

OPTIONS NODECK,LIST,XREF,NOREL,OBJ(P)

THE LIST OF OPTIONS USED DURING THIS ASSEMBLY IS-- NODECK,LIST,XREF,NOREL,OBJ



ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	2
	0000			1	#KCALL	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	*	@SPF EXP-N				
				1188+		PRINT ON				
				1189	*	@ERM EXP-N				
				1811+		PRINT ON				
				1812	*	@WKA EXP-N				
				1882+		PRINT ON				
				1883	*	@DIR EXP-N				
				2003+		PRINT ON				

## #KCALL - CALL PROCEDURE FILE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 3
		2005		*****	
		2006	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		2007	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE. 120-2083	*
		2008	*		*
		2009		*****	
		2010	*	STATUS -	*
		2011	*	VERSION 1 MODIFICATION 0	*
		2012	*		*
		2013	*	FUNCTION -	*
		2014	*	THE SYNTAX OF THE 'CALL' COMMAND CHECKED ALONG WITH THE	*
		2015	*	FILE NAME SPECIFICATIONS, IF ANY ERRORS EXIST THE FUNCTION IS	*
		2016	*	ABORTED BEFORE THE PROCEDURE FILE IS INITIALIZED FOR A CALLING	*
		2017	*	SEQUENCE. THIS ROUTINE COPIES THE REQUIRED PORTION OF THE	*
		2018	*	SAVED PROCEDURE FILE TO A TEMPORARY WORK AREA WHERE THE	*
		2019	*	PROCEDUREFILE LINES WILL LATER BE PROCES EDBY THE COMMAND	*
		2020	*	ANALYZER	*
		2021	*		*
		2022	*	ENTRY POINTS -	*
		2023	*	* KCALLN HAS ONLY ONE ENTRY POINT, KCALLN, THE FIRST EXECUTABLE	*
		2024	*	INSTRUCTION.	*
		2025	*		*
		2026	*	INPUT -	*
		2027	*	* THE REQUIRED PORTION OF THE SAVED PROCEDURE FILE IS INPUT.	*
		2028	*		*
		2029	*	OUTPUT -	*
		2030	*	* OUTPUT CONSISTS OF COPYING THE REQUIRED PORTION OF THE SAVED	*
		2031	*	PROCEDURE FILE TO THE TEMPORARY WORK AREA LOCATED IN THE SYSTEM	*
		2032	*	PROGRAM FILE OF THE IPL'ED DISK.	*
		2033	*		*
		2034	*	EXTERNAL REFEPENCES -	*
		2035	*	\$CAERK - ENTRY POINT TO ERROR PROGRAM	*
		2036	*	\$CAERR - SAVE AREA FOR ERROR CODE	*
		2037	*	\$DISKN - PHYSICAL IOCS	*
		2038	*	\$INDR1 - WORK AREA INDICATORS	*
		2039	*	\$INDR2 - ADDRESSES OF SYSTEM 1-BIT INDICATORS	*
		2040	*	\$DBGUF - FILE UPDATE CRUSHER INDICATORS	*
		2041	*	\$SPRNT - SYSTEM PRINT ROUTINE	*
		2042	*	\$CAIPL - ERROR EXIT TO FILE UPDATE CRUSHER	*
		2043	*	\$NEXTB - RELATIVE DADDR OF NEXT PROCEDURE FILE DB	*
		2044	*	\$NEXTL - DISPLACEMENT WITHIN PROCEDURE DB FILE TO TEXT	*
		2045	*	\$DFDET - INTERNAL GRAPRO INDICATOR	*
		2046	*	\$KEYCD - KEYBOARD INDICATORS	*
		2047	*	\$\$INND - END OF INPUT LINE BUFFER	*
		2048	*	\$INDR3 - SYSTEM INDICATORS	*
		2049	*	\$CARPL - NORMAL EXIT TO FILE UPDATE CRUSHER	*
		2050	*	\$XRSAB - INDEX REGISTER SAVE AREA	*
		2051	*		*
		2052	*	EXITS, NORMAL -	*
		2053	*	* KCALLN HAS ONE NORMAL EXIT	*
		2054	*	\$CARPL - AFTER VERIFYING AND COPYING PROCEDURE FILE TO	*
		2055	*	TEMPORARY WORK AREA	*
		2056	*		*
		2057	*	EXITS, ERROR -	*
		2058	*	\$CAERK - WITH ERROR CODES	*
		2059	*	@@E231 - SPECIFIFD FILE NOT A PROCEDURE FILE	*
		2060	*	@@E308 - SPECIFIED <LINE NUMBER> DOES NOT EXIST	*

## #KCALL - CALL PROCEDURE FILE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 4
		2061	*	@@E131 - INVALID PARAKTER	*
		2062	*	@@E130 - REQUIRED PARAMETER MISSING	*
		2063	*	@@E139 - INVALID DELIMETER	*
		2064	*	REFERENCE SHOULD BE MADE TO THE ROUTINES SUFFER AND SVMD POR	*
		2065	*	ERRORS HANDIED CF THECE PROGRAMS	*
		2066	*		*
		2067	*	*TABLES/WORK AREAS -	*
		2068	*	* 4 SECTORS FOR READING OR THE PASSWORD DIRECTORY DATA OVERLAYING	*
		2069	*	GRABIT AND DL2ICS BUFFERS	*
		2070	*	8 SECTORS FOR GRABIT TO READ SAVED FILE	*
		2071	*	8 SECTORS FOR DL2ICS TO READ/WRITE SAVED FILE TO TEMPORARY	*
		2072	*	WORK AREA	*
		2073	*		*
		2074	*	*ATTRIBUTES -	*
		2075	*	N/A	*
		2076	*		*
		2077	*	*CHARACTER CODE DEPENDENCY -	*
		2078	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL	*
		2079	*	REPRESENTATION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT	*
		2080	*	TO THE ONE USED AT ASSEMBLY TIME, THE CODING HAS BEEN ARRANGED	*
		2081	*	SO THAT REDEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL	*
		2082	*	RESULT IN A CORRECT MODULE FOR THE NEW DEFINITION.	*
		2083	*		*
		2084	*	*NOTES -	*
		2085	*	ERROR PROCEDURES	*
		2086	*	* THE ERROR CODE IS SET AT \$CAERK	*
		2087	*	@XR IS LEFT POINTING TO THE ERROR BYTE IN THE PRIMARY	*
		2088	*	INPUT BUFFER	*
		2089	*		*
		2090	*	REGISTER USAGE	*
		2091	*	* BOTH REGISTERS ARE USED DURING PROGRAM USAGE	*
		2092	*	* THE REGISTERS ARE NOT SAVED OR RESTORED	*
		2093	*		*
		2094	*	SAVED/RESTORED AREAS -	*
		2095	*	NONE	*
		2096	*		*
		2097	*	MODIFICATION CONSIDERATIONS -	*
		2098	*	N/A	*
		2099	*		*
		2100	*	REQUIRED MODULES	*
		2101	*	@SYSEQ - COMMON SYSTEM EQUATES	*
		2102	*	@FXDEQ - SYSTEM NUCLEUS ADDRESS AND INDICATORS	*
		2103	*	@CANEQ - SYSTEM LOCATION EQUATES	*
		2104	*	@WKAEQ - WORK AREA EQUATES	*
		2105	*	@DIREQ - FILE LIBRARY ADDRESS AND EQUATES	*
		2106	*	SCANIT - SCAN ACROSS BLANKS	*
		2107	*	SUFFER - SYNTAX CHECK FILE NAME REFERENCES	*
		2108	*	C4BIN2 - CONVERT EBCDIC TO BINARY	*
		2109	*	SFINDF - FILE FINDING ROUTINE	*
		2110	*	SVOLID - SEARCH VOLUME-ID TABLE	*
		2111	*	SGETDB - READ FIRST BLOCK OF USER DIRECTORY	*
		2112	*	SRCHFN - SEARCH USER DIRECTORY	*
		2113	*	SALPHA - ALPHANUMERIC SYNTAX CHECKER	*
		2114	*	TSMLES - DATA MANAGEMENT COMMON WORK AREAS AND EQUATES	*
		2115	*	GRABIT - RETURN FILE LINES	*
		2116	*	DL2ICS - DISK I/O INTERFACE	*

[illegible]

## #KCALL - CALL PROCEDURE FILE

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ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT                                VER 15, MOD 00  19/02/22  PAGE   6

0C00                                2122      ORG    $$KLD3
                                2123 *      HDR    #KCALL,0
                                2124 *****
                                2125 *  PROGRAM HEADER FOR DISK LOAD                                *
                                2126 *****
                                2127 *$KCAL EQU    X'1CC4'                                DISK ADDR OF #KCALL
                                2128 *$KCA EQU    X'0C00'                                CORE LOAD ADDRESS OF #KCALL
                                2129 *$@KCA EQU    012                                SECTOR CNT OF #KCALL
0C00                                2130      ORG    $$KCA                                CORE LOAD ADDRESS
0C00 7BD2C3C1D3D3 0C00 2131 $$$$$$ EQU    *                                FIRST LOCATION IN PROGRAM
0C06 6F            0C05 2132      DC    CL6 '#KCALL'                                PROGRAM NAME
                                0C06 2133      DC    IL1 '111'                                PROGRAM NUMBER OR #KCALL
                                0C07 2134 $KCALL EQU    *                                ENTRY POINT TO PROGRAM
                                2135 *** END OF EXPANSION ***

0C07 C0 87 115B      2137      B      KCASYN                                EXIT TO SYNTAX CHECK
                                2138 *      MTEXT @@300=@PRETR
                                2139 *****
                                2140 * PPL'S AND TEXT FOR MESSAGE                                *
                                2141 *****
0C0B C0            0C0B 2142 @@M300 DC    AL1 (@PRETR)                                PRINT CONTROL FUNCTION
0C0C 37            0C0C 2143      DC    IL1 '55'                                LENGTH OF MESSAGE
0C0D 0C0F          0C0E 2144      DC    AL (@CADDR) (@@T300)                        ADDR OF MESSAGE
                                2145 *
                                0C0F 2146 @@T300 EQU    *                                LEFT BYTE OR MESSAGE
0C0F C5D9D9D6D940F5F8 0C41 2147      DC    CL051 'ERROR 580 DUPLICATE DISK LABELS - SPECIFY DISK LOCA'
0C42 E3C9D6D5      0C45 2148      DC    CL004 'TION'
                                2149 *
                                2150 * PATCH AREA FOR MEGSAGES
                                2151 *
0C46            0C54 2152 $$$$001 DS    CL15                                MSG EXPANSION PATCH AREA
                                2154 *****
                                2155 *      SFARCH SAVED FILE TO START PROCEOLRE LINE NO.                                *
                                2156 *****
                                2157 *
                                2158 *KCALLN ENTER BASE=KCAEQU                                ENTRY POINT
                                0DCF 2159      USING KCAEQU,@BR                                BASE ADDRESS SPECIFICATION
                                0C55 2160 KCALLN EQU    *                                MODULE ENTRY POINT
0C55 C2 01 0DCF      2161      LA      KCAEQU,@BR                                LOAD BASE REGISTER
                                2162 *** END OF EXPANSION ***

0C59 35 02 17D4      2164      L      SMUDEA,@XR                                USER FILE ENTRY POINT
0C5D B8 01 0D        2165      TBN    ##DUES(,@XR), $PROCI                        CHECK IF PROC FILE
0C60 F2 10 10        2166      JT     KCA010                                YES
                                2167 *      SPRNT KCAERR                                PRINT ERR MSG
0C63 C0 87 0465      2168      B      $SPRNT                                PRINT ON SYSTEM PRINTER
0C67 0DDB          0C68 2169      DC    AL2 (KCAERR)                                PPL ADDRESS
                                2170 *** END OF EXPANSION ***

0C69 C0 87 0465      2172      B      $SPRNT                                PRINT WAIT FUNCTION
0C6D 057F          0C6E 2173      DC    AL2 ($WAITF)                                PPL OF PRINT
0C6F C0 87 049D      2174      B      $CAIPL                                EXIT TO KEYBOARD MODE
0C73 0C 01 0F81 17D6 2175 KCA010 MVC    DL2RAD (@DADDR), SMBFDA                        INIT USER FILE DADDR
0C79 2C 07 0E26 07   2176      MVC    KCAM2N, ##DUEN (##LUEN,@XR)                MOVE FILE NAME TO MSG
0C7E 3B 40 03C3      2177      SBF    $KEYCD,$KEYDT

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## #KCALL - CALL PROCEDURE FILE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22	PAGE 7
	0C82	34	02	0CBD	2178	ST	KCA015+@OP1,@XR	SAVE @XR REG	
					2180		*****		
					2181	*	CONVERT NO. LINES AND NO. OF DISK UNITS IN THE	*	
					2182	*	FILE AND THE DATE LAST MODIFIED TO EBCIDIC	*	
					2183		*****		
					2184	*			
	0C86	68	02	94 10	2185	MNZ	KCAM5M-@B1(,@BR),##DUEB-KCAEDM(,@XR)	MOVE IN MONTH	
	0C8A	68	03	95 10	2186	MNN	KCAM5M(,@BR),##DUEB-KCAEDM(,@XR)	*	
	0C8E	68	02	97 11	2187	MNZ	KCAM5D-@B1(,@BR),##DUEB-KCAEDA(,@XR)	MOVE IN DAY	
	0C92	68	03	98 11	2188	MNN	KCAM5D(,@BR),##DUEB-KCAEDA(,@XR)	*	
	0C96	68	02	9A 12	2189	MNZ	KCAM5Y-@B1(,@BR),##DUEB(,@XR)	MOVE IN YEAR	
	0C9A	68	03	9B 12	2190	MNN	KCAM5Y(,@BR),##DUEB(,@XR)	*	
	0C9E	E2	02	0A	2191	LA	##DUEF-@B1(,@XR),@XR	CONVERT NO. DISK UNITS TO	
	0CA1	C0	87	1349	2192	B	C2DEC5	* EBCDIC AND MOVE IT TO	
	0CA5	4C	02	69 1387	2193	MVC	KCAM5S(KCAEEL,@BR),C2DVAL	* MESSAGE	
	0CAA	9E	01	05 44	2194	ALC	KCAEDN+@B1(##LUEL,@XR),KCANEG(,@BR)	DECR. NO. LINES	
	0CAE	E2	02	04	2195	LA	KCAEDN(,@XR),@XR	CONVERT NO. LINES ON FILE TO	
	0CB1	C0	87	1349	2196	B	C2DEC5	* EBCDIC AND MOVE IT TO	
	0CB5	4C	02	5E 1387	2197	MVC	KCAM5L(KCAEEL,@BR),C2DVAL	* MESSAGE	
	0CBA	C2	02	0000	2198	KCA015 LA	*-*,@XR	RESTORE XR REG	
	0CBE	4C	01	4A 17D6	2199	MVC	KCAQUE(@DADDR,@BR),SMBFDA	SAVE REL DISK ADDRESS	
	0CC3	6C	01	40 0B	2200	MVC	KCALST(##LUEF,@BR),##DUEF(,@XR)	SAVE NO. UNITS FILE	
	0CC7	6E	00	02 0C	2201	ALC	KCADP1+@DSAD(##LUEI,@BR),##DUEI(,@XR)	ADD FIT LENGTH	
	0CCB	6E	01	02 09	2202	ALC	KCADP1+@DSAD(@DADDR,@BR),##DUEA(,@XR)	* DISK DISP	
	0CCF	0C	04	110F 0DD4	2203	MVC	GRBFRA,KCADP1+@DBFR2(@DPLNG-@B1)	INIT DISK AND CORE	
	0CD5	0C	00	1113 0DD2	2204	MVC	GRSCTR,KCADP1+@DCNT(1)	* ADDRESS AND SECTOR CNT	
	0CDB	3C	00	1116	2205	MVI	GRWHAT,GRAEFI	* AND INDICATOR FOR GRABIT	
					2206	*	DSKL2 KCADP1,WAIT	PRIME GRAPRO BUFFERS	
	0CDF	C0	87	0EE9	2207	B	DL2ICS	PERFORM RELATIVE DISK OP	
	0CE3	0DCF		0CE4	2208	DC	AL2(KCADP1)	DPL ADDRESS	
	0CE5	C0	87	0025	2209	B	\$DISKN	WAIT AND CHECK DISK ERRORS	
	0CE9	057F		0CEA	2210	DC	AL2(\$WAITF)	WAIT DPL ADDRESS	
					2211	***	END OF EXPANSION	***	
	0CEB	C0	87	0F82	2213	KCA020 B	GRABIT	INITIALIZATION PASS- 1ST TIME	
	0CEF	3D	1C	115B	2214	CLI	GRTEXT,@EOF	EOF FOUND ?	
	0CF3	F2	81	16	2215	JE	KCA030	YES, LINE NO. NOT FOUND	
	0CF6	3C	02	1116	2216	MVI	GRWHAT,GRAEFS	RETURN LINE POINTER CODE	
	0CFA	5D	01	3E 44	2217	CLC	KCALIN(2,@BR),KCANEG(,@BR)	DEFAULT LINE NO. ?	
	0CFE	F2	81	16	2218	JE	KCA040	YES	
	0D01	9D	01	00 3E	2219	CLC	0(@SBLNL,@XR),KCALIN(,@BR)	LINE NO. FOUND ?	
	0D05	F2	81	0F	2220	JE	KCA040	YES	
	0D08	C0	04	0CEB	2221	BNH	KCA020	BRANCH LN NO. < PRES VALUE	
	0D0C	D2	02	00	2222	KCA030 LA	0(,@BR),@XR	POINT XR OUT OF ILB	
	0D0F	3C	49	03CD	2223	MVI	\$CAERR,@E308	LINE NO. DOES NOT EXIST	
	0D13	C0	87	0469	2224	B	\$CAERK	EXIT TO ERROR PGM	
					2226		*****		
					2227	*	CALCULATE RELATIVE DB ADDRESS AND DISPLACEMENT	*	
					2228		*****		
					2229	*			
					2230	*KCA040	SPRNT KCAPL4	PRINT FILE NAME	
	0D17	C0	87	0465	2231	KCA040 B	\$SPRNT	PRINT ON SYSTEM PRINTER	
	0D1B	0E27		0D1C	2232	DC	AL2(KCAPL4)	PPL ADDRESS	
					2233	***	END OF EXPANSION	***	



## #KCALL - CALL PROCEDURE FILE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	8
					2235	*	SPRNT KCAPL5				PRINT DISK FILE INFO
0D1D	C0	87	0465		2236	B	\$SPRNT				PRINT ON SYSTEM PRINTER
0D21	0E6B			0D22	2237	DC	AL2(KCAPL5)				PPL ADDRESS
					2238	***	END OF EXPANSION ***				
0D23	4D	00	02 1112		2240	KCA045	CLC KCADP1+@DSAD(1,@BR),GRANDA				SCTR POINTER UPDATED ? 1-5
0D28	F2	81	0D		2241		JE KCA050				YES
0D2B	4E	00	02 1113		2242	ALC	KCADP1+@DSAD(1,@BR),GRSCTR				UPDATE BY BUFFER LEN
0D30	5F	01	40 48		2243	SLC	KCALST(##LUEF,@BR),KCAUPD(,@BR)				DEC BY LEN BUFFER
0D34	C0	87	0D23		2244	B	KCA045				UPDATE 1-5
0D38	0D	01	1115 110F		2245	KCA050	CLC GRANCA(@CADDR),GRBFRA				REL BUFFER SECTOR UPDATE ?
0D3E	F2	81	0E		2246	JE	KCA060				POINTER FOUND ?
0D41	5F	00	02 44		2247	SLC	KCADP1+@DSAD(1,@BR),KCANEG(,@BR)				UPDATE REL DISK DADDR
0D45	0E	01	1115 1118		2248	ALC	GRANCA(@CADDR),GRASSZ				UPDATE BY BUFFER LEN
0D4B	C0	87	0D38		2249	B	KCA050				UPDATE
					2251	*****	*****				
					2252	*	INITIALIZE NUCLUES POINTERS				*
					2253	*****	*****				
					2254	*					
0D4F	0F	00	03E6 03E6		2255	KCA060	SLC \$NEXTB(1),\$NEXTB				INIT DISK DADDR
0D55	74	02	3E		2256	ST	KCALIN(,@BR),@XR				SAVE XR - ERROR
0D58	5F	01	3E 42		2257	SLC	KCALIN(@CADDR,@BR),KCA006(,@BR)				POSITION POINTER
0D5C	4F	01	3E 110F		2258	SLC	KCALIN(@CADDR,@BR),GRBFRA				ADJUST TO SECTOR DISP
0D61	1C	00	03E7 3E		2259	MVC	\$NEXTL(1),KCALIN(,@BR)				INIT DISP POINTER
0D66	0C	00	03E8 111B		2260	MVC	\$DFDET(1),GRASIZ				SAVE GRABIT POINTER
					2262	*****	*****				
					2263	*	COPY SAVE FILE TO TEMPORARY SPF WORKAREA				*
					2264	*****	*****				
					2265	*					
0D6C	1C	01	0F81 4A		2266	KCA070	MVC DL2RAD(@DADDR),KCAQUE(,@BR)				INIT BASE ADDRESS
					2267	*KCA080	DSKL2 KCADP1,WAIT				READ SAVED FILE
0D71	C0	87	0EE9		2268	KCA080	B DL2ICS				PERFORM RELATIVE DISK OP
0D75	0DCF			0D76	2269	DC	AL2(KCADP1)				DPL ADDRESS
0D77	C0	87	0025		2270	B	\$DISKN				WAIT AND CHECK DISK EPRORS
0D7B	057F			0D7C	2271	DC	AL2(\$WAITF)				WAIT DPL ADDRESS
					2272	***	END OF EXPANSION ***				
0D7D	1C	01	0F81 46		2274	MVC	DL2RAD(@DADDR),KCASPF(,@BR)				INIT TO SPF AREA
0D82	0E	01	0F81 0587		2275	ALC	DL2RAD(@DADDR),\$BSADR				ADJUST TO SPF START
					2276	*	DSKL2 KCADP2,WAIT				WRITE TO SPF WORKAREA
0D88	C0	87	0EE9		2277	B	DL2ICS				PERFORM RELATIVE DISK OP
0D8C	0DD5			0D8D	2278	DC	AL2(KCADP2)				DPL ADDRESS
0D8E	C0	87	0025		2279	B	\$DISKN				WAIT AND CHECK DISK ERRORS
0D92	057F			0D93	2280	DC	AL2(\$WAITF)				WAIT DPL ADDRESS
					2281	***	END OF EXPANSION ***				
0D94	5E	01	02 48		2283	ALC	KCADP1+@DSAD(@DADDR,@BR),KCAUPD(,@BR)				UPDATE BY SCTR LNG
0D98	5E	01	08 48		2284	ALC	KCADP2+@DSAD(@DADDR,@BR),KCAUPD(,@BR)				UPDATE BY SCTR LNG
0D9C	5F	01	40 48		2285	SLC	KCALST(2,@BR),KCAUPD(,@BR)				DEC BY SCTR LEND
0DA0	F2	81	04		2286	JZ	KCA100				END OF BUFFER ?
0DA3	C0	84	0D6C		2287	BP	KCA070				COPY OPERATION
					2289	*****	*****				
					2290	*	SET NUCLEUS INDRS FOR PROCEDURE CALL MODE				*

## #KCALL - CALL PROCEDURE FILE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 9
					2291	*****		
					2292	*		
	0DA7	3B	80	03D5	2293	KCA100 SBF	\$INDR2,\$READY PRINT 'READY'	
	0DAB	3B	02	03C3	2294	SBF	\$KEYCD,\$IOYES SET I/O OUT OF CODE	
	0DAF	3A	01	03C3	2295	SBN	\$KEYCD,\$CARDI SIMULATE CARD INPUT	
	0DB3	3C	40	06FA	2296	MVI	\$\$INND,@BLANK RECURSIVELY	
	0DB7	0C	F2	06F9 06FA	2297	MVC	\$\$INND-1(\$\$INND-\$\$INLN),\$INND * CLEAR BUFFER	
	0DBD	3A	08	03E0	2298	SBN	\$DBGUF,\$CALLI CALL PROCEDURE MODE	
	0DC1	3A	10	03D6	2299	SBN	\$INDR3,\$CLBFR SET IYDR TO CLEAR BFR	
	0DC5	C0	87	0465	2300	B	\$SPRNT PRINT WAIT FUNCTION	
	0DC9	057F		0DCA	2301	DC	AL2(\$WAITF) PPL OF PARAMETER CALL	
	0DCB	C0	87	04A1	2302	B	\$CARPL EXIT TO FILE CRUSHER	
					2304	*****		
					2305	* DISK DPL'S USED IN KCALLN *		
					2306	*****		
					2307	*		
				0008	2308	KCASCT EQU 8	NO. OF SCTRS IN BFR	
				0DCF	2309	KCAEQU EQU *	ENTRY POINT	
					2310	*		
					2311	* READ SAVED FILE		
					2312	*KCADP1 DPL FUNC=@DGET,CNT=KCASCT,CADDR=KCABUF		
				0DCF	2313	KCADP1 EQU *	DISK PARAMETER LIST	
	0DCF	01		0DCF	2314	DC AL1(@DGET)	REQUESTED FUNCTION	
	0DD0	00		0DD0	2315	DC AL1(*-*)	CYLINDER ADDRESS	
	0DD1	00		0DD1	2316	DC AL1(*-*)	HEAD/SECTOR/DRIVE/DISK SPEC	
	0DD2	08		0DD2	2317	DC AL1(KCASCT)	SECTOR COUNT	
	0DD3	125B		0DD4	2318	DC AL2(KCABUF)	BUFFER ADDRESS	
					2319	*** END OF EXPANSION ***		
					2321	*		
					2322	* WRITE TO SPF AREA		
					2323	*KCADP2 DPL FUNC=@DPUT,CNT=KCASCT,CADDR=KCABUF		
				0DD5	2324	KCADP2 EQU *	DISK PARAMETER LIST	
	0DD5	02		0DD5	2325	DC AL1(@DPUT)	REQUESTED FUNCTION	
	0DD6	00		0DD6	2326	DC AL1(*-*)	CYLINDER ADDRESS	
	0DD7	00		0DD7	2327	DC AL1(*-*)	HEAD/SECTOR/DRIVER/DISK SPEC	
	0DD8	08		0DD8	2328	DC AL1(KCASCT)	SECTOR COUNT	
	0DD9	125B		0DDA	2329	DC AL2(KCABUF)	BUFFER ADDRESS	
					2330	*** END OF EXPANSION ***		
					2332	*****		
					2333	* CONSTANTS USED IN KCALLN *		
					2334	*****		
					2335	*		
					2336	*KCAERR PPL FUNC=@PRETR,CNT=45,CADDAP=KCAMSG		
				0DDB	2337	KCAERR EQU *	PPL ADDRESS	
	0DDB	C0		0DDB	2338	DC AL1(@PRETR)	FUNCTION REQUESTED	
	0DDC	2D		0DDC	2339	DC AL1(45)	PRINT COUNT	
	0DDD	0DDF		0DDE	2340	DC AL2(KCAMSG)	DATA ADDRESS	
					2341	*** END OF EXPANSION ***		
					2343	KCAMSG EQU *	ERROR MESSAGE	
	0DDF	C5D9D9D6D940F2F3		0E0B	2344	DC CL45'ERROR 231 SPECIFIED FILE NOT A PROCEDURE FILE'		
	0E0C	FFFF		0E0D	2345	KCALIN DC IL2'-1'	DEFAULT START LINE NO.	
					2346	*	* USER SAVED FILE	

## #KCALL - CALL PROCEDURE FILE

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 10	
	0E0E		0E0F	2347	KCALST DS	CL2	NO. UNITS IN	
				2348	*		* USER SAVED FILE	
	0E10	0006	0E11	2349	KCA006 DC	IL2'06'	CONSTANT '6'	
	0E12	FFFF	0E13	2350	KCANEG DC	IL2'-1'	CONSTANT '1' NEG	
	0E14	2300	0E15	2351	KCASPF DC	AL2(##PWR)	START SPF WORKAREA	
	0E16	0008	0E17	2352	KCAUPD DC	AL2(KCASCT)	SECTOR UPDATE POINTER	
	0E18		0E19	2353	KCAQUE DS	CL2	TEMPORARY WORK AREA	
	0E1A		0E1C	2354	KCATEM DS	CL3	TEMPORARY SAVE AREA	
			2356	*****				
			2357	*	MESSAGE USED IN KCALLN		*	
			2358	*****				
			0E1D	2359	KCAM3N EQU	*	FILE NAME SUFFER	
	0E1D	4040	0E1E	2360	DC	CL2' '		
	0E1F		0E26	2361	KCAM2N DS	CL8	FILE NAME	
			2362	*KCAPL4 PPL FUNC=@PRETR,CNT=10,CADDR=KCAMS3N				
			0E27	2363	KCAPL4 EQU	*	PPL ADDRESS	
	0E27	C0	0E27	2364	DC	AL1(@PRETR)	FUNCTION REQUESRED	
	0E28	0A	0E28	2365	DC	AL1(10)	PRINT COUNT	
	0E29	0E1D	0E2A	2366	DC	AL2(KCAM3N)	DATA ADDRESS	
			2367	*** END OF EXPANSION ***				
			0E2B	2369	KCAMS5 EQU	*	SIZE AND DATE MESSAGE	
	0E2B		0E2D	2370	KCAM5L DS	CL3	* NO. OF LINES ON FILE	
	0E2E	40D3C9D5C56B4040	0E35	2371	DC	CL8' LINE, '	*	
	0E36		0E38	2372	KCAM5S DS	CL3	* NO. OF DISK SECTORS IN FILE	
	0E39	40C4C9E2D240E4D5	0E4C	2373	DC	CL20' DISK UNITS IN FILE.'		
	0E4D	40C4C1E3C540D3C1	0E5F	2374	DC	CL19' DATE LAST MODIFIED'		
	0E60	406040	0E62	2375	DC	CL3' - '	*	
	0E63		0E64	2376	KCAM5M DS	CL2	* MONTH	
	0E65	61	0E65	2377	DC	CL1'/'	*	
	0E66		0E67	2378	KCAM5D DS	CL2	* DAY	
	0E68	61	0E68	2379	DC	CL1'/'	*	
	0E69		0E6A	2380	KCAM5Y DS	CL2	* YEAR	
	0E63		2381	ORG	*-8		** INIT DATE TO	
	0E63	F0F161F0F161F7F0	0E6A	2382	DC	CL8'01/01/70'	** 01/01/70	
	0E6B	C0	0E6B	2383	KCAPL5 DC	AL1(@PRETR)	PRINT PARM LIST - 5	
	0E6C	40	0E6C	2384	DC	XL1'40'	*	
	0E6D	0E2B	0E6E	2385	DC	AL2(KCAMS5)	*	
			0002	2386	KCAEDM EQU	2	DISP IN MONTH IN ENTRY DATE	
			0001	2387	KCAEDA EQU	1	DISP IN MONTH IN ENTRY DA.	
			0003	2388	KCAEEL EQU	3	ENTER LN./ SCTR. CNT. LENGTHS	
			0004	2389	KCAEDN EQU	4	DISP FROM UNITS TO LINES	
			2390	*				
			2391	*KCARET PPL FUNC=@RETRN,CNT=@RTRNC				
			0E6F	2392	KCARET EQU	*	PPL ADDRESS	
	0E6F	80	0E6F	2393	DC	AL1(@RETRN)	FUNCTION REQUESTED	
	0E70	80	0E70	2394	DC	AL1(@RTRNC)	PRINT COUNT	
	0E71	0000	0E72	2395	DC	AL2(*-*)	DATA ADDRESS	
			2396	*** END OF EXPANSION ***				
			2398	ORG *-2				
	0E71		2399	* PATCH 120				
			2400	*****				
			2401	* PATCH AREA 1				*
			2402	*****				

#KCALL - CALL PROCEDURE FILE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15,	MOD	00	19/02/22	PAGE	11
	0E71			0EE8	2403	\$\$\$\$\$1	DS CL120							
					2404	*****								
					2405	*	\$DL2P							

PATCH AREA FOR PROGRAM

## DL2ICS - TWO TRACK LOGICAL IOCR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 12
		2407+		*****			
		2408+	*	5703-XM1 COPYRIGHT IBM CORP 1970			*
		2409+	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE. 120-2083			*
		2410+	*				*
		2411+		*****			*
		2412+	*	STATUS -			*
		2413+	*	VERSION 1 MODIFICATION 0			*
		2414+	*				*
		2415+	*	FUNCTION			*
		2416+	*	DL2ICS CONVERTS A RELATIVE DISK ADDRESS TO A PHYSICAL DISK			*
		2417+	*	ADDRESS AND COMBINES IT WITH A BASE ADDRESS PLACED IN DL2RAD			*
		2418+	*	BY THE CALLER.			*
		2419+	*	THE RELATIVE DISK ADDRESS IS A TWO BYTE CYLINDER SECTOR COUNT			*
		2420+	*	IN THE CALLERS DISK PARAMETER LIST (DPL).			*
		2421+	*	THE COUNT IS A CYLINDER SECTOR DISPLACEMENT FROM THE BASE			*
		2422+	*	ADDRESS PLACED IN DL2RAD			*
		2423+	*	DL2ICS IS USED TO PROCESS DATA ON THE FIXED OR REMOVABLE DISK			*
		2424+	*	ON EITHER DRIVE AND PROVIDES THE INTERFACE TO \$DISKN.			*
		2425+	*	THE PHYSICAL DISK ADDRESS IS PLACED IN A COPY OF THE USERS DPL			*
		2426+	*	IN DL2ICS AND A CALL IS MADE TO \$DISKN TO PERFORM THE REQUESTED			*
		2427+	*	OPERATION.			*
		2428+	*				*
		2429+	*	ENTRY POINTS			*
		2430+	*	THE ENTRY IS DL2ICS. THE BASE REGISTER IS SAVED AND RESTORED			*
		2431+	*	ON RETURN. THE INDEX REGISTER IS NOT USED.			*
		2432+	*	THE FORMAT OF THE CALLING SEQUENCE IS AS FOLLOWS:			*
		2433+	*	B DL2ICS			*
		2434+	*	DC AL2(PARMLT)			*
		2435+	*	WHERE PARMLT IS THE ADDR OF THE PARAMETER LIST TO BE PROCESSED.			*
		2436+	*				*
		2437+	*	INPUT			*
		2438+	*	THE INPUT IS A TWO BYTE BASE DISK ADDRESS PLACED IN			*
		2439+	*	DL2RAD AND A SIX BYTE DPL. THE SAME FORMAT AS THE DPL FOR			*
		2440+	*	\$DISKN EXCEPT FOR THE DISK ADDRESS WHICH IS A RELATIVE CYLINDER			*
		2441+	*	AND SECTOR DISPLACEMENT FROM THE BASE ADDRESS IN DL2RAD.			*
		2442+	*				*
		2443+	*	OUTPUT			*
		2444+	*	NONE.			*
		2445+	*				*
		2446+	*	EXTERNAL REFERENCES			*
		2447+	*	\$DISKN - ENTRY TO PHYSICAL DISK ROUTINE IS THE SYSTEM NUCLEUS.			*
		2448+	*				*
		2449+	*	EXITS, NORMAL			*
		2450+	*	NORMAL - EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE POINTER			*
		2451+	*	TO THE DPL. THE BASE REGISTER IS RESTORED. THE RETURN ADDRESS			*
		2452+	*	IS THE ADDRESS RECALL REGISTER (ARR) +2.			*
		2453+	*				*
		2454+	*	EXITS, ERROR			*
		2455+	*	NONE			*
		2456+	*				*
		2457+	*	TABLES/WORK AREAS			*
		2458+	*	THE CONSTANTS AND WORK AREAS RESIDE AT THE END OF THE EXECUTABLE			*
		2459+	*	CODE AND ARE REFERENCED BY A DISPLACEMENT RELATIVE TO THE VALUE			*
		2460+	*	IN INDEX REGISTER 1 (@BR).			*
		2461+	*	DL2SEC AND DL2SAD ARE EQUATED TO OPERAND LOCATIONS IN THE			*
		2462+	*	EXECUTABLE CODE TO ELIMINATE EXCESS WORKING STORAGE.			*

## DL2ICS - TWO TRACK LOGICAL IOCR

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 13
					2463+	*		*
					2464+	*	ATTRIBUTES	*
					2465+	*	* DL2ICS IS REUSABLE	*
					2466+	*		*
					2467+	*	CHARACTER CODE DEPENDENCY	*
					2468+	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
					2469+	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*
					2470+	*		*
					2471+	*	NOTES	*
					2472+	*	ERROR PROCEDURES	*
					2473+	*	NONE	*
					2474+	*		*
					2475+	*	REGISTER USAGE	*
					2476+	*	INDEX REGISTER 1 (@BR) IS SAVED AND RESTORED. THIS REGISTER IS	*
					2477+	*	USED DURING EXECUTION. REGISTER 2 (@BR) IS NOT USED.	*
					2478+	*		*
					2479+	*	SAVED/RESTORED AREAS	*
					2480+	*	NONE	*
					2481+	*		*
					2482+	*	MODIFICATION CONSIDERATIONS	*
					2483+	*	NONE	*
					2484+	*		*
					2485+	*	REQUIRED MODULES	*
					2486+	*	@SYSEQ - COMMON SYSTEM EQUATES.	*
					2487+	*	@FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATORS VALUES EQUATES	*
					2488+	*		*
					2489+	*	OTHER	*
					2490+	*	DL2ICS MAY BE USED TO CONVERT THE DISK ADDRESS ONLY AND NOT TO	*
					2491+	*	CALL \$DISKN IF THE USER MOVES A UCB CODE TO DL2SWH.	*
					2492+	*	THIS OPTION IS NOT STANDARD USAGE.	*
					2493+	*	*****	*
				0EED	2494+		USING DL2000,@BR	ESTABLISH ADDRESSABILITY
					2495+			
				0001	2496+DL2E01	EQU	X'01'	FIELD LENGTH OF 1
				0002	2497+DL2E02	EQU	X'02'	FIELD LENGTH OF 2
				0018	2498+DL2E18	EQU	X'18'	HEX TRACK SECTOR COUNT
				0060	2499+DL2E60	EQU	X'60'	PHYSICAL SECTOR COUNT
				0083	2500+DL2TSD	EQU	X'83'	MASK OFF TRACK SPINDLE DISK
				007C	2501+DL2E7C	EQU	X'7C'	MASK OUT SECTOR COUNT
				0EE9	2502+DL2ICS	EQU	*	ENTRY POINT
	0EE9	34	01	0F6A	2503+	ST	DL2900+@OP1,@BR	SAVE OLD BASE
				0EED	2504+DL2000	EQU	*	START PROCESSING
	0EED	C2	01	0EED	2505+	LA	DL2000,@BR	SET BASE ADDRESS
	0EF1	76	08	8A	2506+	A	DL2C01(,@BR),@ARR	BUMP TO RIGHT BYTE OF ADDR
	0EF4	74	08	14	2507+	ST	DL2001+@DOP2(,@BR),@ARR	ADDR OF PARAM
	0EF7	76	08	8A	2508+	A	DL2C01(,@BR),@ARR	BUMP TO RETURN ADDR
	0EFA	74	08	81	2509+	ST	DL2910+@OP1(,@BR),@ARR	SAVE RETURN ADDR
					2510+	*		
	0EFD	4C	01	1D 0000	2511+DL2001	MVC	DL2002+@DOP2(@DADDR,@BR),*-*	SETUP ADDR OF DPL
	0F02	5E	01	1D 8C	2512+	ALC	DL2002+@DOP2(@CADDR,@BR),DL2C05(,@BR)	DUMP TO RIGHT END
	0F06	4C	05	92 0000	2513+DL2002	MVC	DL2DPL(@DPLNG,@BR),*-*	MOVE USER DPL TO WORK AREA
	0F0B	5F	00	8F 86	2514+DL2005	SLC	DL2LST+@DSAD(DL2E01,@BR),DL2C48(,@BR)	ADJUST SCTR/CYL
	0F0F	F2	82	07	2515+	JM	DL2006	GO TO RESTORE TO CONTINUE
	0F12	5E	00	8E 8A	2516+	ALC	DL2LST+@DCYL(DL2E01,@BR),DL2C01(,@BR)	BUMP CYLINDER COUNT
	0F16	D0	87	1E	2517+	B	DL2005(,@BR)	BACK FOR NEXT CYLINDER
	0F19	5E	00	8F 86	2518+DL2006	ALC	DL2LST+@DSAD(DL2E01,@BR),DL2C48(,@BR)	RESTORE POSITIVE



## DL2ICS - TWO TRACK LOGICAL IOCR

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	MOD	00	19/02/22	PAGE	14
					2519+*								
					2520+*		GET THE LOGICAL SECTOR FROM THE DPL. THE NUMBER IS LEFT ADJUSTED						
					2521+*		TO COMAE IT MTN THE POINTER ESTABLISHED PRIOR TO AN ENTRY.						
0F1D	5C	00	1D	8F	2522+	MVC	DL2SEC(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR NUMBER						
0F21	7C	00	8F		2523+	MVI	DL2LST+@DSAD(,@BR),@ZERO CLEAR SECTOR BYTE						
					2524+*								
					2525+*		MOVE THE RELATIVE START TO THE DFL						
					2526+*								
0F24	5E	01	8F	94	2527+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2RAD(,@BR) DL2RAD TO DPL						
0F28	7D	18	1D		2528+	CLI	DL2SEC(,@BR),DL2E18 IS COUNT OVER A TRACK						
0F2B	F2	82	08		2529+	JL	DL2008 NO GO CHANGE A PHYSICAL ADOR						
0F2E	5E	01	8F	85	2530+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR) BUMP TRACK VALUE						
0F32	5F	00	1D	88	2531+	SLC	DL2SEC(1,@BR),DL2K18(,@BR) DECR BY TRACK VALUE						
0F36	5E	00	1D	1D	2532+DL2008	ALC	DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT 1						
0F3A	5E	00	1D	1D	2533+	ALC	DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT						
0F3E	5C	00	14	8F	2534+	MVC	DL2SAD(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR ADDRESS						
					2535+*								
					2536+*		ZERO OUT THE SECTOR COUNT AND LEAVE THE DISK. SPINDLE AND						
					2537+*		TRACK BITS AS IS TO BE RE INSERTED AFTER THE SECTOR HAS BEEN						
					2538+*		LOCATES.						
					2539+*								
0F42	7B	7C	8F		2540+	SBF	DL2LST+@DSAD(,@BR),DL2E7C TURN OFF						
0F45	7B	83	14		2541+	SBF	DL2SAD(,@BR),DL2TSD OFF TRACK SPINDLE DISK						
0F48	5E	00	14	1D	2542+	ALC	DL2SAD(DL2E01,@BR),DL2SEC(,@BR) COMBINE SECTOR COUNTS						
0F4C	7D	60	14		2543+DL2010	CLI	DL2SAD(,@BR),DL2E60 TEST IF TRACK CROSSED						
0F4F	F2	82	08		2544+	JL	DL2100						
					2545+*								
					2546+*		INCREMENT TRACK BIT. OVERFLOW INTO THE CYLINDER COUNT.						
					2547+*								
0F52	5E	01	8F	85	2548+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR)						
0F56	5F	00	14	83	2549+	SLC	DL2SAD(1,@BR),DL2K60(,@BR) DECR BY TRACK VALUE						
					2550+*								
0F5A	5E	00	8F	14	2551+DL2100	ALC	DL2LST+@DSAD(1,@BR),DL2SAD(,@BR) INSERT SECTOR COUNT						
					2552+*								
0F5E	F2	80	06		2553+DL2110	JC	DL2900,@NOP CONVERSION SWITCH						
				0F5F	2554+DL2SWH	EQU	DL2110+@Q ADDR OF Q CODE FOR SWITCH						
0F61	C0	87	0025		2555+	B	\$DISKN GO PROCESS I/O						
0F65	0F7A			0F66	2556+	DC	AL2(DL2LST) ADDRESS OF DPL						
0F67	C2	01	0000		2557+DL2900	LA	*-*,@BR RESTORE CALLERS BASE						
0F6B	C0	87	0000		2558+DL2910	B	*-*						
					2559+*****								
					2560+*		CONSTANTS						
					2561+*****								
0F6F	0060			0F70	2562+DL2K60	DC	XL2'0060' SECTOR COUNT OF 24 LEFT ADJUSTD						
0F71	0080			0F72	2563+DL2K80	DC	XL2'0080' BIT FOR INCREMENTING TRACK						
0F73	30			0F73	2564+DL2C48	DC	IL1'48' CYLINDER VALUE FOR 1 DISK						
0F74	0018			0F75	2565+DL2K18	DC	XL2'18' HEX SECTORS PER TRACK						
0F76	0001			0F77	2566+DL2C01	DC	IL2'1' CONSTANT FOR REGISTER MODE						
0F78	0005			0F79	2567+DL2C05	DC	IL2'5' DISP TO RIGHT END OF DPL						
					2568+*****								
					2569+*		WORK AREA						
					2570+*****								
				0F7A	2571+DL2LST	EQU	* LIST HIGH END						
0F7A				0F7F	2572+DL2DPL	DS	CL(@DPLNG) WORKING DPL						
				0F7C	2573+DL2PHY	EQU	DL2LST+@DSAD POINTER TO PHYSICAL DADDR						
				0F01	2574+DL2SAD	EQU	DL2001+@DOP2 SAVE SECTOR BYTE FROM DPI						

DL2ICS - TWO TRACK LOGICAL IOCR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	15
0F80		0F0A	2575+DL2SEC	EQU	DL2002+@DOP2				
		0F81	2576+DL2RAD	DS	CL(@DADDR)				
		0F82	2577+DL2END	EQU	*				
			2578+*		END OF DL2ICS				
			2579+***	END OF EXPANSION	***				
			2580 *	\$GRAB					



## GRABIT -- RETRIEVE FILE STATEMENTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 16

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2582+*****
2583+* 5703-XM1      COPYRIGHT IBM CORP. 1970      *
2584+*              REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083  *
2585+*              *
2586+*****
2587+*STATUS      *
2588+*  VERSION 1 MODIFICATION 0      *
2589+*      *
2590+*FUNCTION      *
2591+*  GRABIT LOCATES SEQUENTIAL STATEMENTS IN THE FILE SPECIFIED BY THE *
2592+*  USER, AND, DEPENDING UPON THE OPTION CHOSEN, PASSES BACK THE      *
2593+*  STATEMENT OR SKIPS TO THE NEXT.      *
2594+*  AFTER BEING PRIMED BY THE CALLING PROGRAM, GRABIT READS LOGICALLY *
2595+*  CONSECUTIVE BLOCKS OF SEGMENTED STATEMENTS, FROM THE FILE      *
2596+*  SPECIFIED BY THE USER, INTO CORE.  GRABIT RETURNS WITH @XR      *
2597+*  POINTING TO THE BINARY LINE NUMBER OF THE NEXT STATEMENT.      *
2598+*  IN ADDITION TO @XR, GRABIT PARAMETERS CAN BE SET TO CAUSE THE      *
2599+*  BINARY LINE NR; THE TYPE CODE; AND THE UNPACKED, NON-SEGMENTED      *
2600+*  TEXT OF THE NEXT STMT TO BE PLACED IN AREAS DEFINED BY THE USER.  *
2601+*  IF GRABIT IS USED TO SKIP THROUGH THE STMTS WITHOUT UNPACKING      *
2602+*  THEM OR CHANGING THEIR LENGTH OR SEGMENTED CONDITION, GRABIT CAN      *
2603+*  BE INSTRUCTED TO RETURN THE BLOCKS TO THEIR ORIGINAL DISK ADDRESS  *
2604+*  IF THE SPECIFIED FILE IS ACCESSED BY DL4ICS.      *
2605+*      *
2606+*NOTES      *
2607+*  THIS VERSION OF GRABIT USES DL2ICS AND DL4ICS TO ACCESS THE NEXT  *
2608+*  DATA BLOCK.      *
2609+*****
1069 2610+      USING GRABSE,@BR
0F82 2611+GRABIT EQU *      ENTRY POINT TO ROUTINE
0F82 2612+      ST      GRASBR,@BR      SAVE CALLING PROG'S BASE REG.
0F86 C2 01 1069 2613+      LA      GRABSE,@BR      LOAD LOCAL BASE TO BASE REG.
0F8A 34 08 100C 2614+      ST      GRASAR,@ARR      SAVE RETURN ADDR.
0F8E 7D 00 AD 2615+      CLI     GRWHAT(,@BR),GRAEFI      IS FUNC REQ'D INITIALIZATION ?
0F91 F2 81 13 2616+      JE      GRA100      YES, GO TO INITIALIZATION RTN
2617+* THE ADDRESS OF THE NEXT SEGMENT IN THE CURRENT BUFFER IS INITLZ'D
2618+* AND MAINTAINED IN THE NEXT INST, WHICH LOADS IT TO THE @XR.
0F94 C2 02 0000 2619+GRA020 LA      *-* ,@XR      LOAD NEXT STMT CADDR TO @XR
0F98 7D 01 AD 2620+      CLI     GRWHAT(,@BR),GRAEFR      IS FUNC REQ'D RETURN TEXT ?
0F9B F2 81 90 2621+      JE      GRA300      YES, GO RETURN STMT ROUTINE
0F9E 7D 02 AD 2622+      CLI     GRWHAT(,@BR),GRAEFS      IS FUNC REQ'D SKIP STATEMENT
0FA1 F2 81 3E 2623+      JE      GRA200      YES, GO TO SKIP STMT ROUTINE
0FA4 F2 87 41 2624+      J      GRA210      GO TO SKIP SEGMENT RTN
2625+*
2626+*      INITIALIZATION ROUTINE
2627+*
0FA7 75 02 A6 2628+GRA100 L      GRBFRA(,@BR),@XR      LOAD 1ST BFR ADDR TO DB
0FAA 74 02 AC 2629+      ST      GRANCA(,@BR),@XR      PROPAGATE IT TO NEXT BFR DPL
0FAD 5C 01 A9 A3 2630+      MVC     GRANDA(@DADDR,@BR),GRSRDA(,@BR) INITLZ NEXT BRF DADDR
0FB1 7C FF B2 2631+      MVI     GRASIZ(,@BR),GRAEBS      INITLZ BUFFER SIZE COUNTER
0FB4 5C 00 A4 AA 2632+      MVC     GRACSC(1,@BR),GRSCTR(,@BR) INITLZ SCTR COUNT IN DPL
0FB8 7C 98 BB 2633+      MVI     GRAERR+@Q(,@BR),@E551      SET ERR CODE TO SAVED FILE
0FBB C0 87 0025 2634+      B      $DISKN      WAIT FOR FIRST DATA BLOCKS TO
0FBF 057F 0FC0 2635+      DC      AL2($WAITF)      * GET INTO CORE
0FC1 7D 01 AA 2636+      CLI     GRSCTR(,@BR),GRAESC      IS DL4ICS BEING USED ?
0FC4 F2 01 49 2637+      JNE     GRA260      NO, GO ACCESS 1ST STATEMENT

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## GRABIT -- RETRIEVE FILE STATEMENTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 17

0FC7	7C	97	BB		2638+	MVI	GRAERR+@Q(,@BR),@E550	SET ERR CODE TO SPECIFY WRKFILE
0FCA	5E	01	AC AF		2639+	ALC	GRANCA(@CADDR,@BR),GRASSZ(,@BR)	SET CADDR OF NEXT BFR
0FCE	BD	00	00		2640+GRA140	CLI	GRAELK(,@XR),GRAELN	IS 1ST DB LINK CODE = 0 ?
0FD1	F2	81	07		2641+	JE	GRA150	YES, GO INCR TO NEXT LOGICAL DB
0FD4	7C	02	A9		2642+	MVI	GRANDA(,@BR),GRAEDB	SET DADDR OF NEXT DB
0FD7	6E	00	A9 00		2643+	ALC	GRANDA(1,@BR),GRAELK(,@XR) *	
0FDB	5E	00	A9 B1		2644+GRA150	ALC	GRANDA(1,@BR),GRANPB(,@BR)	INCR TO NEXT BFR DADDR
0FDF	F2	87	2E		2645+	J	GRA260	GO ACCESS FIRST STATEMENT
					2646+*			
					2647+*		ACCESS NEXT STATEMENT OR NEXT SEGMENT ROUTINE	
					2648+*			
0FE2	BD	75	07		2649+GRA200	CLI	GRAEDT(,@XR),GRAEET	END-OF-FILE RECORD ?
0FE5	F2	81	16		2650+	JE	GRA230	YES, RESET OR TO THIS RECORD
0FE8	6F	00	B2 02		2651+GRA210	SLC	GRASIZ(1,@BR),GRAES1(,@XR)	DECR BFR CT BY SEGMENT LENGTH
0FEC	B6	02	02		2652+	A	GRAES1(,@XR),@XR	INCR OR BY SEGMENT LENGTH
0FEF	7D	00	B2		2653+GRA220	CLI	GRASIZ(,@BR),@ZERO	IS BUFFER EMPTY ?
0FF2	D0	82	BA		2654+	BL	GRAERR(,@BR)	GONE NEG, GO TO BAD ERR
0FF5	F2	81	15		2655+	JE	GRA250	YES, GO TO GET NEXT BFR
0FF8	BD	80	01		2656+	CLI	GRAES0(,@XR),@SNUL	IS SEGMENT NULL ?
0FFB	F2	81	0F		2657+	JE	GRA250	YES, GO TO GET NEXT BFR
0FFE	34	02	0F97		2658+GRA230	ST	GRA020+@OP1,@XR	SAVE CADDR OF NEXT SEG.IN INST.
1002	E2	02	06		2659+	LA	GRAEDL(,@XR),@XR	POINT @XR TO LINE NUMBER
1005	C2	01	0000		2660+GRA240	LA	*-*,@BR	RESTORE THE BASE REGISTER
				1008	2661+GRASBR	EQU	GRA240+@OP1	* STORED IN INST AT GRA240
1009	C0	87	0000		2662+GRA245	B	*-*	RETURN TO USER
				100C	2663+GRASAR	EQU	GRA245+@OP1	* TO CADDR SAVED IN GRA245
100D	D0	87	67		2664+GRA250	B	GRA500(,@BR)	ACCESS NEXT BUFFER
1010	BD	80	01		2665+GRA260	CLI	GRAES0(,@XR),@SNUL	IS 1ST SEG. NULL ?
1013	D0	81	BA		2666+	BE	GRAERR(,@BR)	YES, GO TO BAD ERR
1016	B9	02	03		2667+	TBF	GRAES2(,@XR),GRAETP	PRIMARY SEGMENT
1019	C0	10	0FFE		2668+	BT	GRA230	YES, SAVE LOCATION
101D	7D	01	AD		2669+	CLI	GRWHAT(,@BR),GRAEFR	ACTION REQ'D = RETURN TEXT ?
1020	D0	81	BA		2670+	BE	GRAERR(,@BR)	YES, GO TO BAD ERR
1023	7D	04	AD		2671+	CLI	GRWHAT(,@BR),GRAEFG	ACTION REQ'D = SKIP SEGMENT ?
1026	C0	81	0FFE		2672+	BE	GRA230	YES, GO SAVE LOCATION
102A	C0	87	0FE8		2673+	B	GRA210	NO, GO SKIP THIS SEGMENT
					2674+*			
					2675+*		RETURN TEXT ROUTINE	
					2676+*			
102E	2C	01	0E1B 06		2677+GRA300	MVC	GRLINE,GRAEDL(GRAELL,@XR)	SET BINARY LINE NO.IN O/P FIELD
1033	2C	00	0E1C 07		2678+	MVC	GRTYPE,GRAEDT(1,@XR)	SET TYPE CODE IN OUTPUT FIELD
1038	4C	01	58 111D		2679+	MVC	GRTEND(@CADDR,@BR),GRATXT	INITLZ TEXT 0/P CADDR IN INST.
103D	BD	75	07		2680+	CLI	GRAEDT(,@XR),GRAEET	END OF FILE STATEMENT ?
1040	F2	01	08		2681+	JNE	GRA303	NO - GO RESET SEGMENT SWITCH
1043	3C	1C	115B		2682+	MVI	GRTEXT,@EOF	MOVE EOF CODE TO GRTEXT
1047	C0	87	0FFE		2683+	B	GRA230	GO GET OUT
104B	7C	87	01		2685+GRA303	MVI	GRA310+@Q(,@BR),@UCB	INITLZ BRANCH FOR ONLY SEGMENT
104E	BD	00	03		2686+	CLI	GRAES2(,@XR),@SONLY	IS IT AN ONLY SEGMENT ?
1051	F2	81	03		2687+	JE	GRA305	YES, BYPASS BRANCH RESET
1054	7C	80	01		2688+	MVI	GRA310+@Q(,@BR),@NOP	SET FOR MORE SEGMENTS
1057	6F	00	B2 02		2689+GRA305	SLC	GRASIZ(1,@BR),GRAES1(,@XR)	DECR BFR CT BY SEG LENGTH
105B	9F	00	02 B6		2690+	SLC	GRAES1(1,@XR),GRAPSG(,@BR)	DECR SEG CT BY SDF-HDR LENGTH
105F	6C	00	B9 02		2691+	MVC	GRASEG(1,@BR),GRAES1(,@XR)	MOVE TEXT LENGTH TO TEXT CTR
1063	E2	02	07		2692+	LA	GRAELP(,@XR),@XR	INCR TO TYPE CODE
1066	F2	87	2A		2693+	J	GRA317	GO TEST FILE TYPE

## GRABIT -- RETRIEVE FILE STATEMENTS

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 18
1069	C0	87	0FEF		2694+	GRA310	B GRA220	GO ACCESS NEXT STATEMENT
1069					2695+		ORG GRA310	* UNLESS CURRENT STATEMENT
1069	C0	87	0FEF		2696+		BC GRA220,@UCB	* HAS MORE SEGMENTS
106D	6C	00	24 00		2697+		MVC GRASVC(,@BR),@ZERO(1,@XR)	SAVE CURR CHAR IN RESTORE INST
1071	D0	87	67		2698+		B GRA500(,@BR)	ACCESS NEXT BUFFER
1074	BD	02	03		2699+		CLI GRAES2(,@XR),@SLAST	LAST SEGMENT ?
1077	F2	01	03		2700+		JNE GRA313	NO, GO RESET SEG COUNTER
107A	7C	87	01		2701+		MVI GRA310+@Q(,@BR),@UCB	RESET BRANCH OUT
107D	6F	00	B2 02		2702+	GRA313	SLC GRASIZ(1,@BR),GRAES1(,@XR)	DECR BUFFER COUNTER
1081	9F	00	02 B8		2703+		SLC GRAES1(1,@XR),GRASSG(,@BR)	DECR SEG COUNT BY SDF LENGTH
1085	6C	00	B9 02		2704+		MVC GRASEG(1,@BR),GRAES1(,@XR)	MOVE TEXT LNG TO SEG COUNTER
1089	E2	02	04		2705+		LA GRAELS(,@XR),@XR	INCR @XR PAST SECONDARY SDF
108C	BC	00	00		2706+	GRA315	MVI @ZERO(,@XR),*-*	RESTORE CHAR SAVED IN Q-CODE
				108D	2707+	GRASVC	EQU GRA315+@Q	SAVED CHAR HOLD AREA
108F	5E	01	58 B1		2708+	GRA316	ALC GRTEND(@CADDR,@BR),GRABOA(,@BR)	INCR RECEIVING CADDR
				1093	2709+	GRA317	EQU *	MOVE TEXT TO GRTEXT
1093	38	80	03D4		2710+		TBN \$INDR1,\$BASIC	IS FILE TYPE = BASIC ?
1097	F2	90	24		2711+		JF GRA350	NO, BYPASS REPITION CODE CHECK
109A	BD	1B	01		2712+		CLI GRAENC(,@XR),GRAEMR	IS CHAR REF A REPITION CODE ?
109D	F2	84	1E		2713+		JH GRA350	NO, GO RETURN REF'D CHAR
10A0	5C	01	3E 58		2714+		MVC GRATND(@CADDR,@BR),GRTEND(,@BR)	SET RCV'G CADDR IN INSTR
10A4	2C	00	0000 00		2715+	GRA320	MVC *-*,@ZERO(1,@XR)	RETURN REPEATED CHAR TO OUTPUT
				10A7	2716+	GRATND	EQU GRA320+@OP1	* ADDR SUPPLIED
10A9	9F	00	01 B1		2717+		SLC GRAENC(1,@XR),GRAONE(,@BR)	DECR. REPITION COUNTER
10AD	F2	01	07		2718+		JNZ GRA330	IF <> 0, GO INCR O/P CADDR
10B0	5C	01	58 3E		2719+		MVC GRTEND(@CADDR,@BR),GRATND(,@BR)	RESTORE NEW O/P CADDR
10B4	F2	87	0C		2720+		J GRA360	GO INCR @XR
10B7	5E	01	3E B1		2721+	GRA330	ALC GRATND(@CADDR,@BR),GRABOA(,@BR)	INCR O/P CADDR IN INSTR
10BB	D0	87	3B		2722+		B GRA320(,@BR)	GO MOVE CHAR TO OUTPUT
10BE	2C	00	0000 01		2723+	GRA350	MVC *-*,GRAENC(1,@XR)	MOVE NON-REPEAT CHAR TO OUTPUT
				10C1	2724+	GRTEND	EQU GRA350+@OP1	* ADDR SUPPLIED
10C3	E2	02	01		2725+	GRA360	LA GRAENC(,@XR),@XR	INCR @XR TO NEXT CHAR.
10C6	5F	00	B9 B1		2726+		SLC GRASEG(1,@BR),GRABOA(,@BR)	DECR BFR SPACE CTR
10CA	D0	81	00		2727+		BZ GRA310(,@BR)	NO MORE TEXT IN SEG, CHK MORE
10CD	D0	87	26		2728+		B GRA316(,@BR)	MORE TEXT, GO INCR RECV CADDR
					2729+*			
					2730+*			ACCESS NEXT BUFFER ROUTINE
					2731+*			
10D0	74	08	A0		2732+	GRA500	ST GRA5SA(,@BR),@ARR	
10D3	C0	87	0025		2733+		B \$DISKN	WAIT FOR PRIOR READ TO COMPLETE
10D7	057F			10D8	2734+		DC AL2(\$WAITF)	*
				10D9	2735+	GRA600	EQU *	
10D9	7D	01	AA		2736+		CLI GRSCTR(,@BR),GRAESC	DL4ICS BEING USED ?
10DC	F2	01	50		2737+		JNE GRA700	NO, GO REFILL BUFFER
					2738+*			
					2739+*			DL4ICS BEING USED - ACCESS NEXT DATA BLOCK
					2740+*			
10DF	75	02	A6		2741+		L GRBFRA(,@BR),@XR	SAVE CURR BFR STARTING CADDR
10E2	5C	04	A6 AC		2742+		MVC GRBFRA(GRAEDS,@BR),GRANCA(,@BR)	MOVE NEXT DPL TO CURR DPI
10E6	74	02	AC		2743+		ST GRANCA(,@BR),@XR	RESTORE NEXT BFR STARTING CADDR
10E9	75	02	A6		2744+		L GRBFRA(,@BR),@XR	POINT EN TO CURR BFR CADDR
10EC	BD	00	00		2745+		CLI GRAELK(,@XR),GRAELN	NEXT LOGICAL DB = NEXT PHYS DB ?
10EF	F2	81	07		2746+		JE GRA620	YES, GO INCR SCTR DISP.
10F2	7C	02	A9		2747+		MVI GRANDA(,@BR),GRAEDB	SET DADDR OF NEXT DB
10F5	6E	00	A9 00		2748+		ALC GRANDA(1,@BR),GRAELK(,@XR)	*
10F9	5E	00	A9 B1		2749+	GRA620	ALC GRANDA(1,@BR),GRANPB(,@BR)	INCR SCTR DISP FOR NEXT PHYS D

## GRABIT -- RETRIEVE FILE STATEMENTS

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 19
10FD	C0 87 11CF			2750+GRA640	B	DL4ICS	GO READ NEXT DB	
1101	1110			1102 2751+	DC	AL2(GRANPL)	* CADDR OF DPL	
1103	7C FF B2			2752+GRA660	MVI	GRASIZ(,@BR),GRAEBS	RE-INITLZ BFR SPACE COUNT	
1106	C0 87 0000			2753+GRA680	B	*-*	RETURN TO	
				1109 2754+GRA5SA	EQU	GRA680+@OP1	* CADDR SUPPLIED	
				110A 2755+GRACPL	EQU	*	DPL FOR CURRENT BUFFER	
110A	02			110A 2756+GRACFN	DC	AL1(@DPUT)	WRITE FUNCTION CODE	
110B				110C 2757+GRSRDA	DS	CL2	RELATIVE DADDR OF CURR. BFR	
				110B 2758+GRACCA	EQU	GRSRDA-@B1	CYLINDER BYTE OF DISK ADDR.	
110B				2759+	ORG	*-2	* INITIALIZED TO THE	
110B	0503			110C 2760+	DC	AL2(@WSTBL)	* 1ST DB OF THE WORK FILE	
110D				110D 2761+GRACSC	DS	CL1	SECTOR COUNT	
110E	125B			110F 2762+GRBFRA	DC	AL2(GRBFR1)	CADDR OF CURRENT BUFFER	
				1110 2763+GRANPL	EQU	*	DPL FOR NEXT BUFFER	
1110	01			1110 2764+	DC	AL1(@DGET)	READ FUNCTION CODE	
1111				1112 2765+GRANDA	DS	CL2	RELATIVE DADDR OF NEXT BFR.	
1113				1113 2766+GRSCTR	DS	CL1	SECTOR COUNT	
1113				2767+	ORG	*-1	* INITIALIZE TO 1	
1113	01			1113 2768+	DC	XL1'01'		
1114				1115 2769+GRANCA	DS	CL2	CADDR OF NEXT BUFFER	
1116				1116 2770+GRWHAT	DS	CL1	USER SPEC'D FUNCTION CODE	
1116				2771+	ORG	*-1	SET TO ZERO FOR	
1116	00			1116 2772+	DC	XL1'00'	* INITIALIZATION CALL	
1117	0100			1118 2773+GRASSZ	DC	XL2'0100'	SECTOR SIZE	
1119	0001			111A 2774+GRANPB	DC	XL2'01'	DISP TO NEXT PHYS BFR DADDR	
				0002 2775+GRAEDB	EQU	2	DB DADDR ADJUSTMENT FACTOR	
111B				111B 2776+GRASIZ	DS	CL1	BUFFER SPACE COUNTER	
111C	115B			111D 2777+GRATXT	DC	AL2(GRTEXT)	ADDRESS OF TEXT OUTPUT AREA	
111E	0007			111F 2778+GRAPSG	DC	XL2'07'	SIZE OF PRIMARY SEG. HEADER	
1120	0004			1121 2779+GRASSG	DC	XL2'04'	SIZE OF 2NDARY SEG. HEADER	
				111A 2780+GRAONE	EQU	GRANPB	DECR FACTOR FOR REPITITION CTR	
				111A 2781+GRABOA	EQU	GRANPB	INCR FACTOR FOR NEXT TEXT CHAR	
				111A 2782+GRANXC	EQU	GRANPB	CYL ADJ FACTOR	
1122				1122 2783+GRASEG	DS	CL1	SEGMENT TEXT COUNTER	
				0000 2784+GRAEFI	EQU	X'00'	INITIALIZATION FUNC. CODE	
				0003 2785+GRAEFW	EQU	X'03'	WRITE BACK ONLY FUNC. CODE	
				0001 2786+GRAEFR	EQU	X'01'	RETURN TEXT FUNC. CODE	
				0002 2787+GRAEFS	EQU	X'02'	SKIP STATEMENT FUNC. CODE	
				0004 2788+GRAEFG	EQU	X'04'	SKIP SEGMENT FUNC. CODE	
				00FF 2789+GRAEBS	EQU	X'FF'	BUFFER TEXT AREA SIZE	
				0001 2790+GRAESC	EQU	X'01'	SCTR COUNT IF DL4ICS USED	
				0000 2791+GRAELK	EQU	X'00'	DISP TO LINK CODE WITHIN DB	
				0000 2792+GRAELN	EQU	X'00'	LINK CODE TO NEXT PHYS DB	
				0001 2793+GRAEXA	EQU	X'01'	ADJ TO '@' EQU'S FOR @XR ADDR	
				0006 2794+GRAEDL	EQU	@SBLN+GRAEXA	DISP TO STMT BINARY LINE NO.	
				0007 2795+GRAEDT	EQU	@STYPE+GRAEXA	DISP TO STMT TYPE CODE	
				0002 2796+GRAELL	EQU	X'02'	LENGTH OF BINARY LINE NUMBER	
				0075 2797+GRAEET	EQU	@EOFTC	TYPE CODE OF END-OF-FILE STMT	
				0001 2798+GRAES0	EQU	@SDF0+GRAEXA	DISP TO SDF0 - NULL INDR	
				0002 2799+GRAES1	EQU	@SDF1+GRAEXA	DISP TO SDF1 - LENGTH	
				0003 2800+GRAES2	EQU	@SDF2+GRAEXA	DISP TO SDF2 - SEGMENTATION CDE	
				0002 2801+GRAETP	EQU	X'02'	MASK FOR A PRIMARY SEGMENT	
				0007 2802+GRAELP	EQU	X'07'	LENGTH OF PRIMARY SEG.	
				0004 2803+GRAELS	EQU	X'04'	LENGTH OF SECONDARY SEG.	
				001B 2804+GRAEMR	EQU	27	MAX. REPITITION CODE	
				0001 2805+GRAENC	EQU	X'01'	DISP TO NEXT TEXT CHARACTER	



## GRABIT -- RETRIEVE FILE STATEMENTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 20
		0001	2806+	GRAEDC EQU	X'01'	DISP TO CYL IN DADDR
		1069	2807+	GRABSE EQU	GRA310	BASE ADDRESS OF GRABIT
		0005	2808+	GRAEDS EQU	X'05'	LNG OF DPL DADDR, SCTR-CT.
		0006	2809+	GRAEW2 EQU	6	SECOND CYL OF WORK FILE
			2810+*			
			2811+*		ERROR ROUTINE	
			2812+*			
1123	3C 98 03CD		2813+	GRAERR MVI	\$CAERR,@E551	SET BAD FILE ERROR CODE
			2814+*			THE ABOVE ERROR CODE IS INITIALLY SET FOR A SAVED FILE,
			2815+*			BUT IS MODIFIED TO THE WORK FILE IF DL4ICS IS USED
1127	3A 04 03D6		2816+	SBN	\$INDR3,\$ERHRD	SET INDR FOR HARD ERROR
112B	C0 87 0469		2817+	B	\$CAERK	GO TO ERRPGM INTERFACE
			2818+*			
			2819+*		DL2ICS BEING USED - ACCESS NEXT DATA BLOCK	
			2820+*			
		112F	2821+	GRASHT EQU	*	ORG HERE TO OVERLAY DL2ICS HDLG
112F	5F 00 A4 B1		2822+	GRA700 SLC	GRACSC(1,@BR),GRANPB(@BR)	DECR IN CORE SCTR COUNT
1133	F2 81 07		2823+	JZ	GRA720	IF ZERO, GO GET NEXT BFR BLOCK
1136	5E 01 A6 AF		2824+	ALC	GRBFRA(@CADDR,@BR),GRASSZ(@BR)	INCR DPL CADDR TO NEXT DB
113A	F2 87 18		2825+	J	GRA740	GO LOAD CADDR TO @XR
113D	5E 00 A9 AA		2826+	GRA720 ALC	GRANDA(1,@BR),GRSCTR(@BR)	INCR LAST DADDR BY SCTRS READ
1141	C0 87 0EE9		2827+	GRA730 B	DL2ICS	REFILL CORE BUFFER
1145	1110	1146	2828+	DC	AL2(GRANPL)	CADDR OF DPL
1147	5C 00 A4 AA		2829+	MVC	GRACSC(1,@BR),GRSCTR(@BR)	RE-INITLZ BFR SECTOR COUNT
114B	5C 01 A6 AC		2830+	MVC	GRBFRA(@CADDR,@BR),GRANCA(@BR)	RE-INITLZ BFR START CADDR
114F	C0 87 0025		2831+	B	\$DISKN	WAIT FOR READ COMPLETE
1153	057F	1154	2832+	DC	AL2(\$WAITF)	*
1155	75 02 A6		2833+	GRA740 L	GRBFRA(@BR),@XR	POINT @XR TO START OF BFR
1158	D0 87 9A		2834+	B	GRA660(@BR)	GO RE-INITLZ BFR SPACE CTR
			2835+***		END OF GRABIT	***
			2836	*****		*****
			2837	*	SYNTAX CHECKING IN KCALL	*
			2838	*****		*****
			2839	*		
		115B	2840	KCATOP EQU	*	TEXT AREA SDF
		125B	2841	KCABUF EQU	KCATOP+256	START OR BUFFERS
			2842	*KCASYN	ENTER BASE=KCAEQL	
		0DCF	2843		USING KCAEQU,@BR	BASE ADDRESS SPECIFICATION
		115B	2844	KCASYN EQU	*	MODULE ENTRY POINT
115B	C2 01 0DCF		2845	LA	KCAEQU,@BR	LOAD BASE REGISTER
			2846	***	END OF EXPANSION	***
			2848	KCA800 L	\$XRSAB,@XR	POINT TO KEYBOARD DEL
1163	C0 87 11CF		2849	B	SCANIT	SCAN ACROSS BLANKS
1167	F2 81 40		2850	JE	KCA950	ERROR EXIT
116A	C0 87 1210		2851	B	SUFFER	FILE SPEC SYNTAX CHECKED
116E	F2 82 47		2852	JL	KCA970	ERROR RETURN
1171	3C 01 11EC		2853	KCA810 MVI	SCAMMA,SCACOM	ALLOW JNE COMMA
1175	C0 87 11CF		2854	B	SCANIT	SCAN BLANKS, COMMA
1179	F2 82 3C		2855	JM	KCA970	ERROR RETURN
117C	C0 87 12D9		2856	B	C4BIN2	CONVERT START LINE NO.
1180	F2 82 20		2857	JL	KCA900	JUMP ON ERROR
1183	F2 81 0C		2858	JZ	KCA820	NON-NUMERIC RETURN
1186	4C 01 3E 1343		2859	MVC	KCALIN(2,@BR),C4BVAL	SAVE CONVERSION
118B	C0 87 11CF		2860	B	SCANIT	SCAN ACROSS BLANKS
118F	F2 82 26		2861	JL	KCA970	JUMP ON ERROR RETURN

GRABIT -- RETRIEVE FILE STATEMENTS

ERR LOC		OBJECT CODE		ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		19/02/22	PAGE	21
1192	3C	11	03CD		2862	KCA820	MVI \$CAERR,@E131					INVALID PARM ERROR CODE
1196	BD	1E	00		2863		CLI 0(,@XR),@EOS					EOS CODE ?
1199	F2	81	20		2864		JE KCA980					YES, FIND SAVED FILE
119C	3D	00	120F		2865		CLI SCACNT,@ZERO					POINTER MOVED ?
11A0	F2	01	04		2866		JNE KCA910					JUMP IF POINTER MOVED
11A3	35	02	1347		2867	KCA900	L C4BSAV,@XR					REPLACE POINTER TI 1ST CHAR
11A7	F2	87	0E		2868	KCA910	J KCA970					ERROR EXIT
11AA	3C	10	03CD		2869	KCA950	MVI \$CAERR,@E130					REQ'D PARM MISSING CODE
11AE	BD	1E	00		2870		CLI 0(,@XR),@EOS					EXIT IF NO FILE SPEC
11B1	F2	81	04		2871		JE KCA970					* NAME FOUND
11B4	3C	18	03CD		2872		MVI \$CAERR,@E139					INVALID DEL CODE
11B8	C0	87	0469		2873	KCA970	B \$CAERK					PRINT ERROR EXIT

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15,	MOD	00	19/02/22	PAGE	22
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		2875	*****					
		2876	*	SEARCH FOR SAVED FILE				
		2877	*****					
		2878	*					
11BC	C0	87	138D	2879	KCA980	B	SFINDF MITT	SEARCH FOR SAVED FILE
11C0	39	88	17BC	2880		TBF	SMIND1,SM1FNE+SM1PNF	BRANCH IF NOT FOUND
		2881	*				* ERROR RETURN	
11C4	C0	10	0C55	2882		BT	KCALLN	FILE FOUND
11C8	D2	02	00	2883		LA	0(,@BR),@XR	POINT XR OUT OF BFR
11CB	C0	87	0469	2884		B	\$CAERK	GOTO ERROR PRGM
		2885	*					
		125B	2886	GRBFR1	EQU	KCABUF		LEFT BYTE BFR AREA
		115B	2887	GRTEXT	EQU	KCATOP		TEXT AREA
		0E1B	2888	GRLINE	EQU	KCATEM-1		LINE NO.
		0E1C	2889	GRTYPE	EQU	KCATEM		TYPE FUNC
		11CF	2890	DL4ICS	EQU	*		
			2891	*		\$CANI		

## SCANIT - DELIMETER SCAN MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 23
		2893+		*****			
		2894+*	5703-XM1	COPYRIGHT IBM CORP. 1970			*
		2895+*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083			*
		2896+*					*
		2897+		*****			*
		2898+*		STATUS			*
		2899+*		VERSION 1 MODIFICATION 0			*
		2900+*					*
		2901+*		FUNCTION			*
		2902+*		THE FUNCTION OF SCANIT IS TO SCAN PAST VALID DELIMITERS AND			*
		2903+*		RETURN A POINTER TO THE FIRST CHARACTER THAT'S NOT A DELIMITER.			*
		2904+*					*
		2905+*		ENTRY POINTS			*
		2906+*		* THE ENTRY POINT IS SCANIT.			*
		2907+*		* THE CALLING SEQUENCE IS AS FOLLOWS:			*
		2908+*		B SCANIT			*
		2909+*		WITH REGISTER 2 (@XR) POINTING TO THE FIRST CHARACTER TO BE			*
		2910+*		EXAMINED.			*
		2911+*					*
		2912+*		INPUT			*
		2913+*		NONE			*
		2914+*					*
		2915+*		OUTPUT			*
		2916+*		NONE			*
		2917+*					*
		2918+*		EXTERNAL REFERENCES			*
		2919+*		\$CAERR - ERROR CODE SAVE AREA			*
		2920+*					*
		2921+*		EXITS, NORMAL			*
		2922+*		NORMAL EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2923+*		SCANIT IN THE CALLING ROUTINE. THE PSR (REGISTER 4) WILL CONTAIN			*
		2924+*		A ZERO IF NO DELIMITERS WERE FOUND OR A HIGH CONDITION IF ONE OR			*
		2925+*		MORE DELIMITERS WERE SCANNED.			*
		2926+*					*
		2927+*		EXITS, ERROR			*
		2928+*		ERROR EXIT FROM SCANIT IS TO THE BYTE FOLLOWING THE BRANCH TO			*
		2929+*		SCANIT IN THE CALLING ROUTINE. THE PSR WILL CONTAIN A LOW			*
		2930+*		CONDITION.			*
		2931+*					*
		2932+*		TABLES/WORKAREAS			*
		2933+*		* SCACNT - AREA CONTAINING NUMBERS OF DELIMITERS SCANNED			*
		2934+*		* SCAMMA - LOC WHERE SCACOM MAY BE MOVED IF ONE COMMA IS ALSO			*
		2935+*		TO BE CONSIDERED A DELIMITER. MOVING SCACOF BACK INTO SCAMMA			*
		2936+*		INDICATES THAT ONLY BLANKS SHOULD BE CONSIDERED DELIMITERS.			*
		2937+*					*
		2938+*		ATTRIBUTES			*
		2939+*		RELOCATABLE AND RE-USABLE			*
		2940+*					*
		2941+*		CHARACTER CODE DEPENDENCY			*
		2942+*		THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR			*
		2943+*		INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.			*
		2944+*					*
		2945+*		NOTES			*
		2946+*		ERROR PROCEDURES			*
		2947+*		THE ONLY ERROR CONDITION DETECTED BY SCANIT IS THE CASE WHERE			*
		2948+*		A CARRIAGE-RETURN CODE FOLLOWS A COMMA. UPON RETURN TO THE			*



## SCANIT - DELIMETER SCAN MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 24

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2949+*      CALLING ROUTINE, @PSR WILL BE SET TO A LOW CONDITION, THE
2950+*      ERROR CODE IS SET IN $CAERR, AND MG WILU BE POINTING TO THE
2951+*      CARRIAGE-RETURN CHARACTER.
2952+*
2953+*      REGISTER USAGE
2954+*      REGISTER 2 (@XR) IS USED AS A POINTER ACROSS THE AREA BEING
2955+*      SCANNED FOR DELIMITERS.
2956+*
2957+*      SAVED/RESTORED AREAS
2958+*      UPON ENTRY TO SCANIT, REGISTER 8 (@ARR) IS SAVED AND USED AS
2959+*      THE RETURN ADDRESS.
2960+*
2961+*      MODIFICATION CONSIDERATIONS
2962+*      NONE
2963+*
2964+*      REQUIRED MODULES
2965+*      * @SYSEQ - COMMON SYSTEM EQUATES
2966+*      * @FXDEQ - FIXED NUCLEUS ADDRESSES EQUATES
2967+*
2968+*      OTHER
2969+*      SCANIT IS INITIALIZED TO BYPASS BLANKS ONLY. IF SCACOM IS
2970+*      MOVED TO SCAMMA, ONE COMMA WILL BE SCANNED ALONG WITH BLANKS.
2971+*      THE INSTRUCTION TO DO THIS IS AS FOLLOWS:
2972+*      MVI    SCAMMA,SCACOM
2973+*
2974+*      TO DROP THE COMMA FROM ITS DELIMITER STATUS, SCACOF SHOULD BE
2975+*      MOVED TO SCAMMA, USING THE FOLLOWING INSTRUCTION:
2976+*      MVI    SCAMMA,SCACOF
2977+*
2978+*****

2980+*
2981+*      EQUATES USED IN THIS SUBROUTINE
2982+*
0001 2983+SCAINC EQU    1      TO INCREMENT POINTER
0001 2984+SCACOM EQU    @BNE   SWITCH TO ALLOW SCANNING COMMA
0087 2985+SCACOF EQU    @UCB   SWITCH TO SET OFF THE INDICATON
2986+*      * FOR SCANNING A COMMA
11CF 2987+SCANIT EQU    *      ENTRY POINT TO THIS SUBROUTINE
11CF 34 08 120B 2988+      ST    SCA500+@OP1,@ARR   SAVE RETURN ADDRESS
11D3 34 02 120D 2989+      ST    SCASVE,@XR       SAVE POINTER VALUE
11D7 3C 04 03CD 2990+      MVI    $CAERR,@E110      SET ERROR CODE
11DB F2 87 03  2991+      J      SCA200        GO TO PROCESS

11DE E2 02 01  2993+SCA100 LA    SCAINC(,@XR),@XR   INCREMENT POINTER TO NEXT CHAR
11E1 BD 40 00  2994+SCA200 CLI    0(,@XR),@BLANK   IS THIS CHAR BLANK ?
11E4 C0 81 11DE 2995+      BE    SCA100        YES, FETCH NEXT ONE
2996+*
11E8 BD 6B 00  2997+      CLI    0(,@XR),@COMMA      IS IT A COMMA ?
11EB F2 87 10  2998+SCA250 JC    SCA400,@UCB        UCS TO RETURN -- OR NOP IF
2999+*      * SCAMMA IS ACTIVE AND CHAR
11EE E2 02 01  3000+SCA300 LA    SCAINC(,@XR),@XR   INCREMENT POINTER TO NEXT CHAR
11F1 BD 40 00  3001+      CLI    0(,@XR),@BLANK   IS THIS CHAR A BLANK ?
11F4 C0 81 11EE 3002+      BE    SCA300        YES, FETCH NEXT ONE
3003+*

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SCANIT - DELIMETER SCAN MODULE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE 25
11F8	BD	1F 00		3004+	CLI	0(,@XR),@EOS+1			IS THIS EOS ?
11FB	F2	82 0A		3005+	JL	SCA500			IF NOT, SKIP ERROR ROUTINE
				3006+*					
11FE	34	02 120F		3007+SCA400	ST	SCACNT,@XR			SAVE NEW POINTER VALUE
1202	0F	01 120F 120D		3008+	SLC	SCACNT(2),SCASVE			SET PSR TO EQUAL IF POINTER
				3009+*					* NOT ADVANCED
1208	C0	87 0000		3010+SCA500	B	*-*			YES, RETURN
			11EC	3011+SCAMMA	EQU	SCA250+@Q			TO SET SCAN COMMA INDICATOR
				3012+*					
				3013+*		SAVE AREA			
				3014+*					
			120C	3015+SCASV1	EQU	*			FIRST BYTE OF SCASVE
120C			120D	3016+SCASVE	DS	CL2			ORIGINAL POINTER VALUE SAVE
120E			120F	3017+SCACNT	DS	CL2			SAVE AREA FOR TOTAL CHAR SCAN
				3018+*					
						END OF SCANIT			
				3019+***		END OF EXPANSION ***			
				3020 *		\$UFFE			

## SUFFER - FILE SPECIFICATION CHECKER

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 26
3022+				*****			
3023+	*	5703-XM1		COPYRIGHT IBM CORP. 1970			*
3024+	*			REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE 120-2083			*
3025+	*						*
3026+				*****			
3027+	*			STATUS			*
3028+	*			VERSION 1 MODIFICATION 0			*
3029+	*						*
3030+	*			FUNCTION			*
3031+	*			THE FUNCTION OF SUFFER IS TO SYNTAX CHECK A FILE SPECIFICATION			*
3032+	*			AND SCAN TO THE FIRST NON-DELIMITER FOLLOWING A VALID ONE.			*
3033+	*			A SPECIFICATION CAN CONSIST OF ANY OF THE FOLLOWING:			*
3034+	*			* FILENAME / PASSWORD / VOL-D			*
3035+	*			* FILENAME / PASSWORD			*
3036+	*			* FILENAME			*
3037+	*			**FILENAME / VOL-ID			*
3038+	*			**FILENAME			*
3039+	*			*FILENAME / VOL-ID			*
3040+	*			*FILENAME			*
3041+	*						*
3042+	*			ENTRY POINTS			*
3043+	*			SUFFER - FIRST LOCATION IN PROGRAM. SUFFER EXPECTS INDEX			*
3044+	*			REGISTER 2 (@XR) TO BE ADDRESSING THE LEFTMOST CHARACTER			*
3045+	*			OF THE FILE SPECIFICATION. THE CALLING SEQUENCE IS:			*
3046+	*			B SUFFER			*
3047+	*						*
3048+	*			INPUT			*
3049+	*			INPUT TO SUFFER IS INDE, REGISTER 2 (@XR) ADDRESSING THE LEFTMOST			*
3050+	*			CHARACTER OF THE FILE-SPECIFICATION TO BE SYNTAX CHECKED.			*
3051+	*						*
3052+	*			OUTPUT			*
3053+	*			OUTPUT FROM SUFFER UPON NORMAL EXIT IS INDEX REGISTER 2 (@XR)			*
3054+	*			ADDRESSING THE FIRST NON-DELIMITER FOLLOWING THE FILE SPECIFICA-			*
3055+	*			TION. THE FILENAME WILL BE SAVED IN SMFNAM IN TSMLES. THE PASS-			*
3056+	*			WORD IF SPECIFIED WILL BE SAVED IN SMPSWD IN TSMLES, OTHERWISE IT			*
3057+	*			WILL BE BLANKS. (NOTE: ** OR * FILENAMES, WHEN SPECIFIED, WILL			*
3058+	*			CAUSE THE *'S TO BE SAVED IN SMPSWD). THE VOL-ID, IF SPECIFIED,			*
3059+	*			WILL BE SAVED IN SMVOID IN TSMLES, OTHERWISE A BLANK IS MOVED			*
3060+	*			TO SMVOID AS AN INDICATOR.			*
3061+	*			OUTPUT FROM SUFFER UPON ERROR EXIT IS INDEX REGISTER 2 (@XR)			*
3062+	*			ADDRESSING THE INVALID CHARACTER (SEE EXITS,ERROR). THE PROGRAM			*
3063+	*			STATUS REGISTER (@PSR) WILL CONTAIN A LOW CONDITION CODE.			*
3064+	*						*
3065+	*			EXTERNAL REFERENCES			*
3066+	*			SALPHR - ADDR IN SALPHA - SYNTAX CHECKED PARAMETER			*
3067+	*			SALPH6 - ENTRY TO SALPHA - SYNTAX CHECK VOL-ID			*
3068+	*			SALPH8 - ENTRY TO SALPHA - SYNTAX CHECK PASSWORD; FILENAME			*
3069+	*			SAL375 - SAVE AREA IN SALPHA - ERROR POINTER SAVE AREA			*
3070+	*			SCANIT - DELIMITER SCAN MODULE			*
3071+	*			SCAMMA - SWITCH IN SCANIT - DELIMITER SCAN TYPE INDR			*
3072+	*			SCACOF - MASK IN SCANIT TO BYPASS BLANKS ONLY			*
3073+	*			SCACOM - MASK IN SCANIT - BYPASS 1 COMMA			*
3074+	*			SCACNT - COUNTER IN SCANIT - NUMBER OF SCANNED BLANKS			*
3075+	*			TSMLES - DATA MANAGEMENT COMMUNICATIONS REGIONS			*
3076+	*			\$CAERR - ADDR IN SYSTEM NUCLEUS-ERROR CODE SAVE AREA			*
3077+	*						*

## SUFFER - FILE SPECIFICATION CHECKER

ERR LOC	OBJECT CODE	ADDR STMT SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 27
3078+	*	EXITS, NORMAL	*
3079+	*	NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE. INDEX REGISTER	*
3080+	*	2 (@XR) WILL BE ADDRESSING THE FIRST NON-DELIMITER FOLLOWING	*
3081+	*	THE FILE SPECIFICATION. THE PROGRAM STATUS REGISTER (@PSR)	*
3082+	*	WILL CONTAIN A NON-LOW CONDITION CODE.	*
3083+	*		*
3084+	*	EXITS, ERROR	*
3085+	*	NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE. INDEX REGISTER	*
3086+	*	2 (@XR) WILL BE ADDRESSING THE LEFTMOST BYTE OF AN INVALID	*
3087+	*	PARAMETER OR WILL BE ADDRESSING AN INVALID DELIMITER IN THE	*
3088+	*	FILE SPECIFICATION. THE PROGRAM STATUS REGISTER (@PSR)	*
3089+	*	WILL CONTAIN A LOW CONDITION CODE.	*
3090+	*		*
3091+	*	TABLES/WORK AREAS	*
3092+	*	SUFFER DOES NOT CONTAIN ANY TABLES OR WORK AREAS.	*
3093+	*		*
3094+	*	ATTRIBUTES	*
3095+	*	RELOCATABLE, REUSABLE	*
3096+	*		*
3097+	*	CHARACTER CODE DEPENDENCY	*
3098+	*	CHARACTER CODE DEPENDENCY CLASS - C	*
3099+	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-	*
3100+	*	TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE	*
3101+	*	USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-	*
3102+	*	DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN	*
3103+	*	A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE	*
3104+	*	SPECIAL CONSIDERATIONS FOR THIS MODULE:	*
3105+	*	* @ASTER - PART OF @SYSEQ	*
3106+	*	* @SLASH - PART OF @SYSEQ	*
3107+	*	* @COMMA - PART OF @SYSEQ	*
3108+	*	* @EOS - PART OF @SYSEQ	*
3109+	*	* @BLANK - PART OF @SYSEQ	*
3110+	*	* CHARACTER LEFT PARENTHESIS - C'('	*
3111+	*		*
3112+	*	NOTES	*
3113+	*	ERROR PROCEDURES	*
3114+	*	THE FOLLOWING ERROR CONDITIONS WILL CAUSE SUFFER TO RETURN A	*
3115+	*	LOW CONDITION CODE TO THE CALL ROUTINE AND INDEX REGISTER 2	*
3116+	*	(@XR) ADDRESSING THE ERROR:	*
3117+	*	* ANY ERROR RETURNED FROM SALPHA (NOTE SALPHA ERRORS).	*
3118+	*	* ANY ERROR RETURNED FROM SCANIT (NOTE SCANIT ERRORS).	*
3119+	*	* ANY INVALID DELIMITER FOLLOWING THE SPECIFICATION	*
3120+	*	* ANY INVALID PARAMETER WITHIN THE SPECIFICATION.	*
3121+	*	NOTE MODIFICATION CONSIDERATIONS.	*
3122+	*		*
3123+	*	REGISTER USAGE	*
3124+	*	INDEX REGISTER 1 (@BR) IS SAVED AND RESTORED FOR THE CALL	*
3125+	*	ROUTINE AND USED AS A BASE FOR ADDRESSING WITHIN THE MODULE.	*
3126+	*	INDEX REGISTER 2 (@XR) IS USED AS AN INDEX TO SCAN THE FILE	*
3127+	*	SPECIFICATION.	*
3128+	*		*
3129+	*	SAVED/RESTORED AREAS	*
3130+	*	N/A	*
3131+	*		*
3132+	*	MODIFICATION CONSIDERATIONS	*
3133+	*	SUFFER'S NORMAL DELIMITER SCAN UPON EXIT ALLOWS ONLY BLANKS	*

SUFFER - FILE SPECIFICATION CHECKER

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	28
		3134+	*		AND 1 COMMA FOLLOWING THE FILE-SPECIFICATION. AN EXCEPTION				*
		3135+	*		TO THIS USE (UTILIZED BY THE MODULE KALLOC) IS THE OPTION OF				*
		3136+	*		HAVING A LEFT PARENTHESIS IE. '(' FOLLOWING THE FILE SPECI-				*
		3137+	*		FICATION INSTEAD OF A COMMA. THIS USE IS EFFECTED BY				*
		3138+	*		MODIFYING THE Q-CODE OF THE INSTRUCTION LABELED SUF625 WITH A				*
		3139+	*		BRANCH EQUAL CONDITION CODE.				*
		3140+	*						*
		3141+	*	REQUIRED MODULES					*
		3142+	*	SALPHA	- FILENAME, PASSWORD, VOL-ID ALPHAMERIC SYNTAX CHECKER				*
		3143+	*	SCANIT	- DELIMITER SCAN ROLTIME				*
		3144+	*	TSMLES	- DATA MANAGEMENT COMMUNICATION REGIONS				*
		3145+	*	@DIREQ	- SYSTEM LIBRARY DIRECTORY EQUATES				*
		3146+	*	@ERMEQ	- ERROR MESSAGE EQUATES				*
		3147+	*	@FXDEQ	- COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS				*
		3148+	*	@SYSEQ	- COMMON SYSTEM SOFTWARE EQUATES				*
		3149+	*						*
		3150+	*	OTHER					*
		3151+	*	N/A					*
		3152+	*	*****					*

## SUFFER - FILE SPECIFICATION CHECKER

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 29
					3154+	*****		
					3155+	*		
					3156+		INITIALIZATION OF MODULE	
					3157+	*		
					3158+	*****		
					3159+	*		
					3160+	*SUFFER ENTER BASE=SUFBSSE,EXIT=SUFND,@BR,,@ARR		
				1243	3161+	USING SUFBSE,@BR	BASE ADDRESS SPECIFICATION	
				1210	3162+	SUFFER EQU *	MODULE ENTRY POINT	
1210	34	01	12D4		3163+	ST SUFND0+@OP1,@BR	SAVE @BR	
1214	C2	01	1243		3164+	LA SUFBSE,@BR	LOAD BASE REGISTER	
1218	74	08	95		3165+	ST SUFND2+@OP1(,@BR),@ARR	SAVE RETURN ADDRESS	
					3166+	*** END OF EXPANSION ***		
					3168+	*****		
					3169+	*		
					3170+		INITIALIZE FIELDS IN TSMLES	
					3171+	*		
					3172+	*****		
					3173+	*		
121B	3C	40	17CA		3174+	MVI SMPSWD,@BLANK	BLANK ALL OF PASSWORD FIELD	
121F	0C	06	17C9 17CA		3175+	MVC SMPSWD-@B1(##LPEN-@B1),SMPSWD		
1225	3C	40	17BD		3176+	MVI SMVOID-@VOLID+@B1,@BLANK	BLANK FIRST BYTE OR VOL-1D	
					3178+	*****		
					3179+	*		
					3180+		CHECK FOR AND PROCESS POOLED AND IBM FILENAMES	
					3181+	*		
					3182+	*****		
					3183+	*		
1229	BD	5C	00		3184+	CLI @ZERO(,@XR),@ASTER	ASTERISK IN FILENAME ?	
122C	F2	01	14		3185+	JNE SUF100	NO, PROCESS FILENAME	
122F	3C	5C	17C3		3186+	MVI SMPSWD-##DPEN,@ASTER	SAVE * IN SMPSWD	
1233	E2	02	01		3187+	LA @B1(,@XR),@XR	INCREMENT XR BY ONE	
1236	BD	5C	00		3188+	CLI @ZERO(,@XR),@ASTER	ASTERISK IN FILENAME ?	
1239	F2	01	07		3189+	JNE SUF100	NO, PROCESS FILENAME	
123C	3C	5C	17C4		3190+	MVI SMPSWD-##DPEN+@B1,@ASTER	SAVE * IN SMPSWD	
1240	E2	02	01		3191+	LA @B1(,@XR),@XR	INCREMENT XR BY ONE	
					3193+	*****		
					3194+	*		
					3195+		PROCESS FILENAME	
					3196+	*		
					3197+	*****		
					3198+	*		
				1243	3199+	SUFBSSE EQU *	BASE ADDR IN MODULE	
1243	3C	87	11EC		3200+	SUF100 MVI SCAMMA,SCACOF	PRIME SCANIT	
1247	C0	87	16F1		3201+	B SALPH8	SYNTAX CHECK FILENAME	
124B	D0	82	85		3202+	BL SUF750(,@BR)	TAKE ERROR EXIT	
124E	0C	07	17D2 17B7		3203+	MVC SMFNAM(##LUEN),SALPHR+##DUEN	SAVE FILENAME	
1254	BD	61	00		3204+	CLI @ZERO(,@XR),@SLASH	IS A SLASH DELIMITER PRESENT ?	
1257	F2	01	35		3205+	JNE SUF600	NO, RETURN TO USER	
125A	3D	5C	17C3		3206+	CLI SMPSWD-##DPEN,@ASTER	SHOULD A PASSWORD BE CHECKED?	
125E	F2	81	1A		3207+	JE SUF200	NO, CHECK VOL-ID	
					3209+	*****		

## SUFFER - FILE SPECIFICATION CHECKER

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 30
				3210+	*			
				3211+	*	PROCESS	PASSWORD	
				3212+	*			
				3213+	*	*****		
				3214+	*			
1261	E2	02	01	3215+		LA @B1(,@XR),@XR	INCREMENT XR BY ONE	
1264	C0	87	11CF	3216+		B SCANIT	BYPASS BLANKS	
1268	C0	87	16F1	3217+		B SALPH8	SYNTAX CHECK PASSWORD	
126C	D0	82	85	3218+		BL SUF750(,@BR)	TAKE ERROR EXIT	
126F	0C	07	17CA 17B7	3219+		MVC SMPSWD(##LPEN),SALPHR+##DPEN	SAVE PASSWORD	
1275	BD	61	00	3220+		CLI @ZERO(,@XR),@SLASH	IS SLASH DELIMITER PRESENT ?	
1278	F2	01	14	3221+		JNE SUF600	NO, RETURN TO USER	
				3223+	*	*****		
				3224+	*			
				3225+	*	PROCESS	VOL-ID	
				3226+	*			
				3227+	*	*****		
				3228+	*			
127B	E2	02	01	3229+	SUF200	LA @B1(,@XR),@XR	INCREMENT XR BY ONE	
127E	C0	87	11CF	3230+		B SCANIT	BYPASS BLANKS	
1282	C0	87	16F5	3231+		B SALPH6	SYNTAX CHECK VOL-ID	
1286	D0	82	85	3232+	SUF400	BL SUF750(,@BR)	TAKE ERROR EXIT	
1289	0C	05	17C2 17B5	3233+		MVC SMVOID(@VOLID),SALPHR+@VOLID-@B1	SAVE VALID	
128F	BD	4D	00	3234+	SUF600	CLI @ZERO(,@XR),C'('	IS THIS '(' ?	
1292	F2	80	39	3235+	SUF625	JC SUF800,@NOP	JUMP IF '(' VALID ADJACENT	
1295	3D	00	120F	3236+		CLI SCACNT,@ZERO	ANY BLANKS SCANNED ?	
1299	F2	01	0C	3237+		JNE SUF650	YES, CONTINUE DELIMITER SCAN	
129C	BD	1E	00	3238+		CLI @ZERO(,@XR),@EOS	IS IT EOS ?	
129F	F2	81	2C	3239+		JE SUF800	YES, RETURN	
12A2	BD	6B	00	3240+		CLI @ZERO(,@XR),@COMMA	IS IT A COMMA ?	
12A5	F2	01	18	3241+		JNE SUF680	NO, ERROR EXIT	
				3242+	*			
12A8	34	02	1745	3243+	SUF650	ST SAL375+@OP1,@XR	SAVE ERROR POINTER	
12AC	3C	01	11EC	3244+		MVI SCAMMA,SCACOM	MODIFY SCANIT TO BYPASS COMMA	
12B0	C0	87	11CF	3245+		B SCANIT	BYPASS DELIMITERS	
12B4	F2	82	11	3246+		JL SUF750	ERROR - RETURN	
				3248+	*	*****		
				3249+	*			
				3250+	*	MODIFY	PSR FOR ERROR INDICATION	
				3251+	*			
				3252+	*	*****		
				3253+	*			
12B7	BD	4D	00	3254+		CLI @ZERO(,@XR),C'('	IS IT '(' ?	
12BA	F2	01	11	3255+		JNE SUF800	NO, RETURN	
12BD	7C	18	7E	3256+		MVI SUF680+@Q(,@BR),@@E139	INVALID DELIMITER	
12C0	3C	00	03CD	3257+	SUF680	MVI \$CAERR,*-*	ERROR CODE	
12C0				3258+		ORG SUF680	INITIALIZE INSTRUCTION	
12C0	3C	11	03CD	3259+		MVI \$CAERR,@@E131	INVALID PARAMETER	
				3260+	*			
12C4	35	02	1745	3261+		L SAL375+@OP1,@XR	RESTORE ERROR POINTER	
12C8	75	04	44	3262+	SUF750	L SUF400+@Q(,@BR),@PSR	LOAD CONDITION LOW INTO PSR	
12CB	F2	87	03	3263+	SUF780	J SUFND0	ERROR EXIT	

3265+\*\*\*\*\*



SUFFER - FILE SPECIFICATION CHECKER

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15,	MOD 00	19/02/22	PAGE	31
					3266+	*						
					3267+	*	END OF MODULE PROCESSING					
					3268+	*						
					3269+	*	*****					
					3270+	*						
12CE	75	04	89		3271+	SUF800 L	SUF780+@Q(,@BR),@PSR	LOAD	CODE	FOR	NORMAL	EXIT
					3272+	*SUFND EXIT	@BR,,RETURN					
12D1	C2	01	0000		3273+	SUFND0 LA	*-*,@BR	RESTORE	@BR			
12D5	C0	87	0000		3274+	SUFND2 B	*-*	RETURN	TO	CALLING	PROGRAM	
					3275+	***	END OF EXPANSION ***					
					3276+	***	END OF SUFFER				***	
					3277	*	\$C4BD					



## C4BIN2 - CONVERT DECIMAL TO BINARY ROUTINE

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ERR LOC  OBJECT CODE      ADDR STMT SOURCE STATEMENT                                VER 15, MOD 00  19/02/22  PAGE  32

3279+*****
3280+*FUNCTION -                                                                    *
3281+*   SERIALLY REUSABLE SUBROUTINE TO CONVERT A 4 BYTE POSITIVE DECIMAL *
3282+*   NUMBER A 2 BYTE BINARY VALUE.                                           *
3283+*   A 5 BYTE POSITIVE DECIMAL NUMBER.                                       *
3284+*   ON ENTRY @XR POINTS TO THE LEFT BYTE OF THE DECIMAL VALUE.             *
3285+*   ON RETURN C4BVAL IS THE RIGHT BYTE OF THE 2 BYTES BINARY VALUE        *
3286+*   WHICH MAY BE MODIFIED BY THE USER IN ANY WAY IN IT'S LOCATION.        *
3287+*   THE 4 BYTES DECIMAL VALUE IS NOT ALTERED.                             *
3288+*   @XR IS NOT ALTERED.                                                     *
3289+*   @BR IS SAVED AND RESTORED AT EXIT.                                       *
3290+*****

3292+*                                                                    *
3293+*                               INITIALIZATION                                *
3294+*                                                                    *
12D9 3295+C4BIN2 EQU   *                               ENTRY POINT
12D9 3296+          USING C4BIN2,@BR                               BASE VALUE
3297+*
12D9 3298+          ST    C4B800+@OP1,@BR          SAVE CALLERS BASE REGISTER
12DD C2 01 12D9    3299+          LA    C4BIN2,@BR          LOAD BASE VALUE
3300+*
12E1 74 08 66      3301+          ST    C4B850+@OP1(,@BR),@ARR  SAVE RETURN ADDRESS
3302+*
12E4 74 02 6E      3303+          ST    C4BSAV(,@BR),@XR        SAVE VALUE OF POINTER
12E7 3C 0C 03CD    3304+          MVI    $CAERR,@E122          SET ERROR CODE IN CASE
12EB 5C 01 6A 6B    3305+          MVC    C4BVAL(C4BLVL,@BR),C4BINI(,@BR) INIT VALUE TO ZERO
12EF 3C 04 1348    3306+C4B100 MVI    C4B900,4                INITLZ CHAR. COUNT
3307+*
3308+***          DETERMINE IF CHAR NUMERIC AND DECR CHAR COUNT
3309+*
12F3 F2 80 32      3310+C4B200 JC     C4B600,@NOP            SET TO UCB IF IMBEDDED BLANKS
3311+*                    * ALLOWED
12F6 BD F0 00      3312+C4B300 CLI    0(,@XR),C4BLOW          THIS CHAR NUMERIC ?
12F9 F2 82 35      3313+          JL     C4B700                NO, GOTO RETURN
3314+*
12FC 5F 00 6F 4E    3315+          SLC    C4B900(1,@BR),C4B590+@D1(,@BR) DECR CHAR COUNT
1300 F2 82 35      3316+          JL     C4B800                BR TO ERROR EXIT IF TOO MANY
3317+*
3318+***          MULTIPLY PREVIOUS VALUE BY TEN
3319+*
1303 5E 01 6A 6A    3320+          ALC    C4BVAL(C4BLVL,@BR),C4BVAL(,@BR) DOUBLE PREVIOUS VALUE
1307 5C 01 68 6A    3321+          MVC    C4BWRK(C4BLVL,@BR),C4BVAL(,@BR) SAVE DOUBLE VALUE
130B 5E 01 6A 6A    3322+          ALC    C4BVAL(C4BLVL,@BR),C4BVAL(,@BR) QUADRUPLE PREVIOUS VALUE
130F 5E 01 6A 6A    3323+          ALC    C4BVAL(C4BLVL,@BR),C4BVAL(,@BR) OCTUPLE PREVIOUS VALUE
1313 5E 01 6A 68    3324+          ALC    C4BVAL(C4BLVL,@BR),C4BWRK(,@BR) ADD IN SAVED DOUBLE
3325+*
3326+***          ADD IN VALUE OF THIS CHAR AND INCR POINTER
3327+*
1317 68 03 6C 00    3328+          MNN    C4BCHR(,@BR),0(,@XR)    FETCH NEMERIC VALUE OF NEW CHAR
131B 5E 01 6A 6C    3329+          ALC    C4BVAL(C4BLVL,@BR),C4BCHR(,@BR) INCR VALU BY THIS CHAR
3330+*
131F E2 02 01      3331+          LA     @B1(,@XR),@XR          INCR POINTER TO NEXT CHAR
1322 D0 87 1A      3332+          B      C4B200(,@BR)            GOTO DO IT AGAIN
3333+*
3334+*                               ROUTINE TO SCAN BLANKS                                *

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C4BIN2 - CONVERT DECIMAL TO BINARY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	33
						3335+	*				
1325	E2	02	01			3336+C4B590	LA @B1(,@XR),@XR			INCR POINTER TO NEXT CHAR	
1328	BD	40	00			3337+C4B600	CLI 0(,@XR),@BLANK			IS THIS CHAR A BLANK ?	
132B	D0	01	1D			3338+	BNE C4B300(,@BR)			RETURN IF NOT	
132E	D0	87	4C			3339+	B C4B590(,@BR)			GET NEXT CHAR IF YES	

## C4BIN2 - CONVERT DECIMAL TO BINARY ROUTINE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 34
					3341+	*		
					3342+	***	ENDING ROUTINE	
					3343+	*		
1331	74	02	68		3344+	C4B700 ST	C4BLEN(,@BR),@XR	PLACE VALUE OF POINTER
1334	5F	01	68 6E		3345+	SLC	C4BLEN(2,@BR),C4BSAV(,@BR)	SUBTRACT ENTERING VALUE
					3346+	*		
1338	C2	01	0000		3347+	C4B800 LA	*-*,@BR	RESTORE CALLERS BR
					3348+	*		
133C	C0	87	0000		3349+	C4B850 B	*-*	RETURN TO CALLING ROUTINE
					3350+	*		*
					3351+	*	WORK AREA AND CONSTANT	*
					3352+	*		*
1340				1341	3353+	C4BWRK DS	CL2	SAVE AREA FOR DOUBLED VALUE
					3354+	*		
				1342	3355+	C4BYT1 EQU	*	FIRST BYTE OF BINARY VALUE
1342				1343	3356+	C4BVAL DS	CL2	SAVE AREA FOR BINARY VALUE
					3357+	*		
1344	00			1344	3358+	C4BINI DC	XL1'00'	INITIALIZE WA TO ZERO
					3359+	*		
1345				1345	3360+	C4BCHR DS	CL1	SAVE AREA FOR EACH NEW CHAR
1345					3361+	ORG	*-1	INITIALIZE
1345	00			1345	3362+	DC	XL1'00'	* TO ZERO
					3363+	*		
1346				1347	3364+	C4BSAV DS	CL2	SAVE AREA FOR XR
					3365+	*		
1348				1348	3366+	C4B900 DS	CL1	SAVE AREA FOR CHAR COUNTER
					3367+	*		*
					3368+	*	EQUATES FOR C4BIN2	*
					3369+	*		*
				1341	3370+	C4BLEN EQU	C4BWRK	ON RETURN WILL CONTAIN COUNT
					3371+	*		* @XR INCREMENTED BY
				0004	3372+	C4BCHC EQU	4	NUMBER OF CHAR TO CONVERT
					3373+	*		
				00F0	3374+	C4BLOW EQU	C'0'	LOWEST NUMERIC CHARACTER
					3375+	*		
				0002	3376+	C4BLVL EQU	C4BVAL-C4BWRK	LENGTH OF BINARY VALUE
					3377+	*		
				12F4	3378+	C4BLNK EQU	C4B200+@Q	LOCATION OF IMBEDDED BLANK IND
					3379+	*		
				0087	3380+	C4BSPC EQU	@UCB	MOVED TO C4BLNK TO ALLOW BLANKS
					3381+	*		
				12F0	3382+	C4BNMC EQU	C4B100+@Q	LOCATION OF CONVERSION COUNT
					3383+	*		
				0080	3384+	C4BNOP EQU	@NOP	CHANGED IF IMBEDDED BLANK OK
				1349	3385+	C4END EQU	*	DEFINE END OF CODE
					3386+	***	END OF C4BIN2	***
					3387	*	\$C2D5	

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	35
					3389+	*****	*****				
					3390+	*FUNCTION	-				
					3391+	*SERIALLY	REUSABLE SUBROUTINE TO CONVERT A 2 BYTE BINARY VALUE TO				
					3392+	*A 5 BYTE	POSITIVE DECIMAL NUMBER.				
					3393+	*ON ENTRY	@XR POINTS TO THE LEFT BYTE OF THE BINARY VALUE.				
					3394+	*ON RETURN	C2DVAL IS THE RIGHT BYTE OF THE 5 BYTES DECIMAL VALUE				
					3395+	*WITH LEADING	ZEROS WHICH MAY BE MODIFIED BY THE USER IN ANY WAY				
					3396+	*IN IT'S	LOCATION.				
					3397+	*THE 2 BYTES	BINARY VALUE IS NOT ALTERED.				
					3398+	*@XR IS	NOT ALTERED.				
					3399+	*@BR IS	SAVED AND RESTORED AT EXIT.				
					3400+	*****	*****				
				1349	3402+	C2DEC5 EQU	*MODULE ENTRY POINT				
				1349	3403+	USING C2DEC5,@BR	BASE ADDRESS SPECIFICATION				
1349	34	01	137D		3404+	ST C2D050+@OP1,@BR	SAVE @BR				
134D	C2	01	1349		3405+	LA C2DEC5,@BR	LOAD BASE REGISTER				
1351	74	08	38		3406+	ST C2D052+@OP1(,@BR),@ARR	SAVE RETURN ADDRESS				
					3407+	*					
					3408+	INITIALIZE DECIMAL INCREMENTER AND DECIMAL SUM TO 1 AND 0 RESP.					
					3409+	*					
1354	54	90	43 39		3410+	ZAZ C2D903(C2D903-C2D901,@BR),C2D901(C2D902-C2D901,@BR)					
1358	7C	01	17		3411+	MVI C2D030+@D1(,@BR),@B1	INITIALIZE DISP TO BYTE 1				
135B	7C	01	16		3412+C2D020	MVI C2D030+@Q(,@BR),@B1	INIT TEST TO BIT 7				
					3413+	*					
135E	B8	00	00		3414+C2D030	TBN *-*(,@XR),*-*	TEST IF THIS BIT IS OFF				
1361	F2	90	04		3415+	JF C2D040	* BR AROUND SUM INCREMENT				
					3416+	INCREMENT DECIMAL SUM BY DECIMAL VALUE OF THIS TESTED BIT					
1364	56	04	3E 43		3417+	AZ C2DVAL(C2D903-C2DVAL,@BR),C2D903(C2D903-C2DVAL,@BR)					
					3418+	DOUBLE DECIMAL VALUE OF INCREMENT TO VALUE OF NEXT BIT					
1368	56	04	43 43		3419+C2D040	AZ C2D903(C2D903-C2DVAL,@BR),C2D903(C2D903-C2DVAL,@BR)					
136C	5E	00	16 16		3420+	ALC C2D030+@Q(1,@BR),C2D030+@Q(,@BR)	SHIFT BIT MASK LEFT ONE				
1370	D0	20	15		3421+	BNOL C2D030(,@BR)	CONTINUE LOOP UNLESS ALL BITS				
					3422+	*TESTED					
1373	5F	00	17 13		3423+	SLC C2D030+@D1(1,@BR),C2D020+@Q(,@BR)	DECR DISP TO BYTE 0				
1377	D0	81	12		3424+	BZ C2D020(,@BR)	FALL THROUGH IF UNDERFLOW				
137A	C2	01	0000		3425+C2D050	LA *-*,@BR	RESTORE @BR				
137E	C0	87	0000		3426+C2D052	B *-*	RETURN TO CALLING PROGRAM				
					3427+	*					
					3428+***	WORK AREA					
					3429+	*					
1382	F1			1382	3430+C2D901	DC DL1'1'	INIT WORK AREA				
				1383	3431+C2D902	EQU *	FIST BYTE OF DECIMAL VALUE				
1383				1387	3432+C2DVAL	DS CL5	5 BYTES DECIMAL VALUE				
1388				138C	3433+C2D903	DS CL5	DECIMAL INCREMENTER				
					3434+***	END OF C4DEC5	***				
				0469	3435 SFIERR	EQU \$CAERK					
					3436 *	\$FIND					

## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 36
		3438+		*****	
		3439+*	5703-XM1	COPYRIGHT IBM CORP. 1970	*
		3440+*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
		3441+*			*
		3442+		*****	
		3443+*		STATUS	*
		3444+*		VERSION 1 MODIFICATION 0	*
		3445+*			*
		3446+*		FUNCTION	*
		3447+*		* SFINDF IS A CONTROL MODULE USED TO LOCATE A SPECIFIED PASSWORD	*
		3448+*		AND/OR FILENAME.	*
		3449+*		* IF THE FILENAME, PASSWORD, AND VOLUME-ID ARE ALL EXPLICITLY	*
		3450+*		SPECIFIED. A CALL IS ISSUED TO SVOLID, SGETDB AND SRCHFN TO	*
		3451+*		SEARCH FOR THE REQUIRED FILE IN THE FILE LIBRARY SPECIFIED.	*
		3452+*		IF THE PASSWORD OR VOLUME-ID IS NOT EXPLICITLY DEFINED, SFINDF	*
		3453+*		WILL DEFAULT TO THE CURRENT USER SPECIFICATIONS, IF THEY EXIST,	*
		3454+*		FOR THE MISSING PARAMETERS AND THEN ISSUE THE REQUIRED CALLS	*
		3455+*		TO SGETDS AND/OR SRCHFN TO LOCATE THE FILE.	*
		3456+*		* IF A ONE OR TWO-STAR FILENAME IS SPECIFIED, THE SPECIFIED DISK,	*
		3457+*		OR ALL DISKS ON THE SYSTEM WILL BE SEARCHED IN AN ATTEMPT TO	*
		3458+*		LOCATE THE FILE. THE CALLER MAY SET AN INDICATOR TO TERMINATE	*
		3459+*		THE SEARCH AFTER A GIVEN NUMBER OF DISKS HAVE BEEN SEARCHED.	*
		3460+*			*
		3461+*		ENTRY POINTS	*
		3462+*		THE ENTRY POINT IS SFINDF.	*
		3463+*		THE CALLING SEQUENCE IS AS FOLLOWS:	*
		3464+*		B SFINDF	*
		3465+*			*
		3466+*		INPUT	*
		3467+*		* THE FOLLOWING INFORMATION MUST BE SET UP IN TSMLES BEFORE	*
		3468+*		CALLING SFINDF.	*
		3469+*		* SMPSWD MUST CONTAIN SPECIFIED PASSWORD	*
		3470+*		* SMVOID MUST CONTAIN SPECIFIED VOLUME	*
		3471+*		* SMFNAM MUST CONTAIN SPECIFIED FILENAME	*
		3472+*		* THE FOLLOWING SWITCHES ARE PROVIDED TO HANDLE ONE OR TWO-STAR	*
		3473+*		FILES:	*
		3474+*		* SFIVOL - IF @NOP IS SET SVOLID WILL NOT BE CALLED. SVOLID	*
		3475+*		IS NOT REUSABLE AND THIS SWITCH MUST BE SET BEFORE*	*
		3476+*		SFINDF IS CALLED A SECOND TIME.	*
		3477+*		* SFISTR - IF @NOP IS SET ONLY 1 DISK WILL BE SEARCHED	*
		3478+*		* SFIFND - IF @NOP SET WITH SFIVOL ONLY THE NUMBER OF DISKS	*
		3479+*		SPECIFIED IN SFINTR WILL BE SEARCHED.	*
		3480+*			*
		3481+*		OUTPUT	*
		3482+*		* THE OUTPUT FROM SFINDF IS SET IN TSMLES, THE POINTERS AND USER	*
		3483+*		DIRECTORIES REQUIRED ARE INITIALIZED.	*
		3484+*			*
		3485+*		EXTERNAL REFERENCES	*
		3486+*		TSMLES - (SMALES) DATA MANAGEMENT SAVE AREAS AND BUFFERS.	*
		3487+*		\$VOLID - CORE RESIDENT VOLID TABLE.	*
		3488+*		\$USRDR - DISPLACEMENT TO CURRENT USER DIRECTORY.	*
		3489+*		\$FILIB - CURRENT USER FILE LIBRARY DISK ADDRESS.	*
		3490+*		DL2ICS - TWO TRACK LOGICAL IOCS.	*
		3491+*		SRCHFN - SEARCH USER DIRCTY BLOCK.	*
		3492+*		SGETDB - SEARCH PASSWORD DIRCTY.	*
		3493+*		SVOLID - SEARCH VOL-ID TABLE.	*

## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 37
			3494+*		\$CAERR - SAVE AREA FOR SYSTEM ERROR MESSAGT CODE.	*
			3495+*			*
			3496+*	EXITS, NORMAL		*
			3497+*	* NORMAL RETURN IS TO THE CALLER FOLLOWING THE BRANCH TO SFINDF.		*
			3498+*			*
			3499+*	EXITS, ERROR		*
			3500+*	* THE ERROR RETURN IS TO SFIERR WHICH MUST BE DEFINED BY THE		*
			3501+*	CALLER.		*
			3502+*			*
			3503+*	TABLES/WORKAREAS		*
			3504+*	* N/A		*
			3505+*			*
			3506+*	ATTRIBUTES		*
			3507+*	* RELOCATABLE		*
			3508+*	* RE-USABLE		*
			3509+*			*
			3510+*	CHARACTER CODE DEPENDENCY		*
			3511+*	* THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR		*
			3512+*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.		*
			3513+*			*
			3514+*	NOTES		*
			3515+*	ERROR PROCEDURES		*
			3516+*	IF A FILE-SPEC WAS NOT ENTERED AND A CURRENT USER IS NOT IN		*
			3517+*	AFFECT. THE ERROR EXIT TO SFIERR IS TAKEN.		*
			3518+*			*
			3519+*	REGISTER USAGE		*
			3520+*	@BR AND @XR ARE SAVED AND RESTORED. DURING EXECUTION @BR IS		*
			3521+*	USED AS A BASE REGISTER AND @XR IS USED TO POINT TO \$NUCBS.		*
			3522+*			*
			3523+*	SAVED/RESTORED AREAS		*
			3524+*	NONE		*
			3525+*			*
			3526+*	MODIFICATION CONSIDERATIONS		*
			3527+*	NONE		*
			3528+*			*
			3529+*	REQUIRED MODULES		*
			3530+*	@SYSEQ - SYSTEM SOFTWARE EQUATES.		*
			3531+*	@FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATOR VALUES.		*
			3532+*	TSMLES - DATA MANAGEMENT SAVE AREAS AND BUFFERS.		*
			3533+*	\$VOLID - SEARCH VOLUME-ID SUBROUTINE.		*
			3534+*	SRCHFN - SEARCH FOR FILENAME SUBROUTINES.		*
			3535+*	SGETDB - SEARCH PASSWORD DIRECTORY SUBROUTINE.		*
			3536+*	DL2ICS - TWO TRACK DISK LOGICAL IOCS.		*
			3537+*			*
			3538+*	OTHER		*
			3539+*	NONE		*
			3540+*	*****		*
			3542+*			*
			3543+*		EQUATES USED IN THIS SUBROUTINE	*
			3544+*			*
138D 34 01 149A		138D	3545+	SFINDF EQU *	START OF MODULE	
1391 C2 01 13CB			3546+	ST SFISBR,@BR	SAVE @BR	
			3547+	LA SFIBSE,@BR	SET LOCAL BASE	
		13CB	3548+	USING SFIBSE,@BR	*	



## SFINDF - FILE SEARCH CONTROL MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 38
1395	74	08	D3		3549+	ST	SFEXT(, @BR), @ARR	SAVE RETURN ADDR
1398	74	02	CB		3550+	ST	SFISXR(, @BR), @XR	SAVE @XR
139B	C2	02	03C0		3551+	LA	\$NUCBS, @XR	SET NUCLEUS BASE
				03C0	3552+	USING	\$NUCBS, @XR	*
139F	3D	40	17C3		3553+	CLI	SMPSWD-##LPEN+@B1, @BLANK	WAS A PASSWD SPECIFIED ?
13A3	F2	81	98		3554+	JE	SFI500	NO, GO CHECK LOGON STATUS
13A6	3D	40	13CD		3555+	CLI	SMVOID-\$VOLID+@B1, @BLANK	WAS A VOL-ID SPECIFIED ?
13AA	F2	81	07		3556+	JE	SFI100	NO, GO CHECK LOGON STATUS
13AD	C0	87	14A9		3557+SFI050	B	SVOLID	RESOLVE SPECIFIED VOL-ID
				13AE	3558+SFI050	EQU	SFI050+@Q	SET TO A NOP FOR SUCCESSIVE USE
13B1	F2	87	75		3559+	J	SFI350	GO TO GET DIRECTORY
					3560+*			
					3561+*			
					3562+*			PASSWORD WAS SPECIFIED, BUT VOL-ID WAS NOT
13B4	3D	5C	17C3		3563+SFI100	CLI	SMPSWD-##LPEN+@B1, SFI100	IS PASSWORD AN '*' ?
13B8	F2	01	63		3564+	JNE	SFI320	NO, GO CHK FOR FILE LIBR DADDR
13BB	7C	00	D4		3565+	MVI	SFICTR(, @BR), @ZERO	YES, INITLZ LOOP CTR TO ZERO
13BE	7C	00	DB		3566+	MVI	SFITTC(, @BR), @ZERO	INITLZ THIS TIME COUNTER
13C1	BD	00	19		3567+	CLI	\$FILIB-@B1(, @XR), @ZERO	CURRENT USER IN FORCE ?
13C4	F2	01	5D		3568+	JNE	SFI340	YES, GO TRY THAT FIRST
13C7	3A	08	17BC		3569+	SBN	SMIND1, SM1PNF	SET PASSWORD NOT FOUND INDR.
					3570+*			
					3571+*			
					3572+*			THE FOLLOWING ROUTINE WILL SEARCH ALL DISKS ON THE
					3573+*			SYSTEM FOR THE SPECIFIED ONE OR TWO STAR FILE
13CB	7D	01	D4		3574+SFI200	CLI	SFICTR(, @BR), @B1	CHECK THE DISK POINTER
13CE	F2	82	1A		3575+	JL	SFI220	GO CHECK F1
13D1	F2	81	28		3576+	JE	SFI230	GO CHECK F2
13D4	7D	03	D4		3577+	CLI	SFICTR(, @BR), SFIE03	
13D7	F2	82	33		3578+	JL	SFI240	GO CHECK R1
					3579+*			
13DA	BD	00	4C		3580+SFI210	CLI	\$VOLR2+SFIE06(, @XR), @ZERO	DOES R2 CONTAIN A FILE LIBR
13DD	F2	81	AC		3581+	JE	SFI545	NO, NO MORE TO CHK, GO RETURN
13E0	2C	01	17D6 4D		3582+	MVC	SMBFDA(@DADDR), \$VOLR2+SFIE07(, @XR)	SET LIBR DADDR FOR
13E5	7C	FE	D4		3583+	MVI	SFICTR(, @BR), SFIEFE	* SEARCH AND INCR DISK POINTER
13E8	F2	87	3E		3584+	J	SFI350	GO TO SEARCH
					3585+*			
13EB	BD	00	44		3586+SFI220	CLI	\$VOLF1+SFIE06(, @XR), @ZERO	DOES F1 CONTAIN A FILE LIBR
13EE	F2	81	0B		3587+	JE	SFI230	NO, GO CHECK F2
13F1	2C	01	17D6 45		3588+	MVC	SMBFDA, \$VOLF1+SFIE07(@DADDR, @XR)	SET LIBR DADDR FOR SEWN
13F6	7C	01	D4		3589+	MVI	SFICTR(, @BR), @B1	INCR DISK POINTER
13F9	F2	87	2D		3590+	J	SFI350	SO TO SEARCH
					3591+*			
13FC	BD	00	54		3592+SFI230	CLI	\$VOLF2+SFIE06(, @XR), @ZERO	DOES F2 CONTAIN A FILE LIBR
13FF	F2	81	0B		3593+	JE	SFI240	NO, SO CHECK R1
1402	2C	01	17D6 55		3594+	MVC	SMBFDA, \$VOLF2+SFIE07(@DADDR, @XR)	SET LIBR DADDR FOR SEACH
1407	7C	02	D4		3595+	MVI	SFICTR(, @BR), SFIE02	INCR DISK POINTER
140A	F2	87	1C		3596+	J	SFI350	GO TO SEARCH
					3597+*			
140D	BD	00	3C		3598+SFI240	CLI	\$VOLR1+SFIE06(, @XR), @ZERO	DOES R1 CONTAIN A FILE LIBR
1410	D0	81	0F		3599+	BE	SFI210(, @BR)	NO, GO CHECK R2
1413	2C	01	17D6 3D		3600+	MVC	SMBFDA, \$VOLR1+SFIE07(@DADDR, @XR)	SET LIB DADDR FOR SEARCH
1418	7C	03	D4		3601+	MVI	SFICTR(, @BR), SFIE03	INCR DISK POINTER
141B	F2	87	0B		3602+	J	SFI350	GO TO SEARCH
					3603+*			
					3604+*			PASSWORD SPECIFIED, BUT VOLUME ID WAS NOT.

## SFINDF - FILE SEARCH CONTROL MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 39
				3605+*			CHECK FOR CURRENT USER	
				3606+*				
141E	BD	00	19	3607+SF1320	CLI	\$FILIB-@B1(,@XR),@ZERO	CURRENT USER SPEC IN FORCE	
1421	F2	81	20	3608+	JE	SFI505	NO, GO TO ERR ROUTINE	
1424	2C	01	17D6 1A	3609+SF1340	MVC	SMBFDA(@DADDR), \$FILIB(,@XR)	YES, SET TO USER LIBR	
				3610+*				
				3611+*			SO SEARCH FOR SPECIFIED PASSWORD	
				3612+*				
1429	C0	87	15B4	3613+SF1350	B	SGETDB	SEARCH FOR PASSWORD	
142D	38	08	17BC	3614+	TBN	SMIND1, SM1PNF	WAS PASSWORD FOUND	
1431	F2	10	3B	3615+	JT	SFI540	NO, GO TEST STAR COUNTER	
1434	38	10	17BC	3616+	TBN	SMIND1, SM1PDS	PASSWORD DIRCTY ONLY REQ' SED	
1438	F2	10	58	3617+	JT	SFI550	YES, GO RETURN TO USER	
143B	F2	87	26	3618+	J	SFI520	NO, GO SEARCH FOR FILENAME	
				3619+*				
				3620+*			ONLY FILENAME SPECIFIED, CHECK FOR CURRENT USER	
				3621+*				
143E	BD	00	19	3622+SF1500	CLI	\$FILIB-@B1(,@XR),@ZERO	CURRENT USER SPEC IN FORCE	
1441	F2	01	07	3623+	JNE	SFI510	YES, BYPASS ERROR MESSAGE	
1444	BC	21	0D	3624+SF1505	MVI	\$CAERR(,@XR), @@E200	SET NO CURRENT USER ERROR CODE	
1447	C0	87	0469	3625+	B	SFIERR	GO TO ERROR RETURN	
				3626+*				
				3627+*			GET FIRST USER DIRECTORY BLOCK	
				3628+*				
144B	2C	01	0F81 1A	3629+SF1510	MVC	DL2RAD, \$FILIB(@DADDR, @XR)	SET DL2ICS BASE DADDR	
1450	2C	01	17D6 1A	3630+	MVC	SMBFDA, \$FILIB(@DADDR, @XR)	SET LIBR DADDR TO COMMON AREA	
1455	6C	01	D7 1C	3631+	MVC	SFIRDA(,@BR), \$USRDR(@DADDR, @XR)	SET DL2ICS RELATIVE DADDR	
1459	C0	87	0EE9	3632+	B	DL2ICS	GO READ USER DIRECTORY BLOCK	
145D	14A0			145E 3633+	DC	AL2(SFIDPL)	* CADDR OF DPL	
145F	2C	01	17E6 1C	3634+	MVC	SMFUDA, \$USRDR(@DADDR, @XR)	PRESERVE 1ST BLOCK REL. DADDR	
				3635+*				
				3636+*			SEARCH USER DIRECTORY BLOCK FOR FILENAME	
				3637+*				
1464	C0	87	1640	3638+SF1520	B	SRCHFND	GO TO SEARCH ROUTINE	
1468	38	80	17BC	3639+	TBN	SMIND1, SM1FNE	WAS NAME FOUND	
146C	F2	10	24	3640+	JT	SFI550	YES, SO RETURN	
				3641+*				
				3642+*			PASSWORD OR FILENAME NOT FOUND	
				3643+*				
146F	7D	FE	D4	3644+SF1540	CLI	SFICTR(,@BR), SFIEFE	ONE OR TWO STAR FILE WITH MORE	
1472	F2	84	1E	3645+	JH	SFI550	* DISKS TO SEARCH ? NO, GET OUT	
1475	D0	82	00	3646+SF1542	BC	SFI200(,@BR), @BL	* YES, GO SEARCH	
				1476 3647+SF1STR	EQU	SFI542+@Q	* NOP FOR 1ST * OR ** SEARCHED	
1478	F2	87	11	3648+SF1543	JC	SFI545, @UCB	BYPASS TRY CONTROL UNLESS	
				1479 3649+SF1FND	EQU	SFI543+@Q	* Q-CODE CHANGED TO A NOP	
147B	7D	06	DC	3650+	CLI	SFINTR(,@BR), SFIETD	IS TRY COUNTER AT MAX ?	
147E	F2	02	0B	3651+	JNL	SFI545	YES, SO SET ERROR CODE	
1481	5E	00	DB DD	3652+	ALC	SFITTC(,@BR), SFIONE(,@BR)	INCR THIS TRY COUNTER	
1485	5D	00	DB DC	3653+	CLC	SFITTC(,@BR), SFINTR(1, @BR)	THIS TRY = TRYS REQUIRED ?	
1489	D0	01	00	3654+	BNE	SFI200(,@BR)	NO, GO TRY THE NEXT DISK	
148C	BC	26	0D	3655+SF1545	MVI	\$CAERR(,@XR), @@E213	SET * OR ** NOT FOUND CODE	
148F	3A	80	17BC	3656+	SBN	SMIND1, SM1FNE	SET ON FILE NOT FOUND INDR.	
				3657+*				
				3658+*			RETURN TO USER	
				3659+*				
1493	C2	02	0000	3660+SF1550	LA	*-*, @XR	RELOAD @XR	



## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	40
1497	C2 01 0000	1496	3661+SFISXR	EQU	SFI550+@OP1	*			
			3662+SF1560	LA	*-*,@BR	RELOAD @BR			
		149A	3663+SFISBR	EQU	SFI560+@OP1	*			
149B	C0 87 0000		3664+SF1570	B	*-*	RETURN TO THE USER			
		149E	3665+SF1EXT	EQU	SFI570+@OP1	*			
			3666+*						
			3667+*						
			3668+*			CONSTANTS AND SAVE AREAS			
149F		149F	3669+SFICTR	DS	XL1	COUNTER USED TO CONTROL THE			
149F			3670+	ORG	*-1	* SEARCH FOR A STAR FILE			
149F	FF	149F	3671+	DC	AL1(SFIEFF)	INITLZ'D FOR NO SEARCH			
14A0	01	14A0	3672+SFIDPL	DC	AL1(@DGET)	DPL TO READ USER DIRCTY BLOCK 1			
14A1		14A2	3673+SFIRDA	DS	XL2	* RELATIVE DISK ADDRESS			
14A3	02	14A3	3674+	DC	XL1'02'	* SECTOR COUNT			
14A4	17EB	14A5	3675+	DC	AL2(SMUDB1)	* CORE BUFFER ADDRESS			
14A6		14A6	3676+SFITTC	DS	CL1	THIS TRY COUNTER			
14A7		14A7	3677+SFINTR	DS	CL1	NUMBER OF TRYS REQUIRED COUNTER			
14A7			3678+	ORG	SFINTR	INITLZ NUMBER CF TRYS REQUIRED			
14A7	00	14A7	3679+	DC	XL1'0'	* COUNTER TO ZERO			
14A8	01	14A8	3680+SFIONE	DC	XL1'1'	COUNTER INCREMENT			
			3681+*						
			3682+*			EQUATES			
			3683+*						
		0469	3684+SVOERR	EQU	SFIERR	SVOLID ERROR RETURN ADDRESS			
		005C	3685+SFIASST	EQU	C'*'	STAR LIBR TEST CHARACTER			
		0002	3686+SFIE02	EQU	X'02'	STAR COUNTER TEST R1 CODE			
		0003	3687+SFIE03	EQU	X'03'	STAR COUNTER TEST R2 CODE			
		00FE	3688+SFIEFE	EQU	X'FE'	STAR COUNTER COMPLETE CODE			
		00FF	3689+SFIEFF	EQU	X'FF'	NOT A * OR ** FILE COUNTER CODE			
		0006	3690+SFIE06	EQU	X'06'	DISP TO LIBR DADDR BYTE 0			
		0007	3691+SFIE07	EQU	X'07'	DISP TO LIBR DADDR BYTE 1			
		13CB	3692+SFIBSE	EQU	SFI200	LOCAL BASE ADDRESS			
		14A8	3693+SF1END	EQU	*-1	LAST BYTE OF SFINDF			
		0006	3694+SF1ETD	EQU	6	MAX TRY REQUIRED COUNTER VALUE			
		0001	3695+	DROP	@BR				
		0002	3696+	DROP	@XR				
			3697+***						
			3698 *		\$VOLI	END OF SFINDF			***

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 41
		3700+	*****			*
		3701+	* 5703-XM1 COPYRIGHT IBM CORP. 1970			*
		3702+	* REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE 120-2083			*
		3703+	*			*
		3704+	*****			*
		3705+	*STATUS			*
		3706+	* VERSION 1 MODIFICATION 0			*
		3707+	*			*
		3708+	*FUNCTION			*
		3709+	* THE FUNCTION OF SVOLID IS TO SEARCH THE CORE RESIDENT TABLE OF			*
		3710+	* VOLUME ID'S ON THE SYSTEM FOR A SPECIFIED VOLUME ID. IF THE			*
		3711+	* VOLUME IS NOT FOUND, AN ERROR CODE WILL BE PUT IN \$CAERR AND AN			*
		3712+	* EXIT TO \$VOERR IN THE CALLING ROUTINE WILL BE TAKEN. IF MORE			*
		3713+	* THAN ONE VOLUME WITH THE SAME VOL-ID IS FOUND ON THE SYSTEM, THE			*
		3714+	* USER OF THE SYSTEM IS REQUESTED TO INDICATE WHICH DRIVE AND DISK			*
		3715+	* IS TO BE USED. IF THE USER IS UNABLE TO RESOLVE THE CONFLICT,			*
		3716+	* THE COMMAND IS REJECTED. IF THE INPUT SOURCE IS NOT THE KEYBOARD,			*
		3717+	* THE COMMAND IS REJECTED. OTHERWISE THE FILE LIBRARY ADDRESS OF			*
		3718+	* THE RESOLVED VOLUME IS PLACED IN SMBFDA IN THE TSMLES COMMUNICA-			*
		3719+	* TIONS REGION, AND A NORMAL RETURN IS TAKEN.			*
		3720+	*			*
		3721+	*ENTRY POINTS			*
		3722+	* \$VOLID - THE FIRST EXECUTABLE INSTRUCTION. IT IS ASSUMED THAT			*
		3723+	* SMVOID IN TSMLES HAS BEEN PRIMER. ALSO, IF THE VM OPTION OF			*
		3724+	* SVOLID HAS BEEN ASSEMBLED FOR EXECUTION TIME USAGE.			*
		3725+	* THE FIELDS SVOIOF AND SVODSK SHOULD BE PRIMED WITH THE GET/PUT			*
		3726+	* GET/PUT FILENAME AND DISK FILENAME, RESPETIVELY.			*
		3727+	*			*
		3728+	*INPUT			*
		3729+	* INPUT TO SVOLID IS THE SPECIFIED VOL-ID IN THE TSMLES REGION -			*
		3730+	* SMVOID.			*
		3731+	*			*
		3732+	*OUTPUT			*
		3733+	* OUTPUT FROM SVOLID IS THE FILE LIBRARY ADDRESS OF THE RESOLVED			*
		3734+	* SPECIFIED VOL-ID - PLACED IN SMBFDA.			*
		3735+	*			*
		3736+	*EXTERNAL REFERENCES			*
		3737+	* SVOBUF - TEMPORARY SECTOR BUFFER SAVE AREA - USER SUPPLIED			*
		3738+	* SVOERR - ERROR EXIT ADDR FROM SVOLID			*
		3739+	* TSMLES - DATA MANAGEMENT COMMUNICATIONS REGION			*
		3740+	* \$\$ILHD - FIRST BYTE OF INPUT LINE HEADER			*
		3741+	* \$\$XIND - EXECUTION INDR PASS AREA			*
		3742+	* \$\$INND - LAST CHARACTER OF INPUT LINE BUFFER			*
		3743+	* \$\$INLN - FIRST CHARACTER OF INPUT LINE BUFFER			*
		3744+	* \$\$PRES - ENTRY TO ENABLE KEYBOARD			*
		3745+	* \$VOLID - ADDR IN SYSTEM NUCLEUS - VOLUME ID TABLE			*
		3746+	* \$CAERR - ADDR IN SYSTEM NUCLEUS - ERROR CODE SAVE AREA			*
		3747+	* \$KEYCD - INDR BYTE CONTAINING KEYBOARD INDR IN SYSTEM NUCLEUS			*
		3748+	* \$CARDI - MASK IN \$KEYCD - CARD INPUT MODE			*
		3749+	* \$SPRNT - ADDR IN SYSTEM NUCLEUS-SYSTEM PRINTER IOCR INTERFACE			*
		3750+	* \$CIMSK - ADDR IN SYSTEM NUCLEUS-IR MASK ROUTINE INDR			*
		3751+	* \$WAITF - ADDR IN SYSTEM NUCLEUS-DISK WAITS DPL			*
		3752+	* \$KYBSY - MASK IN \$KEYCD - KEYBOARD BUSY			*
		3753+	* \$TRUNK - MASK IN \$KEYCD - TRUNCATED LINE INDR			*
		3754+	* \$UNHSK - ADDR IN SYSTEM NUCLEUS-ENTRY TO UNMASK IR			*
		3755+	*			*

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 42
		3756+	*EXITS, NORMAL			*
		3757+	* NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE.			*
		3758+	*			*
		3759+	*EXITS, ERROR			*
		3760+	* \$VOERR - ERROR EXIT ROUTINE IN CALL ROUTINE.			*
		3761+	* (NOTE: ERROR PROCEDURES).			*
		3762+	*			*
		3763+	*TABLES/WORK AREAS			*
		3764+	* CONSTANTS, PPL'S. AND WORK AREAS WHICH ARE ADDRESSED BY THE BASE			*
		3765+	* REGISTER (@BR) ARE LOCATED TO BE REFERENCED AS SUCH. THOSE			*
		3766+	* WHICH ARE NOT ADDRESSED BY A BASE REGISTER ARE LOCATED AT THE			*
		3767+	* END OF THE MODULE.			*
		3768+	*			*
		3769+	*ATTRIBUTES			*
		3770+	* RELOCATABLE, CONDITIONALLY REUSABLE (SEE OTHER).			*
		3771+	*			*
		3772+	*CHARACTER CODE DEPENDENCY			*
		3773+	* CHARACTER CODE DEPENDENCY CLASS - C			*
		3774+	* THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-			*
		3775+	* TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE			*
		3776+	* USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE			*
		3777+	* DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN			*
		3778+	* A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE			*
		3779+	* SPECIAL CONSIDERATIONS FOR THIS MODULE:			*
		3780+	* * CHARACTER CONSTANT FOR DECIMAL L(ONE) INTERNAL EQUATE			*
		3781+	* * CHARACTER CONSTANT FOR DECIMAL 2(TWO) INTERNAL EQUATE			*
		3782+	* * @BLANK - PART OF @SYSEQ - FOR SYNTAX CHECK			*
		3783+	* * @CHARR - PART OF @SYSEQ - FOR SYNTAX CHECK			*
		3784+	* * @CHARF - PART OF @SYSEQ - FOR SYNTAX CHECK			*
		3785+	* * @EOS - PART OF @SYSEQ - FOR SYNTAX CHECK			*
		3786+	*			*
		3787+	*NOTES			*
		3788+	* ERROR PROCEDURES			*
		3789+	* THE FOLLOWING CONDITIONS WILL CAUSE AN ERROR CODE TO BE PLACED			*
		3790+	* IN SCAERR AND AN EXIT BRANCH TO BE TAKEN TO SVOERR:			*
		3791+	* * THE SPECIFIED VOLUME ID IS NOT ON THE SYSTEM.			*
		3792+	* * DUPLICATE VOLUME ID'S ARE RTLADO. AND INPUT IS NOT FROM			*
		3793+	* THE KEYBOARD.			*
		3794+	* * THE SPECIFIED PHYSICAL ID FROM THE KEYBOARD DOES NOT CONTAIN			*
		3795+	* ONE OF THE MULTIPLY DEFINED VOLUME ID'S.			*
		3796+	* * THE SPECIFIEC OR RESOLVED VOLUME DOES NOT CONTAIN A LIBRARY			*
		3797+	* AREA.			*
		3798+	*			*
		3799+	* REGISTER USAGE			*
		3800+	* INDEX REGISTER 1 (@BR) IS USED PRIMARILY AS A BASE REGISTER			*
		3801+	* AND SECONDLY AS AN INDEX IN THE VOL ID TABLE.			*
		3802+	* INDEX REGISTER 2 (@XR) IS USED PRIMARILY AS AN INDEX REGISTER			*
		3803+	* IN THE VOL-ID TABLE AND SECONDLY AS AN INDEX TO SYNTAX CHECK			*
		3804+	* KEYBOARD INPUT WHEN VOLUMES ARE MULTIPLY DEFINED.			*
		3805+	*			*
		3806+	* SAVED/RESTORED AREAS			*
		3807+	* NONE			*
		3808+	*			*
		3809+	* MODIFICATION CONSIDERATIONS			*
		3810+	* VOLID'S SEARCH OF THE VOL-ID TABLE (SVOLID) IS TOTALLY			*
		3811+	* DEPENDENT ON THE FORMAT OF THE TABLE AS IT EXISTS; ESPECIALLY			*

SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 43
		3812+*		THE NUMBER OF ENTRIES WHICH NOW EXIST (IE. FOUR).	*
		3813+*			*
		3814+*		REQUIRED MODULES	*
		3815+*		@CANEQ - COMMON CORE LOCATIONS OUTSIDE SYSTEM NUCLEUS	*
		3816+*		@DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES	*
		3817+*		@ERMEQ - ERROR MESSAGE EQUATES	*
		3818+*		@FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS	*
		3819+*		@SYSEQ - COMMON SYSTEM SOFTWARE EQUATES	*
		3820+*		TSMLES - DATA MANAGEMENT COMMUNICATION REGIONS	*
		3821+*			*
		3822+*		OTHER	*
		3823+*		SVOLID MAY BE RE-USED IF THE CALL ROUTINE WILL PRIME 'SVOCT1'	*
		3824+*		WITH A '4', AND 'SVOCT2' WITH A '0' BEFORE EACH RE-ENTRY.	*
		3825+*		BOTH OF THESE FIELDS ARE 1 BYTE LONG AND CONTIGUOUS, RESPEC-	*
		3826+*		TIVELY. (IE. CAN BE INITIALIZED WITH 'MVC' OF X'0400').	*
		3827+*		*****	*

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 44

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3829+*****
3830+*
3831+*          SVOLID MODULE EQUATES          *
3832+*
3833+*****
3834+*
0001 3835+SVOLN1 EQU 1          LENGTH CODE OF ONE
00F1 3836+SVO001 EQU X'F1'      CONSTANT OF 1 FOR COMPARE
00F2 3837+SVO002 EQU X'F2'      CONSTANT OF 2 FOR COMPARE
3838+*
0100 3839+SVOINP EQU $$XIND-$$ILHD+@B1    LENGTH INPUT BUFFER
00FF 3840+SVOEND EQU $$XIND-$$ILHD        DISP TO END OF SVOBUF
3842+*****
3843+*
3844+*          INITIALIZATION OF MODULE          *
3845+*
3846+*****
3847+*
14A9 3848+SVOLID EQU *          ENTRY POINT
14BB 3849+          USING SVOBSE,@BR        BASE ADDRESS
14A9 34 01 14F5 3850+          ST          SVO274+@OP1,@BR    SAVE BASE CONTENTS
14AD C2 01 14BB 3851+          LA          SVOBSE,@BR        LOAD BASE ADDRESS
14B1 74 02 3E   3852+          ST          SVO276+@OP1(,@BR),@XR  SAVE INDEX REGISTER
14B4 74 08 46   3853+          ST          SVO290+@OP1(,@BR),@ARR  SAVE RETURN ADDR
3855+*****
3856+*
3857+*          SEARCH VOL-ID TABLE          *
3858+*
3859+*****
3860+*
14B7 C2 02 03FB 3861+          LA          $VOLID+@VOLID-@B1,@XR    LOAD XR AS POINTER INTO NUCLEUS
14BB 3862+SVOBSE EQU *
14BB 8D 05 00 17C2 3863+SVO100 CLC @ZERO(@VOLID,@XR),SMVOID IS THIS THE VOL-ID ?
14C0 D0 01 11     3864+          BNE          SVO200(,@BR)        NO, CHECK NEXT ENTRY
14C3 2C 01 17D6 02 3865+          MVC          SMBFDA(@DADDR),@DADDR(,@XR)  SAVE DADDR-DUPLICATE CHECK
14C8 5E 00 48 49   3866+          ALC          SVOCT2(SVOLN1,@BR),SVOONE(,@BR) INCREMENT COUNT
14CC E2 02 08     3867+SVO200 LA @VOLID+@DADDR(,@XR),@XR INCREMENT XR
14CF 5F 00 47 49   3868+          SLC          SVOCT1(SVOLN1,@BR),SVOONE(,@BR) IS THE LAST ENTRY ?
14D3 D0 01 00     3869+          BNZ          SVO100(,@BR)        NO, CHECK NEXT ONE
```

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 45
		3871+	*****		
		3872+	*		
		3873+		PROCESS ENTRY IF FOUND	*
		3874+	*		
		3875+	*****		
		3876+	*		
14D6 7D 01 48		3877+	CLI	SVOCT2(,@BR),@B1	WAS AN ID FOUND ?
14D9 3C 29 03CD		3878+	MVI	\$CAERR,@E217	ERROR - NO ID FOUND
14DD D0 82 33		3879+	BL	SVO270(,@BR)	NO, ERROR EXIT
14E0 D0 84 4A		3880+	BH	SVO300(,@BR)	MORE THAN 1 ID
		3882+	*****		
		3883+	*		
		3884+		CHECK DISK ADDR OF LIBRARY	*
		3885+	*		
		3886+	*****		
		3887+	*		
14E3 3D 00 17D5		3888+SVO260	CLI	SMBFDA-@B1,@ZERO	IS THERE A LIBRARY ?
14E7 F2 01 08		3889+	JNE	SVO274	YES, RETURN
14EA 3C 54 03CD		3890+	MVI	\$CAERR,@E351	ERROR - NO LIBRARY
14EE 3C 87 14FB		3891+SVO270	MVI	SVO280+@Q,@UCB	SET ERROR EXIT
		3893+	*****		
		3894+	*		
		3895+		END OF MODULE PROCESSING	*
		3896+	*		
		3897+	*****		
		3898+	*		
14F2 C2 01 0000		3899+SVO274	LA	*-*,@BR	RESTORE BASE REGISTER
14F6 C2 02 0000		3900+SVO276	LA	*-*,@XR	RESTORE INDEX REGISTER
		3901+	*		
14FA C0 80 0469		3902+SVO280	BC	SVOERR,@NOP	ERROR EXIT
14FE C0 87 0000		3903+SVO290	B	*-*	RETURN

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 46
			3905+	*****	*****	
			3906+	*		
			3907+		DATA CONSTANTS, BUFFERS, WORK AREAS AND SAVE AREAS	*
			3908+	*		
			3909+	*****	*****	
			3910+	*		
1502		1502	3911+	SVOCT1 DS	CL1 COUNTER - NUMBER OF DISKS - 4	
1502			3912+	ORG	SVOCT1 RESET FOR INITIALIZATION	
1502 04		1502	3913+	DC	XL1'04' INITIALIZED TO 4	
			3914+	*		
1503		1503	3915+	SVOCT2 DS	CL1 COUNTER - DUPLICATE DISK LABELS	
1503			3916+	ORG	SVOCT2 RESET FOR INITIALIZATION	
1503 00		1503	3917+	DC	XL1'00' INITIALIZED TO 0	
1504 01		1504	3918+	SVOONE DC	XL1'01' INITIALIZED TO 1 FOR COUNTER	
			3920+	*****	*****	
			3921+	*		
			3922+		PROCESS MULTIPLE ENTRIES	*
			3923+	*		
			3924+	*****	*****	
			3925+	*		
1505 38 01 03C3			3926+	SVO300 TBN	\$KEYCD,\$CARDI IS KEYBOARD INPUT MODE ?	
1509 3C 25 03CD			3927+	SVO310 MVI	\$CAERR,@E212 KEYBOARD NOT INPUT MODE	
150D D0 10 33			3928+	SVO315 BT	SVO270(,@BR) NO ERROR EXIT	



## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 47
			3930+	*****	*****	
			3931+	*		*
			3932+		ASK USER FOR DRIVE CLARIFICATION	*
			3933+	*		*
			3934+	*****	*****	
			3935+	*		
1510 C0 87 0465		1510	3936+	SVO320 EQU *	PRINT MESSAGES	
1514 0C0B			3937+	B \$SPRNT	PRINT MESSAGE	
		1515	3938+	DC AL2(@M300)	ERROR MESSAGE PPL	
			3939+	*		
1516 0C 00 1539 0476			3940+	MVC SVO335+@VQ(@B1), \$CIMSK	OBTAIN CURRENT MASK STATUS	
151C C0 87 0465			3941+	B \$SPRNT	WAIT FOR PRINT	
1520 057F		1521	3942+	DC AL2(\$WAITF)	ADDR OF PPL	
			3944+	*****	*****	
			3945+	*		*
			3946+		MODIFY INPUT BUFFER FOR ACCEPTANCE OF INPUT ANSWER	*
			3947+	*		*
			3948+	*****	*****	
			3949+	*		
		1522	3950+	SVO330 EQU *	ENABLE INPUT ROUTINE	
			3951+	SET FOR JUMP AFTER INITIAL SAVE OF INPUT BUFFER		
1522 F2 80 09			3952+	JC SVO333, @NOP	SAVE SWITCH	
1525 0C FF 18EA 06FF			3953+	MVC SVOBUF+SVOEND(SVOINP), \$\$XIND	SAVE INPUT BUFFER	
152B 7C 87 68			3954+	MVI SVO330+@Q(, @BR), @UCB	SET SWITCH TO BYPASS SAVE	
			3955+	*		
152E 3C 40 06FA			3956+	SVO333 MVI \$\$INND, @BLANK	CLEAR INPUT BUFFER	
1532 0C F2 06F9 06FA			3957+	MVC \$\$INND-@B1(\$\$INND-\$\$INLN), \$\$INND		
			3958+	*		
1538 C0 01 048D			3959+	SVO335 BC \$UNMSK, @VQ	BRANCH IF UNMASKED	
153C C0 87 0890			3960+	B \$\$PRES	GET USER'S RESRONSE	
1540 38 10 03C3			3961+	SVO350 TBN \$KEYCD, \$KYBSY	IS KEYBOARD BUSY ?	
1544 C0 10 1540			3962+	BT SVO350	YES, WAIT	
1548 C0 87 0465			3963+	B \$SPRNT	WAIT FOR PRINTER RETURN	
154C 057F		154D	3964+	DC AL2(\$WAITF)	ADDR OF PPL	

## SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 48
				3966+	*****			
				3967+	*			
				3968+		VERIFY VOL-ID ON DRIVE SPECIFIED		
				3969+	*			
				3970+	*****			
				3971+	*			
154E	C2	02	0606	3972+	LA	\$\$INLN-@B1,@XR	ADDR FIRST RESPONSE BYTE	
1552	C2	01	03FB	3973+	LA	\$VOLID+@VOLID-@B1,@BR	REFERENCE POINT FOR THE VOLID	
				3974+	*			
1556	E2	02	01	3975+	SVO360 LA	@B1(,@XR),@XR	INDEX BY BLANK	
1559	BD	40	00	3976+	CLI	@ZERO(,@XR),@BLANK	IS IT A BLANK ?	
155C	C0	81	1556	3977+	BE	SVO360	YES, CHECK NEXT BYTE	
				3978+	*			
1560	BD	F1	01	3979+	CLI	@B1(,@XR),SVO001	IS IT DRIVE 1 ?	
1563	F2	81	0A	3980+	JE	SVO400	YES, CHECK DISK TYPE	
				3981+	*			
1566	BD	F2	01	3982+	CLI	@B1(,@XR),SVO002	IS IT DRIVE 2 ?	
1569	C0	01	1510	3983+	BNE	SVO320	NO, ASK USER AGAIN	
156D	D2	01	10	3984+	LA	2*@VOLID+2*@DADDR(,@BR),@BR	SET INDEX FOR DRIVE 2	
1570	BD	D9	00	3985+	SVO400 CLI	@ZERO(,@XR),@CHARR	IS IT REMOVABLE ?	
1573	F2	81	0A	3986+	JE	SVO440		
				3987+	*			
1576	BD	C6	00	3988+	CLI	@ZERO(,@XR),@CHARF	IS IT FIXED ?	
1579	C0	01	1510	3989+	BNE	SVO320	ASK AGAIN	
157D	D2	01	08	3990+	LA	@VOLID+@DADDR(,@BR),@BR	SET INDEX FOR FIXED	
1580	E2	02	01	3991+	SVO440 LA	@B1(,@XR),@XR	INCREMENT TO NEXT BYTE	
1583	E2	02	01	3992+	SVO445 LA	@B1(,@XR),@XR	INCREMENT TO NEXT BYTE	
1586	BD	40	00	3993+	CLI	@ZERO(,@XR),@BLANK	IS IT A BLANK ?	
1589	C0	81	1583	3994+	BE	SVO445	YES, CHECK NEXT BYTE	
				3995+	*			
158D	BD	1E	00	3996+	CLI	@ZERO(,@XR),@EOS	AT EOS ?	
1590	C0	01	1510	3997+	BNE	SVO320	ASK AGAIN	
				3998+	*			
1594	0C	FF	06FF 18EA	3999+	MVC	\$\$XIND(SVOINP),SVOBUF+SVOEND	RESTORE INPUT	
159A	4D	05	00 17C2	4000+	SVO450 CLC	@ZERO(@VOLID,@BR),SMVOID	IS IT THE VOLID ?	
159F	3C	28	03CD	4001+	MVI	\$CAERR,@E216	VOLUME NOT ON THAT DRIVE	
15A3	C0	01	14EE	4002+	BNE	SVO270	NO, ERROR EXIT	

SVOLID - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE	49
				4004+			*****				
				4005+			*				
				4006+			*				
				4007+		SAVE VOL-ID LIBRARY ADDR	*				
				4008+			*****				
				4009+			*				
15A7	1C	01	17D6	02	4010+	MVC	SMBFDA(@DADDR),@DADDR(,@BR) SAVE LIBRARY ADDR				
15AC	3B	80	03C3		4011+	SBF	\$KEYCD,\$TRUNK SET OFF RM EXCEEDED INDR				
15B0	C0	87	14E3		4012+	B	SVO260 NORMAL EXIT				
				4013+	***		END OF SVOLID			***	
				4014	*	\$GETD					

SGETDB - GET USER DIRECTORY BLOCK ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 50
4016+				*****	*
4017+	*		5703-XM1	COPYRIGHT IBM CORP. 1970	*
4018+	*			REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083	*
4019+	*				*
4020+				*****	*
4021+	*		STATUS		*
4022+	*		VERSION 1	MODIFICATION 0	*
4023+	*				*
4024+	*		FUNCTION		*
4025+	*		SGETDB	PROVIDES TWO PRIMARY FUNCTIONS. IT WILL SEARCH THE	*
4026+	*		PASSWORD	DIRECTORY FOR A SPECIFIED PASSWORD ONLY, OR IF	*
4027+	*		INDICATED	WILL GO AND READ IN THE FIRST USER BLOCK ASSOCIATED	*
4028+	*		WITH THAT	PASSWORD.	*
4029+	*		IF THE	PASSWORD SEARCH ONLY IS REQUESTED A SWITCH IS SET TO	*
4030+	*		INHIBIT	READING THE DIRECTORY ON SUBSEQUENT ENTRIES.	*
4031+	*		THE	ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET IN \$CAERR.	*
4032+	*		IF THE	PASSWORD IS OR IS NOT FOUND THE INDICATOR IN SMIND1 IS	*
4033+	*		SET	APPROPRIATELY.	*
4034+	*				*
4035+	*		ENTRY	POINTS	*
4036+	*		SGETDB -	ENTRY TO SEARCH PASSWORD DIRECTORY AND GET	*
4037+	*		ASSOCIATED	USER DIRECTORY. THE CALLING SEQUENCE IS	*
4038+	*		AS	FOLLOWS:	*
4039+	*		B	SGETDB	*
4040+	*				*
4041+	*		INPUT		*
4042+	*		THE	BASE ADDRESS OF THE LIBRARY MUST BE IN SM1FDA IN TSMLES.	*
4043+	*		THE	PASSWORD MUST BE IN SMPSWD.	*
4044+	*		IF THE	PASSWORD DIRECTORY IS TO BE SEARCHED ONLY, THEN SM1PDS	*
4045+	*		IN	SMIND1 MUST BE SET TO 1. IF THE FIRST USER DIRECTORY BLOCK	*
4046+	*		ASSOCIATED	WITH THE SPECIFIED PASSWORD IS TO BE READ IN THEN	*
4047+	*		THEN	SM1PDS MUST BE SET TO 0.	*
4048+	*				*
4049+	*		OUTPUT		*
4050+	*		IF THE	SPECIFIED PASSWORD IS FOUND THE ADDRESS OF THE LEFT BYTE	*
4051+	*		OF THE	ENTRY IS PLACED IN SMPEAD, SM1PNF IN SMIND1 IS SET TO 0.	*
4052+	*		AND THE	USER DIRECTORY RDADDR IS PLACED IN SMFUDA.	*
4053+	*		IF THE	USER DIRECTORY WAS REQUESTED, THE READ OPERATION IS	*
4054+	*		STARTED	BUT NO WAIT IS PERFORMED. THE USER DIRECTORIES OVERLAY	*
4055+	*		THE	PASSWORD DIRECTORIES IN CORE.	*
4056+	*		IF THE	SPECIFIED PASSWORD WAS NOT FOUND SM1PNF, IS SET TO 1 AND	*
4057+	*		THE	ADDRESS FOR THE NEXT AVAILABLE ENTRY IS IN SMPEAD.	*
4058+	*				*
4059+	*		EXTERNAL	REFERENCES	*
4060+	*		\$CAERR -	LOCATION FOR SYSTEM ERROR CODE	*
4061+	*		SMIND1 -	DATA MANAGEMENT INDICATOR	*
4062+	*		DL2RAD -	LOCATION OF FILE PHYSICAL BASE ADDRESS	*
4063+	*		SMBFDA -	LOCATION OF LIBRARY BASE ADDRESS	*
4064+	*		DL2ICS -	ENTRY TO DISK I/O ROUTINE	*
4065+	*		\$DISKN -	ENTRY TO SYSTEM DISK IOCS	*
4066+	*		\$WAITF -	LOCATION OF COMMON I/O WAIT FUNCTION	*
4067+	*		SMPSWD -	LOCATION PASSWORD ARGUMENT	*
4068+	*		SMPEAD -	LOCATION OF PASSWORD ENTRY ADDRESS	*
4069+	*		SMFUDA -	LOCATION OF USER DIRECTORY RDADDR	*
4070+	*				*
4071+	*		EXITS,	NORMAL	*

## SGETDB - GET USER DIRECTORY BLOCK ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 51	
			4072+*	NORMAL EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE BRANCH	*	
			4073+*	TO SGETDB	*	
			4074+*		*	
			4075+*	EXITS, ERROR	*	
			4076+*	NONE	*	
			4077+*		*	
			4078+*	TABLES/WORKAREAS	*	
			4079+*	NONE	*	
			4080+*		*	
			4081+*	ATTRIBUTES	*	
			4082+*	RELOCATABLE	*	
			4083+*	REUSABLE	*	
			4084+*		*	
			4085+*	CHARACTER CODE DEPENDENCY	*	
			4086+*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*	
			4087+*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*	
			4088+*		*	
			4089+*	NOTES	*	
			4090+*	ERROR PROCEDURES	*	
			4091+*	THE ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET BUT SGETDB	*	
			4092+*	DETECTS NO PARTICULAR ERROR. THE CONDITION AS TO IF THE	*	
			4093+*	PASSWORD WAS OR WAS NOT FOUND IS INDICATED HOWEVER.	*	
			4094+*		*	
			4095+*	REGISTER USAGE	*	
			4096+*	@BR AND @XR1 ARS SAVED AND RESTORED. @BR IS USED AS A BASE	*	
			4097+*	REGISTER AND @XR IS USED AS AN INDEX TO THE PASSWORD DIRCTY.	*	
			4098+*	@ARR IS USED TO PROVIDE THE RETURN ADDRESS.	*	
			4099+*		*	
			4100+*	SAVED/RESTORED AREAS	*	
			4101+*	NONE	*	
			4102+*		*	
			4103+*	MODIFICATION CONSIDERATIONS	*	
			4104+*	IN USING SGETDB THE USER MUST TAKE INTO CONSIDERATION THAT	*	
			4105+*	SGETDB DOES NOT WAIT FOR THE USER DIRECTORY BLOCK TO BE IN	*	
			4106+*	CORE BEFORE RETURNING.	*	
			4107+*		*	
			4108+*	REQUIRED MODULES	*	
			4109+*	@SYSEQ - SYSTEM SOFTWARE EQUATES	*	
			4110+*	@FXDEQ - NUCLEUS EQUATES	*	
			4111+*	@DIREQ - LIBRARY DIRECTORY EQUATES	*	
			4112+*	DL2ICS - DISK IOCS	*	
			4113+*	TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA	*	
			4114+*		*	
			4115+*	OTHER	*	
			4116+*	NONE	*	
			4117+*	*****	*	
			4118+*	SGETDB ENTER BASE, SGETDB, EXIT, SGE90, @BR, @XR, @ARR	*	
		15B4	4119+	USING SGETDB, @BR	BASE ADDRESS SPECIFICATION	
		15B4	4120+	SGETDB EQU *	MODULE ENTRY POINT	
15B4	34	01	162C	4121+	ST SGE900+@OP1, @BR	SAVE @BR
15B8	C2	01	15B4	4122+	LA SGETDB, @BR	LOAD BASE REGISTER
15BC	74	02	7C	4123+	ST SGE901+@OP1(, @BR), @XR	SAVE @XR
15BF	74	08	80	4124+	ST SGE902+@OP1(, @BR), @ARR	SAVE RETURN ADDRESS
			4125+***	END OF EXPANSION ***		

15C2 3C 23 03CD

4127+ MVI \$CAERR, @@E210

PASSWORD NOT ON DISK

## SGETDB - GET USER DIRECTORY BLOCK ROUTINE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 52

15C6	3B 08 17BC		4128+	SBF	SMIND1,SM1PNF	INITIALIZE INDICATOR TO FOUND
15CA	F2 80 15		4129+SGE050	JC	SGE055,@NOP	SET SWITCH FOR 2ND ENTRY
15CD	7C 87 17		4130+	MVI	SGE050+@Q(,@BR),@UCB	TURN SWITCH ON FOR NEXT ENTRY
15D0	0C 01 0F81 17D6		4131+	MVC	DL2RAD,SMBFDA	STUFF IN THE BASE ADDR
15D6	C0 87 0EE9		4132+	B	DL2ICS	CALL DISK I/O ROUTINE
15DA	1635	15DB	4133+	DC	AL2(SGEDPL)	POINTER TO PARAMETER LIST
15DC	C0 87 0025		4134+	B	\$DISKN	WAIT FOR DIRCTY TO LOAD
15E0	057F	15E1	4135+	DC	AL2(\$WAITF)	WAIT FOR DIRCTY
15E2	75 02 86		4137+SGE055	L	SGEDPL+@DBFR2(,@BR),@XR	PASSWORD BUFFER CADDR
15E5	6C 00 89 00		4138+	MVC	SGECNT(1,@BR),##DPHC(,@XR)	ENTRY COUNT TO WORK
15E9	E2 02 04		4139+	LA	##DPE1(,@XR),@XR	BUMP TO FIRST PASSWORD
			4140+*			
15EC	2D 07 17CA 07		4141+SGE060	CLC	SMPSWD(##LPEN),##DPEN(,@XR)	LOOK AT PSWD ENTRY
15F1	F2 81 0E		4142+	JE	SGE070	FOUND THE PSWD
15F4	E2 02 0C		4143+	LA	##LPE(,@XR),@XR	BUMP TO LOOK AT NEXT ENTRY
15F7	5F 00 89 8B		4144+	SLC	SGECNT(1,@BR),SGEC01(,@BR)	DECR ENTRY COUNT
15FB	D0 01 38		4145+	BNE	SGE060(,@BR)	BACK FOR LOOK AT ENTRY
15FE	3A 08 17BC		4146+	SBN	SMIND1,SM1PNF	NOT FOUND INDICATOR
			4147+*			
			4148+*			
			4149+*		THE PASSWORD OR THE END OF THE DIRCTY HAS BEEN FOUND,	
			4150+*		SAVE THE POINTERS.	
1602	34 02 17E4		4151+SGE070	ST	SMPEAD,@XR	SAVE ENTRY ADDRESS
1606	2C 01 17E6 09		4152+	MVC	SMFUDA(@DADDR),##DPEA(,@XR)	POSSIBLE USER DADDR OF BLK
160B	38 10 17BC		4153+	TBN	SMIND1,SM1PDS	TEST SEARCH BIT ONLY ON
160F	F2 10 17		4154+	JT	SGE900	SEARCH ONLY SO EXIT
1612	7D 00 89		4155+	CLI	SGECNT(,@BR),@ZERO	TEST COUNT IF ENTRY FOUND
1615	F2 81 11		4156+	JE	SGE900	JUMP IF NOT FOUND
1618	6C 01 83 09		4157+SGE080	MVC	SGEDPL+@DSAD(@DADDR,@BR),##DPEA(,@XR)	BLK ADDR TO DPL
161C	C0 87 0EE9		4158+	B	DL2ICS	CALL TO READ USER DIRCTY
1620	1635	1621	4159+	DC	AL2(SGEDPL)	POINTER TO PARAMETER LIST
			4160+*			
1622	7C 80 17		4161+	MVI	SGE050+@Q(,@BR),@NOP	TURN OFF SKIP INSTR
1625	5C 01 83 88		4162+	MVC	SGEDPL+@DSAD(@DADDR,@BR),SGERAD(,@BR)	RESTORE DSAD PSWD
			4163+*			
			4164+*SGE900	EXIT	@BR,@XR,,RETURN	
1629	C2 01 0000		4165+SGE900	LA	*-*,@BR	RESTORE OBR
162D	C2 02 0000		4166+SGE901	LA	*-*,@XR	RESTORE OXR
1631	C0 87 0000		4167+SGE902	B	*-*	RETURN TO CALLING PROGRAM
			4168+***		END OF EXPANSION ***	
			4169+*			
			4170+*		DPL TO READ IN THE PASSWORD DIRCTY	
			4171+*			
			4172+*SGEDPL \$DPL	FUNC-@DGET,DADDR-##RP,CNT-##LP,CADDR-SMPDB1		
		1635	4173+SGEDPL	EQU	*	DISK PARAMETER
1635	01	1635	4174+	DC	AL1(@DGET)	REQUESTED FUNCTION
1636	0001	1637	4175+	DC	AL2(##RP)	DISK ADDRESS
1638	04	1638	4176+	DC	AL1(##LP)	SECTOR COUNT
1639	17EB	163A	4177+	DC	AL2(SMPDB1)	BUFFER ADDRESS
			4178+***		END OF EXPANSION ***	
163B	0001	163C	4180+SGERAD	DC	AL2(##RP)	RELATIVE DADDR OF DIRCTY
163D		163D	4181+SGECNT	DS	CL1	SAVE AREA FOR ENTRY COUNT
163E	0001	163F	4182+SGEC01	DC	IL2'1'	CONSTANT 1 FOR ADDR MODIFCATION

[illegible][illegible][illegible]



## SRCHFN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 54
4188+				*****	*
4189+	*		5703-XM1	COPYRIGHT IBM CORP. 1970	*
4190+	*			REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083	*
4191+	*				*
4192+				*****	*
4193+	*		STATUS		*
4194+	*		VERSION 1	MODIFICATION 0	*
4195+	*				*
4196+	*		FUNCTION		*
4197+	*			* SRCHFN SEARCHES A USER DIRECTORY FOR A SPECIFIED FILENAME. IT	*
4198+	*			IS ASSUMED THAT THE DIRECTORY TO BE SEARCHED HAS BEEN READ INTO	*
4199+	*			CORE AT SMUDBI IN TSMLES. IF THE DIRECTORY IS LINKED TO AN	*
4200+	*			ADDITIONAL BLOCK IT IS READ IN TO THE SECONDARY BUFFER WHILE	*
4201+	*			THE PRIMARY BLOCK IS SEARCHED.	*
4202+	*			* THE ADDRESS OF THE ENTRY OR THE ADDRESS FOR A NEW ENTRY IS	*
4203+	*			PLACED IN SMUDEA. THE ADDRESS OF THE ACTIVE DIRECTORY IS PLACED	*
4204+	*			IN SMUDBA. IF THE NAME WAS NOT FOUND SMIFNE IS SET TO 1 IN	*
4205+	*			SMIND1. IF THE NAME WAS FOUND THE INDICATOR IS SET TO 0.	*
4206+	*				*
4207+	*		ENTRY POINTS		*
4208+	*		SRCHFN -	ENTRY TO SEARCH FOR A FILENAME. THE CALLING SEQUENCE	*
4209+	*			IS AS FOLLOWS:	*
4210+	*		B	SRCHFN	*
4211+	*				*
4212+	*		INPUT		*
4213+	*			THE USER DIRECTORY BLOCK MUST BE READ INTO SMUDB1 IN TSMLES.	*
4214+	*			THE NAME OF THE ENTRY TO SEARCH FOR MUST BE IN SMFNAM IN TSMLES	*
4215+	*				*
4216+	*		OUTPUT		*
4217+	*			* IF THE FILE NAME IS FOUND THE ADDRESS OF THE ENTRY IS SET IN	*
4218+	*			SMUDEA. THE ADDRESS OF THE BUFFER CONTAINING THE ENTRY IS IN	*
4219+	*			SMUDBA, AND THE INDICATOR BIT SMIFNE IN SMIND1 IS SET TO 0.	*
4220+	*			* IF THE FILE NAME WAS NOT FOUND SMUDEA CONTAINS THE ADDRESS OF	*
4221+	*			WHERE THE NEXT ENTRY MAY BE MADE IN THE DIRECTORY. SMUDBA	*
4222+	*			CONTAINS THE ADDRESS OF THE BUFFER CONTAINING THE LAST BLOCK,	*
4223+	*			AND SMIFNE IS SET TO 1 IN SMIND1.	*
4224+	*			* SMUDEA CONTAINS THE ADDRESS OF THE LEFTMOST BYTE OF THE FIELD,	*
4225+	*			* THE ERROR CODE FOR FILE NOT FOUND IS ALWAYS MOVED TO \$CAERR,	*
4226+	*				*
4227+	*		EXTERNAL REFERENCES		*
4228+	*		\$CAERR -	LOCATION OF ERROR CODE INDICATOR.	*
4229+	*		\$DISKN -	ENTRY TO DISK IOCS.	*
4230+	*		\$WAITF -	ADDRESS OF COMMON I/O WAIT FUNCTION.	*
4231+	*		DL2ICS -	ENTRY TO DISK LOGICAL IOCS.	*
4232+	*		SMFNAM -	ADDRESS OF FILENAME SAVE AREA	*
4233+	*		SMUDEA -	ADDRESS OF USER DIRECTORY ENTRY ADDRESS.	*
4234+	*		SMUDBA -	ADDRESS OF USER DIRECTORY BUFFER ADDRESS.	*
4235+	*		SMDAAD -	LOCATION OF RELATIVE DISK ADDRESS OF ACTIVE BUFFER.	*
4236+	*		SMIFNE -	VALUE OF NOT FOUND INDICATOR.	*
4237+	*		SMIND1 -	LOCATION INDICATOR 1.	*
4238+	*		SMUDB1 -	ADDRESS OF DIRECTORY BLOCK BUFFER.	*
4239+	*		SMUDB2 -	ADDRESS OF DIRECTORY BLOCK BUFFER.	*
4240+	*				*
4241+	*		EXITS, NORMAL		*
4242+	*			THE REGISTER @BR @XR ARE RESTORED AND THE EXIT IS TO THE	*
4243+	*			ADDRESS SAVED FROM THE @ARR REGISTER.	*

## SRCHFVN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 55
		4244+	*				*
		4245+	*	EXITS, ERROR			*
		4246+	*	NONE.			*
		4247+	*				*
		4248+	*	TABLES/WORKAREAS			*
		4249+	*	NONE			*
		4250+	*				*
		4251+	*	ATTRIBUTES			*
		4252+	*	RELOCATABLE			*
		4253+	*				*
		4254+	*	CHARACTER CODE DEPENDENCY			*
		4255+	*	CHARACTER CODE DEPENDENCY CLASS - C			*
		4256+	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-			*
		4257+	*	TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE			*
		4258+	*	USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-			*
		4259+	*	DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN			*
		4260+	*	A CORRECT MODULE FOR THE NEW DEFINITIONS.			*
		4261+	*				*
		4262+	*	NOTES			*
		4263+	*	ERROR PROCEDURES			*
		4264+	*	NONE			*
		4265+	*				*
		4266+	*	REGISTER USAGE			*
		4267+	*	@BR AND @XR ARE SAVED ON ENTRY AND RESTORED AT EXIT.			*
		4268+	*	@ARR IS USED AS THE RETURN ADDRESS.			*
		4269+	*				*
		4270+	*	SAVED/RESTORED AREAS			*
		4271+	*	NONE			*
		4272+	*				*
		4273+	*	MODIFICATION CONSIDERATIONS			*
		4274+	*	NONE			*
		4275+	*				*
		4276+	*	REQUIRED MODULES			*
		4277+	*	@SYSEQ - SYSTEM SOFTWARE EQUATES.			*
		4278+	*	@DIREQ - LIBRARY DIRECTORY EQUATES.			*
		4279+	*	@FXDEQ - SYSTEM NUCLEUS EQUATES.			*
		4280+	*	DL2ICS - LOGICAL DISK IOCS.			*
		4281+	*	TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA.			*
		4282+	*				*
		4283+	*	OTHER			*
		4284+	*	NONE			*
		4285+	*	*****			*

## SRCHFN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 56

1640	34	01	16CA	1640	4287+SRCHFN	EQU	*	ENTRY TO SEARCH FILENAME
					4288+	ST	SRC900+@OP1,@BR	SAVE BASE REGISTER
				1644	4289+	USING	SRC010,@BR	
1644	C2	01	1644		4290+SRC010	LA	SRC010,@BR	SET BASE ADDR
1648	74	02	8A		4291+	ST	SRC910+@OP1(,@BR),@XR	SAVE INDEX REG
164B	74	08	8E		4292+	ST	SRC920+@OP1(,@BR),@ARR	SAVE RETURN ADDR
164E	3C	24	03CD		4293+	MVI	\$CAERR,@E211	FILE NOT FOUND
1652	5C	01	9B A1		4294+	MVC	SRCBF1(@CADDR,@BR),SRCBA1(,@BR)	INITIALIZE OLF POINTER
1656	5C	01	9D A3		4295+	MVC	SRCBF2(@CADDR,@BR),SRCBA2(,@BR)	ALTERNATE BUFFER
165A	5C	01	9F 9B		4296+	MVC	SRCACT(@CADDR,@BR),SRCBF1(,@BR)	SET ACTIVE BUFFER
165E	C0	87	0025		4298+SRC020	B	\$DISKN	WAIT FOR USER BLOCK
1662	057F			1663	4299+	DC	AL2(\$WAITF)	WAIT OP DPL
					4300+*			
1664	7C	87	5E		4301+	MVI	SRC055+@Q(,@BR),@UCB	RESET NOP FOR LINKED DIRCTY
1667	75	02	9F		4302+	L	SRCACT(,@BR),@XR	PICKUP POINTER TO ACTIVE BUFFER
					4303+*			
					4304+*			BLOCK LINK SHOULD ALWAYS BE GREATER THAN 1 IF IT IS
					4305+*			PRESENT. IF NOT THE LINK BYTE SHOULD BE ZERO.
					4306+*			
166A	9D	01	03 A6		4307+	CLC	##DUHB(@DADDR,@XR),SRCC01(,@BR)	TEST LIVE FIELD
166E	F2	82	11		4308+	JL	SRC030	JUMP NOT LINKED
1671	5C	01	AC 9D		4309+	MVC	SRCBFR(@DADDR,@BR),SRCBF2(,@BR)	GET ALTERNATE BUFFER ADDR
1675	6C	01	A9 03		4310+	MVC	SRCADAD(@DADDR,@BR),##DUHB(,@XR)	SET LINK TO MEXT BLOCK
1679	C0	87	0EE9		4311+	B	DL2ICS	READ NEXT BLOCK
167D	16EB			167E	4312+	DC	AL2(SRCDPL)	POINTER TO DPL
					4313+*			
167F	7C	80	5E		4314+	MVI	SRC055+@Q(,@BR),@NOP	SET SWITCH FOR LINKED BLOCK
1682	6C	00	A4 04		4315+SRC030	MVC	SRCCNT(1,@BR),##DUHC(,@XR)	GET ENTRY COUNT
1686	E2	02	0C		4316+	LA	##DUEI(,@XR),@XR	BUMP TO FIRST ENTRY
1689	7D	00	A4		4317+	CLI	SRCCNT(,@BR),@ZERO	IS STARTING COUNT ZERO ?
168C	D0	81	5D		4318+	BE	SRC055(,@BR)	YES, RETURN NOT FOUND
168F	8D	07	07 17D2		4319+SRC035	CLC	##DUEN(##LUEN,@XR),SMFNAM	LOOK AT ENTRY
1694	F2	81	1C		4320+	JE	SRC040	JUMP IF THE NAME IS FOUND
1697	E2	02	32		4321+	LA	##LUE(,@XR),@XR	BUMP THE POINTER FOR NEXT ENTRY
169A	5F	00	A4 A6		4322+	SLC	SRCCNT(1,@BR),SRCC01(,@BR)	DECR ENTRY COUNTER
169E	D0	01	4B		4323+	BNE	SRC035(,@BR)	BACK TO TEXT NEXT ENTRY
16A1	F2	00	2F		4324+SRC055	JC	SRC060,*-*	LINK SWITCH
16A4	5C	01	9B 9D		4325+	MVC	SRCBF1(@CADDR,@BR),SRCBF2(,@BR)	SWITCH BUFFERS
16A8	5C	01	9D 9F		4326+	MVC	SRCBF2(@CADDR,@BR),SRCACT(,@BR)	*
16AC	5C	01	9F 9B		4327+	MVC	SRCACT(@CADDR,@BR),SRCBF1(,@BR)	SET ACTIVE BUFFER
16B0	D0	87	1A		4328+	B	SRC020(,@BR)	GO BACK TO NEXT BUFFER
					4329+*			
					4330+*			FILENAME HAS BEEN FOUND.
					4331+*			
16B3	34	02	17D4		4332+SRC040	ST	SMUDEA,@XR	SAVE ENTRY ADDR
16B7	3B	80	17BC		4333+	SBF	SMIND1,SM1FNE	TURN OFF NOT FOUND INDICATOR
16BB	75	02	9F		4334+SRC050	L	SRCACT(,@BR),@XR	GET CADDR OF ACTIVE BUFFER
16BE	34	02	17D8		4335+	ST	SMUDBA,@XR	SAVE CADDR IN SMALES
16C2	2C	01	17EA 01		4336+	MVC	SMDAAD,##DUHA(@DADDR,@XR)	SAVE RDADDR OF ACTIVE DIRCTY
16C7	C2	01	0000		4337+SRC900	LA	*-*,@BR	RESTORE CALLERS BASE
16CB	C2	02	0000		4338+SRC910	LA	*-*,@XR	RESTORE INDEX
16CF	C0	87	0000		4339+SRC920	B	*-*	RETURN
					4341+*			
					4342+*			FILENAME WAS NOT FOUND. SAVE ADDR FOR NEXT ENTRY AND



## SRCHFVN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/02/22	PAGE 58
			4349+*					
			4350+*		CONSTANTS AND WORK AREA			
			4351+*					
16DE		16DF	4352+SRCBF1	DS	CL(@CADDR)			WORK AREA PRIMARY BUFFER ADDR
16E0		16E1	4353+SRCBF2	DS	CL(@CADDR)			WORK AREA SECONDARY BUFFER ADDR
16E2		16E3	4354+SRCACT	DS	CL(@CADDR)			SAVE AREA FOR ACTIVE BUFFER
16E4	17EB	16E5	4355+SRCBA1	DC	AL2(SMUDB1)			ADDRESS OF USED DIRCTY BLUFFER 1
16E6	19EB	16E7	4356+SRCBA2	DC	AL2(SMUDB2)			ADDRESS OF DIRCTY BUFFER 2
16E8		16E8	4357+SRCCNT	DS	CL1			WORK AREA FOR ENTRY COUNT
16E9	0001	16EA	4358+SRCC01	DC	IL2'1'			CONSTANT TO DECR ENTRY COUNT
		16EB	4359+SRCDPL	EQU	*			DEFINE LEFT END OF DPL
16EB	01	16EB	4360+SRCGET	DC	AL1(@DGET)			READ OP CODE
16EC		16ED	4361+SRCDAD	DS	CL(@DADDR)			RELATIVE ADDR OF BLOCK
16EE	02	16EE	4362+SRCST	DC	AL1(##LU)			SECTOR COUNT FOR BLOCK
16EF		16F0	4363+SRCBFR	DS	CL(@CADDR)			BUFFER ADDR OF BLOCK
			4364+***			END OF SRCHFVN		***
			4365 *		\$ALPH			

## SALPHA - SYNTAX CHECKER MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 59
4367+				*****	*
4368+	*	5703-XM1		COPYRIGHT IBM CORP. 1970	*
4369+	*			REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
4370+	*				*
4371+				*****	*
4372+	*			STATUS	*
4373+	*			VERSION 1 MODIFICATION 0	*
4374+	*				*
4375+	*			FUNCTION	*
4376+	*			THE FUNCTION OF SALPHA IS TO SYNTAX CHECK AN 8 CHARACTER OR 6	*
4377+	*			CHARACTER ALPHAMERIC PARAMETER DETERMINED BY THE ENTRY POINT,	*
4378+	*			SALPH8 OR SALPH6 RESPECTIVELY. ENTRY AT SALPHA IMPLIES A REQUEST	*
4379+	*			THAT THE FIRST CHARACTER BE ALPHABETIC. A SYNTACTICALLY CORRECT	*
4380+	*			PARAMETER WILL BE SAVED AT SALPHR (LEFTMOST BYTE ADDRESS), THE	*
4381+	*			COUNT OF THE NUMBER OF VALID CMARACTERS, IF NEEDED, IS FOOD IN	*
4382+	*			SALCNT. UPON ENTRY, SALPHA REQUIRES INDEX RESISTER 2 (OM TO BE	*
4383+	*			ADDRESSING THE FIRST CHARACTER 0, THE PARAMETER TO BE SYNTAX	*
4384+	*			CHECKED. UPON NORMAL RETURN INDEX REGISTER 2 (@XR) WILL BE	*
4385+	*			ADDRESSING THE FIRST NON-DELIMITER FOLLOWING THE PARAMETER (NOTE	*
4386+	*			INPUT),	*
4387+	*				*
4388+	*			ENTRY POINTS	*
4389+	*			* SALPH8 - ENTRY POINT TO SYNTAX CHECK AN EIGHT CHARACTER	*
4390+	*			ALPHAMERIC PARAMETER WHOSE FIRST CHARACTER MUST BE	*
4391+	*			ALPHABETIC.	*
4392+	*			* SALPH6 - ENTRY POINT TO SYNTAX CHECK A SIX CHARACTER	*
4393+	*			ALPHAMERIC PARAMETER WHICH HAS NO RESTRICTIONS ON	*
4394+	*			THE TYPE OF THE FIRST CHARACTER. (NOTE MODIFICA-	*
4395+	*			TION CONSIDERATIONS)	*
4396+	*				*
4397+	*			INPUT	*
4398+	*			UPON ENTRY TO SALPHA, AT EITHER ENTRY POINT, INDEX REGISTER 2	*
4399+	*			(@XR) SHOULD BE ADDRESSING THE LEFTMOST CHARACTER OF THE PARAMETER*	*
4400+	*			TO BE SYNTAX CHECKED. ALSO, THE SWITCH 'SCAMMA' IN SCANIT SHOULD	*
4401+	*			BE SET FOR THE TYPE OF DELIMITER SCAN REQUESTED AFTER THE SYNTAX	*
4402+	*			CHECK. (IE. BLANKS ONLY OR BLANKS WITH 1 COMMA).	*
4403+	*				*
4404+	*			OUTPUT	*
4405+	*			OUTPUT FROM SALPHA INCLUDES THE SYNTAX CHECKED PARAMETER AT SALPHR*	*
4406+	*			(LEFTMOST BYTE OF SAVE AREA) AND THE COUNT OF VALID CHARACTERS	*
4407+	*			IN SALCNT, AND INDEX REGISTER 2 (@XR) WILL BE POINTING AT THE	*
4408+	*			FIRST NON-DELIMITER AFTER THE PARAMETER. THE ONLY EXCEPTION TO	*
4409+	*			THIS IS UPON DETECTION OF AN ERROR (SEE ERROR EXITS AND PROC.)	*
4410+	*				*
4411+	*			EXTERNAL REFERENCES	*
4412+	*			SCANIT - DELIMITER SCAN MODULE	*
4413+	*			\$CAERR - ADDR IN SYSTEM NUCLEUS-ERROR CODE SAVE AREA	*
4414+	*				*
4415+	*			EXITS, NORMAL	*
4416+	*			NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE WITH INDEX	*
4417+	*			REGISTER 2 (@XR) POINTING TO THE NEXT NON-DELIMITER	*
4418+	*			FOLLOWING THE PARAMETER AND WITH A NON-LOW CONDITION CODE	*
4419+	*			IN THE PROGRAM STATUS RESISTER (@PSR),	*
4420+	*				*
4421+	*			EXITS, ERROR	*
4422+	*			NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE WILH INDEX	*

## SALPHA - SYNTAX CHECKER MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 60
		4423+	*	REGISTER 2 (@XR) POINTING TO THE LEFTMOST CHARACTER OF THE	*
		4424+	*	INVALID PARAMETER AND WITH A LOW CONDITION CODE IN THE	*
		4425+	*	PROGRAM STATUS REGISTER (@PSR),	*
		4426+	*		*
		4427+	*	TABLES/WORK AREAS	*
		4428+	*	ALL OF THE CONSTANTS AND WORK AREAS IN SALPHA ARE LOCATED AT THE	*
		4429+	*	END OF THE MODULE AND ARE ADDRESSED BY INDEX REGISTER 1 (RBR).	*
		4430+	*		*
		4431+	*	ATTRIBUTES	*
		4432+	*	REUSABLE, RELOCATABLE	*
		4433+	*		*
		4434+	*	CHARACTER CODE DEPENDENCY	*
		4435+	*	CHARACTER CODE DEPENDENCY CLASS - E	*
		4436+	*	THE OPERATION OF THIS MODULE DEPENDS UPON THE FOLLOWING PROPERTIES	*
		4437+	*	OF THE INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET:	*
		4438+	*	* THE FOLLOWING SPECIAL ALPHABETIC CHARACTERS ARE PART OF	*
		4439+	*	@SYSEQ AND ARE SPECIFICALLY COMPARED FOR:	*
		4440+	*	* @DOLAR	*
		4441+	*	* @NUMBR	*
		4442+	*	* @ASIGN	*
		4443+	*	* THE REMAINING-ALPHABETIC CHARACTERS ARE DEFINED TO BE	*
		4444+	*	INCLUSIVELY IN THE RANGE DEFINED BY THE FOLLOWING IN @SYSEQ:	*
		4445+	*	* @CHARA	*
		4446+	*	* @CHARZ	*
		4447+	*		*
		4448+	*	THE DECIMAL NUMBERS FALL INTO THE CATEGORY OF BEING GREATER	*
		4449+	*	THAN AN @CHARZ (IE. THIS IS DEFAULTED TO BY CHECKING METHOD)	*
		4450+	*	THE SPECIFIC INSTRUCTIONS WHICH REQUIRE MODIFICATION IF THESE	*
		4451+	*	PROPERTIES OF THE CHARACTER SET ARE CHANGED MAY BE IDENTIFIED BY:	*
		4452+	*	* SAL200 - FOR THE THREE SPECIAL CHARACTERS	*
		4453+	*	* SAL250 - FOR THE REMAINING ALPHABETIC RANGE	*
		4454+	*	* SAL425 - BRANCHES 'TO' THIS LOCATION IMPLY DEFAULT TO NUMERIC	*
		4455+	*		*
		4456+	*	NOTES	*
		4457+	*	ERROR PROCEDURES	*
		4458+	*	THE FOLLOWING ERROR CONDITIONS WILL RESULT IN AN ERROR CODE	*
		4459+	*	BEING SET IN \$CAERR AND AN ERROR EXIT BEING MADE (SEE EDITS,	*
		4460+	*	ERROR):	*
		4461+	*	* A NON-ALPHABETIC FIRST CHARACTER WHEN ENTRY WAS AT	*
		4462+	*	SALPH8.	*
		4463+	*	* A NON-ALPHAMERIC CHARACTER EMBEDDED IN A PARAMETER WHICH	*
		4464+	*	SALPH8 WAS CALLED TO CHECK.	*
		4465+	*	* A NON-ALPHAMERIC CHARACTER BEING FIRST OR EMBEDDED IN A	*
		4466+	*	PARAMETER WHICH SALPH6 WAS CALLED TO CHECK.	*
		4467+	*	* A PARAMETER OF GREATER THAN EIGHT CHARACTERS WHEN ENTRY	*
		4468+	*	WAS AT SALPH8.	*
		4469+	*	* A PARAMETER OF GREATER THAN SIX CHARACTERS WHEN ENTRY	*
		4470+	*	WAS AT SALPH6.	*
		4471+	*		*
		4472+	*	REGISTER USAGE	*
		4473+	*	INDEX REGISTER 1 (@BR) IS USED AS A BASE REGISTER THROUGHOUT	*
		4474+	*	THE EXECUTION OF THE MODULE. IT IS SAVED FOR THE CALL PROGRAM	*
		4475+	*	UPON ENTRY AND RESTORED UPON EXIT.	*
		4476+	*	INDEX REGISTER 2 (@XR) IS USED AS A PARAMETER PASSING REGISTER.	*
		4477+	*	UPON ENTRY IT CONTAINS THE ADDRESS OF THE LEFTMOST BYTE OF	*
		4478+	*	PARAMETER TO BE SYNTAX CHECKED AND UPON EXIT IT CONTAINS THE	*



## SALPHA - SYNTAX CHECKER MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 61
		4479+*		ADDRESS OR THE FIRST NON-DELIMITER FOLLOWING THE PARAMETEP.	*
		4480+*		(NOTE ERROR EXITS AND PROCEDURES),	*
		4481+*			*
		4482+*		SAVED/RESTORED AREAS	*
		4483+*		NONE	*
		4484+*			*
		4485+*		MODIFICATION CONSIDERATIONS	*
		4486+*		BECAUSE OF ITS CHARACTER CODE DEPENDENCY AND PARAMETER LENGTH	*
		4487+*		QUALIFICATIONS, ONE MUST TAKE SPECIAL CARE IN MODIFYING SALPHA,	*
		4488+*		ESPECIALLY THE CONSTANTS AND WORK AREAS AND THEIR RE-INITIAL,	*
		4489+*		IZATION. SALPHA IS MOST COMMONLY USED TO SYNTAX FILENAMES,	*
		4490+*		PASSWORDS, AND VOL-IDS AND IS THEREFORE USED BY THE MODULE	*
		4491+*		SUFFER (FILE SPECIFICATION SYNTAX CHECKER). THEREFORE, ANY	*
		4492+*		SIGNIFICANT CHANGE IN SALPHA WILL REQUIRE AN INVESTIGATION	*
		4493+*		INTO ITS USE AND IMPACT ON SUFFER.	*
		4494+*		SPECIAL NOTE: AN IRREGULAR USE OF SALPHA WHICH CAN BE	*
		4495+*		EFFECTED IS THE SYNTAY CHECK OF A PARAMETER WITH A MAXIMUM	*
		4496+*		OF 10 CHARACTERS. THIS IS DONE BY MODIFYING THE Q-CODE OF	*
		4497+*		THE INSTRUCTION AT SAL450 PRIOR TO ENTRANCE AT SALPH6, WITH	*
		4498+*		X'0A' OR ITS EQUIVALENT. (NOTE: ONE SUCH MODULE WHICH	*
		4499+*		USES THIS OPTION IS UINITL)	*
		4500+*			*
		4501+*		REQUIRED MODULES	*
		4502+*		SCANIT - DELIMITER SCAN ROUTINE	*
		4503+*		@DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES	*
		4504+*		@ERMEQ - ERROR MESSAGE EQUATES	*
		4505+*		@FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS	*
		4506+*		@SYSEQ - COMMON SYSTEM SOFTWARE EQUATES	*
		4507+*			*
		4508+*		OTHER	*
		4509+*		N/A	*
		4510+*		*****	*
		4512+*		*****	*
		4513+*			*
		4514+*		SALPHA MODULE EQUATES	*
		4515+*			*
		4516+*		*****	*
	0008	4517+SALCT8 EQU	##LUEN	COUNT COMPARE FIELD	
		4518+*			
	0006	4519+SALCT6 EQU	@VOLID	COUNT COMPARE FIELD	
		4521+*		*****	*
		4522+*			*
		4523+*		INITIALIZATION OF MODULE	*
		4524+*			*
		4525+*		*****	*
		4527+*	SALPH8 ENTER CHECK	FILENAME OR PASSWORD	
16F1		4528+SALPH8 EQU	*	MODULE ENTRY POINT	
		4529+***	END OF EXPANSION ***		
16F1 3A 80 17AC		4531+*	SBN SALIDR,SAL008	SET ON SALPH8 INDR	
		4532+*			
		4533+*	SALPH6 ENTER BASE-SALBSE,EXIT-SALND,@BR,,@ARR	VOL-ID CHECK	

## SALPHA - SYNTAX CHECKER MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/02/22 PAGE 62

			1711	4534+	USING	SALBSE,@BR	BASE ADDRESS SPECIFICATION
			16F5	4535+SALPH6	EQU	*	MODULE ENTRY POINT
16F5	34	01	17A7	4536+	ST	SALND0+@OP1,@BR	SAVE ABA
16F9	C2	01	1711	4537+	LA	SALBSE,@BR	LOAD BASE RESISTER
16FD	74	08	9A	4538+	ST	SALND2+@OP1(,@BR),@ARR	SAVE RETURN ADDRESS
				4539+***	END OF	EXPANSION ***	
1700	74	02	34	4541+	ST	SAL375+@OP1(,@BR),@XR	SAVE ERROR POINTER
				4543+	*****		
				4544+	*		
				4545+		INITIALIZE WORK AREAS AND VARIABLE INSTRUCTIONS	*
				4546+	*		
				4547+	*****		
1703	7C	40	A8	4548+SAL100	MVI	SALPR7(,@BR),@BLANK	BLANK OUT SALPAR FOR PROCESSING
1706	5C	08	A7 A8	4549+	MVC	SALPR6(##LPEN+@B1,@BR),SALPR7(,@BR)	
170A	7C	00	9C	4550+	MVI	SALCNT(,@BR),@ZERO	ZERO OUT COUNTER
170D	5C	01	63 AA	4551+	MVC	SAL525+@OP1(2,@BR),SALPHS(,@BR)	MODIFY MOVE OF CHARACTER
				4553+	*****		
				4554+	*		
				4555+		CHECK EBCDIC CHARACTERS	*
				4556+	*		
				4557+	*****		
				4558+	*		
			1711	4559+SALBSE	EQU	*	MODULE BASE ADDR
1711	BD	5B	00	4560+SAL200	CLI	@ZERO(,@XR),@DOLAR	IS IT A '\$' ?
1714	F2	81	32	4561+	JE	SAL400	YES, PROCESS CHARACTER
1717	BD	7B	00	4562+	CLI	@ZERO(,@XR),@NUMBR	IS IT A '#' ?
171A	F2	81	2C	4563+	JE	SAL400	YES, PROCESS CHARACTER
171D	BD	7C	00	4564+	CLI	@ZERO(,@XR),@ASIGN	IS IT A '@' ?
1720	F2	81	26	4565+	JE	SAL400	YES, PROCESS CHARACTER
				4566+	*		
1723	BD	C1	00	4567+	CLI	@ZERO(,@XR),@CHARA	IS IT AN ALPHA (A-Z) ?
1726	F2	82	53	4568+SAL250	JL	SAL750	NO, CHECK FOR DELIMITERS
1729	BD	E9	00	4569+	CLI	@ZERO(,@XR),@CHARZ	IS IT AN ALPHA (A-Z) ?
172C	F2	04	1A	4570+	JNH	SAL400	YES, PROCESS CHARACTER
172F	78	80	9B	4571+	TBN	SALIDR(,@BR),SAL008	ENTERED AT SALPH8 ?
1732	F2	90	17	4572+	JF	SAL425	NO, CHECK IF NUMERIC
				4573+	*		
1735	78	01	9B	4574+	TBN	SALIDR(,@BR),SALFST	WAS FIRST CHAR FOUND ALPHA ?
1738	3C	00	03CD	4575+	MVI	\$CAERR,@@E100	ALPHA CHAR REQUIRED--ERROR
173C	F2	10	0D	4576+	JT	SAL425	YES, CONTINUE
173F	75	04	16	4577+SAL350	L	SALERR(,@BR),@PSR	LOAD ERROR CODE - LOW
1742	C2	02	0000	4578+SAL375	LA	*-*,@XR	RESTORE ERROR POINTER
1746	F2	87	58	4579+	J	SAL800	TAKE ERROR FAIT
				4581+	*****		
				4582+	*		
				4583+		PROCESS ALPHAMERIC CHARACTER	*
				4584+	*		
				4585+	*****		
1749	7A	01	9B	4586+SAL400	SBN	SALIDR(,@BR),SALFST	SET ON ALPHA :NOR
				4587+	*		
174C	5E	00	9C 9E	4588+SAL425	ALC	SALCNT(1,@BR),SAL001(,@BR)	ADD 1 TO CHARACTER COUNTER
1750	78	80	9B	4589+	TBN	SALIDR(,@BR),SAL008	WAS ENTRY AT SALPH8 ?

## SALPHA - SYNTAX CHECKER MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/02/22 PAGE 63
1753	D0	90	52	4590+	BF		SAL450(, @BR)	NO, CHECK COUNT FOR VALUE OF SIX
1756	7D	08	9C	4591+	CLI		SALCNT(, @BR), ##LPEN	HAS COUNT EXCEEDED 8 ?
1759	3C	02	03CD	4592+	MVI		\$CAERR, @@E102	PASSWORD/FILENAME LENGTH ERROR
175D	D0	84	2E	4593+	BH		SAL350(, @BR)	YES, TAKE ERROR EXIT
1760	F2	87	0A	4594+	J		SAL500	NO, CONTINUE PROCESSING
1763	7D	06	9C	4595+	CLI	SAL450	SALCNT(, @BR), @VOLID	HAS COUNT EXCEEDED 6 ?
1766	3C	03	03CD	4596+	MVI		\$CAERR, @@E103	INVALID VOL-ID LENGTH
176A	D0	84	2E	4597+	BH		SAL350(, @BR)	YES, TAKE ERROR EXIT
				4599+*				
				4600+*			MODIFY MOVE OF CHARACTER	
				4601+*				
176D	5E	01	63 9E	4602+	ALC	SAL500	SAL525+@OP1(2, @BR), SAL001(, @BR)	
1771	2C	00	0000 00	4603+	MVC	SAL525	*-*, @ZERO(1, @XR)	MOVE CHARACTER TO OUTPUT AREA
1776	E2	02	01	4604+	LA		@B1(, @XR), @XR	INCREMENT XR BY I
1779	D0	87	00	4605+	B		SAL200(, @BR)	CHECK NEXT CHARACTER
				4607+*****				
				4608+*				*
				4609+*			CHECK ERRORS AND BYPASS DELIMITERS	*
				4610+*				*
				4611+*****				
177C	7D	00	9C	4612+	CLI	SAL750	SALCNT(, @BR), @ZERO	ANY VALID CHARACTERS ?
177F	3C	10	03CD	4613+	MVI	SAL755	\$CAERR, @@E130	REQUIRED PARAM MISSING
1783	F2	01	17	4614+	JNE		SAL775	YES, BYPASS DELIMITERS, EYIT
1786	BD	1E	00	4615+	CLI		@ZERO(, @XR), @EOS	IS IT EOS ?
1789	F2	81	0E	4616+	JE		SAL760	YES, ERROR EVIL
178C	78	80	9B	4617+	TBN		SALIDR(, @BR), SAL008	ENTERED AT SALPH8 ?
178F	3C	00	03CD	4618+	MVI		\$CAERR, @@E100	ALPHABETIC CHAR REQUIRED
1793	F2	10	04	4619+	JT		SAL760	ERROR EYIT
1796	3C	01	03CD	4620+	MVI		\$CAERR, @@E101	ALPHAMERIC CHAR REQUIRED
179A	D0	87	2E	4621+	B	SAL760	SAL350(, @BR)	ERROR EYIT
179D	C0	87	11CF	4622+	B	SAL775	SCANIT	BYPASS DELIMITERS
				4624+*****				
				4625+*				*
				4626+*			SET OFF INDICATORS FOR POSSIBLE SALDHA RE-ENTRY	*
				4627+*				*
				4628+*****				
17A1	7C	00	9B	4629+	MVI	SAL800	SALIDR(, @BR), @ZERO	
				4631+*****				
				4632+*				*
				4633+*			END OF MODULE PROCESSING	*
				4634+*				*
				4635+*****				
				4636+*	EXIT	SALND	@BR, ,RETURN	EXIT
17A4	C2	01	0000	4637+	LA	SALND0	*-*, @BR	RESTORE @BR
17A8	C0	87	0000	4638+	B	SALND2	*-*	RETURN TO CALLING PROGRAM
				4639+***			END OF EXPANSION ***	
				4641+*****				
				4642+*				*
				4643+*			DATA CONSTANTS, BUFFERS, AND WORK AREAS	*
				4644+*				*
				4645+*****				

SALPHA - SYNTAX CHECKER MODULE

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00		19/02/22	PAGE	64
17AC			17AC	4646+	SALIDR DS	CL1					1 BYTE OF FLAGS
17AC				4647+	ORG	*-1					
17AC	00		17AC	4648+	DC	XL1'00'					INITIALIZED TO ZERO
			0080	4650+	SAL008 EQU	X'80'					ENTRY POINT INDICATOR
				4651+	*						* 0 - ENTERED AT SALPH6
				4652+	*						* 1 - ENTERED AT SALPH8
			0001	4653+	SALFST EQU	X'01'					FIRST CHARACTER IS ALPHA / INDR
				4654+	*						* 0 - CHARACTER IS NOT ALPHA
				4655+	*						* 1 - CHARACTER IS ALPHA
17AD			17AD	4656+	SALCNT DS	CL1					BYTE CHARACTER COUNTER
17AD				4657+	ORG	*-1					
17AD	00		17AD	4658+	DC	XL1'00'					INITIALIZED TO ZERO
17AE	0001		17AF	4659+	SAL001 DC	XL2'0001'					COUNTER INCREMENT
			17B0	4660+	SALPHR EQU	*					
17B0			17B9	4661+	DS	CL(##LUEN+2*@B1)					SYNTAX SAVE UNIT
17BA	17AF		17BB	4662+	SALPHS DC	AL2(SALPHR-1)					ADDR FOR MODIFYING MOVE
			17B9	4663+	SALPR7 EQU	SALPHR+##DPEN+2*@B1					ADDR IN SALPHR FOR CLANKINS
			17B8	4664+	SALPR6 EQU	SALPHR+##DPEN+@B1					* OUT THE FIELD
			1727	4665+	SALERR EQU	SAL250+@Q					ADDR ERROR CODE FOR LOAD
				4666+	***						END OF SALPHA ***
			4667	*	\$MALE						

## TSMLES - (SMALES) DATA MANAGEMENT COMMON AREAS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/02/22	PAGE 65
		4669+		*****			*
		4670+	*	5703-XM1 COPYRIGHT IBM CORP. 1970			*
		4671+	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083			*
		4672+	*				*
		4673+		*****			*
		4674+	*	STATUS			*
		4675+	*	VERSION 1 MODIFICATION 0			*
		4676+	*				*
		4677+	*	FUNCTION			*
		4678+	*	* TSMLES PROVIDES A COMMON SET OF BUFFERS AND WORK AREAS FOR DATA			*
		4679+	*	MANAGEMENT KEYWORDS AND THERE ASSOCIATED SUBROUTINES. THE WORK			*
		4680+	*	AREAS PROVIDE A COMMON COMMUNICATION BETWEEN SUBROUTINES THAT			*
		4681+	*	PERFORM A VARIETY OF FUNCTIONS WITH THE LIBRARY.			*
		4682+	*	THIS ELIMINATES A LARGE AMOUNT OF CUMBERSOME PARAMETER PASSING.			*
		4683+	*				*
		4684+	*	ENTRY POINTS			*
		4685+	*	N/A			*
		4686+	*				*
		4687+	*	INPUT			*
		4688+	*	N/A			*
		4689+	*				*
		4690+	*	OUTPUT			*
		4691+	*	N/A			*
		4692+	*				*
		4693+	*	EXTERNAL REFERENCES			*
		4694+	*	N/A			*
		4695+	*				*
		4696+	*	EXITS, NORMAL			*
		4697+	*	N/A			*
		4698+	*				*
		4699+	*	EXITS, ERROR			*
		4700+	*	N/A			*
		4701+	*				*
		4702+	*	TABLES/WORKAREAS			*
		4703+	*	N/A			*
		4704+	*				*
		4705+	*	ATTRIBUTES			*
		4706+	*	N/A			*
		4707+	*				*
		4708+	*	CHARACTER CODE DEPENDENCY			*
		4709+	*	N/A			*
		4710+	*				*
		4711+	*	NOTES			*
		4712+	*	ERROR PROCEDURES			*
		4713+	*	N/A			*
		4714+	*	REGISTER USAGE			*
		4715+	*	N/A			*
		4716+	*	SAVED/RESTORED AREAS			*
		4717+	*	N/A			*
		4718+	*	MODIFICATION CONSIDERATIONS			*
		4719+	*	N/A			*
		4720+	*	REQUIRED MODULES			*
		4721+	*	N/A			*
		4722+	*	OTHER			*
		4723+	*	N/A			*
		4724+	*	*****			*

## TSMLES - (SMALES) DATA MANAGEMENT COMMON AREAS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/02/22 PAGE 66
			4726+	*****	
			4727+*	SMALES- SYSTEM DATA MANAGEMENT COMMON SAVE AREAS AND EQUATES	*
			4728+*	USED TO PROVIDE COMMUNICATION BETWEEN SUBROUTINES USED	*
			4729+*	BY THE VARIOUS KEYWORDS INVOLVED WITH FILE MANIPULATION	*
			4730+	*****	
			4731+*		
		17BC	4732+	SMALES EQU *	START OF MANAGEMENT AREA
		17BC	4733+	SMIND1 EQU SMALES	INDICATOR BYTE 1
		0080	4734+	SM1FNE EQU X'80'	SRCHFN INDR NAME NOT FOUND
		0040	4735+	SM1NPD EQU X'40'	PACK INDR NULL DIRCTY FULL
		0020	4736+	SM1STN EQU X'20'	STORIN PACK INDICATOR BIT
		0010	4737+	SM1PDS EQU X'10'	SGETDB SEARCH ONLY FLAG
		0008	4738+	SM1PNF EQU X'08'	SGETDB PASSWORD NOT FOUND
		17C2	4739+	SMVOID EQU SMIND1+6	SPECIFIED VOLUME ID SAVE AREA
		17CA	4740+	SMPSWD EQU SMVOID+8	SPECIFIED PASSWORD SAVE AREA
		17D2	4741+	SMFNAM EQU SMPSWD+8	SPECIFIED FILENAME SAVE AREA
		17D4	4742+	SMUDEA EQU SMFNAM+2	FILENAME DIRCTY ENTRY ADDR
		17D6	4743+	SMBFDA EQU SMUDEA+2	DADDR OF FILE LIBRARY
		17D8	4744+	SMUDBA EQU SMBFDA+2	CADDR OF ACTIVE BUFFER ADDR
		17DA	4745+	SMNULT EQU SMUDBA+2	TOTAL OF NULL SECTORS AVAILABLE
		17DC	4746+	SMNDEA EQU SMNULT+2	NULL DIRCTY ENTRY ERROR
		17DE	4747+	SMNSCT EQU SMNDEA+2	COUNT OF NULL SECTORS REQUIRED
		17E0	4748+	SMNETD EQU SMNSCT+2	CADDR NEW ENTRY TO NULL DIRCTY
		17E2	4749+	SMUPEN EQU SMNETD+2	CADDR NEW USER DIRCTY ENTRY
		17E4	4750+	SMPEAD EQU SMUPEN+2	CADDR PASSWORD ENTRY
		17E6	4751+	SMFUDA EQU SMPEAD+2	REL DADDR 1ST USER DIRCTY BLOCK
			4752+*		*
			4753+	*****	
			4754+*		*
			4755+*	SMDAAD EQU SMNSCT	RELATIVE DADDR
			4756+*	SMNDBA EQU SMFUDA+2	NULL DIRCTY BUFFER CORE ADDR
			4757+*	SMDAAD EQU SMNDBA+2	DADDR OF ACTIVE DIRCTY
			4758+*	SMPDB1 EQU SMDAAD+1	PASSWORD DIRCTY BUFFER
			4759+*	SMPDB1 EQU SMPDB1	SVOLID TEMP SAVE INPUT BUFFER
			4760+*	SMUDB1 EQU SMPDB1	USER DIRCTY BLOCK 1 BUFFER
			4761+*	SMUDB2 EQU SMUDB1+512	USER DIRCTY BLOCK 2 BUFFER
			4762+*	SMAEND EQU SMUDB2+512	END OF SMALES AREA
			4763+***	END OF SMALES	***
		17E8	4764	SMNDBA EQU SMFUDA+2	NULL DIRCTY BUFFER CORE ADDR
		17EA	4765	SMDAAD EQU SMNDBA+2	DADDR OF ACTIVE DIRCTY
		17EB	4766	SMPDB1 EQU SMDAAD+1	PASSWORD DIRCTY BUFFER
		17EB	4767	SMUDB1 EQU SMPDB1	USER DIRCTY BLOCK 1 BUFFER
		19EB	4768	SMUDB2 EQU SMUDB1+512	USER DIRCTY BLOCK 2 BUFFER
		17EB	4769	SVOBUF EQU SMPDB1	BUFFER ADDRESS FOR SVOLID
17BC 00		17BC	4770	DC IL1'00'	SET SMIND1 TO ZERO
		FFFF	4771	END	

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$	001	0C00	2131	
\$\$\$\$\$1	120	0EE8	2403	
\$\$\$CMD	001	0020	0659	
\$\$\$DAT	001	0040	0658	
\$\$\$EPL	001	0091	0655	
\$\$\$ERN	001	0080	0709	
\$\$\$FUN	001	0010	0660	
\$\$\$NLN	001	00A0	0705	
\$\$\$STD	001	0081	0654	
\$\$\$001	015	0C54	2152	
\$\$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	
\$\$FLIB	001	06FF	0711	
\$\$ILEN	001	0601	0629	0631 0635
\$\$ILHD	001	0600	0627	0629 3839 3840
\$\$INLN	001	0607	0642	0644 0646 2297 3957 3972
\$\$INND	001	06FA	0646	2296* 2297 2297 2297* 3956* 3957 3957 3957*
\$\$KBDT	001	09E1	0653	0657
\$\$KBSN	001	09E2	0657	0662
\$\$KLD1	001	0600	0717	
\$\$KLD2	001	0700	0719	
\$\$KLD3	001	0C00	0721	2122
\$\$LPOS	001	09EB	0662	
\$\$PCNT	001	07E9	0678	
\$\$PLYN	001	2004	0692	
\$\$PRES	001	0890	0651	0653 0663 0664 0665 0666 0683 3960
\$\$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	
\$\$XIND	001	06FF	0708	0711 3839 3840 3953 3999*
\$\$ZERO	001	0000	0223	0224 0226 0227 0228 0232 0690
\$ABORT	001	0010	0336	
\$BASIC	001	0080	0394	2710
\$BIGCD	001	0080	0470	
\$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



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$BSADR	001	0587	0608	0610 2275
\$BUFPT	001	03E3	0489	0490
\$CABLD	001	04B4	0562	0563
\$CAERK	001	0469	0539	0542 2224 2817 2873 2884 3435
\$CAERR	001	03CD	0287	0289 2223* 2813* 2862* 2869* 2872* 2990* 3257* 3259* 3304* 3624* 3655* 3878* 3890* 3927* 4001* 4127* 4293* 4575* 4592* 4596* 4613* 4618* 4620*
\$CAIPL	001	049D	0558	0560 2174
\$CALLI	001	0008	0479	2298
\$CARDI	001	0001	0250	2295 3926
\$CARPL	001	04A1	0560	0562 2302
\$CIENT	001	0483	0549	0550
\$CIEXT	001	0480	0548	0549
\$CIMSK	001	0476	0545	0548 3940
\$CISUS	001	0496	0553	0558
\$CLBFR	001	0010	0437	2299
\$CMDKY	001	0008	0349	
\$CMODE	001	0002	0399	
\$CONFIG	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 2298*
\$DBLOK	001	0001	0424	
\$DFDET	001	03E8	0495	0496 2260*
\$DISKN	001	0025	0226	2209 2270 2279 2555 2634 2733 2831 4134 4298
\$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	2816
\$ERKEY	001	0080	0301	
\$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	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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
\$FCIND	001	0010	0409	
\$FDIND	001	0040	0416	
\$FEARR	001	0004	0224	
\$FEMAP	001	0588	0610	0611
\$FILIB	001	03DA	0460	0461 3567 3607 3609 3622 3629 3630
\$FITIN	001	0010	0385	
\$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 2710
\$INDR2	001	03D5	0397	0422 2293*
\$INDR3	001	03D6	0422	0449 2299* 2816*
\$INLNO	001	03CF	0289	0291 0303 0310
\$INRPT	001	0020	0267	
\$IOIND	001	03D2	0338	0364
\$IOPGS	001	0010	0478	
\$IOYES	001	0002	0253	2294
\$IPLDV	001	05FF	0614	0617
\$IRKEY	001	0020	0477	
\$KCALL	001	0C07	2134	
\$KEYBD	001	03E1	0483	0488
\$KEYCD	001	03C3	0247	0281 2177* 2294* 2295* 3926 3961 4011*
\$KEYDT	001	0040	0391	2177
\$KE090	001	00DE	0227	
\$KE130	001	01D5	0228	
\$KYBSY	001	0010	0264	3961
\$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 2255 2255*
\$NEXTL	001	03E7	0494	0495 2259*
\$NOENB	001	0008	0432	
\$NOLST	001	0004	0256	
\$NUCBS	001	03C0	0239	0240 3551 3552
\$NWRKF	001	0080	0445	
\$NWRKR	001	0040	0442	
\$PASWD	001	042D	0509	0510
\$PAUSD	001	04BA	0563	0565

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$PAUSE	001	0002	0333	
\$PGMDT	001	0020	0388	
\$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	
\$PROCI	001	0001	0373	2165
\$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	2293
\$REORD	001	0040	0476	
\$RLOAD	001	051E	0582	0584
\$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 2168 2172 2231 2236 2300 3937 3941 3963
\$SRTRN	001	04FE	0569	0570
\$STEPT	001	0002	0313	
\$SWPCR	001	0511	0575	0577
\$TABLN	001	03CB	0284	0287
\$TFLOW	001	0008	0319	
\$TRACE	001	0004	0314	
\$TRALL	001	0010	0320	
\$TROVR	001	054E	0589	0592
\$TRUNK	001	0080	0272	4011
\$TRVAR	001	0020	0321	
\$UNMSK	001	048D	0550	0553 3959
\$USRDR	001	03DC	0461	0462 3631 3634
\$VMDEF	001	0080	0325	
\$VOLF1	001	03FE	0504	0505 3586 3588
\$VOLF2	001	040E	0506	3592 3594
\$VOLID	001	03F6	0502	0503 0507 3555 3861 3973
\$VOLR1	001	03F6	0503	0504 3598 3600
\$VOLR2	001	0406	0505	0506 3580 3582
\$WAITF	001	057F	0605	0607 2173 2210 2271 2280 2301 2635 2734 2832 3942 3964 4135
				4299
\$WFDEF	001	0040	0519	
\$WFLOK	001	0008	0382	
\$WFNME	001	0443	0518	0523
\$WSIND	001	0004	0379	
\$XIND1	001	03D0	0310	0329
\$XIND2	001	03D1	0329	0338
\$XIND3	001	03D8	0457	0460
\$XPREC	001	0040	0322	
\$XRSAB	001	03C7	0282	0284 2848
\$ZTRAD	001	05A2	0611	
\$12K	001	0004	0466	
\$16CKY	001	0008	0468	

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SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/02/22 PAGE 71

\$16K 001 0002 0465  
\$22IMP 001 0001 0463  
\$\$\$#BL 001 0000 1049  
\$\$\$#CK 001 0000 1177  
\$\$\$#CN 001 0000 1145  
\$\$\$#CO 001 0000 0937  
\$\$\$#CS 001 0000 0997  
\$\$\$#DR 001 0000 0741  
\$\$\$#ER 001 0000 0941  
\$\$\$#FS 001 0000 1037  
\$\$\$#IN 001 0000 1181  
\$\$\$#PW 001 0000 1185  
\$\$\$#RS 001 0000 1017  
\$\$\$#SA 001 0000 1005  
\$\$\$#SS 001 0000 1001  
\$\$\$#VU 001 0600 0961  
\$\$\$#0T 001 0700 0733  
\$\$\$#1T 001 0000 0737  
\$\$\$BCO 001 0600 0749  
\$\$\$BOV 001 0800 1021  
\$\$\$DPR 001 0700 0757  
\$\$\$DRE 001 0889 0773  
\$\$\$DSP 001 2800 0793  
\$\$\$ECM 001 0C00 1053  
\$\$\$EFK 001 0C00 1073  
\$\$\$ERR 001 0C00 1045  
\$\$\$EXM 001 0C00 0933  
\$\$\$FIL 001 0E00 1013  
\$\$\$FIS 001 0E00 1009  
\$\$\$FML 001 0200 1141  
\$\$\$FMS 001 0200 0981  
\$\$\$GRA 001 0889 0905  
\$\$\$GUF 001 0C00 1041  
\$\$\$INL 001 0600 1121  
\$\$\$INS 001 0600 0745  
\$\$\$KAL 001 0C00 0909  
\$\$\$KCA 001 0C00 1125  
\$\$\$KCH 001 0C00 0877  
\$\$\$KCN 001 0C00 0993  
\$\$\$KCT 001 0C00 0845  
\$\$\$KDE 001 0C00 0841  
\$\$\$KDI 001 0D00 0921  
\$\$\$KDN 001 0C00 0829  
\$\$\$KDO 001 0E00 0925  
\$\$\$KED 001 0C00 0765  
\$\$\$KEN 001 0C00 0769  
\$\$\$KEX 001 0C00 0789  
\$\$\$KGO 001 0C00 0761  
\$\$\$KHE 001 0C00 0945  
\$\$\$KKE 001 0C00 1173  
\$\$\$KLI 001 0C00 0849  
\$\$\$KLL 001 0920 1149  
\$\$\$KLO 001 0C00 0853  
\$\$\$KME 001 0D00 0833  
\$\$\$KMO 001 0C00 0777  
\$\$\$KNA 001 0C00 0889

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## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$KOV	001	0E00	0809	
\$\$\$KPA	001	0C00	0785	
\$\$\$KPO	001	0C00	0873	
\$\$\$KPR	001	0C00	0897	
\$\$\$KRE	001	0C00	0817	
\$\$\$KRL	001	0700	0913	
\$\$\$KRM	001	0C00	0781	
\$\$\$KRN	001	0700	0801	
\$\$\$KRO	001	0D00	0805	
\$\$\$KRS	001	0C00	1129	
\$\$\$KRU	001	0C00	0825	
\$\$\$KRV	001	0800	0917	
\$\$\$KSA	001	0C00	0861	
\$\$\$KSE	001	0E00	0901	
\$\$\$KSO	001	0C20	0953	
\$\$\$KSS	001	0C00	0885	
\$\$\$KSV	001	0980	0881	
\$\$\$KSY	001	0C00	0893	
\$\$\$KWI	001	0C00	0821	
\$\$\$KWR	001	0C00	0813	
\$\$\$LOA	001	0600	0753	
\$\$\$MIP	001	0C00	0949	
\$\$\$SDS	001	0C00	1061	
\$\$\$SFF	001	0E00	1065	
\$\$\$SFL	001	0F00	1057	
\$\$\$SFO	001	1500	1029	
\$\$\$SFS	001	0C00	1025	
\$\$\$SPA	001	0C00	0865	
\$\$\$SPO	001	0806	0869	
\$\$\$SPS	001	0C00	0857	
\$\$\$STR	001	1600	1033	
\$\$\$TDC	001	1000	0837	
\$\$\$TSY	001	1000	0797	
\$\$\$TVK	001	0FC0	0973	
\$\$\$UAL	001	0C00	0989	
\$\$\$UAT	001	0900	1085	
\$\$\$UCD	001	0900	1093	
\$\$\$UCN	001	0C00	1077	
\$\$\$UCP	001	0700	1081	
\$\$\$UDE	001	0C00	1097	
\$\$\$UDI	001	0C00	1101	
\$\$\$UEX	001	0C00	0985	
\$\$\$UIN	001	0C00	1089	
\$\$\$UPA	001	0C00	1069	
\$\$\$UPO	001	0C00	1137	
\$\$\$UPT	001	0C00	1133	
\$\$\$VCR	001	2000	0929	
\$\$\$VLO	001	0600	0965	
\$\$\$VOD	001	0600	0969	
\$\$\$VVM	001	0000	0977	
\$\$\$VXI	001	0600	0957	
\$\$\$ZDU	001	1100	1109	
\$\$\$ZLB	001	1100	1153	
\$\$\$ZLO	001	1100	1113	
\$\$\$ZLV	001	0F00	1169	
\$\$\$ZL1	001	0F00	1157	

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SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/02/22 PAGE 73

###ZL2 001 0F00 1161  
###ZL3 001 0C00 1165  
###ZTR 001 1000 1105  
###ZUT 001 0C00 1117  
##BLN 001 18D4 1048  
##CKT 001 2118 1176  
##CNF 001 2000 1144  
##COR 001 0800 0936  
##CSA 001 1000 0996  
##DRT 001 0000 0740  
##ERM 001 0928 0940  
##FSP 001 1880 1036  
##INV 001 212C 1180  
##PWR 001 2300 1184  
##RSP 001 1780 1016  
##SAV 001 1180 1004  
##SSA 001 1128 1000  
##VUF 001 0B08 0960  
##0TR 001 0000 0732  
##1TR 001 0080 0736  
\$@BL 001 0001 1050  
\$@CK 001 0004 1178  
\$@CN 001 0001 1146  
\$@CO 001 003A 0938  
\$@CS 001 003A 0998  
\$@DR 001 0008 0742  
\$@ER 001 0032 0942  
\$@FS 001 0030 1038  
\$@IN 001 003A 1182  
\$@PW 001 00C0 1186  
\$@RS 001 0030 1018  
\$@SA 001 0108 1006  
\$@SS 001 0001 1002  
\$@VU 001 0002 0962  
\$@0T 001 0018 0734  
\$@1T 001 0018 0738  
\$@BCO 001 0018 0750  
\$@BOV 001 0018 1022  
\$@DPR 001 0005 0758  
\$@DRE 001 0001 0774  
\$@DSP 001 0004 0794  
\$@ECM 001 0006 1054  
\$@EFK 001 0002 1074  
\$@ERR 001 0003 1046  
\$@EXM 001 0003 0934  
\$@FIL 001 0009 1014  
\$@FIS 001 0009 1010  
\$@FML 001 0052 1142  
\$@FMS 001 0052 0982  
\$@GRA 001 0003 0906  
\$@GUF 001 0010 1042  
\$@INL 001 0010 1122  
\$@INS 001 0010 0746  
\$@KAL 001 000F 0910  
\$@KCA 001 000C 1126  
\$@KCH 001 000C 0878

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## CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/02/22 PAGE 74

#\$@KCN	001	0010	0994	
#\$@KCT	001	0009	0846	
#\$@KDE	001	0010	0842	
#\$@KDI	001	0005	0922	
#\$@KDN	001	0010	0830	
#\$@KDO	001	000C	0926	
#\$@KED	001	000E	0766	
#\$@KEN	001	0006	0770	
#\$@KEX	001	0003	0790	
#\$@KGO	001	0002	0762	
#\$@KHE	001	000C	0946	
#\$@KKE	001	0006	1174	
#\$@KLI	001	0011	0850	
#\$@KLL	001	0001	1150	
#\$@KLO	001	0008	0854	
#\$@KME	001	0003	0834	
#\$@KMO	001	0004	0778	
#\$@KNA	001	0008	0890	
#\$@KOV	001	0009	0810	
#\$@KPA	001	0005	0786	
#\$@KPO	001	000D	0874	
#\$@KPR	001	0009	0898	
#\$@KRE	001	0002	0818	
#\$@KRL	001	0004	0914	
#\$@KRM	001	0003	0782	
#\$@KRN	001	0003	0802	
#\$@KRO	001	000A	0806	
#\$@KRS	001	000A	1130	
#\$@KRU	001	0003	0826	
#\$@KRV	001	000D	0918	
#\$@KSA	001	0011	0862	
#\$@KSE	001	0004	0902	
#\$@KSO	001	0005	0954	
#\$@KSS	001	000B	0886	
#\$@KSV	001	0002	0882	
#\$@KSY	001	000F	0894	
#\$@KWI	001	0002	0822	
#\$@KWR	001	0002	0814	
#\$@LOA	001	0013	0754	
#\$@MIP	001	000D	0950	
#\$@SDS	001	0004	1062	
#\$@SFF	001	0008	1066	
#\$@SFL	001	0005	1058	
#\$@SFO	001	0003	1030	
#\$@SFS	001	0011	1026	
#\$@SPA	001	0004	0866	
#\$@SPO	001	0003	0870	
#\$@SPS	001	0001	0858	
#\$@STR	001	0002	1034	
#\$@TDC	001	0003	0838	
#\$@TSY	001	0003	0798	
#\$@TVK	001	0001	0974	
#\$@UAL	001	0011	0990	
#\$@UAT	001	000C	1086	
#\$@UCD	001	000B	1094	
#\$@UCN	001	0009	1078	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$@UCP	001	000F	1082	
#\$@UDE	001	000E	1098	
#\$@UDI	001	0008	1102	
#\$@UEX	001	000E	0986	
#\$@UIN	001	000F	1090	
#\$@UPA	001	0004	1070	
#\$@UPO	001	0005	1138	
#\$@UPT	001	0012	1134	
#\$@VCR	001	0008	0930	
#\$@VLO	001	0002	0966	
#\$@VOD	001	0016	0970	
#\$@VVM	001	0030	0978	
#\$@VXI	001	0002	0958	
#\$@ZDU	001	0008	1110	
#\$@ZLB	001	0002	1154	
#\$@ZLO	001	000C	1114	
#\$@ZLV	001	0006	1170	
#\$@ZL1	001	0007	1158	
#\$@ZL2	001	000D	1162	
#\$@ZL3	001	000A	1166	
#\$@ZTR	001	0001	1106	
#\$@ZUT	001	0014	1118	
#\$BCOM	001	0080	0748	
#\$BOLV	001	1780	1020	
#\$DPRI	001	014C	0756	
#\$DREA	001	0200	0772	
#\$DSPL	001	0240	0792	
#\$ECMA	001	1900	1052	
#\$EFKE	001	1990	1072	
#\$ERRP	001	18C0	1044	
#\$EXMS	001	07D4	0932	
#\$FILN	001	1724	1012	
#\$FIST	001	1700	1008	
#\$FMLN	001	1E00	1140	
#\$FMST	001	0D00	0980	
#\$GRAP	001	0690	0904	
#\$GUFU	001	1880	1040	
#\$INLN	001	1C84	1120	
#\$INST	001	0020	0744	
#\$KALL	001	06A4	0908	
#\$KCAL	001	1CC4	1124	
#\$KCHA	001	053C	0876	
#\$KCND	001	0F80	0992	
#\$KCTL	001	03BC	0844	
#\$KDEL	001	035C	0840	
#\$KDIS	001	0744	0920	
#\$KDNT	001	0300	0828	
#\$KDOV	001	0780	0924	
#\$KEDI	001	0188	0764	
#\$KENA	001	01C4	0768	
#\$KEXT	001	0234	0788	
#\$KGOS	001	0180	0760	
#\$KHEL	001	0A30	0944	
#\$KKEY	001	2100	1172	
#\$KLIS	001	0400	0848	
#\$KLLA	001	2004	1148	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$KLOG	001	0444	0852	
#\$KMER	001	030C	0832	
#\$KMOU	001	0204	0776	
#\$KNAM	001	05C0	0888	
#\$KOVN	001	0290	0808	
#\$KPAS	001	0220	0784	
#\$KPOO	001	0508	0872	
#\$KPRT	001	063C	0896	
#\$KREA	001	02BC	0816	
#\$KRLA	001	0700	0912	
#\$KRMO	001	0214	0780	
#\$KRNU	001	0280	0800	
#\$KROV	001	028C	0804	
#\$KRSU	001	1D24	1128	
#\$KRUN	001	02CC	0824	
#\$KRVL	001	0710	0916	
#\$KSAV	001	0488	0860	
#\$KSET	001	0680	0900	
#\$KSOV	001	0AC8	0952	
#\$KSSP	001	0594	0884	
#\$KSVL	001	058C	0880	
#\$KSYM	001	0600	0892	
#\$KWID	001	02C4	0820	
#\$KWRI	001	02B4	0812	
#\$LOAD	001	0100	0752	
#\$MIPP	001	0A80	0948	
#\$SDSY	001	192C	1060	
#\$SFFI	001	193C	1064	
#\$SFLO	001	1918	1056	
#\$SFOV	001	1844	1028	
#\$SFSY	001	1800	1024	
#\$SPAC	001	04CC	0864	
#\$SPOV	001	04DC	0868	
#\$SPSY	001	0484	0856	
#\$STRO	001	1850	1032	
#\$TDCK	001	0350	0836	
#\$TSYK	001	0250	0796	
#\$TVKB	001	0BAC	0972	
#\$UALL	001	0F00	0988	
#\$UATR	001	1A38	1084	
#\$UCDI	001	1AD8	1092	
#\$UCNF	001	19B8	1076	
#\$UCPL	001	19DC	1080	
#\$UDEL	001	1B24	1096	
#\$UDIS	001	1B5C	1100	
#\$UEXL	001	0EA8	0984	
#\$UINI	001	1A88	1088	
#\$UPAC	001	1980	1068	
#\$UPOV	001	1D24	1136	
#\$UPTF	001	1D5C	1132	
#\$VCRT	001	07B4	0928	
#\$VLOA	001	0B80	0964	
#\$VODK	001	0B88	0968	
#\$VVMR	001	0C00	0976	
#\$VXIT	001	0B00	0956	
#\$ZDUM	001	1BA4	1108	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$ZLBM	001	2008	1152	
#\$ZLOA	001	1BC4	1112	
#\$ZLVR	001	20B0	1168	
#\$ZL1M	001	2010	1156	
#\$ZL2M	001	2030	1160	
#\$ZL3M	001	2088	1164	
#\$ZTRA	001	1B9C	1104	
#\$ZUTM	001	1C14	1116	
##DNEA	001	0001	1933	
##DNEF	001	0003	1934	
##DNER	001	0005	1935	
##DNE1	001	0004	1932	
##DNHC	001	0000	1929	
##DNHR	001	0003	1931	
##DNHY	001	0001	1930	
##DPEA	001	0009	1907	4152 4157
##DPEN	001	0007	1906	3186* 3190* 3206 3219 4141 4663 4664
##DPER	001	000B	1908	
##DPE1	001	0004	1905	4139
##DPHC	001	0000	1903	4138
##DPHR	001	0003	1904	
##DUEA	001	0009	1918	2202
##DUED	001	0012	1923	2185 2186 2187 2188 2189 2190
##DUEF	001	000B	1919	2191 2200
##DUEH	001	002B	1924	
##DUEI	001	000C	1920	2201 4316
##DUEL	001	000F	1922	
##DUEN	001	0007	1917	2176 3203 4319
##DUER	001	0031	1925	
##DUES	001	000D	1921	2165
##DUE1	001	000C	1916	
##DUHA	001	0001	1912	4336
##DUHB	001	0003	1913	4307 4310
##DUHC	001	0004	1914	4315
##DUHR	001	000B	1915	
##LAAA	001	0002	1944	
##LAHC	001	0001	1943	
##LN	001	0001	1972	
##LNE	001	0006	1978	
##LNEF	001	0002	1976	
##LNEZ	001	0002	1977	
##LNH	001	0004	1975	
##LNHY	001	0001	1973	
##LNHZ	001	0002	1974	
##LP	001	0004	1948	4176
##LPE	001	000C	1953	4143
##LPEN	001	0008	1950	3175 3219 3553 3563 4141 4549 4591
##LPEZ	001	0002	1951	
##LPH	001	0004	1952	
##LPHZ	001	0003	1949	
##LU	001	0002	1957	4362
##LUE	001	0032	1968	4321
##LUED	001	0003	1965	
##LUEF	001	0002	1961	2200 2243
##LUEH	001	0019	1966	
##LUEI	001	0001	1962	2201

## CROSS REFERENCE

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##LUEL	001	0002	1964	2194					
##LUEN	001	0008	1960	2176	3203	4319	4517	4661	
##LUES	001	0001	1963						
##LUEZ	001	0006	1967						
##LUH	001	000C	1959						
##LUHZ	001	0007	1958						
##MNHM	001	002A	2001						
##MPHM	001	0055	1986						
##MUEG	001	0020	1993						
##MUEK	001	0040	1992						
##MUEO	001	0004	1996						
##MUEP	001	0080	1991						
##MUER	001	0008	1995						
##MUEV	001	0002	1997						
##MUEX	001	0010	1994						
##MUHM	001	000A	1990						
##RN	001	0000	1892						
##RP	001	0001	1893	4175	4180				
##R1	001	0007	1895						
##R2	001	0005	1894						
##BAD	001	0455	1836						
##IO1	001	0459	1844						
##IO2	001	045D	1845						
##TAT	001	0941	1872						
##TBA	001	09A1	1876						
##TFS	001	0941	1870						
##TSY	001	0941	1874						
##VFP	001	0700	1862						
##VLP	001	093D	1865						
##WDB	001	050C	1857						
##WFT	001	0500	1855						
##BA	001	0001	1837						
##IO	001	0001	1849						
##SC	001	0002	1846						
##TA	001	0010	1873						
##TB	001	0010	1877						
##TS	001	0005	1875						
##TW	001	0020	1871						
##VM	001	0100	1866						
##WD	001	00BD	1858						
##WF	001	0003	1856						
##04	001	0004	1848						
##08	001	0008	1847						
##BOV	001	0018	1825						
##ECM	001	0006	1839						
##ERR	001	0003	1833						
##GUF	001	0010	1829						
##LDS	001	0002	1835						
##SDS	001	0004	1831						
##SFF	001	0008	1843						
##SFL	001	0005	1841						
##SFO	001	0005	1851						
##SFS	001	0011	1827						
##VSF	001	0010	1879						
##VSL	001	000F	1880						
##VTR	001	0001	1864						

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#@BOVL	001	0400	1824	
#@ECMA	001	0481	1838	
#@ERRP	001	0441	1832	
#@GUFU	001	0401	1828	
#@LDSV	001	044D	1834	
#@SDSY	001	04AD	1830	
#@SFFI	001	04BD	1842	
#@SFLO	001	0499	1840	
#@SFOV	001	04C4	1850	
#@SFSY	001	0480	1826	
#@VSFI	001	09A1	1878	
#@VTRL	001	0708	1863	
#@WAF1	001	0401	1823	
#@WAR1	001	0400	1822	
#KCALL	001	0000	0001	
@@E001	001	0000	1723	1725
@@E003	001	0001	1725	1727
@@E004	001	0002	1727	1729
@@E005	001	0003	1729	1731
@@E006	001	0004	1731	1733
@@E007	001	0005	1733	1735
@@E008	001	0006	1735	1737
@@E009	001	0007	1737	1739
@@E010	001	0008	1739	1741
@@E011	001	0009	1741	1743
@@E012	001	000A	1743	1745
@@E013	001	000B	1745	1747
@@E014	001	000C	1747	1749
@@E015	001	000D	1749	1751
@@E016	001	000E	1751	1753
@@E017	001	000F	1753	1755
@@E018	001	0010	1755	1757
@@E019	001	0011	1757	1759
@@E020	001	0012	1759	1761
@@E021	001	0013	1761	1763
@@E023	001	0014	1763	1765
@@E024	001	0015	1765	1767
@@E025	001	0016	1767	1769
@@E026	001	0017	1769	1771
@@E027	001	0018	1771	1773
@@E028	001	0019	1773	1775
@@E029	001	001A	1775	1777
@@E030	001	001B	1777	1779
@@E031	001	001C	1779	1781
@@E032	001	001D	1781	1783
@@E035	001	001E	1783	1785
@@E036	001	001F	1785	1787
@@E037	001	0020	1787	1789
@@E038	001	0021	1789	1791
@@E039	001	0022	1791	1793
@@E040	001	0023	1793	1795
@@E041	001	0024	1795	1797
@@E042	001	0025	1797	1799
@@E043	001	0026	1799	1801
@@E044	001	0027	1801	1803
@@E045	001	0028	1803	1805

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E046	001	0029	1805	1807
@@E060	001	002A	1807	1809
@@E080	001	002B	1809	
@@E100	001	0000	1195	1197 4575 4618
@@E101	001	0001	1197	1199 4620
@@E102	001	0002	1199	1201 4592
@@E103	001	0003	1201	1203 4596
@@E110	001	0004	1203	1205 2990
@@E112	001	0005	1205	1207
@@E113	001	0006	1207	1209
@@E114	001	0007	1209	1211
@@E115	001	0008	1211	1213
@@E116	001	0009	1213	1215
@@E117	001	000A	1215	1217
@@E120	001	000B	1217	1219
@@E122	001	000C	1219	1221 3304
@@E123	001	000D	1221	1223
@@E124	001	000E	1223	1225
@@E129	001	000F	1225	1227
@@E130	001	0010	1227	1229 2869 4613
@@E131	001	0011	1229	1231 2862 3259
@@E133	001	0012	1231	1233
@@E134	001	0013	1233	1235
@@E135	001	0014	1235	1237
@@E136	001	0015	1237	1239
@@E137	001	0016	1239	1241
@@E138	001	0017	1241	1243
@@E139	001	0018	1243	1245 2872 3256
@@E142	001	0019	1245	1247
@@E143	001	001A	1247	1249
@@E150	001	001B	1249	1251
@@E151	001	001C	1251	1253
@@E160	001	001D	1253	1255
@@E162	001	001E	1255	1257
@@E163	001	001F	1257	1259
@@E164	001	0020	1259	1261
@@E200	001	0021	1261	1263 3624
@@E205	001	0022	1263	1265
@@E210	001	0023	1265	1267 4127
@@E211	001	0024	1267	1269 4293
@@E212	001	0025	1269	1271 3927
@@E213	001	0026	1271	1273 3655
@@E215	001	0027	1273	1275
@@E216	001	0028	1275	1277 4001
@@E217	001	0029	1277	1279 3878
@@E220	001	002A	1279	1281
@@E221	001	002B	1281	1283
@@E222	001	002C	1283	1285
@@E223	001	002D	1285	1287
@@E225	001	002E	1287	1289
@@E226	001	002F	1289	1291
@@E227	001	0030	1291	1293
@@E228	001	0031	1293	1295
@@E229	001	0032	1295	1297
@@E230	001	0033	1297	1299
@@E232	001	0034	1299	1301

## CROSS REFERENCE

SYMBOL   LEN   VALUE   DEFN   REFERENCES   VER 15, MOD 00   19/02/22   PAGE   81

@@E234	001	0035	1301	1303	
@@E237	001	0036	1303	1305	
@@E240	001	0037	1305	1307	
@@E241	001	0038	1307	1309	
@@E242	001	0039	1309	1311	
@@E248	001	003A	1311	1313	
@@E249	001	003B	1313	1315	
@@E250	001	003C	1315	1317	
@@E251	001	003D	1317	1319	
@@E252	001	003E	1319	1321	
@@E253	001	003F	1321	1323	
@@E254	001	0040	1323	1325	
@@E255	001	0041	1325	1327	
@@E256	001	0042	1327	1329	
@@E300	001	0043	1329	1331	
@@E301	001	0044	1331	1333	
@@E302	001	0045	1333	1335	
@@E303	001	0046	1335	1337	
@@E304	001	0047	1337	1339	
@@E305	001	0048	1339	1341	
@@E308	001	0049	1341	1343	2223
@@E310	001	004A	1343	1345	
@@E315	001	004B	1345	1347	
@@E316	001	004C	1347	1349	
@@E320	001	004D	1349	1351	
@@E325	001	004E	1351	1353	
@@E330	001	004F	1353	1355	
@@E335	001	0050	1355	1357	
@@E338	001	0051	1357	1359	
@@E340	001	0052	1359	1361	
@@E350	001	0053	1361	1363	
@@E351	001	0054	1363	1365	3890
@@E352	001	0055	1365	1367	
@@E360	001	0056	1367	1369	
@@E361	001	0057	1369	1371	
@@E362	001	0058	1371	1373	
@@E371	001	0059	1373	1375	
@@E380	001	005A	1375	1377	
@@E390	001	005B	1377	1379	
@@E400	001	005C	1379	1381	
@@E410	001	005D	1381	1383	
@@E415	001	005E	1383	1385	
@@E417	001	005F	1385	1387	
@@E420	001	0060	1387	1389	
@@E430	001	0061	1389	1391	
@@E432	001	0062	1391	1393	
@@E433	001	0063	1393	1395	
@@E450	001	0064	1395	1397	
@@E451	001	0065	1397	1399	
@@E460	001	0066	1399	1401	
@@E461	001	0067	1401	1403	
@@E464	001	0068	1403	1405	
@@E465	001	0069	1405	1407	
@@E466	001	006A	1407	1409	
@@E467	001	006B	1409	1411	
@@E469	001	006C	1411	1413	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E470	001	006D	1413	1415
@@E471	001	006E	1415	1417
@@E473	001	006F	1417	1419
@@E474	001	0070	1419	1421
@@E475	001	0071	1421	1423
@@E476	001	0072	1423	1425
@@E477	001	0073	1425	1427
@@E478	001	0074	1427	1429
@@E479	001	0075	1429	1431
@@E480	001	0076	1431	1433
@@E481	001	0077	1433	1435
@@E482	001	0078	1435	1437
@@E483	001	0079	1437	1439
@@E484	001	007A	1439	1441
@@E485	001	007B	1441	1443
@@E486	001	007C	1443	1445
@@E487	001	007D	1445	1447
@@E488	001	007E	1447	1449
@@E489	001	007F	1449	1451
@@E490	001	0080	1451	1453
@@E491	001	0081	1453	1455
@@E492	001	0082	1455	1457
@@E493	001	0083	1457	1459
@@E494	001	0084	1459	1461
@@E495	001	0085	1461	1463
@@E496	001	0086	1463	1465
@@E497	001	0087	1465	1467
@@E498	001	0088	1467	1469
@@E500	001	0089	1469	1471
@@E501	001	008A	1471	1473
@@E530	001	008B	1473	1475
@@E531	001	008C	1475	1477
@@E535	001	008D	1477	1479
@@E540	001	008E	1479	1481
@@E541	001	008F	1481	1483
@@E542	001	0090	1483	1485
@@E543	001	0091	1485	1487
@@E544	001	0092	1487	1489
@@E545	001	0093	1489	1491
@@E546	001	0094	1491	1493
@@E547	001	0095	1493	1495
@@E548	001	FFFF	1699	
@@E549	001	0096	1495	1497
@@E550	001	0097	1497	1499 2638
@@E551	001	0098	1499	1501 2633 2813
@@E552	001	0099	1501	1503
@@E553	001	009A	1503	1505
@@E554	001	009B	1505	1507
@@E555	001	009C	1507	1509
@@E556	001	009D	1509	1511
@@E558	001	009E	1511	1513
@@E570	001	009F	1513	1515
@@E571	001	00A0	1515	1517
@@E572	001	00A1	1517	1519
@@E573	001	00A2	1519	1521
@@E574	001	00A3	1521	1523

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E575	001	FFFF	1701	
@@E578	001	00A4	1523	1525
@@E579	001	FFFF	1703	
@@E580	001	FFFF	1705	
@@E585	001	00A5	1525	1527
@@E595	001	FFFF	1707	
@@E597	001	FFFF	1709	
@@E598	001	FFFF	1711	
@@E600	001	00A6	1527	1529
@@E601	001	00A7	1529	1531
@@E602	001	00A8	1531	1533
@@E603	001	00A9	1533	1535
@@E604	001	00AA	1535	1537
@@E606	001	00AB	1537	1539
@@E607	001	00AC	1539	1541
@@E608	001	00AD	1541	1543
@@E609	001	00AE	1543	1545
@@E610	001	00AF	1545	1547
@@E611	001	00B0	1547	1549
@@E612	001	00B1	1549	1551
@@E613	001	00B2	1551	1553
@@E614	001	00B3	1553	1555
@@E700	001	00B4	1555	1557
@@E701	001	00B5	1557	1559
@@E710	001	00B6	1559	1561
@@E712	001	00B7	1561	1563
@@E713	001	00B8	1563	1565
@@E714	001	00B9	1565	1567
@@E715	001	00BA	1567	1569
@@E716	001	00BB	1569	1571
@@E717	001	00BC	1571	1573
@@E718	001	00BD	1573	1575
@@E720	001	00BE	1575	1577
@@E721	001	00BF	1577	1579
@@E723	001	00C0	1579	1581
@@E724	001	00C1	1581	1583
@@E725	001	00C2	1583	1585
@@E726	001	00C3	1585	1587
@@E727	001	00C4	1587	1589
@@E728	001	00C5	1589	1591
@@E729	001	00C6	1591	1593
@@E730	001	00C7	1593	1595
@@E732	001	00C8	1595	1597
@@E752	001	00C9	1597	1599
@@E753	001	00CA	1599	1601
@@E754	001	00CB	1601	1603
@@E755	001	00CC	1603	1605
@@E756	001	00CD	1605	1607
@@E757	001	00CE	1607	1609
@@E758	001	00CF	1609	1611
@@E759	001	00D0	1611	1613
@@E760	001	00D1	1613	1615
@@E761	001	00D2	1615	1617
@@E762	001	00D3	1617	1619
@@E763	001	00D4	1619	1621
@@E764	001	00D5	1621	1623

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E765	001	00D6	1623	1625
@@E766	001	00D7	1625	1627
@@E767	001	00D8	1627	1629
@@E768	001	00D9	1629	1631
@@E769	001	00DA	1631	1633
@@E770	001	00DB	1633	1635
@@E771	001	00DC	1635	1637
@@E772	001	00DD	1637	1639
@@E773	001	00DE	1639	1641
@@E774	001	00DF	1641	1643
@@E775	001	00E0	1643	1645
@@E776	001	00E1	1645	1647
@@E777	001	00E2	1647	1649
@@E778	001	00E3	1649	1651
@@E779	001	00E4	1651	1653
@@E780	001	00E5	1653	1655
@@E781	001	00E6	1655	1657
@@E782	001	00E7	1657	1659
@@E783	001	00E8	1659	1661
@@E784	001	00E9	1661	1663
@@E785	001	00EA	1663	1665
@@E786	001	00EB	1665	1667
@@E790	001	00EC	1667	1669
@@E791	001	00ED	1669	1671
@@E792	001	00EE	1671	1673
@@E793	001	00EF	1673	1675
@@E794	001	00F0	1675	1677
@@E795	001	00F1	1677	1679
@@E796	001	00F2	1679	1681
@@E797	001	00F3	1681	1683
@@E798	001	00F4	1683	1685
@@E800	001	FFFF	1713	
@@E801	001	FFFF	1715	
@@E802	001	FFFF	1717	
@@E803	001	FFFF	1719	
@@E804	001	FFFF	1721	
@@E900	001	00F5	1685	1687
@@E901	001	00F6	1687	1689
@@E902	001	00F7	1689	1691
@@E903	001	00F8	1691	1693
@@E905	001	00F9	1693	1695
@@E906	001	00FA	1695	1697
@@E910	001	00FB	1697	
@@M300	001	0C0B	2142	3938
@@T300	001	0C0F	2146	2144
@ARR	001	0008	0016	2506* 2507 2508* 2509 2614 2732 2988 3165 3301 3406 3549 3853 4124 4292 4538
@ASIGN	001	007C	0071	4564
@ASTER	001	005C	0069	3184 3186 3188 3190 3206
@BCRDL	001	0050	0088	
@BE	001	0081	0043	
@BF	001	0090	0052	
@BH	001	0084	0041	
@BL	001	0082	0042	3646
@BLANK	001	0040	0065	2296 2994 3001 3174 3176 3337 3553 3555 3956 3976 3993 4548
@BM	001	0082	0054	

CROSS REFERENCE															
SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00 19/02/22 PAGE 85										
@BNE	001	0001	0046	2984											
@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	2159	2161*	2185	2186	2187	2188	2189	2190	2193	2194	2197	2199
				2200	2201	2202	2217	2217	2219	2222	2240	2242	2243	2243	2247
				2247	2256	2257	2257	2258	2259	2266	2274	2283	2283	2284	2284
				2285	2285	2494	2503	2505*	2506	2507	2508	2509	2511	2512	2512
				2513	2514	2514	2516	2516	2517	2518	2518	2522	2522	2523	2527
				2527	2528	2530	2530	2531	2531	2532	2532	2533	2533	2534	2534
				2540	2541	2542	2542	2543	2548	2548	2549	2549	2551	2551	2557*
				2610	2612	2613*	2615	2620	2622	2628	2629	2630	2630	2631	2632
				2632	2633	2636	2638	2639	2639	2642	2643	2644	2644	2651	2653
				2654	2660*	2664	2666	2669	2670	2671	2679	2685	2688	2689	2690
				2691	2697	2698	2701	2702	2703	2704	2708	2708	2714	2714	2717
				2719	2719	2721	2721	2722	2726	2726	2727	2728	2732	2736	2741
				2742	2742	2743	2744	2747	2748	2749	2749	2752	2822	2822	2824
				2824	2826	2826	2829	2829	2830	2830	2833	2834	2843	2845*	2859
				2883	3161	3163	3164*	3165	3202	3218	3232	3256	3262	3271	3273*
				3296	3298	3299*	3301	3303	3305	3305	3315	3315	3320	3320	3321
				3321	3322	3322	3323	3323	3324	3324	3328	3329	3329	3332	3338
				3339	3344	3345	3345	3347*	3403	3404	3405*	3406	3410	3410	3411
				3412	3417	3417	3419	3419	3420	3420	3421	3423	3423	3424	3425*
				3546	3547*	3548	3549	3550	3565	3566	3574	3577	3583	3589	3595
				3599	3601	3631	3644	3646	3650	3652	3652	3653	3653	3654	3662*
				3695	3849	3850	3851*	3852	3853	3864	3866	3866	3868	3868	3869
				3877	3879	3880	3899*	3928	3954	3973*	3984	3984*	3990	3990*	4000
				4010	4119	4121	4122*	4123	4124	4130	4137	4138	4144	4144	4145
				4155	4157	4161	4162	4162	4165*	4288	4289	4290*	4291	4292	4294
				4294	4295	4295	4296	4296	4301	4302	4307	4309	4309	4310	4314
				4315	4317	4318	4322	4322	4323	4325	4325	4326	4326	4327	432

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@COMMA	001	006B	0066	2997 3240
@CPLUS	001	004E	0079	
@DADDR	001	0002	0140	2175 2199 2202 2266 2274 2275 2283 2284 2511 2576 2630 3582 3588 3594 3600 3609 3629 3630 3631 3634 3865 3865 3867 3984 3990 4010 4010 4152 4157 4162 4307 4309 4310 4336 4361
@DBFR1	001	0004	0129	
@DBFR2	001	0005	0130	2203 4137
@DCALK	001	0001	0081	
@DCBCY	001	0009	0115	
@DCBT1	001	0050	0117	
@DCNT	001	0003	0128	2204
@DCST1	001	0040	0116	
@DCTRL	001	0000	0125	
@DCYL	001	0001	0126	2516*
@DD2	001	0003	0030	
@DGET	001	0001	0134	2314 2764 3672 4174 4360
@DOLAR	001	005B	0068	4560
@DOP2	001	0004	0028	2507* 2511* 2512* 2574 2575
@DPLNG	001	0006	0132	2203 2513 2572
@DPOS	001	0000	0133	
@DPUT	001	0002	0135	2325 2756
@DSAD	001	0002	0127	2201* 2202* 2240 2242* 2247* 2283* 2284* 2514* 2518* 2522 2523* 2527* 2530* 2534 2540* 2548* 2551* 2573 4157* 4162*
@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	3315 3411* 3423*
@EOF	001	001C	0077	2214 2682
@EOFTC	001	0075	0162	2797
@EOS	001	001E	0076	2863 2870 3004 3238 3996 4615
@FDDBC	001	0000	0195	
@FDE1	001	000C	0200	
@FDFNA	001	000B	0198	
@FDHLN	001	0002	0208	
@FDLNC	001	0002	0193	
@FDNSC	001	0003	0210	
@FDSD	001	0000	0206	
@FLACE	001	0009	0197	
@FLDBC	001	0001	0196	
@FLENT	001	0004	0201	
@FLFNA	001	0002	0199	
@FLHLN	001	0002	0209	
@FLLNC	001	0002	0194	
@FLNSC	001	0001	0211	
@FLSD	001	0001	0207	
@HDLN	001	0007	0092	0672
@IAR	001	0010	0017	

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@INDEX	001	0001	0156	0157
@INST3	001	0003	0032	
@INST4	001	0004	0033	
@INST5	001	0005	0034	
@INST6	001	0006	0035	
@IILIAR	001	00C0	0020	
@LINSZ	001	00F4	0084	0646
@MAPEN	001	0005	0089	
@MINCR	001	2000	0083	
@MINUS	001	0060	0080	
@NOP	001	0080	0040	2553 2688 3235 3310 3384 3902 3952 4129 4161 4314
@NUMBR	001	007B	0070	4562
@OPD2	001	0004	0029	
@OP1	001	0003	0027	2178* 2503* 2509* 2658* 2661 2663 2716 2724 2754 2988* 3163* 3165* 3243* 3261 3298* 3301* 3404* 3406* 3661 3663 3665 3850* 3852* 3853* 4121* 4123* 4124* 4288* 4291* 4292* 4536* 4538* 4541* 4551* 4602*
@OP2	001	0005	0031	
@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	2142 2338 2364 2383
@PRINT	001	0040	0152	0154
@PSR	001	0004	0015	3262* 3271* 4577*
@PWAIT	001	00FF	0158	
@P1IAR	001	0020	0018	
@P2IAR	001	0040	0019	
@Q	001	0001	0024	2554 2633* 2638* 2685* 2688* 2701* 2707 3011 3256* 3262 3271 3378 3382 3412* 3420 3420* 3423 3558 3647 3649 3891* 3954* 4130* 4161* 4301* 4314* 4665
@REGL	001	0002	0012	
@RETRN	001	0080	0153	0154 2393
@RLDWN	001	004F	0159	
@RTRNC	001	0080	0161	2394
@SBLN	001	0005	0170	2794
@SBLNL	001	0002	0184	2219
@SCTSZ	001	0100	0100	
@SDFLN	001	0007	0090	
@SDF0	001	0000	0166	2798
@SDF1	001	0001	0167	2799
@SDF2	001	0002	0168	2800
@SDF3	001	0003	0169	
@SECCY	001	0030	0086	
@SIST	001	0001	0181	
@SLASH	001	0061	0067	3204 3220
@SLAST	001	0002	0183	2699
@SMIDL	001	0003	0182	
@SNULL	001	0080	0173	2656 2665
@SONLY	001	0000	0180	2686
@STEXT	001	0007	0172	
@STYPE	001	0006	0171	2795
@TBCNT	001	0000	0160	
@TBLEF	001	0010	0155	0157
@TBLIX	001	0011	0157	
@UCB	001	0087	0039	2685 2696 2701 2985 2998 3380 3648 3891 3954 4130 4301

CROSS REFERENCE																
SYMBOL	LEN	VALUE	DEFN	REFERENCES								VER 15,	MOD 00	19/02/22	PAGE	88
@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	3176*	3233	3233	3861	3863	3867	3973	3984	3990	4000	4519	4595	
@VQ	001	0001	0025	3940*	3959											
@WSFIT	001	0500	0101													
@WSTBL	001	0503	0102	2760												
@XR	001	0002	0014	2164*	2165	2176	2178	2185	2186	2187	2188	2189	2190	2191	2191*	
				2194	2195	2195*	2198*	2200	2201	2202	2219	2222*	2256	2619*	2628*	
				2629	2640	2643	2649	2651	2652	2652*	2656	2658	2659	2659*	2665	
				2667	2677	2678	2680	2686	2689	2690	2691	2692	2692*	2697	2699	
				2702	2703	2704	2705	2705*	2706	2712	2715	2717	2723	2725	2725*	
				2741*	2743	2744*	2745	2748	2833*	2848*	2863	2867*	2870	2883*	2989	
				2993	2993*	2994	2997	3000	3000*	3001	3004	3007	3184	3187	3187*	
				3188	3191	3191*	3204	3215	3215*	3220	3229	3229*	3234	3238	3240	
				3243	3254	3261*	3303	3312	3328	3331	3331*	3336	3336*	3337	3344	
				3414	3550	3551*	3552	3567	3580	3582	3586	3588	3592	3594	3598	
				3600	3607	3609	3622	3624	3629	3630	3631	3634	3655	3660*	3696	
				3852	3861*	3863	3865	3867	3867*	3900*	3972*	3975	3975*	3976	3979	
				3982	3985	3988	3991	3991*	3992	3992*	3993	3996	4123	4137*	4138	
				4139	4139*	4141	4143	4143*	4151	4152	4157	4166*	4291	4302*	4307	
				4310	4315	4316	4316*	4319	4321	4321*	4332	4334*	4335	4336	4338*	
				4345	4541	4560	4562	4564	4567	4569	4578*	4603	4604	4604*	4615	
@ZERO	001	0000	0062	2523	2653	2697	2706*	2715	2865	3184	3188	3204	3220	3234	3236	
				3238	3240	3254	3565	3566	3567	3580	3586	3592	3598	3607	3622	
				3863	3888	3976	3985	3988	3993	3996	4000	4155	4317	4550	4560	
C2DEC5	001	1349	3402	4562	4564	4567	4569	4603	4612	4615	4629					
C2DVAL	005	1387	3432	2192	2196	3403	3405									
C2D020	003	135B	3412	2193	2197	3417										



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
C4BYT1	001	1342	3355	
C4B100	004	12EF	3306	3382
C4B200	003	12F3	3310	3332 3378
C4B300	003	12F6	3312	3338
C4B590	003	1325	3336	3315 3339
C4B600	003	1328	3337	3310
C4B700	003	1331	3344	3313
C4B800	004	1338	3347	3298* 3316
C4B850	004	133C	3349	3301*
C4B900	001	1348	3366	3306* 3315*
C4END	001	1349	3385	
DL2C01	002	0F77	2566	2506 2508 2516
DL2C05	002	0F79	2567	2512
DL2C48	001	0F73	2564	2514 2518
DL2DPL	006	0F7F	2572	2513*
DL2END	001	0F82	2577	
DL2E01	001	0001	2496	2514 2516 2518 2522 2534 2542
DL2E02	001	0002	2497	2527 2530 2548
DL2E18	001	0018	2498	2528
DL2E60	001	0060	2499	2543
DL2E7C	001	007C	2501	2540
DL2ICS	001	0EE9	2502	2207 2268 2277 2827 3632 4132 4158 4311
DL2K18	002	0F75	2565	2531
DL2K60	002	0F70	2562	2549
DL2K80	002	0F72	2563	2530 2548
DL2LST	001	0F7A	2571	2514* 2516* 2518* 2522 2523* 2527* 2530* 2534 2540* 2548* 2551* 2556
				2573
DL2PHY	001	0F7C	2573	
DL2RAD	002	0F81	2576	2175* 2266* 2274* 2275* 2527 3629* 4131*
DL2SAD	005	0F01	2574	2534* 2541* 2542* 2543 2549* 2551
DL2SEC	005	0F0A	2575	2522* 2528 2531* 2532 2532* 2533 2533* 2542
DL2SWH	003	0F5F	2554	
DL2TSD	001	0083	2500	2541
DL2000	001	0EED	2504	2494 2505
DL2001	005	0EFD	2511	2507* 2574
DL2002	005	0F06	2513	2511* 2512* 2575
DL2005	004	0F0B	2514	2517
DL2006	004	0F19	2518	2515
DL2008	004	0F36	2532	2529
DL2010	003	0F4C	2543	
DL2100	004	0F5A	2551	2544
DL2110	003	0F5E	2553	2554
DL2900	004	0F67	2557	2503* 2553
DL2910	004	0F6B	2558	2509*
DL4ICS	001	11CF	2890	2750
GRABIT	001	0F82	2611	2213
GRABOA	002	111A	2781	2708 2721 2726
GRABSE	004	1069	2807	2610 2613
GRACCA	002	110B	2758	
GRACFN	001	110A	2756	
GRACPL	001	110A	2755	
GRACSC	001	110D	2761	2632* 2822* 2829*
GRAEBS	001	00FF	2789	2631 2752
GRAEDB	001	0002	2775	2642 2747
GRAEDC	001	0001	2806	
GRAEDL	001	0006	2794	2659 2677

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
GRAEDS	001	0005	2808	2742
GRAEDT	001	0007	2795	2649 2678 2680
GRAEET	001	0075	2797	2649 2680
GRAEFG	001	0004	2788	2671
GRAEFI	001	0000	2784	2205 2615
GRAEFR	001	0001	2786	2620 2669
GRAEFS	001	0002	2787	2216 2622
GRAEFW	001	0003	2785	
GRAELK	001	0000	2791	2640 2643 2745 2748
GRAELL	001	0002	2796	2677
GRAELN	001	0000	2792	2640 2745
GRAELP	001	0007	2802	2692
GRAELS	001	0004	2803	2705
GRAEMR	001	001B	2804	2712
GRAENC	001	0001	2805	2712 2717* 2723 2725
GRAERR	004	1123	2813	2633* 2638* 2654 2666 2670
GRAESC	001	0001	2790	2636 2736
GRAES0	001	0001	2798	2656 2665
GRAES1	001	0002	2799	2651 2652 2689 2690* 2691 2702 2703* 2704
GRAES2	001	0003	2800	2667 2686 2699
GRAETP	001	0002	2801	2667
GRAEW2	001	0006	2809	
GRAEXA	001	0001	2793	2794 2795 2798 2799 2800
GRANCA	002	1115	2769	2245 2248* 2629* 2639* 2742 2743* 2830
GRANDA	002	1112	2765	2240 2630* 2642* 2643* 2644* 2747* 2748* 2749* 2826*
GRANPB	002	111A	2774	2644 2749 2780 2781 2782 2822
GRANPL	001	1110	2763	2751 2828
GRANXC	002	111A	2782	
GRAONE	002	111A	2780	2717
GRAPSG	002	111F	2778	2690
GRASAR	004	100C	2663	2614*
GRASBR	004	1008	2661	2612*
GRASEG	001	1122	2783	2691* 2704* 2726*
GRASHT	001	112F	2821	
GRASIZ	001	111B	2776	2260 2631* 2651* 2653 2689* 2702* 2752*
GRASSG	002	1121	2779	2703
GRASSZ	002	1118	2773	2248 2639 2824
GRASVC	003	108D	2707	2697*
GRATND	005	10A7	2716	2714* 2719 2721*
GRATXT	002	111D	2777	2679
GRA020	004	0F94	2619	2658*
GRA100	003	0FA7	2628	2616
GRA140	003	0FCE	2640	
GRA150	004	0FDB	2644	2641
GRA200	003	0FE2	2649	2623
GRA210	004	0FE8	2651	2624 2673
GRA220	003	0FEF	2653	2694 2696
GRA230	004	0FFE	2658	2650 2668 2672 2683
GRA240	004	1005	2660	2661
GRA245	004	1009	2662	2663
GRA250	003	100D	2664	2655 2657
GRA260	003	1010	2665	2637 2645
GRA300	005	102E	2677	2621
GRA303	003	104B	2685	2681
GRA305	004	1057	2689	2687
GRA310	004	1069	2694	2685* 2688* 2695 2701* 2727 2807

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
GRA313	004	107D	2702	2700
GRA315	003	108C	2706	2707
GRA316	004	108F	2708	2728
GRA317	001	1093	2709	2693
GRA320	005	10A4	2715	2716 2722
GRA330	004	10B7	2721	2718
GRA350	005	10BE	2723	2711 2713 2724
GRA360	003	10C3	2725	2720
GRA5SA	004	1109	2754	2732*
GRA500	003	10D0	2732	2664 2698
GRA600	001	10D9	2735	
GRA620	004	10F9	2749	2746
GRA640	004	10FD	2750	
GRA660	003	1103	2752	2834
GRA680	004	1106	2753	2754
GRA700	004	112F	2822	2737
GRA720	004	113D	2826	2823
GRA730	004	1141	2827	
GRA740	003	1155	2833	2825
GRBFRA	002	110F	2762	2203* 2245 2258 2628 2741 2742* 2744 2824* 2830* 2833
GRBFR1	001	125B	2886	2762
GRLINE	003	0E1B	2888	2677*
GRSCTR	001	1113	2766	2204* 2242 2632 2636 2736 2826 2829
GRSRDA	002	110C	2757	2630 2758
GRTEND	005	10C1	2724	2679* 2708* 2714 2719*
GRTEXT	001	115B	2887	2214 2682* 2777
GRTYPE	003	0E1C	2889	2678*
GRWHAT	001	1116	2770	2205* 2216* 2615 2620 2622 2669 2671
KCABUF	001	125B	2841	2318 2329 2886
KCADP1	001	0DCF	2313	2201* 2202* 2203 2204 2208 2240 2242* 2247* 2269 2283*
KCADP2	001	0DD5	2324	2278 2284*
KCAEDA	001	0001	2387	2187 2188
KCAEDM	001	0002	2386	2185 2186
KCAEDN	001	0004	2389	2194* 2195
KCAEEL	001	0003	2388	2193 2197
KCAEQU	001	0DCF	2309	2159 2161 2843 2845
KCAERR	001	0DDB	2337	2169
KCALIN	002	0E0D	2345	2217 2219 2256* 2257* 2258* 2259 2859*
KCALLN	001	0C55	2160	2882
KCALST	002	0E0F	2347	2200* 2243* 2285*
KCAMSG	001	0DDF	2343	2340
KCAMS5	001	0E2B	2369	2385
KCAM2N	008	0E26	2361	2176*
KCAM3N	001	0E1D	2359	2366
KCAM5D	002	0E67	2378	2187* 2188*
KCAM5L	003	0E2D	2370	2197*
KCAM5M	002	0E64	2376	2185* 2186*
KCAM5S	003	0E38	2372	2193*
KCAM5Y	002	0E6A	2380	2189* 2190*
KCANEG	002	0E13	2350	2194 2217 2247
KCAPL4	001	0E27	2363	2232
KCAPL5	001	0E6B	2383	2237
KCAQUE	002	0E19	2353	2199* 2266
KCARET	001	0E6F	2392	
KCASCT	001	0008	2308	2317 2328 2352
KCASPF	002	0E15	2351	2274

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
KCASYN	001	115B	2844	2137
KCATEM	003	0E1C	2354	2888 2889
KCATOP	001	115B	2840	2841 2887
KCAUPD	002	0E17	2352	2243 2283 2284 2285
KCA006	002	0E11	2349	2257
KCA010	006	0C73	2175	2166
KCA015	004	0CBA	2198	2178*
KCA020	004	0CEB	2213	2221
KCA030	003	0D0C	2222	2215
KCA040	004	0D17	2231	2218 2220
KCA045	005	0D23	2240	2244
KCA050	006	0D38	2245	2241 2249
KCA060	006	0D4F	2255	2246
KCA070	005	0D6C	2266	2287
KCA080	004	0D71	2268	
KCA100	004	0DA7	2293	2286
KCA800	004	115F	2848	
KCA810	004	1171	2853	
KCA820	004	1192	2862	2858
KCA900	004	11A3	2867	2857
KCA910	003	11A7	2868	2866
KCA950	004	11AA	2869	2850
KCA970	004	11B8	2873	2852 2855 2861 2868 2871
KCA980	004	11BC	2879	2864
SALBSE	001	1711	4559	4534 4537
SALCNT	001	17AD	4656	4550* 4588* 4591 4595 4612
SALCT6	001	0006	4519	
SALCT8	001	0008	4517	
SALERR	003	1727	4665	4577
SALFST	001	0001	4653	4574 4586
SALIDR	001	17AC	4646	4531* 4571 4574 4586* 4589 4617 4629*
SALND0	004	17A4	4637	4536*
SALND2	004	17A8	4638	4538*
SALPHR	001	17B0	4660	3203 3219 3233 4662 4663 4664
SALPHS	002	17BB	4662	4551
SALPH6	001	16F5	4535	3231
SALPH8	001	16F1	4528	3201 3217
SALPR6	001	17B8	4664	4549*
SALPR7	001	17B9	4663	4548* 4549
SAL001	002	17AF	4659	4588 4602
SAL008	001	0080	4650	4531 4571 4589 4617
SAL100	003	1703	4548	
SAL200	003	1711	4560	4605
SAL250	003	1726	4568	4665
SAL350	003	173F	4577	4593 4597 4621
SAL375	004	1742	4578	3243* 3261 4541*
SAL400	003	1749	4586	4561 4563 4565 4570
SAL425	004	174C	4588	4572 4576
SAL450	003	1763	4595	4590
SAL500	004	176D	4602	4594
SAL525	005	1771	4603	4551* 4602*
SAL750	003	177C	4612	4568
SAL755	004	177F	4613	
SAL760	003	179A	4621	4616 4619
SAL775	004	179D	4622	4614
SAL800	003	17A1	4629	4579

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SCACNT	002	120F	3017	2865 3007* 3008* 3236
SCACOF	001	0087	2985	3200
SCACOM	001	0001	2984	2853 3244
SCAINC	001	0001	2983	2993 3000
SCAMMA	003	11EC	3011	2853* 3200* 3244*
SCANIT	001	11CF	2987	2849 2854 2860 3216 3230 3245 4622
SCASVE	002	120D	3016	2989* 3008
SCASV1	001	120C	3015	
SCA100	003	11DE	2993	2995
SCA200	003	11E1	2994	2991
SCA250	003	11EB	2998	3011
SCA300	003	11EE	3000	3002
SCA400	004	11FE	3007	2998
SCA500	004	1208	3010	2988* 3005
SFIASST	001	005C	3685	3563
SFIBSE	003	13CB	3692	3547 3548
SFICTR	001	149F	3669	3565* 3574 3577 3583* 3589* 3595* 3601* 3644
SFIDPL	001	14A0	3672	3633
SFIEFE	001	00FE	3688	3583 3644
SFIEFF	001	00FF	3689	3671
SFIEND	001	14A8	3693	
SFIERR	001	0469	3435	3625 3684
SFIETD	001	0006	3694	3650
SFIEXT	004	149E	3665	3549*
SFIE02	001	0002	3686	3595
SFIE03	001	0003	3687	3577 3601
SFIE06	001	0006	3690	3580 3586 3592 3598
SFIE07	001	0007	3691	3582 3588 3594 3600
SFIFND	003	1479	3649	
SFINDF	001	138D	3545	2879
SFINTR	001	14A7	3677	3650 3653 3678
SFIONE	001	14A8	3680	3652
SFIRDA	002	14A2	3673	3631*
SFISBR	004	149A	3663	3546*
SFISTR	003	1476	3647	
SFISXR	004	1496	3661	3550*
SFITTC	001	14A6	3676	3566* 3652* 3653
SFIVOL	004	13AE	3558	
SFI050	004	13AD	3557	3558
SFI100	004	13B4	3563	3556
SFI200	003	13CB	3574	3646 3654 3692
SFI210	003	13DA	3580	3599
SFI220	003	13EB	3586	3575
SFI230	003	13FC	3592	3576 3587
SFI240	003	140D	3598	3578 3593
SFI320	003	141E	3607	3564
SFI340	005	1424	3609	3568
SFI350	004	1429	3613	3559 3584 3590 3596 3602
SFI500	003	143E	3622	3554
SFI505	003	1444	3624	3608
SFI510	005	144B	3629	3623
SFI520	004	1464	3638	3618
SFI540	003	146F	3644	3615
SFI542	003	1475	3646	3647
SFI543	003	1478	3648	3649
SFI545	003	148C	3655	3581 3648 3651

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SFI550	004	1493	3660	3617 3640 3645 3661
SFI560	004	1497	3662	3663
SFI570	004	149B	3664	3665
SGECNT	001	163D	4181	4138* 4144* 4155
SGEC01	002	163F	4182	4144
SGEDPL	001	1635	4173	4133 4137 4157* 4159 4162*
SGEEND	001	1640	4184	
SGERAD	002	163C	4180	4162
SGETDB	001	15B4	4120	3613 4119 4122
SGE050	003	15CA	4129	4130* 4161*
SGE055	003	15E2	4137	4129
SGE060	005	15EC	4141	4145
SGE070	004	1602	4151	4142
SGE080	004	1618	4157	
SGE900	004	1629	4165	4121* 4154 4156
SGE901	004	162D	4166	4123*
SGE902	004	1631	4167	4124*
SMALES	001	17BC	4732	4733
SMBFDA	001	17D6	4743	2175 2199 3582* 3588* 3594* 3600* 3609* 3630* 3865* 3888 4010* 4131 4744
SMDAAD	001	17EA	4765	4336* 4766
SMFNAM	001	17D2	4741	3203* 4319 4742
SMFUDA	001	17E6	4751	3634* 4152* 4764
SMIND1	001	17BC	4733	2880 3569* 3614 3616 3639 3656* 4128* 4146* 4153 4333* 4346* 4739
SMNDBA	001	17E8	4764	4765
SMNDEA	001	17DC	4746	4747
SMNETD	001	17E0	4748	4749
SMNSCT	001	17DE	4747	4748
SMNULT	001	17DA	4745	4746
SMPDB1	001	17EB	4766	4177 4767 4769
SMPEAD	001	17E4	4750	4151* 4751
SMPSWD	001	17CA	4740	3174* 3175 3175* 3186* 3190* 3206 3219* 3553 3563 4141 4741
SMUDBA	001	17D8	4744	4335* 4745
SMUDB1	001	17EB	4767	3675 4355 4768
SMUDB2	001	19EB	4768	4356
SMUDEA	001	17D4	4742	2164 4332* 4345* 4743
SMUPEN	001	17E2	4749	4750
SMVOID	001	17C2	4739	3176* 3233* 3555 3863 4000 4740
SM1FNE	001	0080	4734	2880 3639 3656 4333 4346
SM1NPD	001	0040	4735	
SM1PDS	001	0010	4737	3616 4153
SM1PNF	001	0008	4738	2880 3569 3614 4128 4146
SM1STN	001	0020	4736	
SRCACT	002	16E3	4354	4296* 4302 4326 4327* 4334
SRCBA1	002	16E5	4355	4294
SRCBA2	002	16E7	4356	4295
SRCBFR	002	16F0	4363	4309*
SRCBF1	002	16DF	4352	4294* 4296 4325* 4327
SRCBF2	002	16E1	4353	4295* 4309 4325 4326*
SRCCNT	001	16E8	4357	4315* 4317 4322*
SRCC01	002	16EA	4358	4307 4322
SRCDAD	002	16ED	4361	4310*
SRCDPL	001	16EB	4359	4312
SRCGET	001	16EB	4360	
SRCHFN	001	1640	4287	3638
SRC SCT	001	16EE	4362	



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SRC010	004	1644	4290	4289 4290
SRC020	004	165E	4298	4328
SRC030	004	1682	4315	4308
SRC035	005	168F	4319	4323
SRC040	004	16B3	4332	4320
SRC050	003	16BB	4334	4347
SRC055	003	16A1	4324	4301* 4314* 4318
SRC060	004	16D3	4345	4324
SRC900	004	16C7	4337	4288*
SRC910	004	16CB	4338	4291*
SRC920	004	16CF	4339	4292*
SUFBSE	001	1243	3199	3161 3164
SUFFER	001	1210	3162	2851
SUFND0	004	12D1	3273	3163* 3263
SUFND2	004	12D5	3274	3165*
SUF100	004	1243	3200	3185 3189
SUF200	003	127B	3229	3207
SUF400	003	1286	3232	3262
SUF600	003	128F	3234	3205 3221
SUF625	003	1292	3235	
SUF650	004	12A8	3243	3237
SUF680	004	12C0	3257	3241 3256* 3258
SUF750	003	12C8	3262	3202 3218 3232 3246
SUF780	003	12CB	3263	3271
SUF800	003	12CE	3271	3235 3239 3255
SVOBSE	001	14BB	3862	3849 3851
SVOBUF	001	17EB	4769	3953* 3999
SVOCT1	001	1502	3911	3868* 3912
SVOCT2	001	1503	3915	3866* 3877 3916
SVOEND	001	00FF	3840	3953* 3999
SVOERR	001	0469	3684	3902
SVOINP	001	0100	3839	3953 3999
SVOLID	001	14A9	3848	3557
SVOLN1	001	0001	3835	3866 3868
SVOONE	001	1504	3918	3866 3868
SVO001	001	00F1	3836	3979
SVO002	001	00F2	3837	3982
SVO100	005	14BB	3863	3869
SVO200	003	14CC	3867	3864
SVO260	004	14E3	3888	4012
SVO270	004	14EE	3891	3879 3928 4002
SVO274	004	14F2	3899	3850* 3889
SVO276	004	14F6	3900	3852*
SVO280	004	14FA	3902	3891*
SVO290	004	14FE	3903	3853*
SVO300	004	1505	3926	3880
SVO310	004	1509	3927	
SVO315	003	150D	3928	
SVO320	001	1510	3936	3983 3989 3997
SVO330	001	1522	3950	3954*
SVO333	004	152E	3956	3952
SVO335	004	1538	3959	3940*
SVO350	004	1540	3961	3962
SVO360	003	1556	3975	3977
SVO400	003	1570	3985	3980
SVO440	003	1580	3991	3986



CROSS REFERENCE

SYMBOL    LEN VALUE DEFN    REFERENCES    VER 15, MOD 00    19/02/22    PAGE    96

SVO445    003    1583 3992    3994  
SVO450    005    159A 4000

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY =        0

OL105 I    THE CODE LENGTH OF #KCALL IS    6077 DECIMAL.  
OL103 I    TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS    20  
          NAME-#KCALL,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-R,CATEGORY-000

START ADDRESS	CATEGORY	NAME AND ENTRY	CODE LENGTH HEXADECIMAL	DECIMAL
0C00	0	#KCALL	17BD	6077
OL100 I THE TOTAL CORE USED BY #KCALL IS 6077 DECIMAL.				
OL101 I THE START CONTROL ADDRESS OF THIS MODULE IS 0C00.				
OL104 I TOTAL NUMBER OF LIBRARY SECTORS REQUIRED IS 24				
NAME-#KCALL,PACK-R1R1R1,UNIT-R1,RETAIN-P,LIBRARY-O				
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SVO450	005	159A	4000	
TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 12				