                               4956+*                  SALPNA MODULE EQUATES
                               4957+*
                               4958+***********************************************************************
                          0008 4959+SALCT8 EQU   ##LUEN                    COUNT COMPARE FIELD
                               4960+*
                          0006 4961+SALCT6 EQU   @VOLID                    COUNT COMPARE FIELD

                               4963+***********************************************************************
                               4964+*
                               4965+*                  INITIALIZATION OF MODULE
                               4966+*
                               4967+***********************************************************************

                               4969+*SALPH8 ENTER CHECK                     FILENAME OR PASSWORD
                          18B1 4970+SALPH8 EQU   *                         MODULE ENTRY POINT
                               4971+*** END OF EXPANSION ***
    18B1 3A 80 196C            4972+       SBN   SALIDR,SAL008             SET ON SALPH8 INDR
                               4973+*
                               4974+*SALPH6 ENTER BASE-SALBSE,EXIT-SALND,@BR,,@ARR  VOL-ID CHECK
                          18D1 4975+       USING SALBSE,@BR                BASE ADDRESS SPECIFICATION
                          18B5 4976+SALPH6 EQU   *                         MODULE ENTRY POINT
    18B5 34 01 1967            4977+       ST    SALND0+@OP1,@BR           SAVE ABA
    18B9 C2 01 18D1            4978+       LA    SALBSE,@BR                LOAD BASE RESISTER
    18BD 74 08 9A              4979+       ST    SALND2+@OP1(,@BR),@ARR    SAVE RETURN ADDRESS
                               4980+*** END OF EXPANSION ***
    18C0 74 02 34              4981+       ST    SAL375+@OP1(,@BR),@XR     SAVE ERROR POINTER

                               4983+***********************************************************************
                               4984+*
                               4985+*                  INITIALIZE WORK AREAS AND VARIABLE INSTRUCTIONS
                               4986+*
                               4987+***********************************************************************
    18C3 7C 40 A8              4988+SAL100 MVI   SALPR7(,@BR),@BLANK       BLANK OUT SALPAR FOR PROCESSING
    18C6 5C 08 A7 A8           4989+       MVC   SALPR6(##LPEN+@B1,@BR),SALPR7(,@BR)
    18CA 7C 00 9C              4990+       MVI   SALCNT(,@BR),@ZERO        ZERO OUT COUNTER
    18CD 5C 01 63 AA           4991+       MVC   SAL525+@OP1(2,@BR),SALPHS(,@BR) MODIFY MOVE OF CHARACTER

                               4993+***********************************************************************
                               4994+*
                               4995+*                  CHECK EBCDIC CHARACTERS
                               4996+*
                               4997+***********************************************************************
                               4998+*
                          18D1 4999+SALBSE EQU   *                         MODULE BASE ADDR
    18D1 BD 5B 00              5000+SAL200 CLI   @ZERO(,@XR),@DOLAR        IS IT A '$' ?
    18D4 F2 81 32              5001+       JE    SAL400                    YES, PROCESS CHARACTER
    18D7 BD 7B 00              5002+       CLI   @ZERO(,@XR),@NUMBR        IS IT A '#' ?
    18DA F2 81 2C              5003+       JE    SAL400                    YES, PROCESS CHARACTER
    18DD BD 7C 00              5004+       CLI   @ZERO(,@XR),@ASIGN        IS IT A '@' ?
    18E0 F2 81 26              5005+       JE    SAL400                    YES, PROCESS CHARACTER
                               5006+*
    18E3 BD C1 00              5007+       CLI   @ZERO(,@XR),@CHARA        IS IT AN ALPHA (A-Z) ?
    18E6 F2 82 53              5008+SAL250 JL    SAL750                    NO, CHECK FOR DELIMITERS
    18E9 BD E9 00              5009+       CLI   @ZERO(,@XR),@CHARZ        IS IT AN ALPHA (A-Z) ?
    18EC F2 04 1A              5010+       JNH   SAL400                    YES, PROCESS CHARACTER
    18EF 78 80 9B              5011+       TBN   SALIDR(,@BR),SAL008       ENTERED AT SALPH8 ?
    18F2 F2 90 17              5012+       JF    SAL425                    NO, CHECK IF NUMERIC
                               5013+*
    18F5 78 01 9B              5014+       TBN   SALIDR(,@BR),SALFST       WAS FIRST CHAR FOUND ALPHA ?
    18F8 3C 00 03CD            5015+       MVI   $CAERR,@@E100             ALPHA CHAR REQUIRED--ERROR
    18FC F2 10 0D              5016+       JT    SAL425                    YES, CONTINUE
    18FF 75 04 16              5017+SAL350 L     SALERR(,@BR),@PSR         LOAD ERROR CODE - LOW
    1902 C2 02 0000            5018+SAL375 LA    *-*,@XR                   RESTORE ERROR POINTER
    1906 F2 87 58              5019+       J     SAL800                    TAKE ERROR FAIT

                               5021+***********************************************************************
                               5022+*
                               5023+*                  PROCESS ALPHAMERIC CHARACTER
                               5024+*
                               5025+***********************************************************************
    1909 7A 01 9B              5026+SAL400 SBN   SALIDR(,@BR),SALFST       SET ON ALPHA :NOR
                               5027+*
    190C 5E 00 9C 9E           5028+SAL425 ALC   SALCNT(1,@BR),SAL001(,@BR) ADD 1 TO CHARACTER COUNTER
    1910 78 80 9B              5029+       TBN   SALIDR(,@BR),SAL008       WAS ENTRY AT SALPH8 ?
    1913 D0 90 52              5030+       BF    SAL450(,@BR)              NO, CHECK COUNT FOR VALUE OF SIX
    1916 7D 08 9C              5031+       CLI   SALCNT(,@BR),##LPEN       HAS COUNT EXCEEDED 8 ?
    1919 3C 02 03CD            5032+       MVI   $CAERR,@@E102             PASSWORD/FILENAME LENGTH ERROR
    191D D0 84 2E              5033+       BH    SAL350(,@BR)              YES, TAKE ERROR EXIT
    1920 F2 87 0A              5034+       J     SAL500                    NO, CONTINUE PROCESSING
    1923 7D 06 9C              5035+SAL450 CLI   SALCNT(,@BR),@VOLID       HAS COUNT EXCEEDED 6 ?
    1926 3C 03 03CD            5036+       MVI   $CAERR,@@E103             INVALID VOL-ID LENGTH
    192A D0 84 2E              5037+       BH    SAL350(,@BR)              YES, TAKE ERROR EXIT

                               5039+*
                               5040+*                  MODIFY MOVE OF CHARACTER
                               5041+*
    192D 5E 01 63 9E           5042+SAL500 ALC   SAL525+@OP1(2,@BR),SAL001(,@BR)
    1931 2C 00 0000 00         5043+SAL525 MVC   *-*,@ZERO(1,@XR)          MOVE CHARACTER TO OUTPUT AREA
    1936 E2 02 01              5044+       LA    @B1(,@XR),@XR             INCREMENT XR BY I
    1939 D0 87 00              5045+       B     SAL200(,@BR)              CHECK NEXT CHARACTER

                               5047+***********************************************************************
                               5048+*
                               5049+*                  CHECK ERRORS AND BYPASS DELIMITERS
                               5050+*
                               5051+***********************************************************************
    193C 7D 00 9C              5052+SAL750 CLI   SALCNT(,@BR),@ZERO        ANY VALID CHARACTERS ?
    193F 3C 10 03CD            5053+SAL755 MVI   $CAERR,@@E130             REQUIRED PARAM MISSING
    1943 F2 01 17              5054+       JNE   SAL775                    YES, BYPASS DELIMITERS, EYIT
    1946 BD 1E 00              5055+       CLI   @ZERO(,@XR),@EOS          IS IT EOS ?
    1949 F2 81 0E              5056+       JE    SAL760                    YES, ERROR EVIL
    194C 78 80 9B              5057+       TBN   SALIDR(,@BR),SAL008       ENTERED AT SALPH8 ?
    194F 3C 00 03CD            5058+       MVI   $CAERR,@@E100             ALPHABETIC CHAR REQUIRED
    1953 F2 10 04              5059+       JT    SAL760                    ERROR EYIT
    1956 3C 01 03CD            5060+       MVI   $CAERR,@@E101             ALPHAMERIC CHAR REQUIRED
    195A D0 87 2E              5061+SAL760 B     SAL350(,@BR)              ERROR EYIT
    195D C0 87 169C            5062+SAL775 B     SCANIT                    BYPASS DELIMITERS

                               5064+***********************************************************************
                               5065+*
                               5066+*                  SET OFF INDICATORS FOR POSSIBLE SALDHA RE-ENTRY
                               5067+*
                               5068+***********************************************************************
    1961 7C 00 9B              5069+SAL800 MVI   SALIDR(,@BR),@ZERO

                               5071+***********************************************************************
                               5072+*
                               5073+*                  END OF MODULE PROCESSING
                               5074+*
                               5075+***********************************************************************
                               5076+*SALND  EXIT  @BR,,RETURN               EXIT
    1964 C2 01 0000            5077+SALND0 LA    *-*,@BR                   RESTORE @BR
    1968 C0 87 0000            5078+SALND2 B     *-*                       RETURN TO CALLING PROGRAM
                               5079+*** END OF EXPANSION ***

                               5081+***********************************************************************
                               5082+*
                               5083+*                  DATA CONSTANTS, BUFFERS, AND WORK AREAS
                               5084+*
                               5085+***********************************************************************
    196C                  196C 5086+SALIDR DS    CL1                       1 BYTE OF FLAGS
    196C                       5087+       ORG   *-1
    196C 00               196C 5088+       DC    XL1'00'                   INITIALIZED TO ZERO

                          0080 5090+SAL008 EQU   X'80'                     ENTRY POINT INDICATOR
                               5091+*                                      * 0 - ENTERED AT SALPH6
                               5092+*                                      * 1 - ENTERED AT SALPH8
                          0001 5093+SALFST EQU   X'01'                     FIRST CHARACTER IS ALPHA / INDR
                               5094+*                                      * 0 - CHARACTER IS NOT ALPHA
                               5095+*                                      * 1 - CHARACTER IS ALPHA
    196D                  196D 5096+SALCNT DS    CL1                       BYTE CHARACTER COUNTER
    196D                       5097+       ORG   *-1
    196D 00               196D 5098+       DC    XL1'00'                   INITIALIZED TO ZERO
    196E 0001             196F 5099+SAL001 DC    XL2'0001'                 COUNTER INCREMENT
                          1970 5100+SALPHR EQU   *
    1970                  1979 5101+       DS    CL(##LUEN+2*@B1)          SYNTAX SAVE UNIT
    197A 196F             197B 5102+SALPHS DC    AL2(SALPHR-1)             ADDR FOR MODIFYING MOVE
                          1979 5103+SALPR7 EQU   SALPHR+##DPEN+2*@B1       ADDR IN SALPHR FOR CLANKINS
                          1978 5104+SALPR6 EQU   SALPHR+##DPEN+@B1         * OUT THE FIELD
                          18E7 5105+SALERR EQU   SAL250+@Q                 ADDR ERROR CODE FOR LOAD
                               5106+***                       END OF SALPHA                            ***
                               5107 *
                               5109 ***********************************************************************
                               5110 *  PATCH AREA 5
                               5111 ***********************************************************************
    197C                  19F3 5112 $$$$$5 DS   CL120                      PATCH AREA FOR PROGRAM
                               5113 ***********************************************************************
                               5115 ***********************************************************************
                               5116 * SMALES- SYSTEM DATA MANAGEMENT COMMON SAVE AREAS AND EQUATES        *
                               5117 *         USED TO PROVIDE COMMUNICATION BETWEEN SUBROUTINES USED      *
                               5118 *         BY THE VARIOUS KEYWORDS INVOLVED WITH FILE MANIPULATION     *
                               5119 ***********************************************************************
                               5120 *
                          19F4 5121 SMALES EQU   *                         START OF MANAGEMENT AREA
                          19F4 5122 SMIND1 EQU   SMALES                    INDICATOR BYTE 1
                          19FA 5123 SMVOID EQU   SMIND1+6                  SPECIFIED VOLUME ID SAVE AREA
                          1A02 5124 SMPSWD EQU   SMVOID+8                  SPECIFIED PASSWORD SAVE AREA
                          1A0A 5125 SMFNAM EQU   SMPSWD+8                  SPECIFIED FILENAME SAVE AREA
                          1A0C 5126 SMUDEA EQU   SMFNAM+2                  FILENAME DIRCTY ENTRY ADDR
                          1A0E 5127 SMBFDA EQU   SMUDEA+2                  DADDR OF FILE LIBRARY
                          1A10 5128 SMUDBA EQU   SMBFDA+2                  CADDR OF ACTIVE BUFFER ADDR
                          1A12 5129 SMNULT EQU   SMUDBA+2                  TOTAL OF NULL SECTORS AVAILABLE
                          1A14 5130 SMNDEA EQU   SMNULT+2                  NULL DIRCTY ENTRY ERROR
                          1A16 5131 SMNSCT EQU   SMNDEA+2                  COUNT OF NULL SECTORS REQUIRED
                          1A18 5132 SMNETD EQU   SMNSCT+2                  CADDR NEW ENTRY TO NULL DIRCTY
                          1A1A 5133 SMUPEN EQU   SMNETD+2                  CADDR NEW USER DIRCTY ENTRY
                          1A1C 5134 SMPEAD EQU   SMUPEN+2                  CADDR PASSWORD ENTRY
                          1A1E 5135 SMFUDA EQU   SMPEAD+2                  REL DADDR 1ST USER DIRCTY BLOCK
                          1A20 5136 SMNDBA EQU   SMFUDA+2                  NULL DIRCTY BUFFER CORE ADDR
                          1A22 5137 SMDAAD EQU   SMNDBA+2                  DADDR OF ACTIVE DIRCTY
                          0080 5138 SMIFNE EQU   X'80'                     SRCHFN INDR NAME NOT FOUND
                          0040 5139 SMINPD EQU   X'40'                     PACK INDR NULL DIRCTY FULL
                          0020 5140 SMISTN EQU   X'20'                     STORIN PACK INDICATOR BIT
                          0010 5141 SMIPDS EQU   X'10'                     SGETDB SEARCH ONLY FLAG
                          0008 5142 SMIPNF EQU   X'08'                     SGETDB PASSWORD NOT FOUND
                          1A23 5143 SMPDB1 EQU   SMDAAD+1                  PASSWORD DIRCTY BUFFER
                          1A23 5144 SMPIBS EQU   SMPDB1                    SVOLID TEMP SAVE INPUT BUFFER
                          1A23 5145 SMUDB1 EQU   SMPDB1                    USER DIRCTY BLOCK 1 BUFFER
                          1C23 5146 SMUDB2 EQU   SMUDB1+512                USER DIRCTY BLOCK 2 BUFFER
                          1E23 5147 SMAEND EQU   SMUDB2+512                END OF SMALES AREA
                          1A23 5148 SVOBUF EQU   SMUDB1                    BUFFER ADDR FOR SVOLID
    19F4 00               19F4 5149        DC    XL1'00'                   SET SMIND1 TO ZERO
                               5150 *
                               5151 *
                          FFFF 5152        END
TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY =     0
```

```
$$$$$$  001  0C00 2290
$$$$$2  040  0FB2 2892
$$$$$5  120  19F3 5112
$$$$01  030  0E35 2544
$$$$03  015  1127 3014
$$$$04  015  11AF 3071
$$$CMD  001  0020 0659
$$$DAT  001  0040 0658
$$$EPL  001  0091 0655
$$$ERN  001  0080 0709   2405  2411  2900  2907  2979  3079  3136
$$$FUN  001  0010 0660
$$$NLN  001  00A0 0705
$$$STD  001  0081 0654
$$$001  015  0C54 2311
$$BNLN  001  0605 0635   0637
$$CDBS  001  08C0 0685
$$CDND  001  0666 0644
$$CDRD  001  0890 0683   0685
$$CKEY  001  0603 0633
$$CKFF  001  0B3D 0665
$$COFF  001  0B44 0664
$$CSNS  001  209C 0694
$$DATB  001  0BBF 0666
$$EOSA  001  0AFE 0663
$$ERSK  001  1C00 0704
$$FITS  001  1D00 0712   2496  3584  3586
$$FLIB  001  06FF 0711
$$ILEN  001  0601 0629   0631  0635
$$ILHD  001  0600 0627   0629  4378  4379
$$INLN  001  0607 0642   0644  0646  4494  4508
$$INND  001  06FA 0646   4493* 4494  4494  4494*
$$KBDT  001  09E1 0653   0657
$$KBSN  001  09E2 0657   0662
$$KLD1  001  0600 0717
$$KLD2  001  0700 0719
$$KLD3  001  0C00 0721   2281
$$LPOS  001  09EB 0662
$$PCNT  001  07E9 0678
$$PLYN  001  2004 0692
$$PRES  001  0890 0651   0653  0663  0664  0665  0666  0683  4496
$$PRFL  001  2143 0696
$$PRNT  001  0707 0672   0673  0677  0678
$$PRTN  001  0782 0673
$$PSIO  001  07CE 0677
$$PYCD  001  2200 0698
$$PYMP  001  2000 0690   0692  0694  0696  0698
$$SLIB  001  1C00 0707
$$TPCD  001  0606 0637   0642
$$UPAR  001  0602 0631   0633
$$WSPB  001  1E00 0710   2476  2498
$$XIND  001  06FF 0708   0711  2405  2411* 2413  2900  2907  2979  3079  3136  4378  4379  4491
                         4533*
$$ZERO  001  0000 0223   0224  0226  0227  0228  0232  0690  2430
$ABORT  001  0010 0336
$BASIC  001  0080 0394   3052
$BIGCD  001  0080 0470
```

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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  74
$BLDPL  001  0579 0603   0605
$BLNOE  001  0569 0593
$BLOAD  001  0522 0584   0586  0589  0602  0603
$BLRTN  001  0550 0592   0593
$BRSAV  001  03C5 0281   0282
$BSADR  001  0587 0608   0610
$BUFPT  001  03E3 0489   0490
$CABLD  001  04B4 0562   0563
$CAERK  001  0469 0539   0542  3001  3181
$CAERR  001  03CD 0287   0289  2903* 2992* 2994* 2998* 3178* 3180* 3405* 3436* 3838* 3996* 4212*
                         4417* 4429* 4465* 4535* 4786* 4788* 5015* 5032* 5036* 5053* 5058* 5060*
$CAIPL  001  049D 0558   0560
$CALLI  001  0008 0479
$CARDI  001  0001 0250   4464
$CARPL  001  04A1 0560   0562  2406  3063
$CIENT  001  0483 0549   0550
$CIEXT  001  0480 0548   0549
$CIMSK  001  0476 0545   0548  2986* 3043* 4478
$CISUS  001  0496 0553   0558
$CLBFR  001  0010 0437
$CMDKY  001  0008 0349
$CMODE  001  0002 0399
$CONFG  001  03DD 0462   0472
$CRPOS  001  03E2 0488   0489
$CRTAD  001  044D 0527   0528
$CRTAV  001  0002 0343
$CRTDN  001  0002 0367
$CRTIN  001  03D3 0364   0371
$CRTNO  001  0004 0346
$CRTPU  001  0004 0368
$CRTSP  001  0008 0369
$CRTUP  001  0001 0366
$CRUSH  001  0080 0475
$CSDPL  001  050E 0574   0575
$C0001  001  0464 0531   0537
$DATE   001  043A 0512   0513
$DBGUF  001  03E0 0474   0483  2362* 2367* 3668*
$DBLOK  001  0001 0424   3048  3094  3103
$DFDET  001  03E8 0495   0496
$DISKN  001  0025 0226   2348  2354  2370  2379  2394  2408  2700  2841  3624  3636  3656  3845
                         4001
$DKERR  001  0008 0405
$DKSIZ  001  03D7 0449   0457  0498
$DK100  001  0001 0451
$DK200  001  0002 0452
$DK400  001  0004 0453
$DK600  001  0008 0454
$DK800  001  0010 0455
$DPLSV  001  0449 0523   0525
$DTNMB  001  0040 0270
$DTRDR  001  0040 0358
$ENDNU  001  0600 0617   0627  0651  0672  0708  0717  0719  0721
$ERDPL  001  046F 0542   0544
$ERFIL  001  0040 0297
$ERHRD  001  0004 0429
$ERKEY  001  0080 0301
```

```
                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  75
$ERLOG  001  0345 0231
$ERMAD  001  0472 0544   0545
$ERPND  001  0004 0402
$ERRCT  001  03CF 0303
$ERRPG  001  03CE 0291
$ERSFL  001  0035 0296
$ERSTK  001  0030 0294
$ER050  001  0363 0232
$ER1N2  001  0050 0299
$EXADR  001  0517 0577   0579
$EXCMD  001  0001 0331
$EXFTR  001  043B 0513   0518  2317
$FCIND  001  0010 0409
$FDIND  001  0040 0416
$FEARR  001  0004 0224
$FEMAP  001  0588 0610   0611
$FILIB  001  03DA 0460   0461  3348  3388  3390  3403  3410  3411
$FITIN  001  0010 0385   3093  3667
$FUIND  001  0020 0414
$GUFIO  001  0583 0607   0608
$GUFIR  001  0008 0259
$HISTE  001  042E 0510   0511
$HIST1  001  0435 0511   0512
$HRDER  001  0020 0355
$INDR1  001  03D4 0371   0397  2345  2356  3052* 3054* 3057* 3060* 3087* 3092* 3093* 3106* 3667*
$INDR2  001  03D5 0397   0422
$INDR3  001  03D6 0422   0449  3048* 3094* 3103*
$INLNO  001  03CF 0289   0291  0303  0310
$INRPT  001  0020 0267
$IOIND  001  03D2 0338   0364
$IOPGS  001  0010 0478   2362  2367  3668
$IOYES  001  0002 0253   2410
$IPLDV  001  05FF 0614   0617
$IRKEY  001  0020 0477
$KEDI   001  0C07 2293
$KEYBD  001  03E1 0483   0488
$KEYCD  001  03C3 0247   0281  2410* 4464  4497  4545*
$KEYDT  001  0040 0391   2356  3054
$KE090  001  00DE 0227
$KE130  001  01D5 0228
$KYBSY  001  0010 0264   4497
$LDRTN  001  0571 0602
$LEVEL  001  03DF 0472   0474
$LIST   001  0002 0426
$LMRGN  001  03C1 0242   0244
$LNPTR  001  0080 0361
$LOADB  001  054A 0586
$LOADR  001  051A 0579   0582
$LPRIO  001  03EA 0496
$LPROS  001  03E5 0491   0493
$LPRP3  001  03E4 0490   0491
$MOUNT  001  0020 0440
$MPDWN  001  0001 0340
$NEXTB  001  03E6 0493   0494
$NEXTL  001  03E7 0494   0495
$NOENB  001  0008 0432
```

```
$NOLST  001  0004 0256
$NUCBS  001  03C0 0239   0240  2898  2899  2978  3332  3333
$NWRKF  001  0080 0445
$NWRKR  001  0040 0442
$PASWD  001  042D 0509   0510
$PAUSD  001  04BA 0563   0565
$PAUSE  001  0002 0333
$PGMDT  001  0020 0388   2345
$PGMST  001  0010 0352
$PKERT  001  0419 0507   0509
$PLST1  001  0454 0528   0529
$PLST2  001  045B 0529   0530
$PLST3  001  0462 0530   0531
$PRDEV  001  044B 0525   0527
$PRESN  001  0002 0376   3060
$PROCI  001  0001 0373   3057  3145
$PRPOS  001  03C2 0244   0247
$PSDBR  001  04FA 0568
$PSDXR  001  04F2 0567   0568
$PSTEP  001  0004 0334
$PSTMT  001  0008 0335
$PTCH1  001  03F5 0498   0502
$READY  001  0080 0418
$REORD  001  0040 0476
$RLOAD  001  051E 0582   0584  2414
$RMRGN  001  03C0 0240   0242
$RSTR   001  04D6 0565   0567  0569  0574
$RUNIT  001  0001 0312
$SFAID  001  050D 0570
$SPRNT  001  0465 0537   0539  2397  3045  3061  3110  3142  3147  3150  3171  4475  4479  4499
$SRTRN  001  04FE 0569   0570
$STEPT  001  0002 0313
$SWPCR  001  0511 0575   0577
$TABLN  001  03CB 0284   0287  3666*
$TFLOW  001  0008 0319
$TRACE  001  0004 0314
$TRALL  001  0010 0320
$TROVR  001  054E 0589   0592
$TRUNK  001  0080 0272   4545
$TRVAR  001  0020 0321
$UNMSK  001  048D 0550   0553  2407  4495
$USRDR  001  03DC 0461   0462  3412  3415
$VMDEF  001  0080 0325
$VOLF1  001  03FE 0504   0505  3367  3369
$VOLF2  001  040E 0506   3373  3375
$VOLID  001  03F6 0502   0503  0507  3336  3338
$VOLR1  001  03F6 0503   0504  3379  3381
$VOLR2  001  0406 0505   0506  3361  3363
$WAITF  001  057F 0605   0607  2349  2355  2380  2398  3062  3846  4002  4480  4500
$WFDEF  001  0040 0519   3669
$WFLOK  001  0008 0382   3093  3106
$WFNME  001  0443 0518   0523  3049* 3108* 3669*
$WSIND  001  0004 0379   3093  3667
$XIND1  001  03D0 0310   0329  2412  2413*
$XIND2  001  03D1 0329   0338
$XIND3  001  03D8 0457   0460  2412*
```

```
SYMBOL  LEN VALUE DEFN   REFERENCES

$XPREC  001  0040 0322
$XRSAV  001  03C7 0282   0284  2897
$ZTRAD  001  05A2 0611
$12K    001  0004 0466
$16CKY  001  0008 0468
$16K    001  0002 0465
$22IMP  001  0001 0463
#$$#BL  001  0000 1315
#$$#CK  001  0000 1443
#$$#CN  001  0000 1411
#$$#CO  001  0000 1203
#$$#CS  001  0000 1263
#$$#DR  001  0000 1007
#$$#ER  001  0000 1207
#$$#FS  001  0000 1303
#$$#IN  001  0000 1447
#$$#PW  001  0000 1451
#$$#RS  001  0000 1283
#$$#SA  001  0000 1271
#$$#SS  001  0000 1267
#$$#VU  001  0600 1227
#$$#0T  001  0700 0999
#$$#1T  001  0000 1003
#$$BCO  001  0600 1015   2484
#$$BOV  001  0800 1287
#$$DPR  001  0700 1023
#$$DRE  001  0889 1039
#$$DSP  001  2800 1059
#$$ECM  001  0C00 1319
#$$EFK  001  0C00 1339
#$$ERR  001  0C00 1311
#$$EXM  001  0C00 1199
#$$FIL  001  0E00 1279
#$$FIS  001  0E00 1275
#$$FML  001  0200 1407
#$$FMS  001  0200 1247
#$$GRA  001  0889 1171
#$$GUF  001  0C00 1307
#$$INL  001  0600 1387
#$$INS  001  0600 1011
#$$KAL  001  0C00 1175
#$$KCA  001  0C00 1391
#$$KCH  001  0C00 1143
#$$KCN  001  0C00 1259
#$$KCT  001  0C00 1111
#$$KDE  001  0C00 1107
#$$KDI  001  0D00 1187
#$$KDN  001  0C00 1095
#$$KDO  001  0E00 1191
#$$KED  001  0C00 1031   2289
#$$KEN  001  0C00 1035
#$$KEX  001  0C00 1055
#$$KGO  001  0C00 1027
#$$KHE  001  0C00 1211
#$$KKE  001  0C00 1439
#$$KLI  001  0C00 1115
```

```
#$$KLL  001  0920 1415
#$$KLO  001  0C00 1119
#$$KME  001  0D00 1099
#$$KMO  001  0C00 1043
#$$KNA  001  0C00 1155
#$$KOV  001  0E00 1075
#$$KPA  001  0C00 1051
#$$KPO  001  0C00 1139
#$$KPR  001  0C00 1163
#$$KRE  001  0C00 1083
#$$KRL  001  0700 1179
#$$KRM  001  0C00 1047
#$$KRN  001  0700 1067
#$$KRO  001  0D00 1071
#$$KRS  001  0C00 1395
#$$KRU  001  0C00 1091
#$$KRV  001  0800 1183
#$$KSA  001  0C00 1127
#$$KSE  001  0E00 1167
#$$KSO  001  0C20 1219
#$$KSS  001  0C00 1151
#$$KSV  001  0980 1147
#$$KSY  001  0C00 1159
#$$KWI  001  0C00 1087
#$$KWR  001  0C00 1079
#$$LOA  001  0600 1019
#$$MIP  001  0C00 1215
#$$SDS  001  0C00 1327
#$$SFF  001  0E00 1331
#$$SFL  001  0F00 1323
#$$SFO  001  1500 1295
#$$SFS  001  0C00 1291
#$$SPA  001  0C00 1131
#$$SPO  001  0806 1135
#$$SPS  001  0C00 1123
#$$STR  001  1600 1299
#$$TDC  001  1000 1103
#$$TSY  001  1000 1063
#$$TVK  001  0FC0 1239
#$$UAL  001  0C00 1255
#$$UAT  001  0900 1351
#$$UCD  001  0900 1359
#$$UCN  001  0C00 1343
#$$UCP  001  0700 1347
#$$UDE  001  0C00 1363
#$$UDI  001  0C00 1367
#$$UEX  001  0C00 1251
#$$UIN  001  0C00 1355
#$$UPA  001  0C00 1335
#$$UPO  001  0C00 1403
#$$UPT  001  0C00 1399
#$$VCR  001  2000 1195
#$$VLO  001  0600 1231
#$$VOD  001  0600 1235
#$$VVM  001  0000 1243
#$$VXI  001  0600 1223
```

```
                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  79
#$$ZDU  001  1100 1375
#$$ZLB  001  1100 1419
#$$ZLO  001  1100 1379
#$$ZLV  001  0F00 1435
#$$ZL1  001  0F00 1423
#$$ZL2  001  0F00 1427
#$$ZL3  001  0C00 1431
#$$ZTR  001  1000 1371
#$$ZUT  001  0C00 1383
#$#BLN  001  18D4 1314
#$#CKT  001  2118 1442
#$#CNF  001  2000 1410
#$#COR  001  0800 1202
#$#CSA  001  1000 1262
#$#DRT  001  0000 1006
#$#ERM  001  0928 1206
#$#FSP  001  1880 1302
#$#INV  001  212C 1446
#$#PWR  001  2300 1450
#$#RSP  001  1780 1282
#$#SAV  001  1180 1270
#$#SSA  001  1128 1266
#$#VUF  001  0B08 1226
#$#0TR  001  0000 0998
#$#1TR  001  0080 1002
#$@#BL  001  0001 1316
#$@#CK  001  0004 1444
#$@#CN  001  0001 1412
#$@#CO  001  003A 1204
#$@#CS  001  003A 1264
#$@#DR  001  0008 1008
#$@#ER  001  0032 1208
#$@#FS  001  0030 1304
#$@#IN  001  003A 1448
#$@#PW  001  00C0 1452
#$@#RS  001  0030 1284
#$@#SA  001  0108 1272
#$@#SS  001  0001 1268
#$@#VU  001  0002 1228
#$@#0T  001  0018 1000
#$@#1T  001  0018 1004
#$@BCO  001  0018 1016   2483
#$@BOV  001  0018 1288
#$@DPR  001  0005 1024
#$@DRE  001  0001 1040
#$@DSP  001  0004 1060
#$@ECM  001  0006 1320
#$@EFK  001  0002 1340
#$@ERR  001  0003 1312
#$@EXM  001  0003 1200
#$@FIL  001  0009 1280
#$@FIS  001  0009 1276
#$@FML  001  0052 1408
#$@FMS  001  0052 1248
#$@GRA  001  0003 1172
#$@GUF  001  0010 1308
```

```
                                 CROSS REFERENCE

SYMBOL  LEN VALUE DEFN   REFERENCES                                    VER 15, MOD 00  26/06/20  PAGE  80

#$@INL  001  0010 1388
#$@INS  001  0010 1012
#$@KAL  001  000F 1176
#$@KCA  001  000C 1392
#$@KCH  001  000C 1144
#$@KCN  001  0010 1260
#$@KCT  001  0009 1112
#$@KDE  001  0010 1108
#$@KDI  001  0005 1188
#$@KDN  001  0010 1096
#$@KDO  001  000C 1192
#$@KED  001  000E 1032
#$@KEN  001  0006 1036
#$@KEX  001  0003 1056
#$@KGO  001  0002 1028
#$@KHE  001  000C 1212
#$@KKE  001  0006 1440
#$@KLI  001  0011 1116
#$@KLL  001  0001 1416
#$@KLO  001  0008 1120
#$@KME  001  0003 1100
#$@KMO  001  0004 1044
#$@KNA  001  0008 1156
#$@KOV  001  0009 1076
#$@KPA  001  0005 1052
#$@KPO  001  000D 1140
#$@KPR  001  0009 1164
#$@KRE  001  0002 1084
#$@KRL  001  0004 1180
#$@KRM  001  0003 1048
#$@KRN  001  0003 1068
#$@KRO  001  000A 1072
#$@KRS  001  000A 1396
#$@KRU  001  0003 1092
#$@KRV  001  000D 1184
#$@KSA  001  0011 1128
#$@KSE  001  0004 1168
#$@KSO  001  000D 1220
#$@KSS  001  000B 1152
#$@KSV  001  0002 1148
#$@KSY  001  000F 1160
#$@KWI  001  0002 1088
#$@KWR  001  0002 1080
#$@LOA  001  0013 1020
#$@MIP  001  000D 1216
#$@SDS  001  0004 1328
#$@SFF  001  0008 1332
#$@SFL  001  0005 1324
#$@SFO  001  0003 1296
#$@SFS  001  0011 1292
#$@SPA  001  0004 1132
#$@SPO  001  0003 1136
#$@SPS  001  0001 1124
#$@STR  001  0002 1300
#$@TDC  001  0003 1104
#$@TSY  001  0003 1064
```

```
                                         CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  81
#$@TVK  001  0001 1240
#$@UAL  001  0011 1256
#$@UAT  001  000C 1352
#$@UCD  001  000B 1360
#$@UCN  001  0009 1344
#$@UCP  001  000F 1348
#$@UDE  001  000E 1364
#$@UDI  001  0008 1368
#$@UEX  001  000E 1252
#$@UIN  001  000F 1356
#$@UPA  001  0004 1336
#$@UPO  001  0005 1404
#$@UPT  001  0012 1400
#$@VCR  001  0008 1196
#$@VLO  001  0002 1232
#$@VOD  001  0016 1236
#$@VVM  001  0030 1244
#$@VXI  001  0002 1224
#$@ZDU  001  0008 1376
#$@ZLB  001  0002 1420
#$@ZLO  001  000C 1380
#$@ZLV  001  0006 1436
#$@ZL1  001  0007 1424
#$@ZL2  001  000D 1428
#$@ZL3  001  000A 1432
#$@ZTR  001  0001 1372
#$@ZUT  001  0014 1384
#$BCOM  001  0080 1014   2482
#$BOLV  001  1780 1286
#$DPRI  001  014C 1022
#$DREA  001  0200 1038
#$DSPL  001  0240 1058
#$ECMA  001  1900 1318
#$EFKE  001  1990 1338
#$ERRP  001  18C0 1310
#$EXMS  001  07D4 1198
#$FILN  001  1724 1278
#$FIST  001  1700 1274
#$FMLN  001  1E00 1406
#$FMST  001  0D00 1246
#$GRAP  001  0690 1170
#$GUFU  001  1880 1306
#$INLN  001  1C84 1386
#$INST  001  0020 1010
#$KALL  001  06A4 1174
#$KCAL  001  1CC4 1390
#$KCHA  001  053C 1142
#$KCND  001  0F80 1258
#$KCTL  001  03BC 1110
#$KDEL  001  035C 1106
#$KDIS  001  0744 1186
#$KDNT  001  0300 1094
#$KDOV  001  0780 1190
#$KEDI  001  0188 1030
#$KENA  001  01C4 1034
#$KEXT  001  0234 1054
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                                        CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  82
#$KGOS  001  0180 1026
#$KHEL  001  0A30 1210
#$KKEY  001  2100 1438
#$KLIS  001  0400 1114
#$KLLA  001  2004 1414
#$KLOG  001  0444 1118
#$KMER  001  030C 1098
#$KMOU  001  0204 1042
#$KNAM  001  05C0 1154
#$KOVM  001  0290 1074
#$KPAS  001  0220 1050
#$KPOO  001  0508 1138
#$KPRT  001  063C 1162
#$KREA  001  02BC 1082
#$KRLA  001  0700 1178
#$KRMO  001  0214 1046
#$KRNU  001  0280 1066
#$KROV  001  028C 1070
#$KRSU  001  1D24 1394
#$KRUN  001  02CC 1090
#$KRVL  001  0710 1182
#$KSAV  001  0488 1126
#$KSET  001  0680 1166
#$KSOV  001  0AC8 1218
#$KSSP  001  0594 1150
#$KSVL  001  058C 1146
#$KSYM  001  0600 1158
#$KWID  001  02C4 1086
#$KWRI  001  02B4 1078
#$LOAD  001  0100 1018
#$MIPP  001  0A80 1214
#$SDSY  001  192C 1326
#$SFFI  001  193C 1330
#$SFLO  001  1918 1322
#$SFOV  001  1844 1294
#$SFSY  001  1800 1290
#$SPAC  001  04CC 1130
#$SPOV  001  04DC 1134
#$SPSY  001  0484 1122
#$STRO  001  1850 1298
#$TDCK  001  0350 1102
#$TSYK  001  0250 1062
#$TVKB  001  0BAC 1238
#$UALL  001  0F00 1254
#$UATR  001  1A38 1350
#$UCDI  001  1AD8 1358
#$UCNF  001  19B8 1342
#$UCPL  001  19DC 1346
#$UDEL  001  1B24 1362
#$UDIS  001  1B5C 1366
#$UEXL  001  0EA8 1250
#$UINI  001  1A88 1354
#$UPAC  001  1980 1334
#$UPOV  001  1D24 1402
#$UPTF  001  1D5C 1398
#$VCRT  001  07B4 1194
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#$VLOA  001  0B80 1230
#$VODK  001  0B88 1234
#$VVMR  001  0C00 1242
#$VXIT  001  0B00 1222
#$ZDUM  001  1BA4 1374
#$ZLBM  001  2008 1418
#$ZLOA  001  1BC4 1378
#$ZLVR  001  20B0 1434
#$ZL1M  001  2010 1422
#$ZL2M  001  2030 1426
#$ZL3M  001  2088 1430
#$ZTRA  001  1B9C 1370
#$ZUTM  001  1C14 1382
##DNEA  001  0001 0920
##DNEF  001  0003 0921
##DNER  001  0005 0922
##DNE1  001  0004 0919
##DNHC  001  0000 0916
##DNHR  001  0003 0918
##DNHY  001  0001 0917
##DPEA  001  0009 0894   3862  3868
##DPEN  001  0007 0893   3852  4715* 4719* 4735  4748  5103  5104
##DPER  001  000B 0895
##DPE1  001  0004 0892   3850
##DPHC  001  0000 0890   3849
##DPHR  001  0003 0891
##DUEA  001  0009 0905   3115  3127
##DUED  001  0012 0910   3158  3159  3160  3161  3162  3163
##DUEF  001  000B 0906   3083  3114  3164
##DUEH  001  002B 0911   3109
##DUEI  001  000C 0907   3124  3125  3126  3134  4019
##DUEL  001  000F 0909   3121
##DUEN  001  0007 0904   3107  3108  4022  4732
##DUER  001  0031 0912
##DUES  001  000D 0908   3077  3081  3087  3088  3092  3101  3104  3122  3128  3145
##DUE1  001  000C 0903
##DUHA  001  0001 0899   4039
##DUHB  001  0003 0900   4010  4013
##DUHC  001  0004 0901   4018
##DUHR  001  000B 0902
##LAAA  001  0002 0931   3115  3127
##LAHC  001  0001 0930
##LN    001  0001 0959
##LNE   001  0006 0965
##LNEF  001  0002 0963
##LNEZ  001  0002 0964
##LNH   001  0004 0962
##LNHY  001  0001 0960
##LNHZ  001  0002 0961
##LP    001  0004 0935   3887
##LPE   001  000C 0940   3854
##LPEN  001  0008 0937   2981  3095  3098  3334  3344  3852  4704  4748  4989  5031
##LPEZ  001  0002 0938
##LPH   001  0004 0939
##LPHZ  001  0003 0936
##LU    001  0002 0944   4065
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##LUE   001  0032 0955   4024
##LUED  001  0003 0952
##LUEF  001  0002 0948   3083  3114
##LUEH  001  0019 0953   3109
##LUEI  001  0001 0949   3124  3125  3126  3134
##LUEL  001  0002 0951   3121  3167
##LUEN  001  0008 0947   3044  3049  3107  3108  4022  4732  4959  5101
##LUES  001  0001 0950
##LUEZ  001  0006 0954
##LUH   001  000C 0946
##LUHZ  001  0007 0945
##MNHM  001  002A 0988
##MPHM  001  0055 0973
##MUEG  001  0020 0980   3081  3122
##MUEK  001  0040 0979   3128
##MUEP  001  0080 0978   3077
##MUER  001  0008 0982   3101  3104
##MUEV  001  0002 0984   3088
##MUEX  001  0010 0981
##MUE0  001  0004 0983
##MUHM  001  000A 0977
##RN    001  0000 0879
##RP    001  0001 0880   3886  3891
##R1    001  0007 0882
##R2    001  0005 0881
#@#BAD  001  0455 0823
#@#IO1  001  0459 0831   2466  3721
#@#IO2  001  045D 0832
#@#TAT  001  0941 0859
#@#TBA  001  09A1 0863
#@#TFS  001  0941 0857
#@#TSY  001  0941 0861
#@#VFP  001  0700 0849
#@#VLP  001  093D 0852
#@#WDB  001  050C 0844   2474  3705
#@#WFT  001  0500 0842   2458  3713
#@@#BA  001  0001 0824
#@@#IO  001  0001 0836   2467
#@@#SC  001  0002 0833   3130  3722
#@@#TA  001  0010 0860
#@@#TB  001  0010 0864
#@@#TS  001  0005 0862
#@@#TW  001  0020 0858
#@@#VM  001  0100 0853
#@@#WD  001  00BD 0845   2492
#@@#WF  001  0003 0843   2373  2459  3714
#@@#04  001  0004 0835
#@@#08  001  0008 0834
#@@BOV  001  0018 0812
#@@ECM  001  0006 0826
#@@ERR  001  0003 0820
#@@GUF  001  0010 0816
#@@LDS  001  0002 0822
#@@SDS  001  0004 0818
#@@SFF  001  0008 0830
#@@SFL  001  0005 0828
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SYMBOL  LEN VALUE DEFN   REFERENCES                         VER 15, MOD 00  26/06/20  PAGE  85
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#@@SFS  001  0011 0814
#@@VSF  001  0010 0866
#@@VSL  001  000F 0867
#@@VTR  001  0001 0851
#@BOVL  001  0400 0811
#@CORS  001  0005 0773
#@ECMA  001  0481 0825
#@ERRP  001  0441 0819
#@GUFU  001  0401 0815
#@LDSV  001  044D 0821
#@MVSD  001  0001 0781
#@NERO  001  0003 0775
#@OBRA  001  0002 0777
#@PTFL  001  0006 0796
#@PTFS  001  0001 0795
#@SDSY  001  04AD 0817
#@SFFI  001  04BD 0829
#@SFLO  001  0499 0827
#@SFOV  001  04C4 0837
#@SFSY  001  0480 0813
#@VCNT  001  0002 0793
#@VLAB  001  0001 0788
#@VLSD  001  0001 0779
#@VSFI  001  09A1 0865
#@VTRL  001  0708 0850
#@WAF1  001  0401 0810
#@WAR1  001  0400 0809
#CNDIS  001  0001 0748
#CNFIG  001  0005 0784
#CORSV  001  0010 0772
#DKEXT  001  0002 0755
#FIGSC  001  0001 0785
#HISCT  001  0006 0762
#HISDX  001  0003 0757
#HISLN  001  0008 0754   0755
#HISN1  001  0003 0760
#HISN2  001  0005 0761
#HISTC  001  0007 0764
#HISTN  001  0009 0766
#HISTQ  001  0000 0758
#HISTR  001  0001 0759
#HISTS  001  0008 0765
#HISTV  001  000F 0767
#HSEND  001  0007 0763
#HSENT  001  0001 0756
#IOSDR  001  0019 0783
#KEDIT  001  0000 0001
#MVSDR  001  000D 0780
#NEROV  001  009C 0774
#OBRAD  001  001D 0776
#PKCNT  001  0002 0741
#PKMRW  001  002B 0742
#PKRDD  001  0003 0739
#PKRTD  001  0003 0738
#PKRTL  001  0004 0745
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#PKVWD  001  0007 0744
#PKWTD  001  0001 0740
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#RDWTL  001  0004 0746
#SDRDK  001  0011 0782
#VLSDR  001  000C 0778
#VLTBE  001  0008 0733
#VOLF1  001  0009 0786
#VOLNG  001  0006 0731   0733  0755
#VOLOC  001  0005 0732
#VOLR1  001  0008 0787
#VTCF1  001  0025 0790
#VTCF2  001  0027 0792
#VTCR1  001  0024 0789
#VTCR2  001  0026 0791
@@E001  001  0000 1989   1991
@@E003  001  0001 1991   1993
@@E004  001  0002 1993   1995
@@E005  001  0003 1995   1997
@@E006  001  0004 1997   1999
@@E007  001  0005 1999   2001
@@E008  001  0006 2001   2003
@@E009  001  0007 2003   2005
@@E010  001  0008 2005   2007
@@E011  001  0009 2007   2009
@@E012  001  000A 2009   2011
@@E013  001  000B 2011   2013
@@E014  001  000C 2013   2015
@@E015  001  000D 2015   2017
@@E016  001  000E 2017   2019
@@E017  001  000F 2019   2021
@@E018  001  0010 2021   2023
@@E019  001  0011 2023   2025
@@E020  001  0012 2025   2027
@@E021  001  0013 2027   2029
@@E023  001  0014 2029   2031
@@E024  001  0015 2031   2033
@@E025  001  0016 2033   2035
@@E026  001  0017 2035   2037
@@E027  001  0018 2037   2039
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@@E029  001  001A 2041   2043
@@E030  001  001B 2043   2045
@@E031  001  001C 2045   2047
@@E032  001  001D 2047   2049
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@@E036  001  001F 2051   2053
@@E037  001  0020 2053   2055
@@E038  001  0021 2055   2057
@@E039  001  0022 2057   2059
@@E040  001  0023 2059   2061
@@E041  001  0024 2061   2063
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@@E043  001  0026 2065   2067
@@E044  001  0027 2067   2069
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SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  87
@@E045  001  0028 2069   2071
@@E046  001  0029 2071   2073
@@E060  001  002A 2073   2075
@@E080  001  002B 2075
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@@E101  001  0001 1463   1465  5060
@@E102  001  0002 1465   1467  5032
@@E103  001  0003 1467   1469  5036
@@E110  001  0004 1469   1471  4212
@@E112  001  0005 1471   1473
@@E113  001  0006 1473   1475
@@E114  001  0007 1475   1477
@@E115  001  0008 1477   1479
@@E116  001  0009 1479   1481
@@E117  001  000A 1481   1483
@@E120  001  000B 1483   1485
@@E122  001  000C 1485   1487
@@E123  001  000D 1487   1489
@@E124  001  000E 1489   1491
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@@E130  001  0010 1493   1495  2998  5053
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@@E136  001  0015 1503   1505
@@E137  001  0016 1505   1507
@@E138  001  0017 1507   1509
@@E139  001  0018 1509   1511  2903  4785
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@@E143  001  001A 1513   1515
@@E150  001  001B 1515   1517
@@E151  001  001C 1517   1519
@@E160  001  001D 1519   1521
@@E162  001  001E 1521   1523
@@E163  001  001F 1523   1525
@@E164  001  0020 1525   1527
@@E200  001  0021 1527   1529  3405
@@E205  001  0022 1529   1531
@@E210  001  0023 1531   1533  3838
@@E211  001  0024 1533   1535  3996
@@E212  001  0025 1535   1537  4465
@@E213  001  0026 1537   1539  3436
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@@E220  001  002A 1545   1547
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@@E222  001  002C 1549   1551
@@E223  001  002D 1551   1553
@@E225  001  002E 1553   1555
@@E226  001  002F 1555   1557
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@@E230  001  0033 1563   1565
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@@E256  001  0042 1593   1595
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@@E301  001  0044 1597   1599
@@E302  001  0045 1599   1601
@@E303  001  0046 1601   1603
@@E304  001  0047 1603   1605
@@E305  001  0048 1605   1607
@@E308  001  0049 1607   1609
@@E310  001  004A 1609   1611
@@E315  001  004B 1611   1613  3180
@@E316  001  004C 1613   1615
@@E320  001  004D 1615   1617
@@E325  001  004E 1617   1619
@@E330  001  004F 1619   1621
@@E335  001  0050 1621   1623
@@E338  001  0051 1623   1625  2994
@@E340  001  0052 1625   1627
@@E350  001  0053 1627   1629
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@@E361  001  0057 1635   1637
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@@E371  001  0059 1639   1641
@@E380  001  005A 1641   1643
@@E390  001  005B 1643   1645
@@E400  001  005C 1645   1647
@@E410  001  005D 1647   1649
@@E415  001  005E 1649   1651
@@E417  001  005F 1651   1653
@@E420  001  0060 1653   1655
@@E430  001  0061 1655   1657
@@E432  001  0062 1657   1659
@@E433  001  0063 1659   1661
@@E450  001  0064 1661   1663
@@E451  001  0065 1663   1665
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@@E464  001  0068 1669   1671
@@E465  001  0069 1671   1673
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@@E467  001  006B 1675   1677
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@@E476  001  0072 1689   1691
@@E477  001  0073 1691   1693
@@E478  001  0074 1693   1695
@@E479  001  0075 1695   1697
@@E480  001  0076 1697   1699
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@@E483  001  0079 1703   1705
@@E484  001  007A 1705   1707
@@E485  001  007B 1707   1709
@@E486  001  007C 1709   1711
@@E487  001  007D 1711   1713
@@E488  001  007E 1713   1715
@@E489  001  007F 1715   1717
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@@E491  001  0081 1719   1721
@@E492  001  0082 1721   1723
@@E493  001  0083 1723   1725
@@E494  001  0084 1725   1727
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@@E496  001  0086 1729   1731
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@@E501  001  008A 1737   1739
@@E530  001  008B 1739   1741
@@E531  001  008C 1741   1743
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@@E541  001  008F 1747   1749
@@E542  001  0090 1749   1751
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@@E544  001  0092 1753   1755
@@E545  001  0093 1755   1757
@@E546  001  0094 1757   1759
@@E547  001  0095 1759   1761
@@E548  001  FFFF 1965
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@@E550  001  0097 1763   1765
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@@E552  001  0099 1767   1769
@@E553  001  009A 1769   1771
@@E554  001  009B 1771   1773
@@E555  001  009C 1773   1775
@@E556  001  009D 1775   1777
@@E558  001  009E 1777   1779
@@E570  001  009F 1779   1781
@@E571  001  00A0 1781   1783
@@E572  001  00A1 1783   1785
@@E573  001  00A2 1785   1787
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@@E578  001  00A4 1789   1791
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@@E601  001  00A7 1795   1797
@@E602  001  00A8 1797   1799
@@E603  001  00A9 1799   1801
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@@E607  001  00AC 1805   1807
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@@E609  001  00AE 1809   1811
@@E610  001  00AF 1811   1813
@@E611  001  00B0 1813   1815
@@E612  001  00B1 1815   1817
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@@E614  001  00B3 1819   1821
@@E700  001  00B4 1821   1823
@@E701  001  00B5 1823   1825
@@E710  001  00B6 1825   1827
@@E712  001  00B7 1827   1829
@@E713  001  00B8 1829   1831
@@E714  001  00B9 1831   1833
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@@E716  001  00BB 1835   1837
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@@E720  001  00BE 1841   1843
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@@E723  001  00C0 1845   1847
@@E724  001  00C1 1847   1849
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@@E726  001  00C3 1851   1853
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@@E728  001  00C5 1855   1857
@@E729  001  00C6 1857   1859
@@E730  001  00C7 1859   1861
@@E732  001  00C8 1861   1863
@@E752  001  00C9 1863   1865
@@E753  001  00CA 1865   1867
@@E754  001  00CB 1867   1869
@@E755  001  00CC 1869   1871
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@@E757  001  00CE 1873   1875
@@E758  001  00CF 1875   1877
@@E759  001  00D0 1877   1879
@@E760  001  00D1 1879   1881
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@@E764  001  00D5 1887    1889
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@@E767  001  00D8 1893    1895
@@E768  001  00D9 1895    1897
@@E769  001  00DA 1897    1899
@@E770  001  00DB 1899    1901
@@E771  001  00DC 1901    1903
@@E772  001  00DD 1903    1905
@@E773  001  00DE 1905    1907
@@E774  001  00DF 1907    1909
@@E775  001  00E0 1909    1911
@@E776  001  00E1 1911    1913
@@E777  001  00E2 1913    1915
@@E778  001  00E3 1915    1917
@@E779  001  00E4 1917    1919
@@E780  001  00E5 1919    1921
@@E781  001  00E6 1921    1923
@@E782  001  00E7 1923    1925
@@E783  001  00E8 1925    1927
@@E784  001  00E9 1927    1929
@@E785  001  00EA 1929    1931
@@E786  001  00EB 1931    1933
@@E790  001  00EC 1933    1935
@@E791  001  00ED 1935    1937
@@E792  001  00EE 1937    1939
@@E793  001  00EF 1939    1941
@@E794  001  00F0 1941    1943
@@E795  001  00F1 1943    1945
@@E796  001  00F2 1945    1947
@@E797  001  00F3 1947    1949
@@E798  001  00F4 1949    1951
@@E800  001  FFFF 1979
@@E801  001  FFFF 1981
@@E802  001  FFFF 1983
@@E803  001  FFFF 1985
@@E804  001  FFFF 1987
@@E900  001  00F5 1951    1953
@@E901  001  00F6 1953    1955
@@E902  001  00F7 1955    1957
@@E903  001  00F8 1957    1959
@@E905  001  00F9 1959    1961
@@E906  001  00FA 1961    1963
@@E910  001  00FB 1963
@@M300  001  0C0B 2301    4476
@@T300  001  0C0F 2305    2303
@ARR    001  0008 0016    2651* 2652  2653* 2654  2809* 2810  2811* 2812  3330  3608  3836  3995
                          4083  4210  4392  4694  4979
@ASIGN  001  007C 0071    5004
@ASTER  001  005C 0069    3095  3097  3098  3100  4713  4715  4717  4719  4735
@BCRDL  001  0050 0088
@BE     001  0081 0043
@BF     001  0090 0052
@BH     001  0084 0041
@BL     001  0082 0042    3427
@BLANK  001  0040 0065    2981  3334  3336  4215  4221  4493  4512  4527  4703  4705  4988
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                                 CROSS REFERENCE
SYMBOL   LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  92
@BM      001  0082 0054
@BNE     001  0001 0046   4206
@BNH     001  0004 0044
@BNL     001  0002 0045
@BNM     001  0002 0057
@BNOL    001  0020 0050
@BNOZ    001  0008 0049
@BNP     001  0004 0056
@BNZ     001  0001 0058
@BOL     001  00A0 0048
@BOZ     001  0088 0047
@BP      001  0084 0053
@BR      001  0001 0013   2316  2317  2318  2318  2322  2322  2325  2325  2329  2329  2330  2330
                          2333  2333  2347  2347  2350  2358  2358  2359  2364  2368  2368  2369
                          2369  2373  2383  2385  2387  2387  2390  2639  2648  2650* 2651  2652
                          2653  2654  2656  2657  2657  2658  2659  2659  2661  2661  2662  2663
                          2663  2667  2667  2668  2672  2672  2673  2675  2675  2676  2676  2677
                          2677  2678  2678  2679  2679  2685  2686  2687  2687  2688  2693  2693
                          2694  2694  2696  2696  2702* 2805  2806  2808* 2809  2810  2811  2812
                          2814  2815  2815  2816  2818  2819  2821  2823  2823  2824  2824  2825
                          2827  2829  2830  2830  2831  2833  2835  2836  2836  2837  2837  2838
                          2838  2839  2846* 2866  2866  2868  2868  2869  2870  2871  2871  2872
                          2872  2873  2874  2874  2875  2876  2877  2877  2878  2880  2880  2881
                          2881  2882  2882  2883  2883  2884  2898  2899* 2903  2978* 2986  2992
                          2994  2998  3001  3043  3045  3048  3049  3052  3054  3057  3060  3061
                          3087  3092  3093  3094  3103  3106  3108  3110  3112  3113* 3114  3115
                          3120  3121  3124  3125  3126  3127  3130  3131  3131  3132  3132  3133
                          3133  3134  3135  3156  3157* 3158  3159  3160  3161  3162  3162  3163
                          3166  3170  3173* 3327  3328* 3329  3330  3331  3346  3347  3355  3358
                          3364  3370  3376  3380  3382  3412  3425  3427  3431  3433  3433  3434
                          3434  3435  3443* 3476  3603  3605  3606* 3607  3608  3647  3652  3653
                          3653  3654  3666  3678* 3831  3833  3834* 3835  3836  3841  3848  3849
                          3855  3855  3856  3865  3868  3872  3873  3873  3876* 3991  3992  3993*
                          3994  3995  3997  3997  3998  3998  3999  3999  4004  4005  4010  4012
                          4012  4013  4017  4018  4020  4021  4025  4025  4026  4028  4028  4029
                          4029  4030  4030  4031  4037  4040* 4050  4079  4081  4082* 4083  4086
                          4086  4087  4088  4093  4093  4095  4095  4096  4096  4097  4099  4099
                          4100  4102* 4388  4389  4390* 4391  4392  4403  4404  4405  4405  4407
                          4407  4408  4416  4418  4419  4438* 4466  4492  4509* 4519  4519* 4524
                          4524* 4534  4544  4690  4692  4693* 4694  4731  4747  4761  4785  4791
                          4800  4802* 4975  4977  4978* 4979  4981  4988  4989  4989  4990  4991
                          4991  5011  5014  5017  5026  5028  5028  5029  5030  5031  5033  5035
                          5037  5042  5042  5045  5052  5057  5061  5069  5077*
@BT      001  0010 0051
@BZ      001  0081 0055
@B1      001  0001 0063   2317  2318  2322  2325  2329  2330  2333  2347  2358  2368  2369  2383
                          2386  2387  2412  2413  2475  2981  3087  3092  3095  3100* 3131  3132
                          3133  3134* 3158* 3160* 3162* 3164  3167* 3334  3336  3344  3348  3355
                          3370  3388  3403  3706  4087  4088  4378  4400  4427  4478  4494* 4508
                          4509  4511  4515  4517  4525  4526  4704  4704* 4705* 4716  4719* 4720
                          4744  4758  4762  4989  5044  5101  5103  5104
@CADDR   001  0002 0142   2303  2364  2365  2657  2815  3135  3997  3998  3999  4028  4029  4030
                          4055  4056  4057  4066
@CARDL   001  0060 0087   0644
@CHARA   001  00C1 0072   5007
@CHARF   001  00C6 0073   4522
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@CHARR  001  00D9 0074   4520
@CHARZ  001  00E9 0075   5009
@CLOFF  001  0010 0094
@CLON   001  0011 0093
@COMMA  001  006B 0066   4217  4769
@CPLUS  001  004E 0079
@DADDR  001  0002 0140   2656  2721  2814  3363  3369  3375  3381  3390  3410  3411  3412  3415
                         3862  3868  3873  4010  4012  4013  4039  4064  4404  4404  4406  4519
                         4524  4544  4544
@DBFR1  001  0004 0129   2881*
@DBFR2  001  0005 0130   3848
@DCALK  001  0001 0081
@DCBCY  001  0009 0115
@DCBT1  001  0050 0117
@DCNT   001  0003 0128   2863  3726
@DCST1  001  0040 0116
@DCTRL  001  0000 0125
@DCYL   001  0001 0126   2661* 2851
@DD2    001  0003 0030
@DGET   001  0001 0134   2449  2473  2481  3120  3453  3885  4063
@DOLAR  001  005B 0068   5000
@DOP2   001  0004 0028   2652* 2656* 2657* 2719  2720  2810* 2814* 2815* 2886  2887
@DPLNG  001  0006 0132   2658  2717  2816  2850
@DPOS   001  0000 0133   2426
@DPUT   001  0002 0135   2437  2457  2465  3704  3712  3720
@DSAD   001  0002 0127   2659* 2663* 2667  2668* 2672* 2675* 2679  2685* 2693* 2696* 2718  2852
                         3868* 3873*
@DSBCY  001  0004 0106
@DSCS1  001  0000 0107
@DSIVF  001  0003 0138
@DSPIN  001  0002 0131
@DTRSZ  001  0018 0085
@DVBCY  001  0007 0108
@DVRFY  001  0031 0136
@DWAIT  001  00FF 0137
@DWBCY  001  0005 0103
@DWSIZ  001  00C0 0105
@DWTB1  001  0003 0104
@DZERO  001  00F0 0064
@D1     001  0002 0026   2942* 2952* 4087* 4099* 4416
@EOF    001  001C 0077   3692
@EOFTC  001  0075 0162   3691
@EOS    001  001E 0076   2909  2918  2971  2996  4223  4530  4767  5055
@FDDBC  001  0000 0195
@FDE1   001  000C 0200
@FDFNA  001  000B 0198
@FDHLN  001  0002 0208
@FDLNC  001  0002 0193   2350*
@FDNSC  001  0003 0210
@FDSD   001  0000 0206
@FLACE  001  0009 0197
@FLDBC  001  0001 0196   2350
@FLENT  001  0004 0201   2382  2389  2500
@FLFNA  001  0002 0199
@FLHLN  001  0002 0209
@FLLNC  001  0002 0194   2350
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  94
@FLNSC  001  0001 0211
@FLSD   001  0001 0207
@HDRLN  001  0007 0092   0672
@IAR    001  0010 0017
@INDEX  001  0001 0156   0157
@INST3  001  0003 0032
@INST4  001  0004 0033
@INST5  001  0005 0034
@INST6  001  0006 0035
@I1IAR  001  00C0 0020
@LINSZ  001  00F4 0084   0646  3000
@MAPEN  001  0005 0089
@MINCR  001  2000 0083   2430
@MINUS  001  0060 0080
@NOP    001  0080 0040   2326  2698  2819  2986  3043  3840  3872  4017  4441  4490  4764
@NUMBR  001  007B 0070   5002
@OPD2   001  0004 0029
@OP1    001  0003 0027   2365* 2648* 2654* 2806* 2812* 2973  3442  3444  3446  3605* 3607* 3608*
                         3833* 3835* 3836* 3991* 3994* 3995* 4081* 4083* 4210* 4389* 4391* 4392*
                         4692* 4694* 4772* 4790  4977* 4979* 4981* 4991* 5042*
@OP2    001  0005 0031   2364* 2365  3135*
@PCTRL  001  0000 0149
@PDATA  001  0003 0151
@PGCSZ  001  0020 0082   0083
@PPLNG  001  0004 0148
@PRCNT  001  0001 0150
@PRETR  001  00C0 0154   2301  2506  3064  3185  3190  3210  3216
@PRINT  001  0040 0152   0154
@PSR    001  0004 0015   4791* 4800* 5017*
@PWAIT  001  00FF 0158
@P1IAR  001  0020 0018
@P2IAR  001  0040 0019
@Q      001  0001 0024   2326* 2699  2818* 2819* 2829* 2835* 2861  2862  2864  2873* 2875  3339
                         3428  3430  3841* 3872* 4004* 4017* 4088* 4096  4096* 4099  4229  4430*
                         4492* 4785* 4791  4800  5105
@REGL   001  0002 0012
@RETRN  001  0080 0153   0154
@RLDWN  001  004F 0159
@RTRNC  001  0080 0161
@SBLN   001  0005 0170
@SBLNL  001  0002 0184
@SCTSZ  001  0100 0100   2382  2548
@SDFLN  001  0007 0090
@SDF0   001  0000 0166
@SDF1   001  0001 0167
@SDF2   001  0002 0168
@SDF3   001  0003 0169
@SECCY  001  0030 0086
@SIST   001  0001 0181
@SLASH  001  0061 0067   4733  4749
@SLAST  001  0002 0183
@SMIDL  001  0003 0182
@SNULL  001  0080 0173
@SONLY  001  0000 0180
@STEXT  001  0007 0172
@STYPE  001  0006 0171
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  95
@TBCNT  001  0000 0160
@TBLEF  001  0010 0155   0157
@TBLIX  001  0011 0157
@UCB    001  0087 0039   2339  2873  3429  3841  4004  4207  4218  4430  4492
@UPARW  001  005A 0078
@VADDR  001  0002 0141
@VENTA  001  0056 0113
@VMDDV  001  00FE 0114
@VMFD1  001  0000 0109
@VMFD2  001  0001 0110
@VMRS3  001  0002 0112
@VMTRL  001  0001 0111
@VOLID  001  0006 0091   4400  4402  4406  4509  4519  4524  4534  4705* 4762  4762  4961  5035
@VQ     001  0001 0025   4478* 4495
@WSFIT  001  0500 0101
@WSTBL  001  0503 0102   2440
@XR     001  0002 0014   2359* 2360  2382* 2385* 2386  2386  2388  2389  2389* 2897* 2909  2918
                         2921  2922  2925  2925* 2928  2930  2933  2933* 2937  2938  2940  2944
                         2944* 2946  2946* 2948  2950  2954  2954* 2956  2956* 2960  2961  2964
                         2964* 2966  2966* 2970  2971  2972* 2991* 2996  3000  3000* 3076* 3077
                         3081  3083  3087  3088  3092  3101  3104  3107  3108  3109  3114  3115
                         3121  3122  3124  3125  3126  3127  3128  3134  3145  3158  3159  3160
                         3161  3163  3164  3164* 3167  3168  3168* 3331  3332* 3333  3348  3361
                         3363  3367  3369  3373  3375  3379  3381  3388  3390  3403  3405  3410
                         3411  3412  3415  3436  3441* 3477  3607  3646* 3647  3650  3650* 3651
                         3651  3652  3679* 3835  3848* 3849  3850  3850* 3852  3854  3854* 3861
                         3862  3868  3877* 3994  4005* 4010  4013  4018  4019  4019* 4022  4024
                         4024* 4035  4037* 4038  4039  4041* 4048  4090  4211  4214  4214* 4215
                         4217  4220  4220* 4221  4223  4225  4391  4400* 4402  4406  4406* 4439*
                         4508* 4511  4511* 4512  4515  4517  4520  4522  4525  4525* 4526  4526*
                         4527  4530  4713  4716  4716* 4717  4720  4720* 4733  4744  4744* 4749
                         4758  4758* 4763  4767  4769  4772  4783  4790* 4981  5000  5002  5004
                         5007  5009  5018* 5043  5044  5044* 5055
@ZERO   001  0000 0062   2360  2386  2668  2818  2909  2918  2971  2996  3346  3347  3348  3361
                         3367  3373  3379  3388  3403  3618  3620  3865  4020  4402  4427  4512
                         4520  4522  4527  4530  4534  4713  4717  4733  4749  4763  4765  4767
                         4769  4783  4990  5000  5002  5004  5007  5009  5043  5052  5055  5069
C2DEC5  001  1658 4080   3165  3169  4079  4082
C2DVAL  005  1696 4110   3166  3170  4093  4093  4093* 4095  4095
C2D020  003  166A 4088   4099  4100
C2D030  003  166D 4090   4087* 4088* 4096  4096* 4097  4099*
C2D040  004  1677 4095   4091
C2D050  004  1689 4102   4081*
C2D052  004  168D 4103   4083*
C2D901  001  1691 4108   4086  4086  4086
C2D902  001  1692 4109   4086
C2D903  005  169B 4111   4086  4086* 4093  4093  4093  4095  4095  4095  4095*
DL2C01  002  0EC4 2711   2651  2653  2661
DL2C05  002  0EC6 2712   2657
DL2C48  001  0EC0 2709   2659  2663
DL2DPL  006  0ECC 2717   2658*
DL2END  001  0ECF 2722
DL2E01  001  0001 2641   2659  2661  2663  2667  2679  2687
DL2E02  001  0002 2642   2672  2675  2693
DL2E18  001  0018 2643   2673
DL2E60  001  0060 2644   2688
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  96
DL2E7C  001  007C 2646   2685
DL2ICS  001  0E36 2647   2327  2352  3117  3413  3843  3869  4014
DL2K18  002  0EC2 2710   2676
DL2K60  002  0EBD 2707   2694
DL2K80  002  0EBF 2708   2675  2693
DL2LST  001  0EC7 2716   2659* 2661* 2663* 2667  2668* 2672* 2675* 2679  2685* 2693* 2696* 2701
                         2718
DL2PHY  001  0EC9 2718
DL2RAD  002  0ECE 2721   2672  3410* 3842*
DL2SAD  005  0E4E 2719   2679* 2686* 2687* 2688  2694* 2696
DL2SEC  005  0E57 2720   2667* 2673  2676* 2677  2677* 2678  2678* 2687
DL2SWH  003  0EAC 2699
DL2TSD  001  0083 2645   2686
DL2000  001  0E3A 2649   2639  2650
DL2001  005  0E4A 2656   2652* 2719
DL2002  005  0E53 2658   2656* 2657* 2720
DL2005  004  0E58 2659   2662
DL2006  004  0E66 2663   2660
DL2008  004  0E83 2677   2674
DL2010  003  0E99 2688
DL2100  004  0EA7 2696   2689
DL2110  003  0EAB 2698   2699
DL2900  004  0EB4 2702   2648* 2698
DL2910  004  0EB8 2703   2654*
DL4CYL  001  0F45 2851   2823*
DL4C01  002  0F4B 2859   2809  2811  2823
DL4C05  002  0F4D 2860   2815
DL4C24  003  0F1C 2862   2836
DL4C48  003  0F09 2864   2830  2871  2877
DL4C96  003  0EF8 2861   2824
DL4DPL  006  0F49 2850   2816*
DL4EFD  001  0001 2857   2829  2875
DL4END  001  0F8B 2888
DL4ETB  001  0080 2858   2835
DL4E01  001  0001 2856   2831
DL4E24  001  0018 2855   2833
DL4E48  001  0030 2854   2827  2869
DL4E96  001  0060 2853   2821
DL4ICS  001  0ECF 2804   2331
DL4LST  001  0F44 2849   2842  2851  2852  2863  2881*
DL4SAV  005  0EE6 2887   2874* 2877* 2880
DL4SCD  001  0F46 2852   2821  2824* 2827  2830* 2833  2836* 2837  2837* 2838  2838* 2839* 2868
                         2874  2880* 2882*
DL4SCT  001  0F47 2863   2831  2866  2872* 2881  2882  2883*
DL4SPT  004  0F4E 2867   2832
DL4WRK  005  0EE7 2886   2866* 2868* 2869  2871* 2872  2883
DL4010  001  0ED3 2807   2805  2808
DL4020  005  0EE3 2814   2810* 2886  2887
DL4030  005  0EEC 2816   2814* 2815*
DL4035  003  0EF1 2818   2884
DL4040  003  0EF7 2821   2825  2861
DL4050  003  0F08 2827   2822  2864
DL4060  003  0F15 2831   2828
DL4070  003  0F1B 2833   2862  2870  2876  2878
DL4080  004  0F28 2837   2834
DL4100  003  0F30 2839   2818* 2829* 2835* 2875
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SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  97
DL4200  003  0F39 2844   2819* 2873*
DL4500  004  0F4E 2866   2867
DL4600  004  0F78 2880   2844
DL4900  004  0F3C 2846   2806*
DL4920  004  0F40 2847   2812*
GCLBSE  001  1483 3610   3603  3606
GCLCNT  001  151A 3727   3653*
GCLCT1  001  150B 3726   3652  3653
GCLDP0  001  1508 3703   3637  3726
GCLDP1  001  150E 3711   3657
GCLDP2  001  1514 3719   3625
GCLEAR  001  1475 3604   3047
GCLEOF  001  14E3 3689   3707
GCLFAD  001  1D00 3584   3646  3715  3723
GCLFT1  001  14F0 3695
GCLFT2  008  1503 3698   3647
GCLINE  004  1507 3700   3666
GCLND0  004  14D7 3678   3605*
GCLND1  004  14DB 3679   3607*
GCLND2  004  14DF 3680   3608*
GCLN01  001  0001 3577   3652  3653
GCLN02  001  0002 3578
GCLN04  001  0004 3579   3651  3666
GCLN07  001  0007 3580
GCLN20  001  0014 3581   3647
GCLPG2  001  1EFF 3588   3592  3620* 3621
GCLSCT  001  1DFF 3586   3588  3590  3618* 3619
GCLSC1  001  1DFE 3590   3619*
GCLSC2  001  1EFE 3592   3621*
GCLS00  001  0000 3572   3647* 3651
GCLS01  001  0001 3573   3652*
GCLS04  001  0004 3574   3650  3651*
GCLS19  001  0013 3575   3646
GCL150  004  149D 3636
GCL200  004  14A3 3646
GCL250  003  14AB 3649
GCL255  001  00FF 3582   3586  3588  3619  3621
GCL300  003  14AE 3650   3654
GCL350  004  14B1 3651   3649
KEDBFR  001  0FB3 2893   2430  2432  2442
KEDCBW  005  1102 3007   2928
KEDCDW  004  1106 3008   2930  2961
KEDCFL  002  0D93 2493   2368  2369  3167
KEDCIO  001  0D7A 2467   3130* 3131  3132  3133
KEDCKW  008  0E17 2535   3086
KEDCLW  004  1118 3012   2940  2950
KEDCND  002  0D8E 2491   2387
KEDCSW  005  1114 3011   2938  2948  3090
KEDCWS  002  0D91 2492   3083
KEDDL1  001  0D5F 2423   2328  3118
KEDDL2  001  0D65 2436   2332
KEDDL3  001  0D6B 2448   2353
KEDDL4  001  0D71 2456   2358  2395
KEDDL5  001  0D77 2464   2371
KEDDL6  001  0D7D 2472   2409
KEDDL7  001  0D83 2480   2415
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES
KEDD1D  002  0D61 2427   2330* 2369* 3115* 3124* 3131*
KEDD1F  001  0D5F 2424   3120*
KEDD1S  001  0D62 2428   2317* 2322  2325* 2329  2330
KEDD2D  002  0D67 2438   2333*
KEDD2S  001  0D68 2441   2329* 2333
KEDD3D  002  0D6D 2450   3127*
KEDD3S  001  0D6E 2451   2358* 2373  2383  3125* 3133*
KEDD5C  002  0D7C 2468   2359  2364  3134* 3135
KEDEA2  001  0002 2538   3098
KEDEBD  001  0004 3033   2928
KEDEBL  001  0005 3032   2928  2966  3033
KEDEBP  001  0009 3030   2922  2925  3031
KEDEDA  001  0001 2541   3160  3161
KEDEDD  001  0003 3035   2930  2961
KEDEDL  001  0004 3034   2930  2933  2961  2964  3035
KEDEDM  001  0002 2537   3158  3159
KEDEDN  001  0004 2540   3167* 3168
KEDEEL  001  0003 2539   3166  3170
KEDEIB  001  0080 3021   2926  2932  2963  3019  3050
KEDEIG  001  0020 3025   2920  2984
KEDEIL  001  0100 2495   2366  2372  2496  2546
KEDEIS  001  0040 3023   2943  2953  3019  3058
KEDEKL  001  0008 2536   3086
KEDELD  001  0003 3039   2940  2950
KEDELE  001  00BC 2499   2388
KEDELL  001  0004 3038   2940  2942  2950  2952  3039
KEDEND  001  0004 2500   2386* 2387* 2388
KEDEPD  001  0008 3031   2922
KEDESD  001  0004 3037   2938  2948
KEDESL  001  0005 3036   2938  2946  2948  2956  3037  3090
KEDFIT  001  1B00 2496   2350* 2382  2452  2460  2468
KEDID1  001  1128 3017   2920* 2924* 2926* 2932* 2943* 2953* 2963* 2984  3018  3050  3055  3058
KEDIOA  001  00FF 2497   2372  2498  2546
KEDISW  001  001F 2502   2360
KEDITN  001  0C07 2295
KEDMSC  001  1174 3067   3066
KEDMS2  001  0D98 2509   2508
KEDMS3  001  12FF 3188   3187
KEDMS4  001  1315 3193   3192
KEDMS5  001  0DD0 2519   3212
KEDMS6  001  1347 3213   3218
KEDM2A  002  0D99 2510   3097* 3100*
KEDM2H  025  0DBB 2515   3109*
KEDM2N  008  0DA1 2513   3107*
KEDM4P  005  1338 3204   3090*
KEDM4T  008  131C 3194   3086*
KEDM5D  002  0E0C 2529   3160* 3161*
KEDM5L  003  0DD2 2520   3170*
KEDM5M  002  0E09 2527   3158* 3159*
KEDM5S  003  0DDD 2522   3166*
KEDM5Y  002  0E0F 2531   3162* 3163*
KEDPBS  001  0D94 2542   3156  3157
KEDPCI  001  1FFF 2498   2372*
KEDPL1  001  1170 3064   3046
KEDPL2  001  0D94 2506   2542  3111
KEDPL3  001  12FB 3185   3143
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE  99
KEDPL4  001  1311 3190   3151
KEDPL5  001  1343 3210   3172
KEDPL6  001  1355 3216   3148
KEDPNM  008  11A0 3069   3044*
KEDPRE  001  0001 3027   2924  3055
KEDPRO  009  110F 3009   2922
KEDSCT  001  01FF 2546   2366
KEDSDL  001  0D89 2487   2318* 2347*
KEDSLD  002  0D8D 2489   2318  2322* 2325  2347  2368* 3114* 3126* 3132*
KEDSSZ  002  0D8F 2490   2385  2491
KEDTBS  004  0D12 2501   2316  3112  3113  3173
KEDTNP  004  0C5A 2318
KEDUEL  002  0D8B 2488   2350  3121*
KEDXRS  004  10AB 2973   2921* 2937* 2960* 2970* 2991
KED100  005  0C55 2317   2400
KED110  004  0C5E 2322   2339
KED120  004  0C6C 2326   2323
KED130  004  0C70 2327   2324
KED150  004  0C88 2339   2326*
KED175  004  0C90 2345   3137  3174
KED200  004  0CA9 2352   2346
KED201  006  0CDB 2366   2364* 2365  2365*
KED202  005  0CD0 2364   2361
KED203  004  0CED 2370   2363
KED205  006  0CF3 2372   3135*
KED210  003  0CF9 2373   2357
KED230  004  0D12 2386   2384  2390  2501
KED250  004  0D23 2394   2351  2374
KED270  004  0D33 2405   2340
KED500  004  0FB3 2897   2296
KED505  004  0FCD 2905   2901
KED530  003  0FF2 2918   2908
KED535  005  1016 2928   2923
KED540  003  1053 2944   2939  2942* 2945
KED544  005  1059 2948   2931
KED546  003  1071 2954   2949  2952* 2955
KED550  003  1094 2966   2929
KED553  004  1097 2967   2927  2947  2965
KED555  003  10A5 2971   2936  2941  2969
KED560  004  10A8 2972   2973
KED570  004  10AF 2975   2919
KED580  004  10CF 2984   2977
KED585  003  10D6 2986   2913
KED589  004  10DC 2991   2959
KED590  003  10E0 2992   2910  2951  2962  2974
KED592  003  10E6 2994   2985
KED593  003  10EC 2996   2904
KED598  003  10F8 3000   2914  2980  2982  2995
KED599  003  10FB 3001   2906  2935  2958  2968  2993  2997  2999
KED600  003  1129 3043   2983
KED610  003  1150 3054   3051
KED620  004  115D 3058   3056
KED650  003  1167 3061   3053  3059
KED700  004  11B0 3076   2987
KED710  006  11D4 3086   3082
KED715  004  11DA 3087   3085
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                                         CROSS REFERENCE

SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE 100

KED750  004  11ED 3092   3078
KED760  003  11F1 3093   3089  3091
KED765  004  11F7 3095
KED770  003  1216 3104   3099
KED780  005  121F 3107   3096  3102  3105
KED790  003  1290 3145   3129
KED800  004  129F 3150   3123  3146
KED810  004  12A5 3157   3144  3149
KED890  004  12EC 3178   3080
KED892  004  12F3 3180   3084
KED899  004  12F7 3181   3179
SALBSE  001  18D1 4999   4975  4978
SALCNT  001  196D 5096   4990* 5028* 5031  5035  5052
SALCT6  001  0006 4961
SALCT8  001  0008 4959
SALERR  003  18E7 5105   5017
SALFST  001  0001 5093   5014  5026
SALIDR  001  196C 5086   4972* 5011  5014  5026* 5029  5057  5069*
SALND0  004  1964 5077   4977*
SALND2  004  1968 5078   4979*
SALPHR  001  1970 5100   4732  4748  4762  5102  5103  5104
SALPHS  002  197B 5102   4991
SALPH6  001  18B5 4976   4760
SALPH8  001  18B1 4970   4730  4746
SALPR6  001  1978 5104   4989*
SALPR7  001  1979 5103   4988* 4989
SAL001  002  196F 5099   5028  5042
SAL008  001  0080 5090   4972  5011  5029  5057
SAL100  003  18C3 4988
SAL200  003  18D1 5000   5045
SAL250  003  18E6 5008   5105
SAL350  003  18FF 5017   5033  5037  5061
SAL375  004  1902 5018   4772* 4790  4981*
SAL400  003  1909 5026   5001  5003  5005  5010
SAL425  004  190C 5028   5012  5016
SAL450  003  1923 5035   5030
SAL500  004  192D 5042   5034
SAL525  005  1931 5043   4991* 5042*
SAL750  003  193C 5052   5008
SAL755  004  193F 5053
SAL760  003  195A 5061   5056  5059
SAL775  004  195D 5062   5054
SAL800  003  1961 5069   5019
SCACNT  002  16DC 4235   4225* 4226* 4765
SCACOF  001  0087 4207   4729
SCACOM  001  0001 4206   4773
SCAINC  001  0001 4205   4214  4220
SCAMMA  003  16B9 4229   4729* 4773*
SCANIT  001  169C 4209   2902  2934  2957  2967  4745  4759  4774  5062
SCASVE  002  16DA 4234   4211* 4226
SCASV1  001  16D9 4233
SCA100  003  16AB 4214   4216
SCA200  003  16AE 4215   4213
SCA250  003  16B8 4218   4229
SCA300  003  16BB 4220   4222
SCA400  004  16CB 4225   4218
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                                 CROSS REFERENCE

SYMBOL  LEN VALUE DEFN   REFERENCES

SCA500  004  16D5 4228   4210* 4224
SFIAST  001  005C 3466   3344
SFIBSE  003  1397 3473   3328  3329
SFICTR  001  146B 3450   3346* 3355  3358  3364* 3370* 3376* 3382* 3425
SFIDPL  001  146C 3453   3414
SFIEFE  001  00FE 3469   3364  3425
SFIEFF  001  00FF 3470   3452
SFIEND  001  1474 3474
SFIERR  004  10BA 2978   3406  3465
SFIETD  001  0006 3475   3431
SFIEXT  004  146A 3446   3330*
SFIE02  001  0002 3467   3376
SFIE03  001  0003 3468   3358  3382
SFIE06  001  0006 3471   3361  3367  3373  3379
SFIE07  001  0007 3472   3363  3369  3375  3381
SFIFND  003  1445 3430
SFINDF  001  1359 3326   2911  2975
SFINTR  001  1473 3458   3431  3434  3459
SFIONE  001  1474 3461   3433
SFIRDA  002  146E 3454   3412*
SFISBR  004  1466 3444   3327*
SFISTR  003  1442 3428
SFISXR  004  1462 3442   3331*
SFITTC  001  1472 3457   3347* 3433* 3434
SFIVOL  004  137A 3339
SFI050  004  1379 3338   3339
SFI100  004  1380 3344   3337
SFI200  003  1397 3355   3427  3435  3473
SFI210  003  13A6 3361   3380
SFI220  003  13B7 3367   3356
SFI230  003  13C8 3373   3357  3368
SFI240  003  13D9 3379   3359  3374
SFI320  003  13EA 3388   3345
SFI340  005  13F0 3390   3349
SFI350  004  13F5 3394   3340  3365  3371  3377  3383
SFI500  003  140A 3403   3335
SFI505  003  1410 3405   3389
SFI510  005  1417 3410   3404
SFI520  004  1430 3419   3399
SFI540  003  143B 3425   3396
SFI542  003  1441 3427   3428
SFI543  003  1444 3429   3430
SFI545  003  1458 3436   3362  3429  3432
SFI550  004  145F 3441   3398  3421  3426  3442
SFI560  004  1463 3443   3444
SFI570  004  1467 3445   3446
SGECNT  001  15A4 3892   3849* 3855* 3865
SGEC01  002  15A6 3893   3855
SGEDPL  001  159C 3884   3844  3848  3868* 3870  3873*
SGERAD  002  15A3 3891   3873
SGETDB  001  151B 3832   3394  3831  3834
SGE050  003  1531 3840   3841* 3872*
SGE055  003  1549 3848   3840
SGE060  005  1553 3852   3856
SGE070  004  1569 3861   3853
SGE080  004  157F 3868
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE 102

SGE900  004  1590 3876   3833* 3864  3866
SGE901  004  1594 3877   3835*
SGE902  004  1598 3878   3836*
SMAEND  001  1E23 5147
SMALES  001  19F4 5121   5122
SMBFDA  001  1A0E 5127   3363* 3369* 3375* 3381* 3390* 3411* 3842  4404* 4427  4544* 5128
SMDAAD  001  1A22 5137   4039* 5143
SMFNAM  001  1A0A 5125   3044  3049  4022  4732* 5126
SMFUDA  001  1A1E 5135   3415* 3862* 5136
SMIFNE  001  0080 5138   2912  2976  3420  3437  4036  4049
SMIND1  001  19F4 5122   2912  2976  3350* 3395  3397  3420  3437* 3839* 3857* 3863  4036* 4049*
                         5123
SMINPD  001  0040 5139
SMIPDS  001  0010 5141   3397  3863
SMIPNF  001  0008 5142   2912  2976  3350  3395  3839  3857
SMISTN  001  0020 5140
SMNDBA  001  1A20 5136   5137
SMNDEA  001  1A14 5130   5131
SMNETD  001  1A18 5132   5133
SMNSCT  001  1A16 5131   5132
SMNULT  001  1A12 5129   5130
SMPDB1  001  1A23 5143   3888  5144  5145
SMPEAD  001  1A1C 5134   3861* 5135
SMPIBS  001  1A23 5144
SMPSWD  001  1A02 5124   2981  3095  3098  3334  3344  3852  4703* 4704  4704* 4715* 4719* 4735
                         4748* 5125
SMUDBA  001  1A10 5128   4038* 5129
SMUDB1  001  1A23 5145   3456  4058  5146  5148
SMUDB2  001  1C23 5146   4059  5147
SMUDEA  001  1A0C 5126   3076  4035* 4048* 5127
SMUPEN  001  1A1A 5133   5134
SMVOID  001  19FA 5123   3336  4402  4534  4705* 4762* 5124
SRCACT  002  164A 4057   3999* 4005  4029  4030* 4037
SRCBA1  002  164C 4058   3997
SRCBA2  002  164E 4059   3998
SRCBFR  002  1657 4066   4012*
SRCBF1  002  1646 4055   3997* 3999  4028* 4030
SRCBF2  002  1648 4056   3998* 4012  4028  4029*
SRCCNT  001  164F 4060   4018* 4020  4025*
SRCC01  002  1651 4061   4010  4025
SRCDAD  002  1654 4064   4013*
SRCDPL  001  1652 4062   4015
SRCGET  001  1652 4063
SRCHFN  001  15A7 3990   3419
SRCSCT  001  1655 4065
SRC010  004  15AB 3993   3992  3993
SRC020  004  15C5 4001   4031
SRC030  004  15E9 4018   4011
SRC035  005  15F6 4022   4026
SRC040  004  161A 4035   4023
SRC050  003  1622 4037   4050
SRC055  003  1608 4027   4004* 4017* 4021
SRC060  004  163A 4048   4027
SRC900  004  162E 4040   3991*
SRC910  004  1632 4041   3994*
SRC920  004  1636 4042   3995*
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                                 CROSS REFERENCE
SYMBOL  LEN VALUE DEFN   REFERENCES                           VER 15, MOD 00  26/06/20  PAGE 103
SSEEND  001  15A7 3895
SUFBSE  001  181B 4728   4690  4693
SUFFER  001  17E8 4691   2905
SUFND0  004  18A9 4802   4692* 4792
SUFND2  004  18AD 4803   4694*
SUF100  004  181B 4729   4714  4718
SUF200  003  1853 4758   4736
SUF400  003  185E 4761   4791
SUF600  003  1867 4763   4734  4750
SUF625  003  186A 4764
SUF650  004  1880 4772   4766
SUF680  004  1898 4786   4770  4785* 4787
SUF750  003  18A0 4791   4731  4747  4761  4775
SUF780  003  18A3 4792   4800
SUF800  003  18A6 4800   4764  4768  4784
SVOBSE  001  16EF 4401   4388  4390
SVOBUF  001  1A23 5148   4491* 4533
SVOCT1  001  1736 4450   4407* 4451
SVOCT2  001  1737 4453   4405* 4416  4454
SVOEND  001  00FF 4379   4491* 4533
SVOERR  004  10BA 3465   4441
SVOINP  001  0100 4378   4491  4533
SVOLID  001  16DD 4387   4400  4509
SVOLN1  001  0001 4375   4405  4407
SVOONE  001  1738 4456   4405  4407
SVO001  001  00F1 4376   4515
SVO002  001  00F2 4377   4517
SVO100  005  16EF 4402   4408
SVO200  003  1700 4406   4403
SVO260  004  1717 4427   4546
SVO270  004  1722 4430   4418  4466  4536
SVO274  004  1726 4438   4389* 4428
SVO276  004  172A 4439   4391*
SVO280  004  172E 4441   4430*
SVO290  004  1732 4442   4392*
SVO300  004  1739 4464   4419
SVO310  004  173D 4465
SVO315  003  1741 4466
SVO320  001  1744 4474   4518  4523  4531
SVO330  001  1756 4488   4492*
SVO333  004  1762 4493   4490
SVO335  004  176C 4495   4478*
SVO350  004  1774 4497   4498
SVO360  003  178A 4511   4513
SVO400  003  17A4 4520   4516
SVO440  003  17B4 4525   4521
SVO445  003  17B7 4526   4528
SVO450  005  17CE 4534

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY =     0

OL105 I  THE CODE LENGTH OF #KEDIT IS  6645 DECIMAL.
OL103 I  TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS   23
         NAME-#KEDIT,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-R,CATEGORY-000
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        OVERLAY LINKAGE EDITOR CORE USAGE MAP    26/06/20



 START    CATEGORY  NAME AND       CODE LENGTH
ADDRESS               ENTRY    HEXADECIMAL DECIMAL

 0C00         0     #KEDIT          19F5    6645


OL100 I  THE TOTAL CORE USED BY #KEDIT IS  6645 DECIMAL.
OL101 I  THE START CONTROL ADDRESS OF THIS MODULE IS 0C00.
OL104 I  TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS   26
         NAME-#KEDIT,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-O
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