

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	19/12/23	PAGE	2
0000			1	#SFFI	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	*	@WKA	EXP-N				
			795+		PRINT	ON				
			796	*	@SPF	EXP-N				
			1259+		PRINT	ON				
			1260	*	@VMD	EXP-N				
			1381+		PRINT	ON				
			1382	*	\$ISE	EXP-N				
			1536+		PRINT	ON				
			1537	*	@DIR	EXP-N				
			1657+		PRINT	ON				
			1658	*	@ERM	EXP-N				
			2280+		PRINT	ON				

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE	3
		2282	*	HDR #SFFIN				
		2283	*	*****				
		2284	*	5703-XM1 COPYRIGHT IBM CORP. 1970				*
		2285	*	REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083				*
		2286	*					*
		2287	*	*****				*
		2288	*	*STATUS				*
		2289	*	VERSION 1 MODIFICATION 0				*
		2290	*					*
		2291	*	*FUNCTION				*
		2292	*	SFFIND LOCATES THE PERMANENT OR SCRATCH, DISK, DATA FILES AT				*
		2293	*	EXECUTION TIME. USING THE PROGRAM FILE'S ALLOCATE'D INFORMATION,				*
		2294	*	SFFIND WILL LOCATE DISK, DATA FILES WHEN THEY ARE FIRST ACCESSED				*
		2295	*	AT PROGRAM EXECUTION TIME. FOR A PERMANENT FILE, IT WILL SEARCH				*
		2296	*	ALL DISKS ON THE SYSTEM FOR THE FILENAME, PASSWORD, AND VOLUME-ID				*
		2297	*	SPECIFIED. THE STATUS OF THE FILE WILL BE CHECKED AND THE NEEDED				*
		2298	*	INFORMATION PLACED IN VM DIRECTORY 2 (D2). FOR A SCRATCH FILE,				*
		2299	*	THE SPACE SPECIFIED IN THE ALLOCATE COMMAND WILL BE SOUGHT FOR				*
		2300	*	IN ALL THE NULL DIRECTORIES ON THE SYSTEM AND NEEDED INFORMATION				*
		2301	*	WILL BE RETURNED IN 02.				*
		2302	*					*
		2303	*	*ENTRY POINTS				*
		2304	*	THE FIRST EXECUTABLE INSTRUCTION FOLLOWING THE PROGRAM HEADER				*
		2305	*	\$XRSAB CONTAINS THE ADDRESS OF THE POINTER TO THE D1 ENTRY.				*
		2306	*	I\$WRK1 CONTAINS THE POINTER TO D2 UPON WHICH THE ADDRESS TO THE				*
		2307	*	D2 ENTRY IS COMPUTED.				*
		2308	*					*
		2309	*	*INPUT				*
		2310	*	\$XRSAB CONTAINS THE ADDRESS OF THE POINTER TO THE D1 ENTRY.				*
		2311	*	I\$WRK1 CONTAINS THE POINTER TO D2 UPON WHICH THE ADDRESS TO				*
		2312	*	THE D2 ENTRY IS COMPUTED.				*
		2313	*					*
		2314	*	*OUTPUT				*
		2315	*	OUTPUT FROM SFFIND FOR SPECIFIC PERMANENT FILE IS STATUS INFORMA-				*
		2316	*	TION AND PHYSICAL DADDR IN 02. FOR SCRATCH FILES IT IS PHYSICAL				*
		2317	*	DADDR'S FOR ALL OF THEM (SAVED IN D2).				*
		2318	*					*
		2319	*	*EXTERNAL REFERENCES				*
		2320	*	DL2ICS - TWO TRACK LOGICAL DISK IOCS				*
		2321	*	DL2SWH - ADDR IN DL2ICS-SWITCH TO INHIBIT PHYSICAL DISK OP				*
		2322	*	DL2PHY - ADDR IN DL2ICS-ADDR PHYSICAL DISK OP				*
		2323	*	DL2RAD - ADDR IN DL2ICS-PRIME BASE ADDR FOR LOGICAL USE				*
		2324	*	I\$PARM - 2 BYTE SAVE AREA IN CORE RESIDENT INTERPRETER				*
		2325	*	I\$WRK1 - 2 BYTE WORK AREA IN CORE RESIDENT INTERPRETER				*
		2326	*	SFINDF - FILE SEARCH CONTROL ROUTINE				*
		2327	*	SURCHN - SEARCHES NULL DIRECTORY				*
		2328	*	SVODSK - ADDR IN SVOLID - PRIME DISK FILENAME				*
		2329	*	SVOIOF - ADDR IN SVOLID - PRIME I/O FILENAME				*
		2330	*	TSMLES - DATA MANAGEMENT COMMUNICATION REGION				*
		2331	*	\$XRSAB - ADDR IN SYSTEM NUCLEUS - SAVE INDEX REGISTER 2 (@XR)				*
		2332	*	\$LDRTN - ADDR IN SYSTEM NUCLEUS - RETURN ADDR FROM NBLOAD				*
		2333	*	\$CAERR - ADDR IN SYSTEM NUCLEUS - ERROR CODE SAVE AREA				*
		2334	*	\$VOLID - ADDR IN SYSTEM NUCLEUS - VOLUME ID TABLE				*
		2335	*	\$LOADR - ADDR IN SYSTEM NUCLEUS - BLAST LOAD AND RETURN				*
		2336	*	\$DISKN - ADDR IN SYSTEM NUCLEUS - PHYSICAL DISK IOCS				*
		2337	*	\$WAITF - ADDR IN SYSTEM NUCLEUS - DISK WAIT DPL				*

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 4
		2338	*	\$UPLSV - ADDR IN SYSTEM NUCLEUS - DPL SAVE AREA	*
		2339	*	\$DATE - ADDR IN SYSTEM NUCLEUS - ADDR OF CURRENT DATE	*
		2340	*		*
		2341	*	*EXITS, NORMAL	*
		2342	*	\$BLOAD - RELOAD OVERLAY. \$CAERR PRIMED WITH ZERO	*
		2343	*		*
		2344	*	*EXITS, ERROR	*
		2345	*	\$BLOAD - RELOAD OVERLAY. \$CAERR PRIMED WITH AN ERROR CODE	*
		2346	*		*
		2347	*	*TABLES/WORK AREAS	*
		2348	*	ALL CHARACTER CONSTANTS & PPL'S USED TO PRINT MESSAGES FOR THE	*
		2349	*	INTERACTION WITH THE USER ARE LOCATED AT THE BEGINNING OF THE	*
		2350	*	MODULE TO ENABLE THEM TO BE MODIFIED FOR WORLD TRADE CONSIDERATION*	*
		2351	*	ALL OTHER CONSTANTS, DPL'S AND WORK AREAS ARE LOCATED AT THE	*
		2352	*	END OF THE MODULE.	*
		2353	*	(NOTE: CHARACTER CODE DEPENDENCY)	*
		2354	*		*
		2355	*	*ATTRIBUTES	*
		2356	*	RELOCATABLE	*
		2357	*		*
		2358	*	*CHARACTER CODE DEPENDENCY	*
		2359	*	CHARACTER CODE DEPENDENCY CLASS - C	*
		2360	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-	*
		2361	*	TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE	*
		2362	*	USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-	*
		2363	*	DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN	*
		2364	*	A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE	*
		2365	*	SPECIAL CONSIDERATIONS FOR THIS MODULE:	*
		2366	*	* CHARACTER CONSTANT STRINGS WHICH ARE USED AS INFORMATIVE	*
		2367	*	MESSAGES OR ERROR MESSAGES FOR THE USER ARE LOCATED IN A	*
		2368	*	GROUP AT THE BEGINNING OF THE MODULE WITH ADEQUATE EXPANSION	*
		2369	*	AREA INCLUDED FOR WORLD TRADE CONSIDERATIONS FOR TRANSLATION	*
		2370	*	TO FOREIGN LANGUAGES.	*
		2371	*	* PPL'S USED TO PRINT THE ABOVE MENTIONED CHARACTER CONSTANTS	*
		2372	*	ARE LOCATED ADJACENT TO THEM FOR LENGTH REVISION.	*
		2373	*	* @SYSEQ TO CONSIDER USED FOR IMMEDIATE COMPARES ETC.	*
		2374	*	* @ZERO	*
		2375	*	* @BI	*
		2376	*	* @ASTER	*
		2377	*		*
		2378	*	*NOTES	*
		2379	*	ERROR PROCEDURES	*
		2380	*	THE FOLLOWING CONDITIONS WILL CAUSE AN ERROR CODE TO BE SAVED	*
		2381	*	IN \$CAERR, AND A NORMAL RETURN WILL BE MADE:	*
		2382	*	* SPECIFIED FILENAME IS NOT FOUND.	*
		2383	*	* SPECIFIED PASSWORD IS NOT FOUND.	*
		2384	*	* SPECIFIED OR RESOLVED VOLUME NOT ON SYSTEM.	*
		2385	*	* VOLUME-ID SPECIFIED IS ON MORE THAN ONE DISK ON SYSTEM.	*
		2386	*	* SPECIFIED FILE IS NOT A DATA FILE	*
		2387	*		*
		2388	*	REGISTER USAGE	*
		2389	*	FOR THE SEARCH OF A SPECIFIC FILE, INDEX REGISTER 1 (@BR) IS	*
		2390	*	USED AS A POINTER TO THE FILE IN QUESTION IN VIRTUAL MEMORY	*
		2391	*	DIRECTORY 2 (PAGE 1 = D2). INDEX REGISTER 2 (@XR) IS FIRST	*
		2392	*	USED AS A POINTER TO THE ENTRY IN D1 AND SUBSEQUENTLY USED	*
		2393	*	AS A POINTER INTO THE DIRECTORY (USER) FOR CHECKINGS ON THE	*

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 5
			2394	*	FILE STATUS.	*
			2395	*	FOR THE SEARCH ON SCRATCH DISK SPACE, INDEX REGISTER 1 (@BR)	*
			2396	*	IS USED AS A POINTER INTO D1	*
			2397	*		*
			2398	*	SAVED/RESTORED AREAS	*
			2399	*	N/A	*
			2400	*		*
			2401	*	MODIFICATION CONSIDERATIONS	*
			2402	*	* WHEN SFFIND USES DL2ICS FOR CONVERSION ONLY, IT DOES NOT	*
			2403	*	SEND A TRUE DPL TO DL2ICS BUT SUPPLIES A PSEUDO DPL VIA	*
			2404	*	THE EQUATE SRFPDA.	*
			2405	*	* NOTE THAT THE TSMLES COMMUNICATIONS REGION HAS BEEN BROKEN	*
			2406	*	UP (IE. PART OF THE FIELDS OVERLAY EXECUTABLE CODE) SO	*
			2407	*	THAT A BASE REGISTER MAY BE USED TO ADDRESS THE FIELDS OR	*
			2408	*	SO THAT OPTIUM USE OF BUFFER SPACE COULD BE MADE.	*
			2409	*		*
			2410	*	REQUIRED MODULES	*
			2411	*	@SYSEQ - COMMON SYSTEM SOFTWARE EQUATES	*
			2412	*	@FXDEQ - FIXED ADDRESSES IN SYSTEM NUCLEUS	*
			2413	*	@CANEQ - RIXED ADDRESSES OUTSIDE SYSTEM NUCLEUS	*
			2414	*	@SPFEQ - SYSTEM PROGRAM FILE EQUATES	*
			2415	*	@WKAEQ - WORK AREA EQUATES	*
			2416	*	@DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES	*
			2417	*	@ERMEQ - ERROR MESSAGE EQUATES	*
			2418	*	@VMDEQ - VIRTUAL MEMORY DIRECTORY EQUATES	*
			2419	*	\$ISEQU - INTERPRETER FIXED EQUATES	*
			2420	*	DL2ICS - TWO TRACK LOGICAL DISK IOCS	*
			2421	*	SFINDF - FILE SEARCH CONTROL ROUTINE	*
			2422	*	SGETDB - PASSWORD DIRECTORY SEARCH; USER BLOCK ACCESS	*
			2423	*	SRCHFN - FILENAME SEARCH ROUTINE	*
			2424	*	SURCHN - SEARCHES NULL DIRECTORY	*
			2425	*	SVOLID - RESOLVES SPECIFIED VOL-ID PHYSICAL LOCATION	*
			2426	*	TSMLES - DATA MANAGEMENT COMMON AREAS	*
			2427	*		*
			2428	*	OTHER	*
			2429	*	SPECIAL NOTES:	*
			2430	*	* THE I/O ROUTINES ARE REQUIRED TO BE CORE RESIDENT FOR	*
			2431	*	EXECUTION.	*
			2432	*	* YOU MAY NOT ABORT THIS MODULE AT ANY TIME DURING ITS	*
			2433	*	EXECUTION.	*
			2434	*	*****	*

## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 6
		2436	*	*****	*
		2437	*		*
		2438	*	MODULE INITIALIZATION	*
		2439	*		*
		2440	*	*****	*
		2441	*		*
		2442	*	HDR \$SFFIN	*
		2443	*		*
		2444	*	*****	*
		2445	*	PROGRAM HEADER FOR DISK LOAD	*
		2446	*	*****	*
		2447	*	#\$SUF1 EQU X'193C'	DISK ADDR OF #SFFIN
		2448	*	#\$S\$FF EQU X'0E00'	CORE LOAD ADDRESS OF #SFFINN
		2449	*	#\$@SFF EQU 008	SECTOR COUNT OF #SFFIN*
0E00		2450		ORG \$\$\$SFF	CORE LOAD ADDRESS
0E00 7BE2C6C6C9D5	0E00	2451	\$\$\$\$\$ EQU *		FIRST LOCATION IN PROGRAM
0E06 4F	0E05	2452	DC	CL6 '#SFFIN'	PROGRAM NAME
	0E06	2453	DC	IL1 '079'	PROGRAM NUMBER OF #SFFIN
	0E07	2454	#SFFIN EQU *		ENTRY POINT TO PROGRAM
		2455	***	END OF EXPANSION ***	
0E07 C0 87 0E90		2456	SFFIND B	SFF050	BYPASS MESSAGES TEXT
		2457	*		
		2458	*	MTEXT @@M048=@PRINT,@@M049=@PRINT,@@M300=@PRETR,PATCH=020	
		2459	*	*****	*
		2460	*	PPL'S AND TEXT FOR MESSAGES	*
		2461	*	*****	*
0E0B 40	0E0B	2462	@M048 DC	AL1 (@PRINT)	PRINT CONTROL FUNCTION
0E0C 16	0E0C	2463	DC	IL1 '22'	LENGTH OF MESSAGE
0E0D 0E17	0E0E	2464	DC	AL (@CADDR) (@@T048)	ADDR OF MESSAGE
		2465	*		
0E0F 40	0E0F	2466	@M049 DC	AL1 (@PRINT)	PRINT CONTROL FUNCTION
0E10 18	0E10	2467	DC	IL1 '24'	LENGTH OF MESSAGE
0E11 0E2D	0E12	2468	DC	AL (@CADDR) (@@T049)	ADDR OF MESSAGE
		2469	*		
0E13 C0	0E13	2470	@M300 DC	AL1 (@PRETR)	PRINT CONTROL FUNCTION
0E14 37	0E14	2471	DC	IL1 '55'	LENGTH OF MESSAGE
0E15 0E45	0E16	2472	DC	AL (@CADDR) (@@T300)	ADDR OF MESSAGE
		2473	*		
	0E17	2474	@T048 EQU *		LEFT BYTE OF MESSAGE
0E17 40404040C7C5E361	0E2C	2475	DC	CL022' GET/PUT FILENAME: '	
		2476	*		
	0E2D	2477	@T049 EQU *		LEFT BYTE OF MESSAGE
0E2D 40404040C4C9E2D2	0E44	2478	DC	CL024' DISK DATA FILENAME: '	
		2479	*		
	0E45	2480	@T300 EQU *		LEFT BYTE OF MESSAGE
0E45 C5D9D9D6D940F5F8	0E77	2481	DC	CL051'ERROR 580 DUPLICATE DISK LABELS - SPECIFY DISK LOCA'	
0E78 E3C9D6D5	0E7B	2482	DC	CL004'TION'	
		2484	*	PATCH AREA FOR MESSAGES	
		2485	*		
0E7C	0E8F	2486	\$\$\$001 DS	CL20	MESSAGE EXPANSION AREA.
		2487	***	END OF EXPANSION ***	
		2488	*		*
		2489	*	*****	*

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23	PAGE 7
				2491		*****			
				2492	*				*
0E90	0C	01	10CA 0571	2493	SFF050	MVC	SFFARR(@CADDR), \$LDRTN	SAVE RETURN ADDRESS	
0E96	35	02	03C7	2494		L	\$XRSAB, @XR	POINTER TO D1 ENTRY	
0E9A	34	02	0EB3	2495		ST	SFF100+@OP1, @XR	SAVE DIRECTORY POINTER	
0E9E	0C	05	0449 10E0	2496		MVC	\$DPLSV(@DPLNG), SFFOVR+@DBFR2	OVERLAY DPL	
				2497	*				
0EA4	B8	40	00	2498		TBN	@\$D1DC(, @XR), @\$MBSD	IS IT A SCRATCH FILE ?	
0EA7	F2	10	F1	2499		JT	SFF520	YES, ASSIGN SCRATCH FILES	
				2500	*				
				2501	*	LOADR	SFFIOR, WAIT	READ I/O ROUTINE	
0EAA	C0	87	051A	2502		B	\$LOADR	LOAD PROGRAM AND RETURN	
0EAE	10D5			0EAF 2503		DC	AL2(SFFIOR)	DPL ADDRESS	
				2504	****	END OF	EXPANTION ***		
0EB0	C2	02	0000	2505	SFF100	LA	*-*, @XR	D1 POINTER	
0EB4	35	01	0D59	2506		L	I\$WRK1, @BR	COMPUTE POINTER TO D2 ENTRY	
0EB8	76	01	01	2507		A	@\$D2CF(, @BR), @BR	* UNDER PROCESS	
				2508	*				*
				2509	*****				



## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23	PAGE 8
				2511		*****			
				2512	*				*
				2513	*	PRIME SFINDF	FOR USER AND PASSWORD DIRECTORY SEARCHES		*
				2514	*				*
				2515		*****			*
				2516	*				*
0EBB	3C	00	15CC	2517		MVI	SMIND1,@ZERO	ZERO INDR	
0EBF	2C	15	15E2 1E	2518		MVC	SMFNAM(##LPEN+##LUEN+@VOLID),@\$D1DF(,@XR)	FILENAME, PWORD	
0EC4	2C	07	151D 1E	2519		MVC	SVODSK(\$L1DF),@\$D1DF(,@XR)	PRIME SVOLID MESSAGE	
0EC9	2C	07	1529 08	2520		MVC	SVOIOF(\$L1BF),@\$D1BF(,@XR)	PRIME SVOLID MESSAGE	
				2521	*				
0ECE	C0	87	11A8	2522		B	SFINDF	SET USER DIRECTORY	
				2523	*				
0ED2	39	88	15CC	2524		TBF	SMIND1,SM1FNE+SM1PNF	WERE FILE AND PASSWORD FOUND ?	
0ED6	F2	90	BA	2525		JF	SFF420	ERROR EXIT	
				2526	*				
				2527		*****			*
				2528	*				*
				2529	*	RESOLVE VOL-ID	FOR NONE SPECIFIED		*
				2530	*				*
				2531		*****			*
				2532	*				
0ED9	34	01	0EFD	2533		ST	SFF170+@OP1,@BR	SAVE BR	
0EDD	C2	01	03F3	2534		LA	\$VOLID-@B1-@DADDR,@BR	INDEX VOL-ID TABLE	
				2535	*				
0EE1	D2	01	08	2536	SFF130	LA	@VOLID+@DADDR(,@BR),@BR	INDEX TO ENTRY	
0EE4	4D	01	02 15E6	2537		CLC	2*@B1(@DADDR,@BR),SMBFDA	BASE LIBRARY ADDR OF FILE ?	
0EE9	F2	01	04	2538		JNE	SFF150	NO, CHECK NEXT ONE	
0EEC	9C	05	0E 00	2539		MVC	@\$D1DV(@VOLID,@XR),@ZERO(,@BR)	PRIME VOLUME	
0EF0	0F	00	10D1 10C4	2540	SFF150	SLC	SFFCTR(@B1),SFF001	DECREMENT COUNTER - IF NOT ZERO	
0EF6	C0	01	0EE1	2541		BNZ	SFF130	* CHECK NEXT ONE.	
				2542	*				
0EFA	C2	01	0000	2543	SFF170	LA	*-*,@BR	RESTORE REGISTER	
				2544	*				
0EFE	35	02	15E4	2545		L	SMUDEA,@XR	LOAD ENTRY POINTER	
0F02	B8	40	0D	2546		TBN	##DUES(,@XR),##MUEK	IS IT KEYBOARD GENERATED FILE ?	
0F05	F2	10	4C	2547		JT	SFF240	YES, SET FOR INPUT ONLY	
				2548	*				
0F08	B8	20	0D	2549		TBN	##DUES(,@XR),##MUEG	IS IT PROGRAM GENERATED ?	
0F0B	3C	B8	03CD	2550		MVI	\$CAERR,@E713	NOT A DATA FILE.	
0F0F	F2	90	81	2551		JF	SFF420	NO, ERROR EXIT - NOT A DATA FILE	
				2552	*				*
				2553		*****			*

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE	9
				2555		*****					
				2556		*					*
				2557		*	CHECK FILE STATUS AND TYPE				*
				2558		*					*
				2559		*****					*
				2560		*					*
0F12	7A	10	01	2561	SFF200	SBN	@\$D2IO(,@BR),@\$M2FT				SET FILE FOR PROGRAM GENERATED
0F15	3D	5C	15D4	2562		CLI	SMPSWD-##DUEN+@B1,@ASTER				IS IT A ** FILE ?
0F19	F2	81	0D	2563		JE	SFF220				YES, SET FOR INPUT & OUTPUT
				2564		*					
0F1C	3D	5C	15D3	2565		CLI	SMPSWD-##DUEN,@ASTER				IS IT A * ?
0F20	F2	81	31	2566		JE	SFF240				YES, SET INPUT ONLY
				2567		*					
0F23	B9	18	0D	2568	SFF210	TBF	##DUES(,@XR),##MUER+##MUEX				FILE POOLED OR PROTECTED
0F26	F2	90	2B	2569		JF	SFF240				YES, SET INPUT ONLY
				2570		*					
0F29	7A	40	01	2571	SFF220	SBN	@\$D2IO(,@BR),@\$M2FO				SET FOR OUTPUT
				2572		*					
0F2C	38	01	0D57	2573		TBN	I\$PARM,\$MBPU				IS IT A PUT ?
0F30	F2	90	21	2574		JF	SFF240				NO, CONTINUE
0F33	8C	02	12 043A	2575		MVC	##DUED(##LUED,@XR),\$DATE				MODIFY DATE
				2576		*					
0F38	BB	04	0D	2577		SBF	##DUES(,@XR),##MUEO				SET OFF OPEN INDR.
0F3B	35	02	15E8	2578		L	SMUDBA,@XR				AT NITITSR ETT.TRI AWS-
0F3F	2C	01	10D1 01	2579		MVC	SFFDPU+@DSAD(@DADDR),##DUHA(,@XR)				SUPPLY DADDR
0F44	34	02	10D4	2580		ST	SFFDPU+@DBFR2,@XR				SUPPLY CADDR
				2581		*					
				2582		*	DSKL2 SFFDPU,WAIT				WRITE BACK USER BLOCK
0F48	C0	87	110F	2583		B	DL2ICS				PERFORM RELATIVE DISK OP
0F4C	10CF			0F4D 2584		DC	AL2(SFFDPU)				DPL ADDRESS
0F4E	C0	87	0025	2585		B	\$DISKN				WAIT AND CHECK DISK ADDRESS
0F52	057F			0F53 2586		DC	AL2(\$WAITF)				WAIT DPL ADDRESS
				2587		***	END OF EXPANSION ***				
				2588		*					
0F54	7A	80	01	2589	SFF240	SBN	@\$D2IO(,@BR),@\$M2FI				SET FILE FOR INPUT
				2590		*					*
				2591		*****					

## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23	PAGE 10
				2593		*****			
				2594	*				*
				2595	*	SET UP D2 ENTRIES			*
				2596	*				*
				2597		*****			*
				2598	*				*
0F57	35	02	15E4	2599	SFF300 L	SMUDEA,@XR	LOAD USER ENTRY		
				2600	*				
0F5B	B8	02	0D	2601	TBN	##DUES(,@XR),##MUEV	IS IT LONG PRECISION ?		
0F5E	F2	90	03	2602	JF	SFF310	NO, COMPUTE PHYSICAL ADDR		
0F61	7A	20	01	2603	SBN	@\$D2IO(,@BR),@\$M2FP	SET LONG PRECISION		
				2604	*				
0F64	3C	87	1185	2605	SFF310 MVI	DL2SWH,@UCB	SET DL2ICS FOR CONVERSION		
0F68	2C	01	10D1 09	2606	MVC	SFFDPU+@DSAD(@DADDR),##DUEA(,@XR)	SUPPLY DADDR FOR		
0F6D	2C	00	10CC 0C	2607	MVC	SFFZER(@B1),##DUEI(,@XR)	* CONVERSION		
0F72	0E	01	10D1 10CC	2608	ALC	SFFDPU+@DSAD(@DADDR),SFFZER	ADD FIT LENGTH		
0F78	7A	80	00	2609	SBN	@\$D2DC(,@BR),@\$MBPD	SET PERMANENT DISK INDICATOR		
				2610	*				
0F7B	C0	87	110F	2611	*	DSKL2 SFFDPU	CONVERT FILE DADDR		
0F7F	10CF			2612	B	DL2ICS	PERFORM RELATIVE DISK OP		
				0F80 2613	DC	AL2(SFFDPU)	DPL ADDRESS		
				2614	***	END OF EXPANSION ***			
				2615	*				
0F81	4C	01	07 11A2	2616	MVC	@\$D2DA(@DADDR,@BR),DL2PHY	MOVE PHYSICAL DADDR TO D2		
0F86	8F	01	0B 10CC	2617	SFF380 SLC	##DUEF(##LUEF,@XR),SFFZER	COMPUTE FILE LENGTH		
0F8B	6C	01	0B 0B	2618	MVC	@\$D2FS(@\$L2FS,@BR),##DUEF(,@XR)	SAVE FILE DATA LENGTH		
				2619	*				
				2620		*****			*
				2621	*				*
				2622	*	RETURN PROCESSING - ERROR AND NORMAL			*
				2623	*				*
				2624		*****			*
				2625	*				*
0F8F	3C	00	03CD	2626	SFF410 MVI	\$CAERR,@ZERO	ZERO		
				0F93 2627	SFF420 EQU	*	RETURN POINT		
				0F93 2628	SFIERR EQU	SFF420	ERROR EXIT		
0F93	35	08	10CA	2629	SFF460 L	SFFARR,@ARR	OVERLAY VIA RETURN TO		
0F97	35	10	10C8	2630	SFF480 L	SFFIAR,@IAR	* CALL ROUTINE.		
				2631	*				*
				2632		*****			*

## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE 11
				2634		*****				
				2635	*					*
				2636	*		SET SEARCH FOR NULL SPACE ON EACH DISK			*
				2637	*					*
				2638		*****				*
				2639	*					*
0F9B	35	01	0D59	2640	SFF520	L	I\$WRK1,@BR	COMPUTE POINTER TO D2 ENTRY	1-5	
0F9F	76	01	01	2641		A	@\$D2CF(,@BR),@BR	POINTER AT CURRENT D2 ENTRY	1-5	
0FA2	7D	00	0B	2642		CLI	@\$D2SF(,@BR),@ZERO	IS 2ND PASS SWITCH ON ?	1-5	
0FA5	F2	81	1C	2643		JE	SFF540	NO, USE NEW NULL DIRECTORY	1-5	
0FA8	1C	00	10D1 0C	2644		MVC	SFFCTR(@B1),##DUEI(,@BR)	RESTORE COUNTER	1-5	
0FAD	1C	01	0FD9 0E	2645		MVC	SFF560+@OP1(@CADDR),@\$D2LC+@B1(,@BR)	DADDR OF LAST LIB	1-5	
0FB2	1C	01	0FF0 10	2646		MVC	SFF590+@DOP2(@CADDR),##MUEX(,@BR)	DAADR OF LAST LIB	1-5	
0FB7	3C	01	10E1	2647		MVI	SFFND2,@DGET	SET DPL FOR READ	1-5	
0FBB	0C	01	0FF7 1099	2648		MVC	SFF595+@DBFR2(@CADDR),SFFNDA	SET TO RD SAVED NULL DIR	1-5	
0FC1	F2	87	28	2649		J	SFF590		1-5	
				2650	*					
0FC4	0E	00	10D1 10C4	2651	SFF540	ALC	SFFCTR(@B1),SFF001	INCREMENT COUNTER		
0FCA	0E	01	0FD9 10CE	2652		ALC	SFF560+@OP1(@CADDR),SFFVOL	INCREMENT COMPARE ADDR		
0FD0	0E	01	0FF1 10CE	2653		ALC	SFF590+@OP2(@CADDR),SFFVOL	* AND MOVE ADDRESS		
0FD6	3D	00	0000	2654	SFF560	CLI	*-*,@ZERO	DOES THIS DISK HAVE A LIBRARY ?		
0FD6				2655		ORG	SFF560	RESET LOCATION COUNTERAET		
0FD6	3D	00	03F4	2656		CLI	\$VOLID-@DADDR,@ZERO	INITIAL COMPARE ADDR		
0FDA	F2	01	0F	2657		JNE	SFF590	YES, READ LIBRARY		
				2658	*					
0FDD	3D	04	10D1	2659		CLI	SFFCTR,4*@B1	LAST DISK TO CHECK ?		
0FE1	C0	01	0FC4	2660		BNE	SFF540	NO, GO INCR TO NEXT		
				2661	*					
0FE5	3C	87	10BA	2662		MVI	SFF815+@Q,@UCB	YES, KILL NULL DIRECTORY SEARCH		
0FE9	F2	87	30	2663		J	SFF620	GO SET NO SPACE INDICATOR		
				2664	*					
0FEC	0C	01	10C3 0000	2665	SFF590	MVC	SFFDPN+@DSAD(@DADDR),*-*	MOVE LIB ADDR TO DPL		
0FEC				2666		ORG	SFF590	RESET LOCATION COUNTER		
0FEC	0C	01	10C3 03F5	2667		MVC	SFFDPN+@DSAD(@DADDR),\$VOLID-@CADDR+@B1	INITIAL CADDR		
				0FF2 2668	SFF595	EQU	*		1-3	
				2669	*					
				2670	*		DSKL2 SFFDPN,WAIT	READ NULL DIRECTORY		
0FF2	C0	87	0025	2671		B	\$DISKN	PERFORM RELATIVE DISK OP		
0FF6	10C1			0FF7 2672		DC	AL2(SFFDPN)	DPL ADDRESS		
0FF8	C0	87	0025	2673		B	\$DISKN	WAIT AND CHECK DISK ADDRESS		
0FFC	057F			0FFD 2674		DC	AL2(\$WAITF)	WAIT DPL ADDRESS		
				2675	***		END OF EXPANSION ***			
				2676	*					*
				2677		*****				*

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE 12
					2679	*****				
					2680	*				*
					2681	*	SEARCH NULL DIRECTORY			*
					2682	*				*
					2683	*****				*
					2684	*				*
0FFE	2C	01	15EE	0A	2685	SFF600	MVC SMNSCT(@\$L1FS),@\$D1FS(,@XR) SECTORS REQUIRED			
1003	3C	00	15CC		2686		MVI SMIND1,@ZERO INIT INDR			
					2687	*				
1007	C0	87	152A		2688	B	SURCHN SEARCH NULL DIRECTORY			
					2689	*				
100B	0D	01	15EC	10CC	2690	CLC	SMNDEA(@DADDR),SFFZER SPACE FOUND ?			
1011	F2	01	0E		2691	JNE	SFF630 YES, CALCULATE PHYSICAL ADDR			
					2692	*				
1014	3D	04	10D1		2693	CLI	SFFCTR,4*@B1 IS CTR = 4 ?			
1018	C0	01	0FC4		2694	BNE	SFF540 NO, TEST OTHER DISKS			
					2695	*				
101C	7C	FF	06		2696	SFF620	MVI @\$D2DA-@B1(,@BR),X'FF' SET COMPARE TO OFF			
101F	F2	87	19		2697	J	SFF700 CHECK 1ST INDR			
					2698	*				
1022	6C	01	0B	0A	2699	SFF630	MVC @\$D2FS(@\$L2FS,@BR),@\$D1FS(,@XR) MOVE D1 FILE SIZE TO D2			
					2700	*	* AND CALCULATE PHYSICAL DISK			
					2701	*	* ADDR FOR D2			
1026	3C	87	1185		2702	MVI	DL2SWH,@UCB SET DL2ICS FOR DADDR CONVERSION			
102A	0C	01	11A7	10C3	2703	SFF634	MVC DL2RAD(@DADDR),SFFDPN+@DSAD SET DL2 TO CONVERT 1-3			
					2704	*				
					2705	*	DSKE2 SFFPDA CONVERT DADDR			
1030	C0	87	110F		2706	B	DL2ICS PERFORM RELATIVE DISK OP			
1034	15EA			1035	2707	DC	AL2(SFFPDA) DPL ADDRESS			
					2708	***	END OF EXPANSION ***			
					2709	*				
1036	4C	06	07	11A2	2710	SFF670	MVC @\$D2DA(@\$D2DA,@BR),DL2PHY MOVE PHYSICAL ADDR TO D2			*
					2711	*				
					2712	*****				

## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23	PAGE 13
				2714		*****			
				2715	*				*
				2716	*	CHECK FIRST ENTRY INDR			*
				2717	*				*
				2718		*****			*
				2719	*				*
103B	F2	80	34	2720	SFF700 JC	SFF750,@NOP	JUMP IF 1ST INDR IS OFF		
				2721	*				
103E	7D	FF	06	2722	CLI	@\$D2DA-@B1(,@BR),X'FF'	IS DADDR INDR A X'FF' ?		
1041	C0	81	0F8F	2723	BE	SFF410	YES, RETURN		
				2724	*				
1045	3C	87	103C	2725	MVI	SFF700+@Q,@UCB	SET OFF 1ST INDR JUMP		
1049	35	01	0D59	2726	L	I\$WRK1,@BR	SET PTR TO CADDR OF D2	1-3	
104D	3C	00	03C7	2727	MVI	\$XRSAB,@ZERO	SET POINTER TO FIRST ENTRY	1-3	
1051	35	02	03C7	2728	L	\$XRSAB,@XR	* IN D1	1-3	
1055	38	10	03E0	2729	TBN	\$DBGUF,\$IOPGS	TWO PAGES OF D1 ?	1-3	
1059	F2	90	0C	2730	JF	SFF720	NO, CONTINUE NORMAL P	1-3	
105C	BD	00	1F	2731	CLI	@\$L1E-1(,@XR),@ZERO	YES, IS THIS PAGE 2 ?	1-3	
105F	F2	01	06	2732	JNE	SFF720	NO, THEN THIS IS PAGE 1	1-3	
1062	D2	01	C0	2733	LA	SFD1P2(,@BR),@BR	YES, POINT AT 9 ENTRY	1-3	
1065	F2	87	07	2734	J	SFF730	GO PROCESS	1-3	
1068	3C	08	10D3	2736	SFF720 MVI	SFFCT8,##@#08	SET UO FOR MAX OF 8 ENTRIES	1-3	
106C	D2	01	40	2737	LA	@\$D2E1(,@BR),@BR	SET UP ADDR OF 1ST D2 ENTRY	1-3	
106F	F2	87	32	2738	SFF730 J	SFF800		1-3	
				2739	*				*
				2740		*****			*
				2741	*				*
				2742	*	CHECK IF ENTRIES ALL ASSIGNED			*
				2743	*				*
				2744		*****			*
				2745	*				*
1072	0F	00	10D3 10C4	2746	SFF750 SLC	SFFCT8(@B1),SFF001	ALL ENTRIES PROCESSED ?		
1078	F2	01	23	2747	JNZ	SFF780	NO, INDEX POINTERS		
				2748	*				
107B	35	01	0D59	2749	L	I\$WRK1,@BR	LOAD CADDR OF D2	1-3	
107F	7C	FF	0B	2750	MVI	@\$D2SF(,@BR),X'FF'	SET FIRST PASS INDR IN D2	1-3	
1082	7C	FF	02	2751	MVI	@\$D2AS(,@BR),X'FF'	SET ACTIVE SCRATCH FILE INDR		
1085	4C	00	0C 10D1	2752	MVC	##DUEI(,@BR),SFFCTR(@B1)		1-5	
108A	4C	01	0E 0FD9	2753	MVC	@\$D2LC+@B1(,@BR),SFF560+@OP1(@CADDR)		1-5	
108F	4C	01	10 0FF0	2754	MVC	##MUEX(,@BR),SFF590+@DOP2(@CADDR)		1-5	
1094	C0	87	0025	2755	B	\$DISKN	WRITE OUT CURRENT NULL DIR	1-5	
1098	10E1			2756	SFFNDA DC	AL2(SFFND2)	DPL ADDR	1-4	
109A	C0	87	0F8F	2757	B	SFF410	RETURN	1-3	
				2758	*				
109E	E2	02	20	2759	SFF780 LA	@\$L1E(,@XR),@XR	INDEX TO NEXT ENTRY IN EACH		
10A1	D2	01	10	2760	LA	@\$L2E(,@BR),@BR	* DIRECTORY		
				2761	*				
10A4	B8	40	00	2762	SFF800 TBN	@\$D1DC(,@XR),@\$MBSD	IS IT A SCRATCH FILE ?		
10A7	C0	90	1072	2763	BF	SFF750	NO, SEE IF LAST ENTRY		
10AB	1C	01	15EC 0B	2764	MVC	SMNDEA(@DADDR),@\$MBEN-1(,@BR)			
				2765	*				
10B0	4D	01	07 10CC	2766	CLC	@\$D2DA(@\$L2DA,@BR),SFFZER	IS D2 DADDR 0 ?		
10B5	C0	01	1072	2767	BNE	SFF750	NO, GO CHECK NEXT FILE		
10B9	C0	80	101C	2768	SFF815 BC	SFF620,@NOP	GO SET NO SPACE IF NO LIB AVAIL		
10BD	C0	87	0FFE	2769	B	SFF600	GO SEARCH FOR SPACE		

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC    OBJECT CODE            ADDR STMT SOURCE STATEMENT            VER 15, MOD 00    19/12/23    PAGE    14

2770 \*  
2771 \*\*\*\*\*



## #SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 15
				2773	*****	
				2774	*	*
				2775	* DATA BUFFERS, CONSTANTS, WORK AREAS.	*
				2776	*	*
				2777	*****	*
				2778	*	*
				2779	*SFFDPN DPL FUNC=@DGET,DADDR=*-* ,CNT=##LN,CADDR=SFF	
			10C1	2780	SFFDPN EQU *	DISK PARAMETER LIST
10C1	01		10C1	2781	DC AL1(@DGET)	REQUESTED FUNCTION
10C2	0000		10C3	2782	DC AL2(*-*)	DISK ADDRESS
10C4	01		10C4	2783	DC AL1(##LN)	SECTOR COUNT
10C5	11A8		10C6	2784	DC AL2(SFFNUL)	BUFFER ADDRESS
				2785	*** END OF EXPANSION ***	
				2786	*	
			10C4	2787	SFF001 EQU SFFDPN+@DCNT	DECREMENT - INCREMENT
				2788	*	
10C7	0025		10C8	2789	SFFIAR DC AL2(\$DISKN)	DISK I/O ROUTINE ADDR
10C9			10CA	2790	SFFARR DS XL2	RETURN ADDRESS SAVE AREA
10CB	0000		10CC	2791	SFFZER DC AL2(@ZERO)	ZERO COMPARE FOR SURCHN
10CD	0008		10CE	2792	SFFVOL DC AL2(@VOLID+@DADDR)	INDEX FOR VOLID TABLE
				2793	*	
				2794	*SFFDPU DPL FUNC=@DGET,CNT=##LU	
			10CF	2795	SFFDPU EQU *	DISK PARAMETER LIST
10CF	01		10CF	2796	DC AL1(@DGET)	REQUESTED FUNCTION
10D0	0000		10D1	2797	DC AL2(*-*)	CYLINDER ADDRESS
10D2	00		10D2	2798	DC AL1(*-*)	HEAD/SECTOR/DRIVE/DISK SPEC
10D3	02		10D3	2799	DC AL1(##LU)	SECTOR COUNT
10D4	0000		10D5	2800	DC AL2(*-*)	BUFFER ADDRESS
				2801	*** END OF EXPANSION ***	
				2802	*	
10D3				2803	ORG SFFDPU+@DBFR2-@B1	RESET LOCATION COUNTER
10D3	04		10D3	2804	SFFCT8 DC XL1'04'	NUM OF DIRECTORY ENTRIES
10D4	04		10D4	2805	SFFCT4 DC XL1'04'	COUNT OF DISKS
			10D1	2806	SFFCTR EQU SFFDPU+@DSAD	COUNTER
				2807	*	
				2808	*SFFIOR DPL FUNC=@DGET,DADDR=#\$DPRI,CNT=#\$@DPR,CADDR=##\$DPR	
			10D5	2809	SFFIOR EQU *	DISK PARAMETER LIST
10D5	01		10D5	2810	DC AL1(@DGET)	REQUESTED FUNCTION
10D6	014C		10D7	2811	DC AL2(#\$DPRI)	DISK ADDRESS
10D8	05		10D8	2812	DC AL1(#\$@DPR)	SECTOR COUNT
10D9	0700		10DA	2813	DC AL2(##\$DPR)	BUFFER ADDRESS
				2814	*** END OF EXPANSION ***	
				2815	*	
				2816	*SFFOVR DPL FUNC=@DGET,DADDR=#@VSFI,CNT=##@VSF,CADDR=\$\$KLD1	
			10DB	2817	SFFOVR EQU *	DISK PARAMETER LIST
10DB	01		10DB	2818	DC AL1(@DGET)	REQUESTED FUNCTION
10DC	09A1		10DD	2819	DC AL2(#@VSFI)	DISK ADDRESS
10DE	10		10DE	2820	DC AL1(##@VSF)	SECTOR COUNT
10DF	0600		10E0	2821	DC AL2(\$\$KLD1)	BUFFER ADDRESS
				2822	*** END OF EXPANSION ***	
				2823	*	
			00C0	2824	SFD1P2 EQU X'C0'	DISP TO D2 9TH ENTRY 1-3
				2825	*SFFND2 DPL FUNC=@DPUT,DADDR=#@LDSV,CNT=##LN,CADDR=SFFNUL	1-5
			10E1	2826	SFFND2 EQU *	DISK PARAMETER LIST
10E1	01		10E1	2827	DC AL1(@DGET)	REQUESTED FUNCTION
10E2	044D		10E3	2828	DC AL2(#@LDSV)	DISK ADDRESS



#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/12/23 PAGE 16

10E4 01	10E4 2829	DC	AL1(##LN)	SECTOR COUNT
10E5 11A8	10E6 2830	DC	AL2(SFFNUL)	BUFFER ADDRESS
	2831	***	END OF EXPANSION	***
	2832	*		*
	2833	*****		

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE	17
		2835	*	PATCH 40,1				1-3
		2836		*****				
		2837	*	PATCH AREA 1				*
		2838		*****				
10E7		110E	2839	\$\$\$\$\$1 DS CL40				PATCH AREA FOR PROGRAM
		2840		*****				

#SFFIN - VM TO/FROM FILE LIBR. TRANSFER ROUTINE.

ERR LOC	OBJECT CODE	ADDR STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE	18
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		2842 *	\$DL2P				
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## DL2ICS - TWO TRACK LOGICAL IOCR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE 19
		2844+		*****			
		2845+	*	5703-XM1 COPYRIGHT IBM CORP 1970			*
		2846+		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE. 120-2083			*
		2847+					*
		2848+		*****			*
		2849+	*	STATUS -			*
		2850+		VERSION 1 MODIFICATION 0			*
		2851+					*
		2852+	*	FUNCTION			*
		2853+	*	DL2ICS CONVERTS A RELATIVE DISK ADDRESS TO A PHYSICAL DISK			*
		2854+		ADDRESS AND COMBINES IT WITH A BASE ADDRESS PLACED IN DL2RAD			*
		2855+		BY THE CALLER.			*
		2856+	*	THE RELATIVE DISK ADDRESS IS A TWO BYTE CYLINDER SECTOR COUNT			*
		2857+		IN THE CALLERS DISK PARAMETER LIST (DPL).			*
		2858+	*	THE COUNT IS A CYLINDER SECTOR DISPLACEMENT FROM THE BASE			*
		2859+		ADDRESS PLACED IN DL2RAD			*
		2860+	*	DL2ICS IS USED TO PROCESS DATA ON THE FIXED OR REMOVABLE DISK			*
		2861+		ON EITHER DRIVE AND PROVIDES THE INTERFACE TO \$DISKN.			*
		2862+	*	THE PHYSICAL DISK ADDRESS IS PLACED IN A COPY OF THE USERS DPL			*
		2863+		IN DL2ICS AND A CALL IS MADE TO \$DISKN TO PERFORM THE REQUESTED			*
		2864+		OPERATION.			*
		2865+					*
		2866+	*	ENTRY POINTS			*
		2867+	*	THE ENTRY IS DL2ICS. THE BASE REGISTER IS SAVED AND RESTORED			*
		2868+		ON RETURN. THE INDEX REGISTER IS NOT USED.			*
		2869+	*	THE FORMAT OF THE CALLING SEQUENCE IS AS FOLLOWS:			*
		2870+		B DL2ICS			*
		2871+		DC AL2(PARMLT)			*
		2872+		WHERE PARMLT IS THE ADDR OF THE PARAMETER LIST TO BE PROCESSED.			*
		2873+					*
		2874+	*	INPUT			*
		2875+	*	THE INPUT IS A TWO BYTE BASE DISK ADDRESS PLACED IN			*
		2876+		DL2RAD AND A SIX BYTE DPL. THE SAME FORMAT AS THE DPL FOR			*
		2877+		\$DISKN EXCEPT FOR THE DISK ADDRESS WHICH IS A RELATIVE CYLINDER			*
		2878+		AND SECTOR DISPLACEMENT FROM THE BASE ADDRESS IN DL2RAD.			*
		2879+					*
		2880+	*	OUTPUT			*
		2881+		NONE.			*
		2882+					*
		2883+	*	EXTERNAL REFERENCES			*
		2884+		\$DISKN - ENTRY TO PHYSICAL DISK ROUTINE IS THE SYSTEM NUCLEUS.			*
		2885+					*
		2886+	*	EXITS, NORMAL			*
		2887+		NORMAL - EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE POINTER			*
		2888+		TO THE DPL. THE BASE REGISTER IS RESTORED. THE RETURN ADDRESS			*
		2889+		IS THE ADDRESS RECALL REGISTER (ARR) +2.			*
		2890+					*
		2891+	*	EXITS, ERROR			*
		2892+		NONE			*
		2893+					*
		2894+	*	TABLES/WORK AREAS			*
		2895+	*	THE CONSTANTS AND WORK AREAS RESIDE AT THE END OF THE EXECUTABLE			*
		2896+		CODE AND ARE REFERENCED BY A DISPLACEMENT RELATIVE TO THE VALUE			*
		2897+		IN INDEX REGISTER 1 (@BR).			*
		2898+	*	DL2SEC AND DL2SAD ARE EQUATED TO OPERAND LOCATIONS IN THE			*
		2899+		EXECUTABLE CODE TO ELIMINATE EXCESS WORKING STORAGE.			*

## DL2ICS - TWO TRACK LOGICAL IOCR

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 20
					2900+	*		*
					2901+	*	ATTRIBUTES	*
					2902+	*	* DL2ICS IS REUSABLE	*
					2903+	*		*
					2904+	*	CHARACTER CODE DEPENDENCY	*
					2905+	*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
					2906+	*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*
					2907+	*		*
					2908+	*	NOTES	*
					2909+	*	ERROR PROCEDURES	*
					2910+	*	NONE	*
					2911+	*		*
					2912+	*	REGISTER USAGE	*
					2913+	*	INDEX REGISTER 1 (@BR) IS SAVED AND RESTORED. THIS REGISTER IS	*
					2914+	*	USED DURING EXECUTION. REGISTER 2 (@BR) IS NOT USED.	*
					2915+	*		*
					2916+	*	SAVED/RESTORED AREAS	*
					2917+	*	NONE	*
					2918+	*		*
					2919+	*	MODIFICATION CONSIDERATIONS	*
					2920+	*	NONE	*
					2921+	*		*
					2922+	*	REQUIRED MODULES	*
					2923+	*	@SYSEQ - COMMON SYSTEM EQUATES.	*
					2924+	*	@FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATORS VALUES EQUATES	*
					2925+	*		*
					2926+	*	OTHER	*
					2927+	*	DL2ICS MAY BE USED TO CONVERT THE DISK ADDRESS ONLY AND NOT TO	*
					2928+	*	CALL \$DISKN IF THE USER MOVES A UCB CODE TO DL2SWH.	*
					2929+	*	THIS OPTION IS NOT STANDARD USAGE.	*
					2930+	*	*****	*
				1113	2931+		USING DL2000,@BR	ESTABLISH ADDRESSABILITY
					2932+	*		
				0001	2933+DL2E01	EQU	X'01'	FIELD LENGTH OF 1
				0002	2934+DL2E02	EQU	X'02'	FIELD LENGTH OF 2
				0018	2935+DL2E18	EQU	X'18'	HEX TRACK SECTOR COUNT
				0060	2936+DL2E60	EQU	X'60'	PHYSICAL SECTOR COUNT
				0083	2937+DL2TSD	EQU	X'83'	MASK OFF TRACK SPINDLE DISK
				007C	2938+DL2E7C	EQU	X'7C'	MASK OUT SECTOR COUNT
				110F	2939+DL2ICS	EQU	*	ENTRY POINT
	110F	34	01	1190	2940+	ST	DL2900+@OP1,@BR	SAVE OLD BASE
				1113	2941+DL2000	EQU	*	START PROCESSING
	1113	C2	01	1113	2942+	LA	DL2000,@BR	SET BASE ADDRESS
	1117	76	08	8A	2943+	A	DL2C01(,@BR),@ARR	BUMP TO RIGHT BYTE OF ADDR
	111A	74	08	14	2944+	ST	DL2001+@DOP2(,@BR),@ARR	ADDR OF PARAM
	111D	76	08	8A	2945+	A	DL2C01(,@BR),@ARR	BUMP TO RETURN ADDR
	1120	74	08	81	2946+	ST	DL2910+@OP1(,@BR),@ARR	SAVE RETURN ADDR
					2947+	*		
	1123	4C	01	1D 0000	2948+DL2001	MVC	DL2002+@DOP2(@DADDR,@BR),*-*	SETUP ADDR OF DPL
	1128	5E	01	1D 8C	2949+	ALC	DL2002+@DOP2(@CADDR,@BR),DL2C05(,@BR)	DUMP TO RIGHT END
	112C	4C	05	92 0000	2950+DL2002	MVC	DL2DPL(@DPLNG,@BR),*-*	MOVE USER DPL TO WORK AREA
	1131	5F	00	8F 86	2951+DL2005	SLC	DL2LST+@DSAD(DL2E01,@BR),DL2C48(,@BR)	ADJUST SCTR/CYL
	1135	F2	82	07	2952+	JM	DL2006	GO TO RESTORE TO CONTINUE
	1138	5E	00	8E 8A	2953+	ALC	DL2LST+@DCYL(DL2E01,@BR),DL2C01(,@BR)	BUMP CYLINDER COUNT
	113C	D0	87	1E	2954+	B	DL2005(,@BR)	BACK FOR NEXT CYLINDER
	113F	5E	00	8F 86	2955+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	19/12/23	PAGE	21
					2956+*								
					2957+*		GET THE LOGICAL SECTOR FROM THE DPL. THE NUMBER IS LEFT ADJUSTED						
					2958+*		TO COMAE IT MTN THE POINTER ESTABLISHED PRIOR TO AN ENTRY.						
1143	5C	00	1D	8F	2959+	MVC	DL2SEC(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR NUMBER						
1147	7C	00	8F		2960+	MVI	DL2LST+@DSAD(,@BR),@ZERO CLEAR SECTOR BYTE						
					2961+*								
					2962+*		MOVE THE RELATIVE START TO THE DFL						
					2963+*								
114A	5E	01	8F	94	2964+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2RAD(,@BR) DL2RAD TO DPL						
114E	7D	18	1D		2965+	CLI	DL2SEC(,@BR),DL2E18 IS COUNT OVER A TRACK						
1151	F2	82	08		2966+	JL	DL2008 NO GO CHANGE A PHYSICAL ADOR						
1154	5E	01	8F	85	2967+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR) BUMP TRACK VALUE						
1158	5F	00	1D	88	2968+	SLC	DL2SEC(1,@BR),DL2K18(,@BR) DECR BY TRACK VALUE						
115C	5E	00	1D	1D	2969+DL2008	ALC	DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT 1						
1160	5E	00	1D	1D	2970+	ALC	DL2SEC(1,@BR),DL2SEC(,@BR) SHIFT LEFT						
1164	5C	00	14	8F	2971+	MVC	DL2SAD(DL2E01,@BR),DL2LST+@DSAD(,@BR) GET SECTOR ADDRESS						
					2972+*								
					2973+*		ZERO OUT THE SECTOR COUNT AND LEAVE THE DISK. SPINDLE AND						
					2974+*		TRACK BITS AS IS TO BE RE INSERTED AFTER THE SECTOR HAS BEEN						
					2975+*		LOCATES.						
					2976+*								
1168	7B	7C	8F		2977+	SBF	DL2LST+@DSAD(,@BR),DL2E7C TURN OFF						
116B	7B	83	14		2978+	SBF	DL2SAD(,@BR),DL2TSD OFF TRACK SPINDLE DISK						
116E	5E	00	14	1D	2979+	ALC	DL2SAD(DL2E01,@BR),DL2SEC(,@BR) COMBINE SECTOR COUNTS						
1172	7D	60	14		2980+DL2010	CLI	DL2SAD(,@BR),DL2E60 TEST IF TRACK CROSSED						
1175	F2	82	08		2981+	JL	DL2100						
					2982+*								
					2983+*		INCREMENT TRACK BIT. OVERFLOW INTO THE CYLINDER COUNT.						
					2984+*								
1178	5E	01	8F	85	2985+	ALC	DL2LST+@DSAD(DL2E02,@BR),DL2K80(,@BR)						
117C	5F	00	14	83	2986+	SLC	DL2SAD(1,@BR),DL2K60(,@BR) DECR BY TRACK VALUE						
					2987+*								
1180	5E	00	8F	14	2988+DL2100	ALC	DL2LST+@DSAD(1,@BR),DL2SAD(,@BR) INSERT SECTOR COUNT						
					2989+*								
1184	F2	80	06		2990+DL2110	JC	DL2900,@NOP CONVERSION SWITCH						
					1185	2991+DL2SWH	EQU	DL2110+@Q ADDR OF Q CODE FOR SWITCH					
1187	C0	87	0025		2992+	B	\$DISKN GO PROCESS I/O						
118B	11A0				118C	2993+	DC	AL2(DL2LST) ADDRESS OF DPL					
118D	C2	01	0000		2994+DL2900	LA	*-*,@BR RESTORE CALLERS BASE						
1191	C0	87	0000		2995+DL2910	B	*-*						
					2996+*****								
					2997+*		CONSTANTS						
					2998+*****								
1195	0060				1196	2999+DL2K60	DC	XL2'0060' SECTOR COUNT OF 24 LEFT ADJUSTD					
1197	0080				1198	3000+DL2K80	DC	XL2'0080' BIT FOR INCREMENTING TRACK					
1199	30				1199	3001+DL2C48	DC	IL1'48' CYLINDER VALUE FOR 1 DISK					
119A	0018				119B	3002+DL2K18	DC	XL2'18' HEX SECTORS PER TRACK					
119C	0001				119D	3003+DL2C01	DC	IL2'1' CONSTANT FOR REGISTER MODE					
119E	0005				119F	3004+DL2C05	DC	IL2'5' DISP TO RIGHT END OF DPL					
					3005+*****								
					3006+*		WORK AREA						
					3007+*****								
					11A0	3008+DL2LST	EQU	* LIST HIGH END					
11A0					11A5	3009+DL2DPL	DS	CL(@DPLNG) WORKING DPL					
					11A2	3010+DL2PHY	EQU	DL2LST+@DSAD POINTER TO PHYSICAL DADDR					
					1127	3011+DL2SAD	EQU	DL2001+@DOP2 SAVE SECTOR BYTE FROM DPI					

[illegible]

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END OF DL2ICS

\* \* \*

## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 23
		3019+		*****	
		3020+*	5703-XM1	COPYRIGHT IBM CORP. 1970	*
		3021+*		REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE, 120-2083	*
		3022+*			*
		3023+*		*****	
		3024+*		STATUS	*
		3025+*		VERSION 1 MODIFICATION 0	*
		3026+*			*
		3027+*		FUNCTION	*
		3028+*	*	SFINDF IS A CONTROL MODULE USED TO LOCATE A SPECIFIED PASSWORD	*
		3029+*		AND/OR FILENAME.	*
		3030+*	*	IF THE FILENAME, PASSWORD, AND VOLUME-ID ARE ALL EXPLICITLY	*
		3031+*		SPECIFIED. A CALL IS ISSUED TO SVOLID, SGETDB AND SRCHFN TO	*
		3032+*		SEARCH FOR THE REQUIRED FILE IN THE FILE LIBRARY SPECIFIED.	*
		3033+*		IF THE PASSWORD OR VOLUME-ID IS NOT EXPLICITLY DEFINED, SFINDF	*
		3034+*		WILL DEFAULT TO THE CURRENT USER SPECIFICATIONS, IF THEY EXIST,	*
		3035+*		FOR THE MISSING PARAMETERS AND THEN ISSUE THE REQUIRED CALLS	*
		3036+*		TO SGETDS AND/OR SRCHFN TO LOCATE THE FILE.	*
		3037+*	*	IF A ONE OR TWO-STAR FILENAME IS SPECIFIED, THE SPECIFIED DISK,	*
		3038+*		OR ALL DISKS ON THE SYSTEM WILL BE SEARCHED IN AN ATTEMPT TO	*
		3039+*		LOCATE THE FILE. THE CALLER MAY SET AN INDICATOR TO TERMINATE	*
		3040+*		THE SEARCH AFTER A GIVEN NUMBER OF DISKS HAVE BEEN SEARCHED.	*
		3041+*			*
		3042+*		ENTRY POINTS	*
		3043+*		THE ENTRY POINT IS SFINDF.	*
		3044+*		THE CALLING SEQUENCE IS AS FOLLOWS:	*
		3045+*	B	SFINDF	*
		3046+*			*
		3047+*		INPUT	*
		3048+*	*	THE FOLLOWING INFORMATION MUST BE SET UP IN TSMLES BEFORE	*
		3049+*		CALLING SFINDF.	*
		3050+*	*	SMPSWD MUST CONTAIN SPECIFIED PASSWORD	*
		3051+*	*	SMVOID MUST CONTAIN SPECIFIED VOLUME	*
		3052+*	*	SMFNAM MUST CONTAIN SPECIFIED FILENAME	*
		3053+*	*	THE FOLLOWING SWITCHES ARE PROVIDED TO HANDLE ONE OR TWO-STAR	*
		3054+*		FILES:	*
		3055+*	*	SFIVOL - IF @NOP IS SET SVOLID WILL NOT BE CALLED. SVOLID	*
		3056+*		IS NOT REUSABLE AND THIS SWITCH MUST BE SET BEFORE	*
		3057+*		SFINDF IS CALLED A SECOND TIME.	*
		3058+*	*	SFISTR - IF @NOP IS SET ONLY 1 DISK WILL BE SEARCHED	*
		3059+*	*	SFIFND - IF @NOP SET WITH SFIVOL ONLY THE NUMBER OF DISKS	*
		3060+*		SPECIFIED IN SFINTR WILL BE SEARCHED.	*
		3061+*			*
		3062+*		OUTPUT	*
		3063+*	*	THE OUTPUT FROM SFINDF IS SET IN TSMLES, THE POINTERS AND USER	*
		3064+*		DIRECTORIES REQUIRED ARE INITIALIZED.	*
		3065+*			*
		3066+*		EXTERNAL REFERENCES	*
		3067+*		TSMLES - (SMALES) DATA MANAGEMENT SAVE AREAS AND BUFFERS.	*
		3068+*		\$VOLID - CORE RESIDENT VOLID TABLE.	*
		3069+*		\$USRDR - DISPLACEMENT TO CURRENT USER DIRECTORY.	*
		3070+*		\$FILIB - CURRENT USER FILE LIBRARY DISK ADDRESS.	*
		3071+*		DL2ICS - TWO TRACK LOGICAL IOCS.	*
		3072+*		SRCHFN - SEARCH USER DIRCTY BLOCK.	*
		3073+*		SGETDB - SEARCH PASSWORD DIRCTY.	*
		3074+*		SVOLID - SEARCH VOL-ID TABLE.	*



## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 24
			3075+*		\$CAERR - SAVE AREA FOR SYSTEM ERROR MESSAGT CODE.	*
			3076+*			*
			3077+*		EXITS, NORMAL	*
			3078+*		* NORMAL RETURN IS TO THE CALLER FOLLOWING THE BRANCH TO SFINDF.	*
			3079+*			*
			3080+*		EXITS, ERROR	*
			3081+*		* THE ERROR RETURN IS TO SFIERR WHICH MUST BE DEFINED BY THE	*
			3082+*		CALLER.	*
			3083+*			*
			3084+*		TABLES/WORKAREAS	*
			3085+*		* N/A	*
			3086+*			*
			3087+*		ATTRIBUTES	*
			3088+*		* RELOCATABLE	*
			3089+*		* RE-USABLE	*
			3090+*			*
			3091+*		CHARACTER CODE DEPENDENCY	*
			3092+*		* THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
			3093+*		INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*
			3094+*			*
			3095+*		NOTES	*
			3096+*		ERROR PROCEDURES	*
			3097+*		IF A FILE-SPEC WAS NOT ENTERED AND A CURRENT USER IS NOT IN	*
			3098+*		AFFECT. THE ERROR EXIT TO SFIERR IS TAKEN.	*
			3099+*			*
			3100+*		REGISTER USAGE	*
			3101+*		@BR AND @XR ARE SAVED AND RESTORED. DURING EXECUTION @BR IS	*
			3102+*		USED AS A BASE REGISTER AND @XR IS USED TO POINT TO \$NUCBS.	*
			3103+*			*
			3104+*		SAVED/RESTORED AREAS	*
			3105+*		NONE	*
			3106+*			*
			3107+*		MODIFICATION CONSIDERATIONS	*
			3108+*		NONE	*
			3109+*			*
			3110+*		REQUIRED MODULES	*
			3111+*		@SYSEQ - SYSTEM SOFTWARE EQUATES.	*
			3112+*		@FXDEQ - SYSTEM NUCLEUS ADDRESSES AND INDICATOR VALUES.	*
			3113+*		TSMLES - DATA MANAGEMENT SAVE AREAS AND BUFFERS.	*
			3114+*		\$VOLID - SEARCH VOLUME-ID SUBROUTINE.	*
			3115+*		SRCHFN - SEARCH FOR FILENAME SUBROUTINES.	*
			3116+*		SGETDB - SEARCH PASSWORD DIRECTORY SUBROUTINE.	*
			3117+*		DL2ICS - TWO TRACK DISK LOGICAL IOCS.	*
			3118+*			*
			3119+*		OTHER	*
			3120+*		NONE	*
			3121+*		*****	*
			3123+*			*
			3124+*		EQUATES USED IN THIS SUBROUTINE	*
			3125+*			*
		11A8	3126+	SFINDF	EQU *	START OF MODULE
11A8	34	01	12B5		3127+	ST SFISBR,@BR
11AC	C2	01	11E6		3128+	LA SFIBSE,@BR
					3129+	USING SFIBSE,@BR
						*

## SFINDF - FILE SEARCH CONTROL MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 25
11B0	74	08	D3		3130+	ST	SFEXT(, @BR), @ARR	SAVE RETURN ADDR
11B3	74	02	CB		3131+	ST	SFISXR(, @BR), @XR	SAVE @XR
11B6	C2	02	03C0		3132+	LA	\$NUCBS, @XR	SET NUCLEUS BASE
				03C0	3133+	USING	\$NUCBS, @XR	*
11BA	3D	40	15D3		3134+	CLI	SMPSWD-##LPEN+@B1, @BLANK	WAS A PASSWD SPECIFIED ?
11BE	F2	81	98		3135+	JE	SFI500	NO, GO CHECK LOGON STATUS
11C1	3D	40	11DD		3136+	CLI	SMVOID-\$VOLID+@B1, @BLANK	WAS A VOL-ID SPECIFIED ?
11C5	F2	81	07		3137+	JE	SFI100	NO, GO CHECK LOGON STATUS
11C8	C0	87	1401		3138+SFI050	B	SVOLID	RESOLVE SPECIFIED VOL-ID
				11C9	3139+SFIVOL	EQU	SFI050+@Q	SET TO A NOP FOR SUCCESSIVE USE
11CC	F2	87	75		3140+	J	SFI350	GO TO GET DIRECTORY
					3141+*			
					3142+*			
					3143+*			PASSWORD WAS SPECIFIED, BUT VOL-ID WAS NOT
11CF	3D	5C	15D3		3144+SFI100	CLI	SMPSWD-##LPEN+@B1, SFIAS	IS PASSWORD AN '*' ?
11D3	F2	01	63		3145+	JNE	SFI320	NO, GO CHK FOR FILE LIBR DADDR
11D6	7C	00	D4		3146+	MVI	SFICTR(, @BR), @ZERO	YES, INITLZ LOOP CTR TO ZERO
11D9	7C	00	DB		3147+	MVI	SFITTC(, @BR), @ZERO	INITLZ THIS TIME COUNTER
11DC	BD	00	19		3148+	CLI	\$FILIB-@B1(, @XR), @ZERO	CURRENT USER IN FORCE ?
11DF	F2	01	5D		3149+	JNE	SFI340	YES, GO TRY THAT FIRST
11E2	3A	08	15CC		3150+	SBN	SMIND1, SM1PNF	SET PASSWORD NOT FOUND INDR.
					3151+*			
					3152+*			
					3153+*			THE FOLLOWING ROUTINE WILL SEARCH ALL DISKS ON THE
					3154+*			SYSTEM FOR THE SPECIFIED ONE OR TWO STAR FILE
11E6	7D	01	D4		3155+SFI200	CLI	SFICTR(, @BR), @B1	CHECK THE DISK POINTER
11E9	F2	82	1A		3156+	JL	SFI220	GO CHECK F1
11EC	F2	81	28		3157+	JE	SFI230	GO CHECK F2
11EF	7D	03	D4		3158+	CLI	SFICTR(, @BR), SFIE03	
11F2	F2	82	33		3159+	JL	SFI240	GO CHECK R1
					3160+*			
11F5	BD	00	4C		3161+SFI210	CLI	\$VOLR2+SFIE06(, @XR), @ZERO	DOES R2 CONTAIN A FILE LIBR
11F8	F2	81	AC		3162+	JE	SFI545	NO, NO MORE TO CHK, GO RETURN
11FB	2C	01	15E6 4D		3163+	MVC	SMBFDA(@DADDR), \$VOLR2+SFIE07(, @XR)	SET LIBR DADDR FOR
1200	7C	FE	D4		3164+	MVI	SFICTR(, @BR), SFIEFE	* SEARCH AND INCR DISK POINTER
1203	F2	87	3E		3165+	J	SFI350	GO TO SEARCH
					3166+*			
1206	BD	00	44		3167+SFI220	CLI	\$VOLF1+SFIE06(, @XR), @ZERO	DOES F1 CONTAIN A FILE LIBR
1209	F2	81	0B		3168+	JE	SFI230	NO, GO CHECK F2
120C	2C	01	15E6 45		3169+	MVC	SMBFDA, \$VOLF1+SFIE07(@DADDR, @XR)	SET LIBR DADDR FOR SEWN
1211	7C	01	D4		3170+	MVI	SFICTR(, @BR), @B1	INCR DISK POINTER
1214	F2	87	2D		3171+	J	SFI350	SO TO SEARCH
					3172+*			
1217	BD	00	54		3173+SFI230	CLI	\$VOLF2+SFIE06(, @XR), @ZERO	DOES F2 CONTAIN A FILE LIBR
121A	F2	81	0B		3174+	JE	SFI240	NO, SO CHECK R1
121D	2C	01	15E6 55		3175+	MVC	SMBFDA, \$VOLF2+SFIE07(@DADDR, @XR)	SET LIBR DADDR FOR SEACH
1222	7C	02	D4		3176+	MVI	SFICTR(, @BR), SFIE02	INCR DISK POINTER
1225	F2	87	1C		3177+	J	SFI350	GO TO SEARCH
					3178+*			
1228	BD	00	3C		3179+SFI240	CLI	\$VOLR1+SFIE06(, @XR), @ZERO	DOES R1 CONTAIN A FILE LIBR
122B	D0	81	0F		3180+	BE	SFI210(, @BR)	NO, GO CHECK R2
122E	2C	01	15E6 3D		3181+	MVC	SMBFDA, \$VOLR1+SFIE07(@DADDR, @XR)	SET LIB DADDR FOR SEARCH
1233	7C	03	D4		3182+	MVI	SFICTR(, @BR), SFIE03	INCR DISK POINTER
1236	F2	87	0B		3183+	J	SFI350	GO TO SEARCH
					3184+*			
					3185+*			PASSWORD SPECIFIED, BUT VOLUME ID WAS NOT.

## SFINDF - FILE SEARCH CONTROL MODULE

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 26
				3186+*			CHECK FOR CURRENT USER	
				3187+*				
1239	BD	00	19	3188+SF1320	CLI	\$FILIB-@B1(,@XR),@ZERO	CURRENT USER SPEC IN FORCE	
123C	F2	81	20	3189+	JE	SFI505	NO, GO TO ERR ROUTINE	
123F	2C	01	15E6 1A	3190+SF1340	MVC	SMBFDA(@DADDR), \$FILIB(,@XR)	YES, SET TO USER LIBR	
				3191+*				
				3192+*			SO SEARCH FOR SPECIFIED PASSWORD	
				3193+*				
1244	C0	87	12C4	3194+SF1350	B	SGETDB	SEARCH FOR PASSWORD	
1248	38	08	15CC	3195+	TBN	SMIND1, SM1PNF	WAS PASSWORD FOUND	
124C	F2	10	3B	3196+	JT	SFI540	NO, GO TEST STAR COUNTER	
124F	38	10	15CC	3197+	TBN	SMIND1, SM1PDS	PASSWORD DIRCTY ONLY REQ' SED	
1253	F2	10	58	3198+	JT	SFI550	YES, GO RETURN TO USER	
1256	F2	87	26	3199+	J	SFI520	NO, GO SEARCH FOR FILENAME	
				3200+*				
				3201+*			ONLY FILENAME SPECIFIED, CHECK FOR CURRENT USER	
				3202+*				
1259	BD	00	19	3203+SF1500	CLI	\$FILIB-@B1(,@XR),@ZERO	CURRENT USER SPEC IN FORCE	
125C	F2	01	07	3204+	JNE	SFI510	YES, BYPASS ERROR MESSAGE	
125F	BC	21	0D	3205+SF1505	MVI	\$CAERR(,@XR), @@E200	SET NO CURRENT USER ERROR CODE	
1262	C0	87	0F93	3206+	B	SFIERR	GO TO ERROR RETURN	
				3207+*				
				3208+*			GET FIRST USER DIRECTORY BLOCK	
				3209+*				
1266	2C	01	11A7 1A	3210+SF1510	MVC	DL2RAD, \$FILIB(@DADDR, @XR)	SET DL2ICS BASE DADDR	
126B	2C	01	15E6 1A	3211+	MVC	SMBFDA, \$FILIB(@DADDR, @XR)	SET LIBR DADDR TO COMMON AREA	
1270	6C	01	D7 1C	3212+	MVC	SFIRDA(,@BR), \$USRDR(@DADDR, @XR)	SET DL2ICS RELATIVE DADDR	
1274	C0	87	110F	3213+	B	DL2ICS	GO READ USER DIRECTORY BLOCK	
1278	12BB			3214+	DC	AL2(SFIDPL)	* CADDR OF DPL	
127A	2C	01	15F6 1C	3215+	MVC	SMFUDA, \$USRDR(@DADDR, @XR)	PRESERVE 1ST BLOCK REL. DADDR	
				3216+*				
				3217+*			SEARCH USER DIRECTORY BLOCK FOR FILENAME	
				3218+*				
127F	C0	87	1350	3219+SF1520	B	SRCHFND	GO TO SEARCH ROUTINE	
1283	38	80	15CC	3220+	TBN	SMIND1, SM1FNE	WAS NAME FOUND	
1287	F2	10	24	3221+	JT	SFI550	YES, SO RETURN	
				3222+*				
				3223+*			PASSWORD OR FILENAME NOT FOUND	
				3224+*				
128A	7D	FE	D4	3225+SF1540	CLI	SFICTR(,@BR), SFIEFE	ONE OR TWO STAR FILE WITH MORE	
128D	F2	84	1E	3226+	JH	SFI550	* DISKS TO SEARCH ? NO, GET OUT	
1290	D0	82	00	3227+SF1542	BC	SFI200(,@BR), @BL	* YES, GO SEARCH	
				3228+SF1542	EQU	SFI542+@Q	* NOP FOR 1ST * OR ** SEARCHED	
1293	F2	87	11	3229+SF1543	JC	SFI545, @UCB	BYPASS TRY CONTROL UNLESS	
				3230+SF1543	EQU	SFI543+@Q	* Q-CODE CHANGED TO A NOP	
1296	7D	06	DC	3231+	CLI	SFINTR(,@BR), SFIETD	IS TRY COUNTER AT MAX ?	
1299	F2	02	0B	3232+	JNL	SFI545	YES, SO SET ERROR CODE	
129C	5E	00	DB DD	3233+	ALC	SFITTC(,@BR), SFIONE(,@BR)	INCR THIS TRY COUNTER	
12A0	5D	00	DB DC	3234+	CLC	SFITTC(,@BR), SFINTR(1, @BR)	THIS TRY = TRYS REQUIRED ?	
12A4	D0	01	00	3235+	BNE	SFI200(,@BR)	NO, GO TRY THE NEXT DISK	
12A7	BC	26	0D	3236+SF1545	MVI	\$CAERR(,@XR), @@E213	SET * OR ** NOT FOUND CODE	
12AA	3A	80	15CC	3237+	SBN	SMIND1, SM1FNE	SET ON FILE NOT FOUND INDR.	
				3238+*				
				3239+*			RETURN TO USER	
				3240+*				
12AE	C2	02	0000	3241+SF1550	LA	*-*, @XR	RELOAD @XR	

## SFINDF - FILE SEARCH CONTROL MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE 27
12B2	C2 01 0000	12B1	3242+	SFISXR EQU	SFI550+@OP1	*		
			3243+	SFI560 LA	*-*,@BR	RELOAD @BR		
12B6	C0 87 0000	12B5	3244+	SFISBR EQU	SFI560+@OP1	*		
			3245+	SFI570 B	*-*	RETURN TO THE USER		
		12B9	3246+	SFIEXT EQU	SFI570+@OP1	*		
			3247+	*				
			3248+	*				
			3249+	*				
12BA		12BA	3250+	SFICTR DS	XL1	COUNTER USED TO CONTROL THE		
12BA			3251+	ORG	*-1	* SEARCH FOR A STAR FILE		
12BA	FF	12BA	3252+	DC	AL1(SFIEFF)	INITLZ'D FOR NO SEARCH		
12BB	01	12BB	3253+	SFIDPL DC	AL1(@DGET)	DPL TO READ USER DIRCTY BLOCK 1		
12BC		12BD	3254+	SFIRDA DS	XL2	* RELATIVE DISK ADDRESS		
12BE	02	12BE	3255+	DC	XL1'02'	* SECTOR COUNT		
12BF	0600	12C0	3256+	DC	AL2(SMUDB1)	* CORE BUFFER ADDRESS		
12C1		12C1	3257+	SFITTC DS	CL1	THIS TRY COUNTER		
12C2		12C2	3258+	SFINTR DS	CL1	NUMBER OF TRYS REQUIRED COUNTER		
12C2			3259+	ORG	SFINTR	INITLZ NUMBER CF TRYS REQUIRED		
12C2	00	12C2	3260+	DC	XL1'0'	* COUNTER TO ZERO		
12C3	01	12C3	3261+	SFIONE DC	XL1'1'	COUNTER INCREMENT		
			3262+	*				
			3263+	*				
			3264+	*				
		0F93	3265+	SVOERR EQU	SFIERR	SVOLID ERROR RETURN ADDRESS		
		005C	3266+	SFIAST EQU	C'*'	STAR LIBR TEST CHARACTER		
		0002	3267+	SFIE02 EQU	X'02'	STAR COUNTER TEST R1 CODE		
		0003	3268+	SFIE03 EQU	X'03'	STAR COUNTER TEST R2 CODE		
		00FE	3269+	SFIEFE EQU	X'FE'	STAR COUNTER COMPLETE CODE		
		00FF	3270+	SFIEFF EQU	X'FF'	NOT A * OR ** FILE COUNTER CODE		
		0006	3271+	SFIE06 EQU	X'06'	DISP TO LIBR DADDR BYTE 0		
		0007	3272+	SFIE07 EQU	X'07'	DISP TO LIBR DADDR BYTE 1		
		11E6	3273+	SFIBSE EQU	SFI200	LOCAL BASE ADDRESS		
		12C3	3274+	SFIEND EQU	*-1	LAST BYTE OF SFINDF		
		0006	3275+	SFIETD EQU	6	MAX TRY REQUIRED COUNTER VALUE		
		0001	3276+	DROP	@BR			
		0002	3277+	DROP	@XR			
			3278+	***				
			3279	*				
			3280	*	\$GETD			
					END OF SFINDF	***		

SGETDB - GET USER DIRECTORY BLOCK ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 28
		3282+	*****		
		3283+	*	5703-XM1 COPYRIGHT IBM CORP. 1970	*
		3284+	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083	*
		3285+	*		*
		3286+	*****		
		3287+	*	STATUS	*
		3288+	*	VERSION 1 MODIFICATION 0	*
		3289+	*		*
		3290+	*	FUNCTION	*
		3291+	*	* SGETDB PROVIDES TWO PRIMARY FUNCTIONS. IT WILL SEARCH THE	*
		3292+	*	PASSWORD DIRECTORY FOR A SPECIFIED PASSWORD ONLY, OR IF	*
		3293+	*	INDICATED WILL GO AND READ IN THE FIRST USER BLOCK ASSOCIATED	*
		3294+	*	WITH THAT PASSWORD.	*
		3295+	*	* IF THE PASSWORD SEARCH ONLY IS REQUESTED A SWITCH IS SET TO	*
		3296+	*	INHIBIT READING THE DIRECTORY ON SUBSEQUENT ENTRIES.	*
		3297+	*	* THE ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET IN \$CAERR.	*
		3298+	*	IF THE PASSWORD IS OR IS NOT FOUND THE INDICATOR IN SMIND1 IS	*
		3299+	*	SET APPROPRIATELY.	*
		3300+	*		*
		3301+	*	ENTRY POINTS	*
		3302+	*	SGETDB - ENTRY TO SEARCH PASSWORD DIRECTORY AND GET	*
		3303+	*	ASSOCIATED USER DIRECTORY. THE CALLING SEQUENCE IS	*
		3304+	*	AS FOLLOWS:	*
		3305+	*	B SGETDB	*
		3306+	*		*
		3307+	*	INPUT	*
		3308+	*	* THE BASE ADDRESS OF THE LIBRARY MUST BE IN SM1FDA IN TSMLES.	*
		3309+	*	* THE PASSWORD MUST BE IN SMPSWD.	*
		3310+	*	* IF THE PASSWORD DIRECTORY IS TO BE SEARCHED ONLY, THEN SM1PDS	*
		3311+	*	IN SMIND1 MUST BE SET TO 1. IF THE FIRST USER DIRECTORY BLOCK	*
		3312+	*	ASSOCIATED WITH THE SPECIFIED PASSWORD IS TO BE READ IN THEN	*
		3313+	*	THEN SM1PDS MUST BE SET TO 0.	*
		3314+	*		*
		3315+	*	OUTPUT	*
		3316+	*	* IF THE SPECIFIED PASSWORD IS FOUND THE ADDRESS OF THE LEFT BYTE	*
		3317+	*	OF THE ENTRY IS PLACED IN SMPEAD, SM1PNF IN SMIND1 IS SET TO 0.	*
		3318+	*	AND THE USER DIRECTORY RDADDR IS PLACED IN SMFUDA.	*
		3319+	*	* IF THE USER DIRECTORY WAS REQUESTED, THE READ OPERATION IS	*
		3320+	*	STARTED BUT NO WAIT IS PERFORMED. THE USER DIRECTORIES OVERLAY	*
		3321+	*	THE PASSWORD DIRECTORIES IN CORE.	*
		3322+	*	* IF THE SPECIFIED PASSWORD WAS NOT FOUND SM1PNF, IS SET TO 1 AND	*
		3323+	*	THE ADDRESS FOR THE NEXT AVAILABLE ENTRY IS IN SMPEAD.	*
		3324+	*		*
		3325+	*	EXTERNAL REFERENCES	*
		3326+	*	\$CAERR - LOCATION FOR SYSTEM ERROR CODE	*
		3327+	*	SMIND1 - DATA MANAGEMENT INDICATOR	*
		3328+	*	DL2RAD - LOCATION OF FILE PHYSICAL BASE ADDRESS	*
		3329+	*	SMBFDA - LOCATION OF LIBRARY BASE ADDRESS	*
		3330+	*	DL2ICS - ENTRY TO DISK I/O ROUTINE	*
		3331+	*	\$DISKN - ENTRY TO SYSTEM DISK IOCS	*
		3332+	*	\$WAITF - LOCATION OF COMMON I/O WAIT FUNCTION	*
		3333+	*	SMPSWD - LOCATION PASSWORD ARGUMENT	*
		3334+	*	SMPEAD - LOCATION OF PASSWORD ENTRY ADDRESS	*
		3335+	*	SMFUDA - LOCATION OF USER DIRECTORY RDADDR	*
		3336+	*		*
		3337+	*	EXITS, NORMAL	*



## SGETDB - GET USER DIRECTORY BLOCK ROUTINE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 29
			3338+*	NORMAL EXIT IS TO THE FIRST INSTRUCTION FOLLOWING THE BRANCH	*
			3339+*	TO SGETDB	*
			3340+*		*
			3341+*	EXITS, ERROR	*
			3342+*	NONE	*
			3343+*		*
			3344+*	TABLES/WORKAREAS	*
			3345+*	NONE	*
			3346+*		*
			3347+*	ATTRIBUTES	*
			3348+*	RELOCATABLE	*
			3349+*	REUSABLE	*
			3350+*		*
			3351+*	CHARACTER CODE DEPENDENCY	*
			3352+*	THE OPERATION OF THIS MODULE DOES NOT DEPEND UPON A PARTICULAR	*
			3353+*	INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.	*
			3354+*		*
			3355+*	NOTES	*
			3356+*	ERROR PROCEDURES	*
			3357+*	THE ERROR CODE FOR PASSWORD NOT FOUND IS ALWAYS SET BUT SGETDB	*
			3358+*	DETECTS NO PARTICULAR ERROR. THE CONDITION AS TO IF THE	*
			3359+*	PASSWORD WAS OR WAS NOT FOUND IS INDICATED HOWEVER.	*
			3360+*		*
			3361+*	REGISTER USAGE	*
			3362+*	@BR AND @XR1 ARS SAVED AND RESTORED. @BR IS USED AS A BASE	*
			3363+*	REGISTER AND @XR IS USED AS AN INDEX TO THE PASSWORD DIRCTY.	*
			3364+*	@ARR IS USED TO PROVIDE THE RETURN ADDRESS.	*
			3365+*		*
			3366+*	SAVED/RESTORED AREAS	*
			3367+*	NONE	*
			3368+*		*
			3369+*	MODIFICATION CONSIDERATIONS	*
			3370+*	IN USING SGETDB THE USER MUST TAKE INTO CONSIDERATION THAT	*
			3371+*	SGETDB DOES NOT WAIT FOR THE USER DIRECTORY BLOCK TO BE IN	*
			3372+*	CORE BEFORE RETURNING.	*
			3373+*		*
			3374+*	REQUIRED MODULES	*
			3375+*	@SYSEQ - SYSTEM SOFTWARE EQUATES	*
			3376+*	@FXDEQ - NUCLEUS EQUATES	*
			3377+*	@DIREQ - LIBRARY DIRECTORY EQUATES	*
			3378+*	DL2ICS - DISK IOCS	*
			3379+*	TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA	*
			3380+*		*
			3381+*	OTHER	*
			3382+*	NONE	*
			3383+*	*****	*
			3384+*	SGETDB ENTER BASE, SGETDB, EXIT, SGE90, @BR, @XR, @ARR	*
		12C4	3385+*	USING SGETDB, @BR	BASE ADDRESS SPECIFICATION
		12C4	3386+*	SGETDB EQU *	MODULE ENTRY POINT
12C4 34 01 133C			3387+*	ST SGE900+@OP1, @BR	SAVE @BR
12C8 C2 01 12C4			3388+*	LA SGETDB, @BR	LOAD BASE REGISTER
12CC 74 02 7C			3389+*	ST SGE901+@OP1(, @BR), @XR	SAVE @XR
12CF 74 08 80			3390+*	ST SGE902+@OP1(, @BR), @ARR	SAVE RETURN ADDRESS
			3391+***	END OF EXPANSION ***	

12D2 3C 23 03CD

3393+ 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 19/12/23 PAGE 30

12D6	3B 08 15CC		3394+	SBF	SMIND1,SM1PNF	INITIALIZE INDICATOR TO FOUND
12DA	F2 80 15		3395+SGE050	JC	SGE055,@NOP	SET SWITCH FOR 2ND ENTRY
12DD	7C 87 17		3396+	MVI	SGE050+@Q(,@BR),@UCB	TURN SWITCH ON FOR NEXT ENTRY
12E0	0C 01 11A7 15E6		3397+	MVC	DL2RAD,SMBFDA	STUFF IN THE BASE ADDR
12E6	C0 87 110F		3398+	B	DL2ICS	CALL DISK I/O ROUTINE
12EA	1345	12EB	3399+	DC	AL2(SGEDPL)	POINTER TO PARAMETER LIST
12EC	C0 87 0025		3400+	B	\$DISKN	WAIT FOR DIRCTY TO LOAD
12F0	057F	12F1	3401+	DC	AL2(\$WAITF)	WAIT FOR DIRCTY
12F2	75 02 86		3403+SGE055	L	SGEDPL+@DBFR2(,@BR),@XR	PASSWORD BUFFER CADDR
12F5	6C 00 89 00		3404+	MVC	SGECNT(1,@BR),##DPHC(,@XR)	ENTRY COUNT TO WORK
12F9	E2 02 04		3405+	LA	##DPE1(,@XR),@XR	BUMP TO FIRST PASSWORD
			3406+*			
12FC	2D 07 15DA 07		3407+SGE060	CLC	SMPSWD(##LPEN),##DPEN(,@XR)	LOOK AT PSWD ENTRY
1301	F2 81 0E		3408+	JE	SGE070	FOUND THE PSWD
1304	E2 02 0C		3409+	LA	##LPE(,@XR),@XR	BUMP TO LOOK AT NEXT ENTRY
1307	5F 00 89 8B		3410+	SLC	SGECNT(1,@BR),SGEC01(,@BR)	DECR ENTRY COUNT
130B	D0 01 38		3411+	BNE	SGE060(,@BR)	BACK FOR LOOK AT ENTRY
130E	3A 08 15CC		3412+	SBN	SMIND1,SM1PNF	NOT FOUND INDICATOR
			3413+*			
			3414+*		THE PASSWORD OR THE END OF THE DIRCTY HAS BEEN FOUND,	
			3415+*		SAVE THE POINTERS.	
			3416+*			
1312	34 02 15F4		3417+SGE070	ST	SMPEAD,@XR	SAVE ENTRY ADDRESS
1316	2C 01 15F6 09		3418+	MVC	SMFUDA(@DADDR),##DPEA(,@XR)	POSSIBLE USER DADDR OF BLK
131B	38 10 15CC		3419+	TBN	SMIND1,SM1PDS	TEST SEARCH BIT ONLY ON
131F	F2 10 17		3420+	JT	SGE900	SEARCH ONLY SO EXIT
1322	7D 00 89		3421+	CLI	SGECNT(,@BR),@ZERO	TEST COUNT IF ENTRY FOUND
1325	F2 81 11		3422+	JE	SGE900	JUMP IF NOT FOUND
1328	6C 01 83 09		3423+SGE080	MVC	SGEDPL+@DSAD(@DADDR,@BR),##DPEA(,@XR)	BLK ADDR TO DPL
132C	C0 87 110F		3424+	B	DL2ICS	CALL TO READ USER DIRCTY
1330	1345	1331	3425+	DC	AL2(SGEDPL)	POINTER TO PARAMETER LIST
			3426+*			
1332	7C 80 17		3427+	MVI	SGE050+@Q(,@BR),@NOP	TURN OFF SKIP INSTR
1335	5C 01 83 88		3428+	MVC	SGEDPL+@DSAD(@DADDR,@BR),SGERAD(,@BR)	RESTORE DSAD PSWD
			3429+*			
			3430+*SGE900	EXIT	@BR,@XR,,RETURN	
1339	C2 01 0000		3431+SGE900	LA	*-*,@BR	RESTORE OBR
133D	C2 02 0000		3432+SGE901	LA	*-*,@XR	RESTORE OXR
1341	C0 87 0000		3433+SGE902	B	*-*	RETURN TO CALLING PROGRAM
			3434+***		END OF EXPANSION ***	
			3435+*			
			3436+*		DPL TO READ IN THE PASSWORD DIRCTY	
			3437+*			
			3438+*SGEDPL \$DPL	FUNC-@DGET,DADDR-##RP,CNT-##LP,CADDR-SMPDB1		
		1345	3439+SGEDPL	EQU	*	DISK PARAMETER
1345	01	1345	3440+	DC	AL1(@DGET)	REQUESTED FUNCTION
1346	0001	1347	3441+	DC	AL2(##RP)	DISK ADDRESS
1348	04	1348	3442+	DC	AL1(##LP)	SECTOR COUNT
1349	0600	134A	3443+	DC	AL2(SMPDB1)	BUFFER ADDRESS
			3444+***		END OF EXPANSION ***	
134B	0001	134C	3446+SGERAD	DC	AL2(##RP)	RELATIVE DADDR OF DIRCTY
134D		134D	3447+SGECNT	DS	CL1	SAVE AREA FOR ENTRY COUNT
134E	0001	134F	3448+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	19/12/23	PAGE 32
		3455+		*****			
		3456+	*	5703-XM1 COPYRIGHT IBM CORP. 1970			*
		3457+	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083			*
		3458+	*				*
		3459+		*****			*
		3460+	*	STATUS			*
		3461+	*	VERSION 1 MODIFICATION 0			*
		3462+	*				*
		3463+	*	FUNCTION			*
		3464+	*	* SRCHFN SEARCHES A USER DIRECTORY FOR A SPECIFIED FILENAME. IT			*
		3465+	*	IS ASSUMED THAT THE DIRECTORY TO BE SEARCHED HAS BEEN READ INTO			*
		3466+	*	CORE AT SMUDBI IN TSMLES. IF THE DIRECTORY IS LINKED TO AN			*
		3467+	*	ADDITIONAL BLOCK IT IS READ IN TO THE SECONDARY BUFFER WHILE			*
		3468+	*	THE PRIMARY BLOCK IS SEARCHED.			*
		3469+	*	* THE ADDRESS OF THE ENTRY OR THE ADDRESS FOR A NEW ENTRY IS			*
		3470+	*	PLACED IN SMUDEA. THE ADDRESS OF THE ACTIVE DIRECTORY IS PLACED			*
		3471+	*	IN SMUDBA. IF THE NAME WAS NOT FOUND SMIFNE IS SET TO 1 IN			*
		3472+	*	SMIND1. IF THE NAME WAS FOUND THE INDICATOR IS SET TO 0.			*
		3473+	*				*
		3474+	*	ENTRY POINTS			*
		3475+	*	SRCHFN - ENTRY TO SEARCH FOR A FILENAME. THE CALLING SEQUENCE			*
		3476+	*	IS AS FOLLOWS:			*
		3477+	*	B SRCHFN			*
		3478+	*				*
		3479+	*	INPUT			*
		3480+	*	THE USER DIRECTORY BLOCK MUST BE READ INTO SMUDB1 IN TSMLES.			*
		3481+	*	THE NAME OF THE ENTRY TO SEARCH FOR MUST BE IN SMFNAM IN TSMLES			*
		3482+	*				*
		3483+	*	OUTPUT			*
		3484+	*	* IF THE FILE NAME IS FOUND THE ADDRESS OF THE ENTRY IS SET IN			*
		3485+	*	SMUDEA. THE ADDRESS OF THE BUFFER CONTAINING THE ENTRY IS IN			*
		3486+	*	SMUDBA, AND THE INDICATOR BIT SMIFNE IN SMIND1 IS SET TO 0.			*
		3487+	*	* IF THE FILE NAME WAS NOT FOUND SMUDEA CONTAINS THE ADDRESS OF			*
		3488+	*	WHERE THE NEXT ENTRY MAY BE MADE IN THE DIRECTORY. SMUDBA			*
		3489+	*	CONTAINS THE ADDRESS OF THE BUFFER CONTAINING THE LAST BLOCK,			*
		3490+	*	AND SMIFNE IS SET TO 1 IN SMIND1.			*
		3491+	*	* SMUDEA CONTAINS THE ADDRESS OF THE LEFTMOST BYTE OF THE FIELD,			*
		3492+	*	* THE ERROR CODE FOR FILE NOT FOUND IS ALWAYS MOVED TO \$CAERR,			*
		3493+	*				*
		3494+	*	EXTERNAL REFERENCES			*
		3495+	*	\$CAERR - LOCATION OF ERROR CODE INDICATOR.			*
		3496+	*	\$DISKN - ENTRY TO DISK IOCS.			*
		3497+	*	\$WAITF - ADDRESS OF COMMON I/O WAIT FUNCTION.			*
		3498+	*	DL2ICS - ENTRY TO DISK LOGICAL IOCS.			*
		3499+	*	SMFNAM - ADDRESS OF FILENAME SAVE AREA			*
		3500+	*	SMUDEA - ADDRESS OF USER DIRECTORY ENTRY ADDRESS.			*
		3501+	*	SMUDBA - ADDRESS OF USER DIRECTORY BUFFER ADDRESS.			*
		3502+	*	SMDAAD - LOCATION OF RELATIVE DISK ADDRESS OF ACTIVE BUFFER.			*
		3503+	*	SMIFNE - VALUE OF NOT FOUND INDICATOR.			*
		3504+	*	SMIND1 - LOCATION INDICATOR 1.			*
		3505+	*	SMUDB1 - ADDRESS OF DIRECTORY BLOCK BUFFER.			*
		3506+	*	SMUDB2 - ADDRESS OF DIRECTORY BLOCK BUFFER.			*
		3507+	*				*
		3508+	*	EXITS, NORMAL			*
		3509+	*	THE REGISTER @BR @XR ARE RESTORED AND THE EXIT IS TO THE			*
		3510+	*	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	19/12/23	PAGE 33
		3511+	*				*
		3512+	*	EXITS, ERROR			*
		3513+	*	NONE.			*
		3514+	*				*
		3515+	*	TABLES/WORKAREAS			*
		3516+	*	NONE			*
		3517+	*				*
		3518+	*	ATTRIBUTES			*
		3519+	*	RELOCATABLE			*
		3520+	*				*
		3521+	*	CHARACTER CODE DEPENDENCY			*
		3522+	*	CHARACTER CODE DEPENDENCY CLASS - C			*
		3523+	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-			*
		3524+	*	TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE			*
		3525+	*	USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE-			*
		3526+	*	DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN			*
		3527+	*	A CORRECT MODULE FOR THE NEW DEFINITIONS.			*
		3528+	*				*
		3529+	*	NOTES			*
		3530+	*	ERROR PROCEDURES			*
		3531+	*	NONE			*
		3532+	*				*
		3533+	*	REGISTER USAGE			*
		3534+	*	@BR AND @XR ARE SAVED ON ENTRY AND RESTORED AT EXIT.			*
		3535+	*	@ARR IS USED AS THE RETURN ADDRESS.			*
		3536+	*				*
		3537+	*	SAVED/RESTORED AREAS			*
		3538+	*	NONE			*
		3539+	*				*
		3540+	*	MODIFICATION CONSIDERATIONS			*
		3541+	*	NONE			*
		3542+	*				*
		3543+	*	REQUIRED MODULES			*
		3544+	*	@SYSEQ - SYSTEM SOFTWARE EQUATES.			*
		3545+	*	@DIREQ - LIBRARY DIRECTORY EQUATES.			*
		3546+	*	@FXDEQ - SYSTEM NUCLEUS EQUATES.			*
		3547+	*	DL2ICS - LOGICAL DISK IOCS.			*
		3548+	*	TSMLES - DATA MANAGEMENT COMMUNICATIONS AREA.			*
		3549+	*				*
		3550+	*	OTHER			*
		3551+	*	NONE			*
		3552+	*	*****			*

## SRCHFN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT VER 15, MOD 00 19/12/23 PAGE 34

1350	34	01	13DA	1350	3554+SRCHFN	EQU	*	ENTRY TO SEARCH FILENAME
					3555+	ST	SRC900+@OP1,@BR	SAVE BASE REGISTER
				1354	3556+	USING	SRC010,@BR	
1354	C2	01	1354		3557+SRC010	LA	SRC010,@BR	SET BASE ADDR
1358	74	02	8A		3558+	ST	SRC910+@OP1(,@BR),@XR	SAVE INDEX REG
135B	74	08	8E		3559+	ST	SRC920+@OP1(,@BR),@ARR	SAVE RETURN ADDR
135E	3C	24	03CD		3560+	MVI	\$CAERR,@E211	FILE NOT FOUND
1362	5C	01	9B A1		3561+	MVC	SRCBF1(@CADDR,@BR),SRCBA1(,@BR)	INITIALIZE OLF POINTER
1366	5C	01	9D A3		3562+	MVC	SRCBF2(@CADDR,@BR),SRCBA2(,@BR)	ALTERNATE BUFFER
136A	5C	01	9F 9B		3563+	MVC	SRCACT(@CADDR,@BR),SRCBF1(,@BR)	SET ACTIVE BUFFER
136E	C0	87	0025		3565+SRC020	B	\$DISKN	WAIT FOR USER BLOCK
1372	057F			1373	3566+	DC	AL2(\$WAITF)	WAIT OP DPL
					3567+*			
1374	7C	87	5E		3568+	MVI	SRC055+@Q(,@BR),@UCB	RESET NOP FOR LINKED DIRCTY
1377	75	02	9F		3569+	L	SRCACT(,@BR),@XR	PICKUP POINTER TO ACTIVE BUFFER
					3570+*			
					3571+*			BLOCK LINK SHOULD ALWAYS BE GREATER THAN 1 IF IT IS
					3572+*			PRESENT. IF NOT THE LINK BYTE SHOULD BE ZERO.
					3573+*			
137A	9D	01	03 A6		3574+	CLC	##DUHB(@DADDR,@XR),SRCC01(,@BR)	TEST LIVE FIELD
137E	F2	82	11		3575+	JL	SRC030	JUMP NOT LINKED
1381	5C	01	AC 9D		3576+	MVC	SRCBFR(@DADDR,@BR),SRCBF2(,@BR)	GET ALTERNATE BUFFER ADDR
1385	6C	01	A9 03		3577+	MVC	SRCADAD(@DADDR,@BR),##DUHB(,@XR)	SET LINK TO MEXT BLOCK
1389	C0	87	110F		3578+	B	DL2ICS	READ NEXT BLOCK
138D	13FB			138E	3579+	DC	AL2(SRCDPL)	POINTER TO DPL
					3580+*			
138F	7C	80	5E		3581+	MVI	SRC055+@Q(,@BR),@NOP	SET SWITCH FOR LINKED BLOCK
1392	6C	00	A4 04		3582+SRC030	MVC	SRCCNT(1,@BR),##DUHC(,@XR)	GET ENTRY COUNT
1396	E2	02	0C		3583+	LA	##DUEI(,@XR),@XR	BUMP TO FIRST ENTRY
1399	7D	00	A4		3584+	CLI	SRCCNT(,@BR),@ZERO	IS STARTING COUNT ZERO ?
139C	D0	81	5D		3585+	BE	SRC055(,@BR)	YES, RETURN NOT FOUND
139F	8D	07	07 15E2		3586+SRC035	CLC	##DUEN(##LUEN,@XR),SMFNAM	LOOK AT ENTRY
13A4	F2	81	1C		3587+	JE	SRC040	JUMP IF THE NAME IS FOUND
13A7	E2	02	32		3588+	LA	##LUE(,@XR),@XR	BUMP THE POINTER FOR NEXT ENTRY
13AA	5F	00	A4 A6		3589+	SLC	SRCCNT(1,@BR),SRCC01(,@BR)	DECR ENTRY COUNTER
13AE	D0	01	4B		3590+	BNE	SRC035(,@BR)	BACK TO TEXT NEXT ENTRY
13B1	F2	00	2F		3591+SRC055	JC	SRC060,*-*	LINK SWITCH
13B4	5C	01	9B 9D		3592+	MVC	SRCBF1(@CADDR,@BR),SRCBF2(,@BR)	SWITCH BUFFERS
13B8	5C	01	9D 9F		3593+	MVC	SRCBF2(@CADDR,@BR),SRCACT(,@BR)	*
13BC	5C	01	9F 9B		3594+	MVC	SRCACT(@CADDR,@BR),SRCBF1(,@BR)	SET ACTIVE BUFFER
13C0	D0	87	1A		3595+	B	SRC020(,@BR)	GO BACK TO NEXT BUFFER
					3596+*			
					3597+*			FILENAME HAS BEEN FOUND.
					3598+*			
13C3	34	02	15E4		3599+SRC040	ST	SMUDEA,@XR	SAVE ENTRY ADDR
13C7	3B	80	15CC		3600+	SBF	SMIND1,SM1FNE	TURN OFF NOT FOUND INDICATOR
13CB	75	02	9F		3601+SRC050	L	SRCACT(,@BR),@XR	GET CADDR OF ACTIVE BUFFER
13CE	34	02	15E8		3602+	ST	SMUDBA,@XR	SAVE CADDR IN SMALES
13D2	2C	01	10C8 01		3603+	MVC	SMDAAD,##DUHA(@DADDR,@XR)	SAVE RDADDR OF ACTIVE DIRCTY
13D7	C2	01	0000		3604+SRC900	LA	*-*,@BR	RESTORE CALLERS BASE
13DB	C2	02	0000		3605+SRC910	LA	*-*,@XR	RESTORE INDEX
13DF	C0	87	0000		3606+SRC920	B	*-*	RETURN
					3608+*			
					3609+*			FILENAME WAS NOT FOUND. SAVE ADDR FOR NEXT ENTRY AND



SRCHFN - SEARCH FOR FILE NAME IN USER DIRECTORY

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 36
			3616+*			
			3617+*		CONSTANTS AND WORK AREA	
			3618+*			
13EE		13EF	3619+SRCBF1	DS	CL(@CADDR)	WORK AREA PRIMARY BUFFER ADDR
13F0		13F1	3620+SRCBF2	DS	CL(@CADDR)	WORK AREA SECONDARY BUFFER ADDR
13F2		13F3	3621+SRCACT	DS	CL(@CADDR)	SAVE AREA FOR ACTIVE BUFFER
13F4 0600		13F5	3622+SRCBA1	DC	AL2(SMUDB1)	ADDRESS OF USED DIRCTY BLUFFER 1
13F6 0800		13F7	3623+SRCBA2	DC	AL2(SMUDB2)	ADDRESS OF DIRCTY BUFFER 2
13F8		13F8	3624+SRCCNT	DS	CL1	WORK AREA FOR ENTRY COUNT
13F9 0001		13FA	3625+SRCC01	DC	IL2'1'	CONSTANT TO DECR ENTRY COUNT
		13FB	3626+SRCDPL	EQU	*	DEFINE LEFT END OF DPL
13FB 01		13FB	3627+SRCGET	DC	AL1(@DGET)	READ OP CODE
13FC		13FD	3628+SRCDAD	DS	CL(@DADDR)	RELATIVE ADDR OF BLOCK
13FE 02		13FE	3629+SRC SCT	DC	AL1(##LU)	SECTOR COUNT FOR BLOCK
13FF		1400	3630+SRCBFR	DS	CL(@CADDR)	BUFFER ADDR OF BLOCK
			3631+***		END OF SRCHFN	***
			3632 *			
			3633 *		\$VOL2	

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE 37
		3635+	*****			*
		3636+	* 5703-XM1	COPYRIGHT IBM CORP. 1970		*
		3637+	* REFER TO INSTRUCTIONS ON COPYRIGHT NOTICE	120-2083		*
		3638+	* *****			*
		3639+	* *****			*
		3640+	*STATUS			*
		3641+	* VERSION 1 MODIFICATION 0			*
		3642+	* *****			*
		3643+	*FUNCTION			*
		3644+	* THE FUNCTION OF SVOLID IS TO SEARCH THE CORE RESIDENT TABLE OF			*
		3645+	* VOLUME ID'S ON THE SYSTEM FOR A SPECIFIED VOLUME ID. IF THE			*
		3646+	* VOLUME IS NOT FOUND, AN ERROR CODE WILL BE PUT IN \$CAERR AND AN			*
		3647+	* EXIT TO \$VOERR IN THE CALLING ROUTINE WILL BE TAKEN. IF MORE			*
		3648+	* THAN ONE VOLUME WITH THE SAME VOL-ID IS FOUND ON THE SYSTEM, THE			*
		3649+	* USER OF THE SYSTEM IS REQUESTED TO INDICATE WHICH DRIVE AND DISK			*
		3650+	* IS TO BE USED. IF THE USER IS UNABLE TO RESOLVE THE CONFLICT,			*
		3651+	* THE COMMAND IS REJECTED. IF THE INPUT SOURCE IS NOT THE KEYBOARD,			*
		3652+	* THE COMMAND IS REJECTED. OTHERWISE THE FILE LIBRARY ADDRESS OF			*
		3653+	* THE RESOLVED VOLUME IS PLACED IN SMBFDA IN THE TSMLES COMMUNICA-			*
		3654+	* TIONS REGION, AND A NORMAL RETURN IS TAKEN.			*
		3655+	* *****			*
		3656+	*ENTRY POINTS			*
		3657+	* \$VOLID - THE FIRST EXECUTABLE INSTRUCTION. IT IS ASSUMED THAT			*
		3658+	* SMVOID IN TSMLES HAS BEEN PRIMER. ALSO, IF THE VM OPTION OF			*
		3659+	* SVOLID HAS BEEN ASSEMBLED FOR EXECUTION TIME USAGE.			*
		3660+	* THE FIELDS SVOIOF AND SVODSK SHOULD BE PRIMED WITH THE GET/PUT			*
		3661+	* GET/PUT FILENAME AND DISK FILENAME, RESPETIVELY.			*
		3662+	* *****			*
		3663+	*INPUT			*
		3664+	* INPUT TO SVOLID IS THE SPECIFIED VOL-ID IN THE TSMLES REGION -			*
		3665+	* SMVOID.			*
		3666+	* *****			*
		3667+	*OUTPUT			*
		3668+	* OUTPUT FROM SVOLID IS THE FILE LIBRARY ADDRESS OF THE RESOLVED			*
		3669+	* SPECIFIED VOL-ID - PLACED IN SMBFDA.			*
		3670+	* *****			*
		3671+	*EXTERNAL REFERENCES			*
		3672+	* SVOBUF - TEMPORARY SECTOR BUFFER SAVE AREA - USER SUPPLIED			*
		3673+	* SVOERR - ERROR EXIT ADDR FROM SVOLID			*
		3674+	* TSMLES - DATA MANAGEMENT COMMUNICATIONS REGION			*
		3675+	* \$\$ILHD - FIRST BYTE OF INPUT LINE HEADER			*
		3676+	* \$\$XIND - EXECUTION INDR PASS AREA			*
		3677+	* \$\$INND - LAST CHARACTER OF INPUT LINE BUFFER			*
		3678+	* \$\$INLN - FIRST CHARACTER OF INPUT LINE BUFFER			*
		3679+	* \$\$PRES - ENTRY TO ENABLE KEYBOARD			*
		3680+	* \$VOLID - ADDR IN SYSTEM NUCLEUS - VOLUME ID TABLE			*
		3681+	* \$CAERR - ADDR IN SYSTEM NUCLEUS - ERROR CODE SAVE AREA			*
		3682+	* \$KEYCD - INDR BYTE CONTAINING KEYBOARD INDR IN SYSTEM NUCLEUS			*
		3683+	* \$CARDI - MASK IN \$KEYCD - CARD INPUT MODE			*
		3684+	* \$SPRNT - ADDR IN SYSTEM NUCLEUS-SYSTEM PRINTER IOCR INTERFACE			*
		3685+	* \$CIMSK - ADDR IN SYSTEM NUCLEUS-IR MASK ROUTINE INDR			*
		3686+	* \$WAITF - ADDR IN SYSTEM NUCLEUS-DISK WAITS DPL			*
		3687+	* \$KYBSY - MASK IN \$KEYCD - KEYBOARD BUSY			*
		3688+	* \$TRUNK - MASK IN \$KEYCD - TRUNCATED LINE INDR			*
		3689+	* \$UNHSK - ADDR IN SYSTEM NUCLEUS-ENTRY TO UNMASK IR			*
		3690+	* *****			*

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 38
		3691+	*	EXITS, NORMAL	*
		3692+	*	NEXT SEQUENTIAL INSTRUCTION IN CALL ROUTINE.	*
		3693+	*		*
		3694+	*	EXITS, ERROR	*
		3695+	*	\$VOERR - ERROR EXIT ROUTINE IN CALL ROUTINE.	*
		3696+	*	(NOTE: ERROR PROCEDURES).	*
		3697+	*		*
		3698+	*	TABLES/WORK AREAS	*
		3699+	*	CONSTANTS, PPL'S. AND WORK AREAS WHICH ARE ADDRESSED BY THE BASE	*
		3700+	*	REGISTER (@BR) ARE LOCATED TO BE REFERENCED AS SUCH. THOSE	*
		3701+	*	WHICH ARE NOT ADDRESSED BY A BASE REGISTER ARE LOCATED AT THE	*
		3702+	*	END OF THE MODULE.	*
		3703+	*		*
		3704+	*	ATTRIBUTES	*
		3705+	*	RELOCATABLE, CONDITIONALLY REUSABLE (SEE OTHER).	*
		3706+	*		*
		3707+	*	CHARACTER CODE DEPENDENCY	*
		3708+	*	CHARACTER CODE DEPENDENCY CLASS - C	*
		3709+	*	THE OPERATION OF THIS MODULE DEPENDS UPON AN INTERNAL REPRESENTA-	*
		3710+	*	TION OF THE EXTERNAL CHARACTER SET WHICH IS EQUIVALENT TO THE ONE	*
		3711+	*	USED AT ASSEMBLY TIME. THE CODING HAS BEEN ARRANGED SO THAT RE	*
		3712+	*	DEFINITION OF CHARACTER CONSTANTS, BY REASSEMBLY, WILL RESULT IN	*
		3713+	*	A CORRECT MODULE FOR THE NEW DEFINITIONS. THE FOLLOWING ARE THE	*
		3714+	*	SPECIAL CONSIDERATIONS FOR THIS MODULE:	*
		3715+	*	* CHARACTER CONSTANT FOR DECIMAL L(ONE) INTERNAL EQUATE	*
		3716+	*	* CHARACTER CONSTANT FOR DECIMAL 2(TWO) INTERNAL EQUATE	*
		3717+	*	* @BLANK - PART OF @SYSEQ - FOR SYNTAX CHECK	*
		3718+	*	* @CHARR - PART OF @SYSEQ - FOR SYNTAX CHECK	*
		3719+	*	* @CHARF - PART OF @SYSEQ - FOR SYNTAX CHECK	*
		3720+	*	* @EOS - PART OF @SYSEQ - FOR SYNTAX CHECK	*
		3721+	*		*
		3722+	*	NOTES	*
		3723+	*	ERROR PROCEDURES	*
		3724+	*	THE FOLLOWING CONDITIONS WILL CAUSE AN ERROR CODE TO BE PLACED	*
		3725+	*	IN SCAERR AND AN EXIT BRANCH TO BE TAKEN TO SVOERR:	*
		3726+	*	* THE SPECIFIED VOLUME ID IS NOT ON THE SYSTEM.	*
		3727+	*	* DUPLICATE VOLUME ID'S ARE RTLADO. AND INPUT IS NOT FROM	*
		3728+	*	THE KEYBOARD.	*
		3729+	*	* THE SPECIFIED PHYSICAL ID FROM THE KEYBOARD DOES NOT CONTAIN	*
		3730+	*	ONE OF THE MULTIPLY DEFINED VOLUME ID'S.	*
		3731+	*	* THE SPECIFIEC OR RESOLVED VOLUME DOES NOT CONTAIN A LIBRARY	*
		3732+	*	AREA.	*
		3733+	*		*
		3734+	*	REGISTER USAGE	*
		3735+	*	INDEX REGISTER 1 (@BR) IS USED PRIMARILY AS A BASE REGISTER	*
		3736+	*	AND SECONDLY AS AN INDEX IN THE VOL ID TABLE.	*
		3737+	*	INDEX REGISTER 2 (@XR) IS USED PRIMARILY AS AN INDEX REGISTER	*
		3738+	*	IN THE VOL-ID TABLE AND SECONDLY AS AN INDEX TO SYNTAX CHECK	*
		3739+	*	KEYBOARD INPUT WHEN VOLUMES ARE MULTIPLY DEFINED.	*
		3740+	*		*
		3741+	*	SAVED/RESTORED AREAS	*
		3742+	*	NOBE	*
		3743+	*		*
		3744+	*	MODIFICATION CONSIDERATIONS	*
		3745+	*	VOLID'S SEARCH OF THE VOL-ID TABLE (SVOLID) IS TOTALLY	*
		3746+	*	DEPENDENT ON THE FORMAT OF THE TABLE AS IT EXISTS; ESPECIALLY	*



SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 39
		3747+*		THE NUMBER OF ENTRIES WHICH NOW EXIST (IE. FOUR).	*
		3748+*			*
		3749+*		REQUIRED MODULES	*
		3750+*		@CANEQ - COMMON CORE LOCATIONS OUTSIDE SYSTEM NUCLEUS	*
		3751+*		@DIREQ - SYSTEM LIBRARY DIRECTORY EQUATES	*
		3752+*		@ERMEQ - ERROR MESSAGE EQUATES	*
		3753+*		@FXDEQ - COMMON CORE LOCATIONS WITHIN THE SYSTEM NUCLEUS	*
		3754+*		@SYSEQ - COMMON SYSTEM SOFTWARE EQUATES	*
		3755+*		TSMLES - DATA MANAGEMENT COMMUNICATION REGIONS	*
		3756+*			*
		3757+*		OTHER	*
		3758+*		SVOLID MAY BE RE-USED IF THE CALL ROUTINE WILL PRIME 'SVOCT1'	*
		3759+*		WITH A '4', AND 'SVOCT2' WITH A '0' BEFORE EACH RE-ENTRY.	*
		3760+*		BOTH OF THESE FIELDS ARE 1 BYTE LONG AND CONTIGUOUS, RESPEC-	*
		3761+*		TIVELY. (IE. CAN BE INITIALIZED WITH 'MVC' OF X'0400').	*
		3762+*			*
		3763+*		THIS VERSION OF VOLID DEVIATES FROM \$VOLID.	*
		3764+*		MESSAGES @@M048 AND @@M049 ARE ADDED.	*
		3765+*		*****	*



## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23	PAGE 40
					3767+	*****			
					3768+	*			
					3769+	SVOLID MODULE EQUATES			
					3770+	*			
					3771+	*****			
					3772+	*			
				0001	3773+	SVOLN1 EQU 1	LENGTH CODE OF ONE		
					3774+	*			
				00F1	3775+	SVO001 EQU X'F1'	CONSTANT OF 1 FOR COMPARE		
				00F2	3776+	SVO002 EQU X'F2'	CONSTANT OF 2 FOR COMPARE		
					3777+	*			
				0100	3778+	SVOINP EQU \$\$XIND-\$\$ILHD+@B1	LENGTH INPUT BUFFER		
				00FF	3779+	SVOEND EQU \$\$XIND-\$\$ILHD	DISP TO END OF SVOBUF		
					3781+	*****			
					3782+	*			
					3783+	INITIALIZATION OF MODULE			
					3784+	*			
					3785+	*****			
					3786+	*			
				1401	3787+	SVOLID EQU *	ENTRY POINT		
				1413	3788+	USING SVOBSE,@BR	BASE ADDRESS		
1401	34	01	144D		3789+	ST SVO274+@OP1,@BR	SAVE BASE CONTENTS		
1405	C2	01	1413		3790+	LA SVOBSE,@BR	LOAD BASE ADDRESS		
1409	74	02	3E		3791+	ST SVO276+@OP1(,@BR),@XR	SAVE INDEX REGISTER		
140C	74	08	46		3792+	ST SVO290+@OP1(,@BR),@ARR	SAVE RETURN ADDR		
					3794+	*****			
					3795+	*			
					3796+	SEARCH VOL-ID TABLE			
					3797+	*			
					3798+	*****			
					3799+	*			
140F	C2	02	03FB		3800+	LA \$VOLID+@VOLID-@B1,@XR	LOAD XR AS POINTER INTO NUCLEUS		
				1413	3801+	SVOBSE EQU *			
1413	8D	05	00 15D2		3802+	SVO100 CLC @ZERO(@VOLID,@XR),SMVOID	IS THIS THE VOL-ID ?		
1418	D0	01	11		3803+	BNE SVO200(,@BR)	NO, CHECK NEXT ENTRY		
141B	2C	01	15E6 02		3804+	MVC SMBFDA(@DADDR),@DADDR(,@XR)	SAVE DADDR-DUPLICATE CHECK		
1420	5E	00	48 49		3805+	ALC SVOCT2(SVOLN1,@BR),SVOONE(,@BR)	INCREMENT COUNT		
1424	E2	02	08		3806+	SVO200 LA @VOLID+@DADDR(,@XR),@XR	INCREMENT XR		
1427	5F	00	47 49		3807+	SLC SVOCT1(SVOLN1,@BR),SVOONE(,@BR)	IS THE LAST ENTRY ?		
142B	D0	01	00		3808+	BNZ SVO100(,@BR)	NO, CHECK NEXT ONE		
					3809+	*			
					3810+	*****			

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE	41
				3812+	*****						
				3813+	*						
				3814+	*	PROCESS ENTRY IF FOUND					
				3815+	*						
				3816+	*****						
				3817+	*						
142E	7D	02	48	3818+	CLI	SVOCT2(,@BR),@D1	WAS AN ID FOUND ?				
1431	3C	29	03CD	3819+	MVI	\$CAERR,@E217	ERROR - NO ID FOUND				
1435	D0	82	33	3820+	BL	SVO270(,@BR)	NO, ERROR EXIT				
1438	D0	84	4A	3821+	BH	SVO300(,@BR)	MORE THAN 1 ID				
				3823+	*****						
				3824+	*						
				3825+	*	CHECK DISK ADDR OF LIBRARY					
				3826+	*						
				3827+	*****						
				3828+	*						
143B	3D	00	15E5	3829+SVO260	CLI	SMBFDA-@B1,@ZERO	IS THERE A LIBRARY ?				
143F	F2	01	08	3830+	JNE	SVO274	YES, RETURN				
1442	3C	54	03CD	3831+	MVI	\$CAERR,@E351	ERROR - NO LIBRARY				
1446	3C	87	1453	3832+SVO270	MVI	SVO280+@Q,@UCB	SET ERROR EXIT				
				3834+	*****						
				3835+	*						
				3836+	*	END OF MODULE PROCESSING					
				3837+	*						
				3838+	*****						
				3839+	*						
144A	C2	01	0000	3840+SVO274	LA	*-*,@BR	RESTORE BASE REGISTER				
144E	C2	02	0000	3841+SVO276	LA	*-*,@XR	RESTORE INDEX REGISTER				
				3842+	*						
1452	C0	80	0F93	3843+SVO280	BC	SVOERR,@NOP	ERROR EXIT				
1456	C0	87	0000	3844+SVO290	B	*-*	RETURN				
				3845+	*						
				3846+	*****						

ERR LOC		OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE	42
				3848+	*****					
				3849+	*					
				3850+	DATA CONSTANTS, BUFFERS, WORK AREAS AND SAVE AREAS					*
				3851+	*					
				3852+	*****					
				3853+	*					
145A			145A	3854+	SVOCT1 DS	CL1	COUNTER - NUMBER OF DISKS - 4			
145A				3855+	ORG	SVOCT1	RESET FOR INITIALIZATION			
145A	04		145A	3856+	DC	XL1'04'	INITIALIZED TO 4			
				3857+	*					
145B			145B	3858+	SVOCT2 DS	CL1	COUNTER - DUPLICATE DISK LABELS			
145B				3859+	ORG	SVOCT2	RESET FOR INITIALIZATION			
145B	00		145B	3860+	DC	XL1'00'	INITIALIZED TO 0			
145C	01		145C	3861+	SVOONE DC	XL1'01'	INITIALIZED TO 1 FOR COUNTER			
				3863+	*****					
				3864+	*					
				3865+	PROCESS MULTIPLE ENTRIES					*
				3866+	*					
				3867+	*****					
				3868+	*					
145D	38	01 03C3		3869+	SVO300 TBN	\$KEYCD,\$CARDI	IS KEYBOARD INPUT MODE ?			
1461	3C	25 03CD		3870+	SVO310 MVI	\$CAERR,@E212	KEYBOARD NOT INPUT MODE			
1465	D0	10 33		3871+	SVO315 BT	SVO270(,@BR)	NO ERROR EXIT			

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE	43
					3873+	*****					
					3874+	*					
					3875+	ASK USER FOR DRIVE CLARIFICATION					
					3876+	*					
					3877+	*****					
					3878+	*					
				1468	3879+	SVO320 EQU *	PRINT MESSAGES				
1468	C0	87	0465		3880+	B \$SPRNT	PRINT HEADING				
146C	0E0F			146D	3881+	DC AL2(@M049)	PPL ADDR				
146E	C0	87	0465		3882+	B \$SPRNT	PRINT MESSAGE				
1472	1512			1473	3883+	DC AL2(SVOPPM)	PPL ADDRESS				
					3884+	*					
1474	C0	87	0465		3885+	B \$SPRNT	PRINT HEADER				
1478	0E0B			1479	3886+	DC AL2(@M048)	ADDR PPL				
147A	C0	87	0465		3887+	B \$SPRNT	PRINT G/P FILENAME				
147E	151E			147F	3888+	DC AL2(SVOPPL)	ADDR PPL				
					3889+	*					
1480	C0	87	0465		3890+	B \$SPRNT	PRINT MESSAGE				
1484	0E13			1485	3891+	DC AL2(@M300)	ERROR MESSAGE PPL				
					3892+	*					
1486	0C	00	149D 0476		3893+	MVC SVO335+@VQ(@B1),\$CIMSK	OBTAIN CURRENT MASK STATUS				
148C	C0	87	0465		3894+	B \$SPRNT	WAIT FOR PRINT				
1490	057F			1491	3895+	DC AL2(\$WAITF)	ADDR OF PPL				
					3897+	*****					
					3898+	*					
					3899+	MODIFY INPUT BUFFER FOR ACCEPTANCE OF INPUT ANSWER					
					3900+	*					
					3901+	*****					
					3902+	*					
				1492	3903+	SVO330 EQU *	ENABLE INPUT ROUTINE				
					3904+	*					
1492	3C	40	06FA		3905+	SVO333 MVI \$\$INND,@BLANK	CLEAR INPUT BUFFER				
1496	0C	F2	06F9 06FA		3906+	MVC \$\$INND-@B1(\$\$INND-\$\$INLN),\$ \$INND					
					3907+	*					
149C	C0	01	048D		3908+	SVO335 BC \$UNMSK,@VQ	BRANCH IF UNMASKED				
14A0	C0	87	0890		3909+	B \$\$PRES	GET USER'S RESRONSE				
14A4	38	10	03C3		3910+	SVO350 TBN \$KEYCD,\$KYBSY	IS KEYBOARD BUSY ?				
14A8	C0	10	14A4		3911+	BT SVO350	YES, WAIT				
14AC	C0	87	0465		3912+	B \$SPRNT	WAIT FOR PRINTER RETURN				
14B0	057F			14B1	3913+	DC AL2(\$WAITF)	ADDR OF PPL				

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 44
				3915+	*****			
				3916+	*			
				3917+	*	VERIFY VOL-ID ON DRIVE SPECIFIED		
				3918+	*			
				3919+	*****			
				3920+	*			
14B2	C2	02	0606	3921+	LA	\$\$INLN-@B1,@XR	ADDR FIRST RESPONSE BYTE	
14B6	C2	01	03FB	3922+	LA	\$VOLID+@VOLID-@B1,@BR	REFERENCE POINT FOR THE VOLID	
				3923+	*			
14BA	E2	02	01	3924+	SVO360 LA	@B1(,@XR),@XR	INDEX BY BLANK	
14BD	BD	40	00	3925+	CLI	@ZERO(,@XR),@BLANK	IS IT A BLANK ?	
14C0	C0	81	14BA	3926+	BE	SVO360	YES, CHECK NEXT BYTE	
				3927+	*			
14C4	BD	F1	01	3928+	CLI	@B1(,@XR),SVO001	IS IT DRIVE 1 ?	
14C7	F2	81	0A	3929+	JE	SVO400	YES, CHECK DISK TYPE	
				3930+	*			
14CA	BD	F2	01	3931+	CLI	@B1(,@XR),SVO002	IS IT DRIVE 2 ?	
14CD	C0	01	1468	3932+	BNE	SVO320	NO, ASK USER AGAIN	
14D1	D2	01	10	3933+	LA	2*@VOLID+2*@DADDR(,@BR),@BR	SET INDEX FOR DRIVE 2	
14D4	BD	D9	00	3934+	SVO400 CLI	@ZERO(,@XR),@CHARR	IS IT REMOVABLE ?	
14D7	F2	81	0A	3935+	JE	SVO440		
				3936+	*			
14DA	BD	C6	00	3937+	CLI	@ZERO(,@XR),@CHARF	IS IT FIXED ?	
14DD	C0	01	1468	3938+	BNE	SVO320	ASK AGAIN	
14E1	D2	01	08	3939+	LA	@VOLID+@DADDR(,@BR),@BR	SET INDEX FOR FIXED	
14E4	E2	02	01	3940+	SVO440 LA	@B1(,@XR),@XR	INCREMENT TO NEXT BYTE	
14E7	E2	02	01	3941+	SVO445 LA	@B1(,@XR),@XR	INCREMENT TO NEXT BYTE	
14EA	BD	40	00	3942+	CLI	@ZERO(,@XR),@BLANK	IS IT A BLANK ?	
14ED	C0	81	14E7	3943+	BE	SVO445	YES, CHECK NEXT BYTE	
				3944+	*			
14F1	BD	1E	00	3945+	CLI	@ZERO(,@XR),@EOS	AT EOS ?	
14F4	C0	01	1468	3946+	BNE	SVO320	ASK AGAIN	
				3947+	*			
14F8	4D	05	00 15D2	3948+	SVO450 CLC	@ZERO(@VOLID,@BR),SMVOID	IS IT THE VOLID ?	
14FD	3C	28	03CD	3949+	MVI	\$CAERR,@E216	VOLUME NOT ON THAT DRIVE	
1501	C0	01	1446	3950+	BNE	SVO270	NO, ERROR EXIT	
				3951+	*			
				3952+	*****			

## SVOL2D - RESOLVE SPECIFIED VOLUME-ID

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER	15,	MOD	00	19/12/23	PAGE	45
					3954+	*****								
					3955+	*								
					3956+		SAVE VOL-ID LIBRARY ADDR							
					3957+	*								
					3958+	*****								
					3959+	*								
1505	1C	01	15E6	02	3960+	MVC	SMBFDA(@DADDR),@DADDR(,@BR) SAVE LIBRARY ADDR							
150A	3B	80	03C3		3961+	SBF	\$KEYCD,\$TRUNK SET OFF RM EXCEEDED INDR							
150E	C0	87	143B		3962+	B	SVO260 NORMAL EXIT							
					3964+	*****								
					3965+	*								
					3966+		MULTIPLE VOLID MESSAGE AND PRINT PPL							
					3967+	*								
					3968+	*****								
					3969+	*								
1512	C0			1512	3970+	SVOPPM DC	AL1(@PRETR) PPL FOR MESSAGE							
1513	08			1513	3971+	DC	AL1(##LUEN) MESSAGE LENGTH							
1514	1516			1515	3972+	DC	AL2(SVOMMS) MESSAGE ADDR							
				1516	3973+	SVOMMS EQU	* MESSAGE							
					3974+	*	PRIMED BY CALL ROUTINE FOR PRINT OF DISK FILENAME							
1516	4040404040404040			151D	3975+	SVODSK DC	CL8' ' PPL FOR MESSAGE							
151E	C0			151E	3976+	SVOPPL DC	AL1(@PRETR) MESSAGE LENGTH							
151F	08			151F	3977+	DC	AL1(##LUEN) MESSAGE ADOR							
1520	1522			1521	3978+	DC	AL2(SVOMES) MESSAGE ADOR							
				1522	3979+	SVOMES EQU	* MESSAGE ADOR							
					3980+	*	PRIMED BY CALL ROUTINE FOR PRINT OF I/O FILENAME							
1522	4040404040404040			1529	3981+	SVOIOF DC	CL8' ' END OF SVOLID							
					3982+	*								
					3983+	*****								
					3984+	***								
					3985	*								
					3986	*	\$URCH							

## SURCHN - SEARCH THE NULL DIRECTORY

ERR LOC	OBJECT CODE	ADDR STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE 46
		3988+	*****			*
		3989+	* 5703-XM1 COPYRIGHT IBM CORP. 1970			*
		3990+	* REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083			*
		3991+	*			*
		3992+	*****			*
		3993+	*STATUS			*
		3994+	* VERSION 1 MODIFICATION 0			*
		3995+	*			*
		3996+	*FUNCTION			*
		3997+	* SURCHN WILL SEARCH THE NULL DIRECTORY FOR AN ENTRY OF AT LEAST			*
		3998+	* N SECTORS WHERE N IS THE NUMBER OF SECTORS REQUIRED. IF THE			*
		3999+	* SPACE IS FOUND THE STARTING ADDRESS IS PLACED IN SMNDEA. IF IT			*
		4000+	* IS NOT FOUND SMNDEA IS SET TO ZERO, AND SMNULT CONTAINS THE			*
		4001+	* TOTAL OF ALL NULL SECTORS IN THE LIBRARY.			*
		4002+	*			*
		4003+	*ENTRY POINTS			*
		4004+	* SURCHN - ENTRY TO SEARCH FOR NULL SPACE. THE CALLING			*
		4005+	* SEQUENCE IS AS FOLLOWS:			*
		4006+	* B SURCHN			*
		4007+	*			*
		4008+	*INPUT			*
		4009+	* THE INPUT TO SURCHN IS VIA TSMLES. SMNSCT MUST CONTAIN THE			*
		4010+	* NUMBER OF SECTORS REQUIRED. SMNDBA MUST CONTAIN THE ADDRESS OF			*
		4011+	* THE NULL DIRECTORY IN CORE.			*
		4012+	*			*
		4013+	*OUTPUT			*
		4014+	* SMNDEA WILL CONTAIN THE RELATIVE DISK ADDRESS OF THE NULL AREA			*
		4015+	* SMNDEA WILL BE ZERO IF THE SPACE IS NOT FOUND.			*
		4016+	* IF THE SPACE REQUIRED IS NOT FOUND SMNULT WILL CONTAIN THE			*
		4017+	* TOTAL OF NULL SECTORS IN THE LIBRARY.			*
		4018+	*			*
		4019+	*EXTERNAL REFERENCES			*
		4020+	* \$CAERR - LOCATION OF SYSTEM ERROR CODE INDICATOR			*
		4021+	* SMNDBA - LOCATION OF NULL DIRECTORY BUFFER ADDRESS			*
		4022+	* SMNULT - LOCATION OF NULL TOTAL COUNT			*
		4023+	* SMNSCT - LOCATION OF REQUIRED SECTOR COUNT			*
		4024+	* SMNDEA - LOCATION OF THE NULL DIRCTY ENTRY ADDRESS.			*
		4025+	*			*
		4026+	*EXITS, NORMAL			*
		4027+	* NORMAL RETURN IS TO THE FIRST INSTRUCTION FOLLOWING THE BRANCH			*
		4028+	* TO SURCHN.			*
		4029+	*			*
		4030+	*EXITS, ERROR			*
		4031+	* N/A			*
		4032+	*			*
		4033+	*TABLES/WORKAREAS			*
		4034+	* NONE			*
		4035+	*			*
		4036+	*ATTRIBUTES			*
		4037+	* RELOCATABLE			*
		4038+	* REUSEABLE			*
		4039+	*			*
		4040+	*CHARACTER CODE DEPENDENCY			*
		4041+	* THE OPERATION OF THIS MODULE DOES NOT DEPEND ON A PARTICULAR			*
		4042+	* INTERNAL REPRESENTATION OF THE EXTERNAL CHARACTER SET.			*
		4043+	*			*

SURCHN - SEARCH THE NULL DIRECTORY

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE	47
			4044+	*	NOTES				*
			4045+	*	ERROR PROCEDURES				*
			4046+	*	N/A				*
			4047+	*					*
			4048+	*	REGISTER USAGE				*
			4049+	*	@BR AND @XR ARE SAVED AND RESTORED ON EXIT. @BR IS USED AS A				*
			4050+	*	BASE REGISTER AND @XR IS USED TO POINT TO THE NULL DIRECTORY.				*
			4051+	*					*
			4052+	*	SAVED/RESTORED AREAS				*
			4053+	*	NONE				*
			4054+	*					*
			4055+	*	MODIFICATION CONSIDERATIONS				*
			4056+	*	NONE				*
			4057+	*					*
			4058+	*	REQUIRED MODULES				*
			4059+	*	@SYSEQ - SYSTEM SOFTWARE EQUATES.				*
			4060+	*	@DIREQ - LIBRARY DIRECTORY EQUATES				*
			4061+	*	@FXDEQ - SYSTEM NUCLEUS EQUATES				*
			4062+	*					*
			4063+	*	OTHER				*
			4064+	*	NONE				*
			4065+	*	*****				*



SURCHN - SEARCH THE NULL DIRECTORY

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 19/12/23 PAGE 48
					4067+	*****	*****	
					4068+	*	SURCHN WILL SEARCH THE NULL DIRECTORY FOR THE NUMBER OF SECTORS	*
					4069+	*	SPECIFIED IN SMNSCT. THE ADDR OF THE SPACE FOUND WILL BE PLACED	*
					4070+	*	IN SMNDEA. IF NO SPACE IS FOUND SMNDEA IS SET TO ZERO.	*
					4071+	*****	*****	
				152A	4072+	SURCHN EQU *	ENTRY TO SURCHN	
				0001	4073+	SURE01 EQU 1	VALUE TO TEST COUNTERS	
				152E	4074+		USING SUR000,@BR	SPECIFY BASE REGISTER
152A	34	01	158D		4075+		ST SUR900+@OP1,@BR	SAVE BASE OF CALLER
152E	C2	01	152E		4076+	SUR000 LA	SUR000,@BR	ESTABLISH BASE ADDR
1532	74	02	63		4077+		ST SUR910+@OP1(,@BR),@XR	SAVE INDEX
1535	74	08	67		4078+		ST SUR920+@OP1(,@BR),@ARR	SET RETURN ADDR
1538	3C	43	03CD		4079+		MVI \$CAERR,@E300	LIBRARY SPACE NOT AVAILABLE
					4080+	*		
153C	35	02	10C6		4081+		L SMNDBA,@XR	GET ADDR TO NULL DIRCTY
1540	1C	01	15EA 9A		4082+		MVC SMNULT(SURE02),SURC00(,@BR)	CLEAR TOTAL FIELD
					4083+	*		
1545	6C	00	1F 00		4084+		MVC SURCNT(SURE01,@BR),##DNHC(,@XR)	ENTRY COUNT FROM HEADER
1549	E2	02	04		4085+		LA ##DNE1(,@XR),@XR	BUMP POINTER TO FIRST ENTRY
154C	7D	00	9A		4086+	SUR010 CLI	SURC00(,@BR),*-*	
				154D	4087+	SURCNT EQU	SUR010+@Q	
154F	F2	81	44		4088+		JE SUR0G2	NO ENTRIES
					4089+	*		
					4090+	*		SEARCH ENTRIES FOR ONE WITH ENOUGH SPACE
					4091+	*		
1552	8D	01	03 15EE		4092+		CLC ##DNEF(##LNEF,@XR),SMNSCT	LOOK FOR LARGE ENOUGH COUNT
1557	F2	02	0F		4093+		JNL SUR0A2	ENTRY GREATER OR EQUAL
					4094+	*		
					4095+	*		ENTRY IS LESS THAN SPECIFIED COUNT. ADD ENTRY COUNT TO
					4096+	*		SMNULT AND TOTAL AVAILABLE SPACE.
					4097+	*		
155A	2E	01	15EA 03		4098+		ALC SMNULT,##DNEF(##LNEF,@XR)	ADD COUNT TO NULL TOTAL
155F	E2	02	06		4099+		LA ##LNE(,@XR),@XR	BUMP TO NEXT ENTRY
1562	5F	00	1F 9B		4100+		SLC SURCNT(SURE01,@BR),SURC01(,@BR)	DECR WORKING COUNT
1566	D0	87	1E		4101+		B SUR010(,@BR)	GO LOOK AT NEXT ENTRY
					4102+	*		
					4103+	*		LARGE ENOUGH SPACE HAS BEEN FOUND. TAKE THE REQUIRED
					4104+	*		NUMBER OF SECTORS AND MODIFY OR DELETE THE ENTRY. SAVE
					4105+	*		DIRECTORY ENTRY ADDR.
					4106+	*		
1569	2C	01	15EC 01		4107+	SUR0A2 MVC	SMNDEA,##DNEA(@DADDR,@XR)	SAVE DADDR OF SPACE FOUND
					4108+	*		
					4109+	*		TEST IF ENTRY IS OF EQUAL SIZE OF REQUIRED SPACE.
					4110+	*		
156E	F2	01	2D		4111+		JNE SUR0A3	ENTRY NOT THE SAME SIZE JUMPS
					4112+	*		
					4113+	*		ENTRY IS OF EQUAL SIZE SO DELETE IT FROM THE DIRECTORY.
					4114+	*		
					4115+	*		MOVE EACH ENTRY OF DIRECTORY UP ONE POSITION
					4116+	*		
1571	AC	05	05 0B		4117+	SUR020 MVC	##DNER(,@XR),##DNER+##LNE(##LNE,@XR)	MOVE ENTRY
1575	5F	00	1F 9B		4118+		SLC SURCNT(SURE01,@BR),SURC01(,@BR)	DECR ENTRY COUNT
1579	F2	81	06		4119+		JE SUR024	ZERO COUNT JUMP
					4120+	*		
157C	E2	02	06		4121+		LA ##LNE(,@XR),@XR	BUMP POINTER TO NEXT *TRY
157F	D0	87	43		4122+		B SUR020(,@BR)	BACK TO MOVE NEXT ENTRY

## SURCHN - SEARCH THE NULL DIRECTORY

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00	19/12/23	PAGE 49
1582	35	02	10C6		4124+	SUR024 L	SMNDBA,@XR			RESTORE POINTER TO START OF BUF
1586	9F	01	00 9B		4125+	SLC	##DNHC(SURE02,@XR),SURC01(,@BR)			DECR HEADER COUNT
					4126+*					
					4127+*		RETURN ACTION			
					4128+*					
158A	C2	01	0000		4129+	SUR900 LA	*-*,@BR			RESTORE BASE
158E	C2	02	0000		4130+	SUR910 LA	*-*,@XR			RESTORE INDEX
1592	C0	87	0000		4131+	SUR920 B	*-*			RETURN ADDR
					4132+*					
					4133+*		NO ENTRY FOUND. CLEAR SMNDEA AND RETURN			
					4134+*					
1596	1C	01	15EC 9A		4135+	SUR0G2 MVC	SMNDEA(@CADDR),SURC00(,@BR)			CLEAR DADDR POINTER
159B	D0	87	5C		4136+	B	SUR900(,@BR)			
					4137+*					
					4138+*		REDUCE ENTRY BY REQUIRED SECTORS. MODIFY THE RELATIVE			
					4139+*		ADDRESS OF ENTRY TO NEW STARTING LOCATION OF THE NULL			
					4140+*		AREA WHICH IS THE REQUIRED SPACE+1.			
					4141+*					
159E	8F	01	03 15EE		4142+	SUR0A3 SLC	##DNEF(##LNEF,@XR),SMNSCT			DECR ENTRY BY REQUIRED COUNT
15A3	6C	00	94 00		4143+	MVC	SURSWK(1,@BR),##DNEA-1(,@XR)			GET CYL COUNT
15A7	BC	00	00		4144+	MVI	##DNEA-1(,@XR),@ZERO			CLEAR CYL IN ENTRY
15AA	8E	01	01 15EE		4145+	ALC	##DNEA(SURE02,@XR),SMNSCT			BUMP SECTOR BY SPACE USED
15AF	9F	01	01 9D		4146+	SUR034 SLC	##DNEA(SURE02,@XR),SURC48(,@BR)			DECR BY 1 CYL VALUE
15B3	F2	82	07		4147+	JL	SUR033			JUMP LEIS THAN A SECTOR
15B6	5E	00	94 9B		4148+	ALC	SURSWK(1,@BR),SURC01(,@BR)			BUMP CYL COUNT
15BA	D0	87	81		4149+	B	SUR034(,@BR)			BACK FOR NEXT CYL
15BD	9E	01	01 9D		4150+	SUR033 ALC	##DNEA(SURE02,@XR),SURC48(,@BR)			RESTORE REMAINDER
15C1	BC	00	00		4151+	SUR03C MVI	##DNEA-1(,@XR),*-*			PLUG CYLINDER BACK INTO DADDR
				15C2	4152+	SURSWK EQU	SUR03C+@Q			ADDR OF CYL IN INSTR
15C4	D0	87	5C		4153+	B	SUR900(,@BR)			GO TO RETURN
					4154+*					
					4155+*		CONSTANTS AND WORK AREA			
					4156+*					
				0002	4157+	SURE02 EQU	2			VALUE FOR MOVES
15C7	0000			15C8	4158+	SURC00 DC	IL2'0'			ZERO FOR COUNT TEST
15C9	01			15C9	4159+	SURC01 DC	IL1'1'			VALUE TO INCR COUNTS
15CA	0030			15CB	4160+	SURC48 DC	IL2'48'			CYL VALUE
					4161+***					
					4162 *			END OF SURCHN		***
					4163 *	\$MALE				

## TSMLES - (SMALES) DATAMANAGEMENT COMMON AREAS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	19/12/23	PAGE	50
		4165+	*****					*
		4166+	*	5703-XM1 COPYRIGHT IBM CORP. 1970				*
		4167+	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083				*
		4168+	*					*
		4169+	*****					*
		4170+	*	STATUS				*
		4171+	*	VERSION 1 MODIFICATION 0				*
		4172+	*					*
		4173+	*	FUNCTION				*
		4174+	*	* TSMLES PROVIDES A COMMON SET OF BUFFERS AND WORK AREAS FOR DATA				*
		4175+	*	MANAGEMENT KEYWORDS AND THERE ASSOCIATED SUBROUTINES. THE WORK				*
		4176+	*	AREAS PROVIDE A COMMON COMMUNICATION BETWEEN SUBROUTINES THAT				*
		4177+	*	PERFORM A VARIETY OF FUNCTIONS WITH THE LIBRARY.				*
		4178+	*	THIS ELIMINATES A LARGE AMOUNT OF CUMBERSOME PARAMETER PASSING.				*
		4179+	*					*
		4180+	*	ENTRY POINTS				*
		4181+	*	N/A				*
		4182+	*					*
		4183+	*	INPUT				*
		4184+	*	N/A				*
		4185+	*					*
		4186+	*	OUTPUT				*
		4187+	*	N/A				*
		4188+	*					*
		4189+	*	EXTERNAL REFERENCES				*
		4190+	*	N/A				*
		4191+	*					*
		4192+	*	EXITS, NORMAL				*
		4193+	*	N/A				*
		4194+	*					*
		4195+	*	EXITS, ERROR				*
		4196+	*	N/A				*
		4197+	*					*
		4198+	*	TABLES/WORKAREAS				*
		4199+	*	N/A				*
		4200+	*					*
		4201+	*	ATTRIBUTES				*
		4202+	*	N/A				*
		4203+	*					*
		4204+	*	CHARACTER CODE DEPENDENCY				*
		4205+	*	N/A				*
		4206+	*					*
		4207+	*	NOTES				*
		4208+	*	ERROR PROCEDURES				*
		4209+	*	N/A				*
		4210+	*	REGISTER USAGE				*
		4211+	*	N/A				*
		4212+	*	SAVED/RESTORED AREAS				*
		4213+	*	N/A				*
		4214+	*	MODIFICATION CONSIDERATIONS				*
		4215+	*	N/A				*
		4216+	*	REQUIRED MODULES				*
		4217+	*	N/A				*
		4218+	*	OTHER				*
		4219+	*	N/A				*
		4220+	*****					*

## TSMLES - (SMALES) DATAMANAGEMENT COMMON AREAS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 19/12/23 PAGE 51
			4222+	*****	
			4223+	* SMALES- SYSTEM DATA MANAGEMENT COMMON SAVE AREAS AND EQUATES	*
			4224+	* USED TO PROVIDE COMMUNICATION BETWEEN SUBROUTINES USED	*
			4225+	* BY THE VARIOUS KEYWORDS INVOLVED WITH FILE MANIPULATION	*
			4226+	*****	
			4227+	*	
		15CC	4228+	SMALES EQU *	START OF MANAGEMENT AREA
		15CC	4229+	SMIND1 EQU SMALES	INDICATOR BYTE 1
		0080	4230+	SM1FNE EQU X'80'	SRCHFN INDR NAME NOT FOUND
		0040	4231+	SM1NPD EQU X'40'	PACK INDR NULL DIRCTY FULL
		0020	4232+	SM1STN EQU X'20'	STORIN PACK INDICATOR BIT
		0010	4233+	SM1PDS EQU X'10'	SGETDB SEARCH ONLY FLAG
		0008	4234+	SM1PNF EQU X'08'	SGETDB PASSWORD NOT FOUND
		15D2	4235+	SMVOID EQU SMIND1+6	SPECIFIED VOLUME ID SAVE AREA
		15DA	4236+	SMPSWD EQU SMVOID+8	SPECIFIED PASSWORD SAVE AREA
		15E2	4237+	SMFNAM EQU SMPSWD+8	SPECIFIED FILENAME SAVE AREA
		15E4	4238+	SMUDEA EQU SMFNAM+2	FILENAME DIRCTY ENTRY ADDR
		15E6	4239+	SMBFDA EQU SMUDEA+2	DADDR OF FILE LIBRARY
		15E8	4240+	SMUDBA EQU SMBFDA+2	CADDR OF ACTIVE BUFFER ADDR
		15EA	4241+	SMNULT EQU SMUDBA+2	TOTAL OF NULL SECTORS AVAILABLE
		15EC	4242+	SMNDEA EQU SMNULT+2	NULL DIRCTY ENTRY ERROR
		15EE	4243+	SMNSCT EQU SMNDEA+2	COUNT OF NULL SECTORS REQUIRED
		15F0	4244+	SMNETD EQU SMNSCT+2	CADDR NEW ENTRY TO NULL DIRCTY
		15F2	4245+	SMUPEN EQU SMNETD+2	CADDR NEW USER DIRCTY ENTRY
		15F4	4246+	SMPEAD EQU SMUPEN+2	CADDR PASSWORD ENTRY
		15F6	4247+	SMFUDA EQU SMPEAD+2	REL DADDR 1ST USER DIRCTY BLOCK
			4248+	*	*
			4249+	*****	
			4250+	*	*
			4251+	*SMDAAD EQU SMNSCT	RELATIVE DADDR
			4252+	*SMNDBA EQU SMFUDA+2	NULL DIRCTY BUFFER CORE ADDR
			4253+	*SMDAAD EQU SMNDBA+2	DADDR OF ACTIVE DIRCTY
			4254+	*SMPDB1 EQU SMDAAD+1	PASSWORD DIRCTY BUFFER
			4255+	*MPIBS EQU SMPDB1	SVOLID TEMP SAVE INPUT BUFFER
			4256+	*MUDB1 EQU SMPDB1	USER DIRCTY BLOCK 1 BUFFER
			4257+	*MUDB2 EQU SMUDB1+512	USER DIRCTY BLOCK 2 BUFFER
			4258+	*MAEND EQU SMUDB2+512	END OF SMALES AREA
			4259+	***	***
			4260	*	*
		10C6	4261	SMNDBA EQU SFFDPN+@DBFR2	NULL DIRCTY BUFFER CORE ADDR
		10C8	4262	SMDAAD EQU SMNDBA+2	DADDR OF ACTIVE DIRCTY
		11A8	4263	SFFNUL EQU SFINDF	NULL DIRECTORY BUFFER ADDRESS
		15EA	4264	SFFPDA EQU SMNDEA-@DADDR	ADDR OF PSEUDO DPL FOR DL2ICS
			4265	*	* DADDR CONVERSION
			4266	*	*
			4267	*****	
			4268	*	*
0600			4269	ORG \$\$KLD1	OVERLAY BUFFERS WITH SVOLID
			4270	*	*
			4271	*****	
			4272	*	*
		0600	4273	SMPDB1 EQU *	PASSWORD DIRECTORY BUFFER
		0600	4274	SMUDB1 EQU SMPDB1	USER DIRECTORY BLOCK 1 BUFFER
		0800	4275	SMUDB2 EQU SMUDB1+512	USER DIRECTORY BLOLK 2 BUEFER
		0A00	4276	SMAEND EQU SMUDB2+512	END OF SMALES AREA
		0800	4277	SVOBUF EQU SMUDB2	SVOLID BUFFER

4278 \*  
4279 \*\*\*\*\*  
4280 \*

FFFF 4281            END

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY =            0

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$\$\$\$\$	001	0E00	2451	
\$\$\$\$\$1	040	110E	2839	
\$\$\$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	020	0E8F	2486	
\$\$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 3778 3779
\$\$INLN	001	0607	0642	0644 0646 3906 3921
\$\$INND	001	06FA	0646	3905* 3906 3906 3906*
\$\$KBDT	001	09E1	0653	0657
\$\$KBSN	001	09E2	0657	0662
\$\$KLD1	001	0600	0717	2821 4269
\$\$KLD2	001	0700	0719	
\$\$KLD3	001	0C00	0721	
\$\$LPOS	001	09EB	0662	
\$\$PCNT	001	07E9	0678	
\$\$PLYN	001	2004	0692	
\$\$PRES	001	0890	0651	0653 0663 0664 0665 0666 0683 3909
\$\$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 3778 3779
\$\$ZERO	001	0000	0223	0224 0226 0227 0228 0232 0690
\$ABORT	001	0010	0336	
\$BASIC	001	0080	0394	
\$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
\$BUFPT	001	03E3	0489	0490
\$CABLD	001	04B4	0562	0563
\$CAERK	001	0469	0539	0542
\$CAERR	001	03CD	0287	0289 2550* 2626* 3205* 3236* 3393* 3560* 3819* 3831* 3870* 3949* 4079*
\$CAIPL	001	049D	0558	0560
\$CALLI	001	0008	0479	
\$CARDI	001	0001	0250	3869
\$CARPL	001	04A1	0560	0562
\$CIENT	001	0483	0549	0550
\$CIEXT	001	0480	0548	0549
\$CIMSK	001	0476	0545	0548 3893
\$CISUS	001	0496	0553	0558
\$CLBFR	001	0010	0437	
\$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 2575
\$DBGUF	001	03E0	0474	0483 2729
\$DBLOK	001	0001	0424	
\$DFDET	001	03E8	0495	0496
\$DISKN	001	0025	0226	2585 2671 2673 2755 2789 2992 3400 3565
\$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 2496*
\$DTNMB	001	0040	0270	
\$DTRDR	001	0040	0358	
\$ENDNU	001	0600	0617	0627 0651 0672 0708 0717 0719 0721
\$ERDPL	001	046F	0542	0544
\$ERFIL	001	0040	0297	
\$ERHRD	001	0004	0429	
\$ERKEY	001	0080	0301	
\$ERLOG	001	0345	0231	
\$ERMAD	001	0472	0544	0545
\$ERPND	001	0004	0402	
\$ERRCT	001	03CF	0303	
\$ERRPG	001	03CE	0291	
\$ERSFL	001	0035	0296	
\$ERSTK	001	0030	0294	



## CROSS REFERENCE

VER 15, MOD 00 19/12/23 PAGE 55

SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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 3148 3188 3190 3203 3210 3211
\$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
\$INDR2	001	03D5	0397	0422
\$INDR3	001	03D6	0422	0449
\$INLNO	001	03CF	0289	0291 0303 0310
\$INRPT	001	0020	0267	
\$IOIND	001	03D2	0338	0364
\$IOPGS	001	0010	0478	2729
\$IOYES	001	0002	0253	
\$IPLDV	001	05FF	0614	0617
\$IRKEY	001	0020	0477	
\$KEYBD	001	03E1	0483	0488
\$KEYCD	001	03C3	0247	0281 3869 3910 3961*
\$KEYDT	001	0040	0391	
\$KE090	001	00DE	0227	
\$KE130	001	01D5	0228	
\$KYBSY	001	0010	0264	3910
\$LDRTN	001	0571	0602	2493
\$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 2502
\$LPRIO	001	03EA	0496	
\$LPROS	001	03E5	0491	0493
\$LPRP3	001	03E4	0490	0491
\$MOUNT	001	0020	0440	
\$MPDWN	001	0001	0340	
\$NEXTB	001	03E6	0493	0494
\$NEXTL	001	03E7	0494	0495
\$NOENB	001	0008	0432	
\$NOLST	001	0004	0256	
\$NUCBS	001	03C0	0239	0240 3132 3133
\$NWRKF	001	0080	0445	
\$NWRKR	001	0040	0442	
\$PASWD	001	042D	0509	0510
\$PAUSD	001	04BA	0563	0565
\$PAUSE	001	0002	0333	
\$PGMDT	001	0020	0388	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
\$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	
\$PRPOS	001	03C2	0244	0247
\$PSDBR	001	04FA	0568	
\$PSDXR	001	04F2	0567	0568
\$PSTEP	001	0004	0334	
\$PSTMT	001	0008	0335	
\$PTCH1	001	03F5	0498	0502
\$READY	001	0080	0418	
\$REORD	001	0040	0476	
\$RLOAD	001	051E	0582	0584
\$RMGRN	001	03C0	0240	0242
\$RSTR	001	04D6	0565	0567 0569 0574
\$RUNIT	001	0001	0312	
\$SFAID	001	050D	0570	
\$SPRNT	001	0465	0537	0539 3880 3882 3885 3887 3890 3894 3912
\$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	3961
\$TRVAR	001	0020	0321	
\$UNMSK	001	048D	0550	0553 3908
\$USRDR	001	03DC	0461	0462 3212 3215
\$VMDEF	001	0080	0325	
\$VOLF1	001	03FE	0504	0505 3167 3169
\$VOLF2	001	040E	0506	3173 3175
\$VOLID	001	03F6	0502	0503 0507 2534 2656 2667 3136 3800 3922
\$VOLR1	001	03F6	0503	0504 3179 3181
\$VOLR2	001	0406	0505	0506 3161 3163
\$WAITF	001	057F	0605	0607 2586 2674 3401 3566 3895 3913
\$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 2494 2727* 2728
\$ZTRAD	001	05A2	0611	
\$12K	001	0004	0466	
\$16CKY	001	0008	0468	
\$16K	001	0002	0465	
\$22IMP	001	0001	0463	
##\$#BL	001	0000	1120	

## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
###CK	001	0000	1248	
###CN	001	0000	1216	
###CO	001	0000	1008	
###CS	001	0000	1068	
###DR	001	0000	0812	
###ER	001	0000	1012	
###FS	001	0000	1108	
###IN	001	0000	1252	
###PW	001	0000	1256	
###RS	001	0000	1088	
###SA	001	0000	1076	
###SS	001	0000	1072	
###VU	001	0600	1032	
###0T	001	0700	0804	
###1T	001	0000	0808	
###BCO	001	0600	0820	
###BOV	001	0800	1092	
###DPR	001	0700	0828	2813
###DRE	001	0889	0844	
###DSP	001	2800	0864	
###ECM	001	0C00	1124	
###EFK	001	0C00	1144	
###ERR	001	0C00	1116	
###EXM	001	0C00	1004	
###FIL	001	0E00	1084	
###FIS	001	0E00	1080	
###FML	001	0200	1212	
###FMS	001	0200	1052	
###GRA	001	0889	0976	
###GUF	001	0C00	1112	
###INL	001	0600	1192	
###INS	001	0600	0816	
###KAL	001	0C00	0980	
###KCA	001	0C00	1196	
###KCH	001	0C00	0948	
###KCN	001	0C00	1064	
###KCT	001	0C00	0916	
###KDE	001	0C00	0912	
###KDI	001	0D00	0992	
###KDN	001	0C00	0900	
###KDO	001	0E00	0996	
###KED	001	0C00	0836	
###KEN	001	0C00	0840	
###KEX	001	0C00	0860	
###KGO	001	0C00	0832	
###KHE	001	0C00	1016	
###KKE	001	0C00	1244	
###KLI	001	0C00	0920	
###KLL	001	0920	1220	
###KLO	001	0C00	0924	
###KME	001	0D00	0904	
###KMO	001	0C00	0848	
###KNA	001	0C00	0960	
###KOV	001	0E00	0880	
###KPA	001	0C00	0856	
###KPO	001	0C00	0944	

## CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/12/23 PAGE 58

###KPR 001 0C00 0968  
###KRE 001 0C00 0888  
###KRL 001 0700 0984  
###KRM 001 0C00 0852  
###KRN 001 0700 0872  
###KRO 001 0D00 0876  
###KRS 001 0C00 1200  
###KRU 001 0C00 0896  
###KRV 001 0800 0988  
###KSA 001 0C00 0932  
###KSE 001 0E00 0972  
###KSO 001 0C20 1024  
###KSS 001 0C00 0956  
###KSV 001 0980 0952  
###KSY 001 0C00 0964  
###KWI 001 0C00 0892  
###KWR 001 0C00 0884  
###LOA 001 0600 0824  
###MIP 001 0C00 1020  
###SDS 001 0C00 1132  
###SFF 001 0E00 1136  
###SFL 001 0F00 1128  
###SFO 001 1500 1100  
###SFS 001 0C00 1096  
###SPA 001 0C00 0936  
###SPO 001 0806 0940  
###SPS 001 0C00 0928  
###STR 001 1600 1104  
###TDC 001 1000 0908  
###TSY 001 1000 0868  
###TVK 001 0FC0 1044  
###UAL 001 0C00 1060  
###UAT 001 0900 1156  
###UCD 001 0900 1164  
###UCN 001 0C00 1148  
###UCP 001 0700 1152  
###UDE 001 0C00 1168  
###UDI 001 0C00 1172  
###UEX 001 0C00 1056  
###UIN 001 0C00 1160  
###UPA 001 0C00 1140  
###UPO 001 0C00 1208  
###UPT 001 0C00 1204  
###VCR 001 2000 1000  
###VLO 001 0600 1036  
###VOD 001 0600 1040  
###VVM 001 0000 1048  
###VXI 001 0600 1028  
###ZDU 001 1100 1180  
###ZLB 001 1100 1224  
###ZLO 001 1100 1184  
###ZLV 001 0F00 1240  
###ZL1 001 0F00 1228  
###ZL2 001 0F00 1232  
###ZL3 001 0C00 1236  
###ZTR 001 1000 1176

2450

## CROSS REFERENCE

SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/12/23 PAGE 59

###ZUT	001	0C00	1188	
###BLN	001	18D4	1119	
###CKT	001	2118	1247	
###CNF	001	2000	1215	
###COR	001	0800	1007	
###CSA	001	1000	1067	
###DRT	001	0000	0811	
###ERM	001	0928	1011	
###FSP	001	1880	1107	
###INV	001	212C	1251	
###PWR	001	2300	1255	
###RSP	001	1780	1087	
###SAV	001	1180	1075	
###SSA	001	1128	1071	
###VUF	001	0B08	1031	
##0TR	001	0000	0803	
##1TR	001	0080	0807	
##@BL	001	0001	1121	
##@CK	001	0004	1249	
##@CN	001	0001	1217	
##@CO	001	003A	1009	
##@CS	001	003A	1069	
##@DR	001	0008	0813	
##@ER	001	0032	1013	
##@FS	001	0030	1109	
##@IN	001	003A	1253	
##@PW	001	00C0	1257	
##@RS	001	0030	1089	
##@SA	001	0108	1077	
##@SS	001	0001	1073	
##@VU	001	0002	1033	
##@0T	001	0018	0805	
##@1T	001	0018	0809	
##@BCO	001	0018	0821	
##@BOV	001	0018	1093	
##@DPR	001	0005	0829	2812
##@DRE	001	0001	0845	
##@DSP	001	0004	0865	
##@ECM	001	0006	1125	
##@EFK	001	0002	1145	
##@ERR	001	0003	1117	
##@EXM	001	0003	1005	
##@FIL	001	0009	1085	
##@FIS	001	0009	1081	
##@FML	001	0052	1213	
##@FMS	001	0052	1053	
##@GRA	001	0003	0977	
##@GUF	001	0010	1113	
##@INL	001	0010	1193	
##@INS	001	0010	0817	
##@KAL	001	000F	0981	
##@KCA	001	000C	1197	
##@KCH	001	000C	0949	
##@KCN	001	0010	1065	
##@KCT	001	0009	0917	
##@KDE	001	0010	0913	

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#\$@KDI	001	0005	0993	
#\$@KDN	001	0010	0901	
#\$@KDO	001	000C	0997	
#\$@KED	001	000E	0837	
#\$@KEN	001	0006	0841	
#\$@KEX	001	0003	0861	
#\$@KGO	001	0002	0833	
#\$@KHE	001	000C	1017	
#\$@KKE	001	0006	1245	
#\$@KLI	001	0011	0921	
#\$@KLL	001	0001	1221	
#\$@KLO	001	0008	0925	
#\$@KME	001	0003	0905	
#\$@KMO	001	0004	0849	
#\$@KNA	001	0008	0961	
#\$@KOV	001	0009	0881	
#\$@KPA	001	0005	0857	
#\$@KPO	001	000D	0945	
#\$@KPR	001	0009	0969	
#\$@KRE	001	0002	0889	
#\$@KRL	001	0004	0985	
#\$@KRM	001	0003	0853	
#\$@KRN	001	0003	0873	
#\$@KRO	001	000A	0877	
#\$@KRS	001	000A	1201	
#\$@KRU	001	0003	0897	
#\$@KRV	001	000D	0989	
#\$@KSA	001	0011	0933	
#\$@KSE	001	0004	0973	
#\$@KSO	001	0005	1025	
#\$@KSS	001	000B	0957	
#\$@KSV	001	0002	0953	
#\$@KSY	001	000F	0965	
#\$@KWI	001	0002	0893	
#\$@KWR	001	0002	0885	
#\$@LOA	001	0013	0825	
#\$@MIP	001	000D	1021	
#\$@SDS	001	0004	1133	
#\$@SFF	001	0008	1137	
#\$@SFL	001	0005	1129	
#\$@SFO	001	0003	1101	
#\$@SFS	001	0011	1097	
#\$@SPA	001	0004	0937	
#\$@SPO	001	0003	0941	
#\$@SPS	001	0001	0929	
#\$@STR	001	0002	1105	
#\$@TDC	001	0003	0909	
#\$@TSY	001	0003	0869	
#\$@TVK	001	0001	1045	
#\$@UAL	001	0011	1061	
#\$@UAT	001	000C	1157	
#\$@UCD	001	000B	1165	
#\$@UCN	001	0009	1149	
#\$@UCP	001	000F	1153	
#\$@UDE	001	000E	1169	
#\$@UDI	001	0008	1173	

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#\$@UEX	001	000E	1057	
#\$@UIN	001	000F	1161	
#\$@UPA	001	0004	1141	
#\$@UPO	001	0005	1209	
#\$@UPT	001	0012	1205	
#\$@VCR	001	0008	1001	
#\$@VLO	001	0002	1037	
#\$@VOD	001	0016	1041	
#\$@VVM	001	0030	1049	
#\$@VXI	001	0002	1029	
#\$@ZDU	001	0008	1181	
#\$@ZLB	001	0002	1225	
#\$@ZLO	001	000C	1185	
#\$@ZLV	001	0006	1241	
#\$@ZL1	001	0007	1229	
#\$@ZL2	001	000D	1233	
#\$@ZL3	001	000A	1237	
#\$@ZTR	001	0001	1177	
#\$@ZUT	001	0014	1189	
#\$BCOM	001	0080	0819	
#\$BOLV	001	1780	1091	
#\$DPRI	001	014C	0827	2811
#\$DREA	001	0200	0843	
#\$DSPL	001	0240	0863	
#\$ECMA	001	1900	1123	
#\$EFKE	001	1990	1143	
#\$ERRP	001	18C0	1115	
#\$EXMS	001	07D4	1003	
#\$FILN	001	1724	1083	
#\$FIST	001	1700	1079	
#\$FMLN	001	1E00	1211	
#\$FMST	001	0D00	1051	
#\$GRAP	001	0690	0975	
#\$GUFU	001	1880	1111	
#\$INLN	001	1C84	1191	
#\$INST	001	0020	0815	
#\$KALL	001	06A4	0979	
#\$KCAL	001	1CC4	1195	
#\$KCHA	001	053C	0947	
#\$KCND	001	0F80	1063	
#\$KCTL	001	03BC	0915	
#\$KDEL	001	035C	0911	
#\$KDIS	001	0744	0991	
#\$KDNT	001	0300	0899	
#\$KDOV	001	0780	0995	
#\$KEDI	001	0188	0835	
#\$KENA	001	01C4	0839	
#\$KEXT	001	0234	0859	
#\$KGOS	001	0180	0831	
#\$KHEL	001	0A30	1015	
#\$KKEY	001	2100	1243	
#\$KLIS	001	0400	0919	
#\$KLLA	001	2004	1219	
#\$KLOG	001	0444	0923	
#\$KMER	001	030C	0903	
#\$KMOU	001	0204	0847	

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#\$KNAM	001	05C0	0959
#\$KOVN	001	0290	0879
#\$KPAS	001	0220	0855
#\$KPOO	001	0508	0943
#\$KPRT	001	063C	0967
#\$KREA	001	02BC	0887
#\$KRLA	001	0700	0983
#\$KRMO	001	0214	0851
#\$KRNU	001	0280	0871
#\$KROV	001	028C	0875
#\$KRSU	001	1D24	1199
#\$KRUN	001	02CC	0895
#\$KRVL	001	0710	0987
#\$KSAV	001	0488	0931
#\$KSET	001	0680	0971
#\$KSOV	001	0AC8	1023
#\$KSSP	001	0594	0955
#\$KSVL	001	058C	0951
#\$KSYM	001	0600	0963
#\$KWID	001	02C4	0891
#\$KWRI	001	02B4	0883
#\$LOAD	001	0100	0823
#\$MIPP	001	0A80	1019
#\$SDSY	001	192C	1131
#\$SFFI	001	193C	1135
#\$SFLO	001	1918	1127
#\$SFOV	001	1844	1099
#\$SFSY	001	1800	1095
#\$SPAC	001	04CC	0935
#\$SPOV	001	04DC	0939
#\$SPSY	001	0484	0927
#\$STRO	001	1850	1103
#\$TDCK	001	0350	0907
#\$TSYK	001	0250	0867
#\$TVKB	001	0BAC	1043
#\$UALL	001	0F00	1059
#\$UATR	001	1A38	1155
#\$UCDI	001	1AD8	1163
#\$UCNF	001	19B8	1147
#\$UCPL	001	19DC	1151
#\$UDEL	001	1B24	1167
#\$UDIS	001	1B5C	1171
#\$UEXL	001	0EA8	1055
#\$UINI	001	1A88	1159
#\$UPAC	001	1980	1139
#\$UPOV	001	1D24	1207
#\$UPTF	001	1D5C	1203
#\$VCRT	001	07B4	0999
#\$VLOA	001	0B80	1035
#\$VODK	001	0B88	1039
#\$VVMR	001	0C00	1047
#\$VXIT	001	0B00	1027
#\$ZDUM	001	1BA4	1179
#\$ZLBM	001	2008	1223
#\$ZLOA	001	1BC4	1183
#\$ZLVR	001	20B0	1239

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#\$ZL1M	001	2010	1227	
#\$ZL2M	001	2030	1231	
#\$ZL3M	001	2088	1235	
#\$ZTRA	001	1B9C	1175	
#\$ZUTM	001	1C14	1187	
##DNEA	001	0001	1587	4107 4143 4144* 4145* 4146* 4150* 4151*
##DNEF	001	0003	1588	4092 4098 4142*
##DNER	001	0005	1589	4117 4117*
##DNE1	001	0004	1586	4085
##DNHC	001	0000	1583	4084 4125*
##DNHR	001	0003	1585	
##DNHY	001	0001	1584	
##DPEA	001	0009	1561	3418 3423
##DPEN	001	0007	1560	3407
##DPER	001	000B	1562	
##DPE1	001	0004	1559	3405
##DPHC	001	0000	1557	3404
##DPHR	001	0003	1558	
##DUEA	001	0009	1572	2606
##DUED	001	0012	1577	2575*
##DUEF	001	000B	1573	2617* 2618
##DUEH	001	002B	1578	
##DUEI	001	000C	1574	2607 2644 2752* 3583
##DUEL	001	000F	1576	
##DUEN	001	0007	1571	2562 2565 3586
##DUER	001	0031	1579	
##DUES	001	000D	1575	2546 2549 2568 2577* 2601
##DUE1	001	000C	1570	
##DUHA	001	0001	1566	2579 3603
##DUHB	001	0003	1567	3574 3577
##DUHC	001	0004	1568	3582
##DUHR	001	000B	1569	
##LAAA	001	0002	1598	
##LAHC	001	0001	1597	
##LN	001	0001	1626	2783 2829
##LNE	001	0006	1632	4099 4117 4117 4121
##LNEF	001	0002	1630	4092 4098 4142
##LNEZ	001	0002	1631	
##LNH	001	0004	1629	
##LNHY	001	0001	1627	
##LNHZ	001	0002	1628	
##LP	001	0004	1602	3442
##LPE	001	000C	1607	3409
##LPEN	001	0008	1604	2518 3134 3144 3407
##LPEZ	001	0002	1605	
##LPH	001	0004	1606	
##LPHZ	001	0003	1603	
##LU	001	0002	1611	2799 3629
##LUE	001	0032	1622	3588
##LUED	001	0003	1619	2575
##LUEF	001	0002	1615	2617
##LUEH	001	0019	1620	
##LUEI	001	0001	1616	
##LUEL	001	0002	1618	
##LUEN	001	0008	1614	2518 3586 3971 3977
##LUES	001	0001	1617	



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SYMBOL LEN VALUE DEFN REFERENCES VER 15, MOD 00 19/12/23 PAGE 64

##LUEZ	001	0006	1621			
##LUH	001	000C	1613			
##LUHZ	001	0007	1612			
##MNHM	001	002A	1655			
##MPHM	001	0055	1640			
##MUEG	001	0020	1647	2549		
##MUEK	001	0040	1646	2546		
##MUEO	001	0004	1650	2577		
##MUEP	001	0080	1645			
##MUER	001	0008	1649	2568		
##MUEV	001	0002	1651	2601		
##MUEX	001	0010	1648	2568	2646	2754*
##MUHM	001	000A	1644			
##RN	001	0000	1546			
##RP	001	0001	1547	3441	3446	
##R1	001	0007	1549			
##R2	001	0005	1548			
##BAD	001	0455	0749			
##IO1	001	0459	0757			
##IO2	001	045D	0758			
##TAT	001	0941	0785			
##TBA	001	09A1	0789			
##TFS	001	0941	0783			
##TSY	001	0941	0787			
##VFP	001	0700	0775			
##VLP	001	093D	0778			
##WDB	001	050C	0770			
##WFT	001	0500	0768			
##BA	001	0001	0750			
##IO	001	0001	0762			
##SC	001	0002	0759			
##TA	001	0010	0786			
##TB	001	0010	0790			
##TS	001	0005	0788			
##TW	001	0020	0784			
##VM	001	0100	0779			
##WD	001	00BD	0771			
##WF	001	0003	0769			
##04	001	0004	0761			
##08	001	0008	0760	2736		
##BOV	001	0018	0738			
##ECM	001	0006	0752			
##ERR	001	0003	0746			
##GUF	001	0010	0742			
##LDS	001	0002	0748			
##SDS	001	0004	0744			
##SFF	001	0008	0756			
##SFL	001	0005	0754			
##SFO	001	0005	0764			
##SFS	001	0011	0740			
##VSF	001	0010	0792	2820		
##VSL	001	000F	0793			
##VTR	001	0001	0777			
##BOVL	001	0400	0737			
##ECMA	001	0481	0751			
##ERRP	001	0441	0745			

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
#@GUFU	001	0401	0741	
#@LDSV	001	044D	0747	2828
#@SDSY	001	04AD	0743	
#@SFFI	001	04BD	0755	
#@SFLO	001	0499	0753	
#@SFOV	001	04C4	0763	
#@SFSY	001	0480	0739	
#@VSFI	001	09A1	0791	2819
#@VTRL	001	0708	0776	
#@WAF1	001	0401	0736	
#@WAR1	001	0400	0735	
#SFFI	001	0000	0001	
#SFFIN	001	0E07	2454	
@\$D1BF	001	0008	1290	2520
@\$D1DC	001	0000	1289	2498 2762
@\$D1DF	001	001E	1294	2518 2519
@\$D1DP	001	0016	1293	
@\$D1DV	001	000E	1292	2539*
@\$D1E1	001	0000	1283	
@\$D1FS	001	000A	1291	2685 2699
@\$D1SW	001	001F	1296	
@\$D2AS	001	0002	1301	2751*
@\$D2BS	001	0003	1308	
@\$D2CB	001	0005	1311	
@\$D2CF	001	0001	1300	2507 2641
@\$D2CP	001	0005	1309	
@\$D2CS	001	0004	1310	
@\$D2CY	001	0006	1312	
@\$D2DA	001	0007	1313	2616* 2696* 2710 2710* 2722 2766
@\$D2DC	001	0000	1305	2609*
@\$D2DD	001	0009	1314	
@\$D2EE	001	000F	1317	
@\$D2E1	001	0040	1304	2737
@\$D2FS	001	000B	1315	2618* 2699*
@\$D2IO	001	0001	1306	2561* 2571* 2589* 2603*
@\$D2LC	001	000D	1316	2645 2753*
@\$D2PN	001	000A	1302	
@\$D2SF	001	000B	1303	2642 2750*
@\$D2VB	001	0002	1307	
@\$L1BF	001	0008	1323	2520
@\$L1DC	001	0001	1322	
@\$L1DF	001	0008	1325	2519
@\$L1DP	001	0008	1326	
@\$L1DV	001	0006	1327	
@\$L1E	001	0020	1321	2731 2759
@\$L1FS	001	0002	1324	2685
@\$L2AS	001	0001	1333	
@\$L2BS	001	0001	1340	
@\$L2CB	001	0001	1343	
@\$L2CF	001	0002	1332	
@\$L2CP	001	0002	1341	
@\$L2CS	001	0001	1342	
@\$L2DA	001	0002	1344	2766
@\$L2DC	001	0001	1337	
@\$L2DD	001	0002	1345	
@\$L2E	001	0010	1336	2760

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@\$L2FS	001	0002	1346	2618 2699
@\$L2HD	001	0040	1331	
@\$L2IO	001	0001	1338	
@\$L2LC	001	0002	1347	
@\$L2PN	001	0008	1335	
@\$L2SF	001	0002	1334	
@\$L2VB	001	0001	1339	
@\$MBCD	001	0020	1361	
@\$MBCR	001	0008	1363	
@\$MBEN	001	000C	1351	2764
@\$MBND	001	0000	1358	
@\$MBPD	001	0080	1359	2609
@\$MBPT	001	0010	1362	
@\$MBPU	001	0001	1354	2573
@\$MBSD	001	0040	1360	2498 2762
@\$M2CI	001	0008	1378	
@\$M2CO	001	0004	1379	
@\$M2EF	001	0002	1353	
@\$M2FI	001	0080	1367	2589
@\$M2FO	001	0040	1368	2571
@\$M2FP	001	0020	1369	2603
@\$M2FT	001	0010	1372	2561
@\$M2NS	001	00FF	1352	
@@E001	001	0000	2192	2194
@@E003	001	0001	2194	2196
@@E004	001	0002	2196	2198
@@E005	001	0003	2198	2200
@@E006	001	0004	2200	2202
@@E007	001	0005	2202	2204
@@E008	001	0006	2204	2206
@@E009	001	0007	2206	2208
@@E010	001	0008	2208	2210
@@E011	001	0009	2210	2212
@@E012	001	000A	2212	2214
@@E013	001	000B	2214	2216
@@E014	001	000C	2216	2218
@@E015	001	000D	2218	2220
@@E016	001	000E	2220	2222
@@E017	001	000F	2222	2224
@@E018	001	0010	2224	2226
@@E019	001	0011	2226	2228
@@E020	001	0012	2228	2230
@@E021	001	0013	2230	2232
@@E023	001	0014	2232	2234
@@E024	001	0015	2234	2236
@@E025	001	0016	2236	2238
@@E026	001	0017	2238	2240
@@E027	001	0018	2240	2242
@@E028	001	0019	2242	2244
@@E029	001	001A	2244	2246
@@E030	001	001B	2246	2248
@@E031	001	001C	2248	2250
@@E032	001	001D	2250	2252
@@E035	001	001E	2252	2254
@@E036	001	001F	2254	2256
@@E037	001	0020	2256	2258

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E038	001	0021	2258	2260
@@E039	001	0022	2260	2262
@@E040	001	0023	2262	2264
@@E041	001	0024	2264	2266
@@E042	001	0025	2266	2268
@@E043	001	0026	2268	2270
@@E044	001	0027	2270	2272
@@E045	001	0028	2272	2274
@@E046	001	0029	2274	2276
@@E060	001	002A	2276	2278
@@E080	001	002B	2278	
@@E100	001	0000	1664	1666
@@E101	001	0001	1666	1668
@@E102	001	0002	1668	1670
@@E103	001	0003	1670	1672
@@E110	001	0004	1672	1674
@@E112	001	0005	1674	1676
@@E113	001	0006	1676	1678
@@E114	001	0007	1678	1680
@@E115	001	0008	1680	1682
@@E116	001	0009	1682	1684
@@E117	001	000A	1684	1686
@@E120	001	000B	1686	1688
@@E122	001	000C	1688	1690
@@E123	001	000D	1690	1692
@@E124	001	000E	1692	1694
@@E129	001	000F	1694	1696
@@E130	001	0010	1696	1698
@@E131	001	0011	1698	1700
@@E133	001	0012	1700	1702
@@E134	001	0013	1702	1704
@@E135	001	0014	1704	1706
@@E136	001	0015	1706	1708
@@E137	001	0016	1708	1710
@@E138	001	0017	1710	1712
@@E139	001	0018	1712	1714
@@E142	001	0019	1714	1716
@@E143	001	001A	1716	1718
@@E150	001	001B	1718	1720
@@E151	001	001C	1720	1722
@@E160	001	001D	1722	1724
@@E162	001	001E	1724	1726
@@E163	001	001F	1726	1728
@@E164	001	0020	1728	1730
@@E200	001	0021	1730	1732 3205
@@E205	001	0022	1732	1734
@@E210	001	0023	1734	1736 3393
@@E211	001	0024	1736	1738 3560
@@E212	001	0025	1738	1740 3870
@@E213	001	0026	1740	1742 3236
@@E215	001	0027	1742	1744
@@E216	001	0028	1744	1746 3949
@@E217	001	0029	1746	1748 3819
@@E220	001	002A	1748	1750
@@E221	001	002B	1750	1752
@@E222	001	002C	1752	1754

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E223	001	002D	1754	1756
@@E225	001	002E	1756	1758
@@E226	001	002F	1758	1760
@@E227	001	0030	1760	1762
@@E228	001	0031	1762	1764
@@E229	001	0032	1764	1766
@@E230	001	0033	1766	1768
@@E232	001	0034	1768	1770
@@E234	001	0035	1770	1772
@@E237	001	0036	1772	1774
@@E240	001	0037	1774	1776
@@E241	001	0038	1776	1778
@@E242	001	0039	1778	1780
@@E248	001	003A	1780	1782
@@E249	001	003B	1782	1784
@@E250	001	003C	1784	1786
@@E251	001	003D	1786	1788
@@E252	001	003E	1788	1790
@@E253	001	003F	1790	1792
@@E254	001	0040	1792	1794
@@E255	001	0041	1794	1796
@@E256	001	0042	1796	1798
@@E300	001	0043	1798	1800 4079
@@E301	001	0044	1800	1802
@@E302	001	0045	1802	1804
@@E303	001	0046	1804	1806
@@E304	001	0047	1806	1808
@@E305	001	0048	1808	1810
@@E308	001	0049	1810	1812
@@E310	001	004A	1812	1814
@@E315	001	004B	1814	1816
@@E316	001	004C	1816	1818
@@E320	001	004D	1818	1820
@@E325	001	004E	1820	1822
@@E330	001	004F	1822	1824
@@E335	001	0050	1824	1826
@@E338	001	0051	1826	1828
@@E340	001	0052	1828	1830
@@E350	001	0053	1830	1832
@@E351	001	0054	1832	1834 3831
@@E352	001	0055	1834	1836
@@E360	001	0056	1836	1838
@@E361	001	0057	1838	1840
@@E362	001	0058	1840	1842
@@E371	001	0059	1842	1844
@@E380	001	005A	1844	1846
@@E390	001	005B	1846	1848
@@E400	001	005C	1848	1850
@@E410	001	005D	1850	1852
@@E415	001	005E	1852	1854
@@E417	001	005F	1854	1856
@@E420	001	0060	1856	1858
@@E430	001	0061	1858	1860
@@E432	001	0062	1860	1862
@@E433	001	0063	1862	1864
@@E450	001	0064	1864	1866

## CROSS REFERENCE

SYMBOL   LEN   VALUE   DEFN   REFERENCES   VER 15, MOD 00   19/12/23   PAGE   69

@@E451	001	0065	1866	1868	
@@E460	001	0066	1868	1870	
@@E461	001	0067	1870	1872	
@@E464	001	0068	1872	1874	
@@E465	001	0069	1874	1876	
@@E466	001	006A	1876	1878	
@@E467	001	006B	1878	1880	
@@E469	001	006C	1880	1882	
@@E470	001	006D	1882	1884	
@@E471	001	006E	1884	1886	
@@E473	001	006F	1886	1888	
@@E474	001	0070	1888	1890	
@@E475	001	0071	1890	1892	
@@E476	001	0072	1892	1894	
@@E477	001	0073	1894	1896	
@@E478	001	0074	1896	1898	
@@E479	001	0075	1898	1900	
@@E480	001	0076	1900	1902	
@@E481	001	0077	1902	1904	
@@E482	001	0078	1904	1906	
@@E483	001	0079	1906	1908	
@@E484	001	007A	1908	1910	
@@E485	001	007B	1910	1912	
@@E486	001	007C	1912	1914	
@@E487	001	007D	1914	1916	
@@E488	001	007E	1916	1918	
@@E489	001	007F	1918	1920	
@@E490	001	0080	1920	1922	
@@E491	001	0081	1922	1924	
@@E492	001	0082	1924	1926	
@@E493	001	0083	1926	1928	
@@E494	001	0084	1928	1930	
@@E495	001	0085	1930	1932	
@@E496	001	0086	1932	1934	
@@E497	001	0087	1934	1936	
@@E498	001	0088	1936	1938	
@@E500	001	0089	1938	1940	
@@E501	001	008A	1940	1942	
@@E530	001	008B	1942	1944	
@@E531	001	008C	1944	1946	
@@E535	001	008D	1946	1948	
@@E540	001	008E	1948	1950	
@@E541	001	008F	1950	1952	
@@E542	001	0090	1952	1954	
@@E543	001	0091	1954	1956	
@@E544	001	0092	1956	1958	
@@E545	001	0093	1958	1960	
@@E546	001	0094	1960	1962	
@@E547	001	0095	1962	1964	
@@E548	001	FFFF	2168		
@@E549	001	0096	1964	1966	
@@E550	001	0097	1966	1968	
@@E551	001	0098	1968	1970	
@@E552	001	0099	1970	1972	
@@E553	001	009A	1972	1974	
@@E554	001	009B	1974	1976	

## CROSS REFERENCE

SYMBOL   LEN   VALUE   DEFN   REFERENCES   VER 15, MOD 00   19/12/23   PAGE   70

@@E555	001	009C	1976	1978	
@@E556	001	009D	1978	1980	
@@E558	001	009E	1980	1982	
@@E570	001	009F	1982	1984	
@@E571	001	00A0	1984	1986	
@@E572	001	00A1	1986	1988	
@@E573	001	00A2	1988	1990	
@@E574	001	00A3	1990	1992	
@@E575	001	FFFF	2170		
@@E578	001	00A4	1992	1994	
@@E579	001	FFFF	2172		
@@E580	001	FFFF	2174		
@@E585	001	00A5	1994	1996	
@@E595	001	FFFF	2176		
@@E597	001	FFFF	2178		
@@E598	001	FFFF	2180		
@@E600	001	00A6	1996	1998	
@@E601	001	00A7	1998	2000	
@@E602	001	00A8	2000	2002	
@@E603	001	00A9	2002	2004	
@@E604	001	00AA	2004	2006	
@@E606	001	00AB	2006	2008	
@@E607	001	00AC	2008	2010	
@@E608	001	00AD	2010	2012	
@@E609	001	00AE	2012	2014	
@@E610	001	00AF	2014	2016	
@@E611	001	00B0	2016	2018	
@@E612	001	00B1	2018	2020	
@@E613	001	00B2	2020	2022	
@@E614	001	00B3	2022	2024	
@@E700	001	00B4	2024	2026	
@@E701	001	00B5	2026	2028	
@@E710	001	00B6	2028	2030	
@@E712	001	00B7	2030	2032	
@@E713	001	00B8	2032	2034	2550
@@E714	001	00B9	2034	2036	
@@E715	001	00BA	2036	2038	
@@E716	001	00BB	2038	2040	
@@E717	001	00BC	2040	2042	
@@E718	001	00BD	2042	2044	
@@E720	001	00BE	2044	2046	
@@E721	001	00BF	2046	2048	
@@E723	001	00C0	2048	2050	
@@E724	001	00C1	2050	2052	
@@E725	001	00C2	2052	2054	
@@E726	001	00C3	2054	2056	
@@E727	001	00C4	2056	2058	
@@E728	001	00C5	2058	2060	
@@E729	001	00C6	2060	2062	
@@E730	001	00C7	2062	2064	
@@E732	001	00C8	2064	2066	
@@E752	001	00C9	2066	2068	
@@E753	001	00CA	2068	2070	
@@E754	001	00CB	2070	2072	
@@E755	001	00CC	2072	2074	
@@E756	001	00CD	2074	2076	



## CROSS REFERENCE

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
@@E757	001	00CE	2076	2078
@@E758	001	00CF	2078	2080
@@E759	001	00D0	2080	2082
@@E760	001	00D1	2082	2084
@@E761	001	00D2	2084	2086
@@E762	001	00D3	2086	2088
@@E763	001	00D4	2088	2090
@@E764	001	00D5	2090	2092
@@E765	001	00D6	2092	2094
@@E766	001	00D7	2094	2096
@@E767	001	00D8	2096	2098
@@E768	001	00D9	2098	2100
@@E769	001	00DA	2100	2102
@@E770	001	00DB	2102	2104
@@E771	001	00DC	2104	2106
@@E772	001	00DD	2106	2108
@@E773	001	00DE	2108	2110
@@E774	001	00DF	2110	2112
@@E775	001	00E0	2112	2114
@@E776	001	00E1	2114	2116
@@E777	001	00E2	2116	2118
@@E778	001	00E3	2118	2120
@@E779	001	00E4	2120	2122
@@E780	001	00E5	2122	2124
@@E781	001	00E6	2124	2126
@@E782	001	00E7	2126	2128
@@E783	001	00E8	2128	2130
@@E784	001	00E9	2130	2132
@@E785	001	00EA	2132	2134
@@E786	001	00EB	2134	2136
@@E790	001	00EC	2136	2138
@@E791	001	00ED	2138	2140
@@E792	001	00EE	2140	2142
@@E793	001	00EF	2142	2144
@@E794	001	00F0	2144	2146
@@E795	001	00F1	2146	2148
@@E796	001	00F2	2148	2150
@@E797	001	00F3	2150	2152
@@E798	001	00F4	2152	2154
@@E800	001	FFFF	2182	
@@E801	001	FFFF	2184	
@@E802	001	FFFF	2186	
@@E803	001	FFFF	2188	
@@E804	001	FFFF	2190	
@@E900	001	00F5	2154	2156
@@E901	001	00F6	2156	2158
@@E902	001	00F7	2158	2160
@@E903	001	00F8	2160	2162
@@E905	001	00F9	2162	2164
@@E906	001	00FA	2164	2166
@@E910	001	00FB	2166	
@@M048	001	0E0B	2462	3886
@@M049	001	0E0F	2466	3881
@@M300	001	0E13	2470	3891
@@T048	001	0E17	2474	2464
@@T049	001	0E2D	2477	2468



CROSS REFERENCE															
SYMBOL	LEN	VALUE	DEFN	REFERENCES	VER 15, MOD 00 19/12/23 PAGE 72										
@T300	001	0E45	2480	2472											
@ARR	001	0008	0016	2629*	2943*	2944	2945*	2946	3130	3390	3559	3792	4078		
@ASIGN	001	007C	0071												
@ASTER	001	005C	0069	2562	2565										
@BCRDL	001	0050	0088												
@BE	001	0081	0043												
@BF	001	0090	0052												
@BH	001	0084	0041												
@BL	001	0082	0042	3227											
@BLANK	001	0040	0065	3134	3136	3905	3925	3942							
@BM	001	0082	0054												
@BNE	001	0001	0046												
@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	2506*	2507	2507*	2533	2534*	2536	2536*	2537	2539	2543*	2561	2571
				2589	2603	2609	2616	2618	2640*	2641	2641*	2642	2644	2645	2646
				2696	2699	2710	2722	2726*	2733	2733*	2737	2737*	2749*	2750	2751
				2752	2753	2754	2760	2760*	2764	2766	2931	2940	2942*	2943	2944
				2945	2946	2948	2949	2949	2950	2951	2951	2953	2953	2954	2955
				2955	2959	2959	2960	2964	2964	2965	2967	2967	2968	2968	2969
				2969	2970	2970	2971	2971	2977	2978	2979	2979	2980	2985	2985
				2986	2986	2988	2988	2994*	3127	3128*	3129	3130	3131	3146	3147
				3155	3158	3164	3170	3176	3180	3182	3212	3225	3227	3231	3233
				3233	3234	3234	3235	3243*	3276	3385	3387	3388*	3389	3390	3396
				3403	3404	3410	3410	3411	3421	3423	3427	3428	3428	3431*	3555
				3556	3557*	3558	3559	3561	3561	3562	3562	3563	3563	3568	3569
				3574	3576	3576	3577	3581	3582	3584	3585	3589	3589	3590	3592
				3592	3593	3593	3594	3594	3595	3601	3604*	3614	3788	3789	3790*
				3791	3792	3803	3805	3805	3807	3807	3808	3818	3820	3821	3840*
				3871	3922*	3933	3933*	3939	3939*	3948	3960	4074	4075	4076*	4077
				4078	4082	4084	4086	4100	4100	4101	4118	4118	4122	4125	4129*
				4135	4136	4143	4146	4148	4148	4149	4150	4153			
@BT	001	0010	0051												
@BZ	001	0081	0055												
@B1	001	0001	0063	2534	2537	2540	2562	2607	2644	2645	2651	2659	2667	2693	2696*
				2722	2746	2752	2753*	2803	3134	3136	3144	3148	3155	3170	3188
				3203	3778	3800	3829	3893	3906*	3921	3922	3924	3928	3931	3940
				3941											
@CADDR	001	0002													

CROSS REFERENCE																			
SYMBOL	LEN	VALUE	DEFN	REFERENCES												VER 15, MOD 00	19/12/23	PAGE	73
@CPLUS	001	004E	0079																
@DADDR	001	0002	0140	2534	2536	2537	2579	2606	2608	2616	2656	2665	2667	2690	2703				
				2764	2792	2948	3013	3163	3169	3175	3181	3190	3210	3211	3212				
				3215	3418	3423	3428	3574	3576	3577	3603	3628	3804	3804	3806				
				3933	3939	3960	3960	4107	4264										
@DBFR1	001	0004	0129																
@DBFR2	001	0005	0130	2496	2580*	2648*	2803	3403	4261										
@DCALK	001	0001	0081																
@DCBCY	001	0009	0115																
@DCBT1	001	0050	0117																
@DCNT	001	0003	0128	2787															
@DCST1	001	0040	0116																
@DCTRL	001	0000	0125																
@DCYL	001	0001	0126	2953*															
@DD2	001	0003	0030																
@DGET	001	0001	0134	2647	2781	2796	2810	2818	2827	3253	3440	3627							
@DOLAR	001	005B	0068																
@DOP2	001	0004	0028	2646*	2754	2944*	2948*	2949*	3011	3012									
@DPLNG	001	0006	0132	2496	2950	3009													
@DPOS	001	0000	0133																
@DPUT	001	0002	0135																
@DSAD	001	0002	0127	2579*	2606*	2608*	2665*	2667*	2703	2806	2951*	2955*	2959	2960*	2964*				
				2967*	2971	2977*	2985*	2988*	3010	3423*	3428*								
@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	3818															
@EOF	001	001C	0077																
@EOFTC	001	0075	0162																
@EOS	001	001E	0076	3945															

## CROSS REFERENCE

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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	
@ILIAR	001	00C0	0020	
@LINSZ	001	00F4	0084	0646
@MAPEN	001	0005	0089	
@MINCR	001	2000	0083	
@MINUS	001	0060	0080	
@NOP	001	0080	0040	2720 2768 2990 3395 3427 3581 3843
@NUMBR	001	007B	0070	
@OPD2	001	0004	0029	
@OP1	001	0003	0027	2495* 2533* 2645* 2652* 2753 2940* 2946* 3242 3244 3246 3387* 3389* 3390* 3555* 3558* 3559* 3789* 3791* 3792* 4075* 4077* 4078*
@OP2	001	0005	0031	2653*
@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	2470 3970 3976
@PRINT	001	0040	0152	0154 2462 2466
@PSR	001	0004	0015	
@PWAIT	001	00FF	0158	
@P1IAR	001	0020	0018	
@P2IAR	001	0040	0019	
@Q	001	0001	0024	2662* 2725* 2991 3139 3228 3230 3396* 3427* 3568* 3581* 3832* 4087 4152
@REGL	001	0002	0012	
@RETRN	001	0080	0153	0154
@RLDWN	001	004F	0159	
@RTRNC	001	0080	0161	
@SBLN	001	0005	0170	
@SBLNL	001	0002	0184	
@SCTSZ	001	0100	0100	
@SDFLN	001	0007	0090	
@SDF0	001	0000	0166	
@SDF1	001	0001	0167	
@SDF2	001	0002	0168	
@SDF3	001	0003	0169	
@SECCY	001	0030	0086	
@SIST	001	0001	0181	
@SLASH	001	0061	0067	
@SLAST	001	0002	0183	
@SMIDL	001	0003	0182	
@SNULL	001	0080	0173	
@SONLY	001	0000	0180	
@STEXT	001	0007	0172	
@STYPE	001	0006	0171	
@TBCNT	001	0000	0160	
@TBLEF	001	0010	0155	0157
@TBLIX	001	0011	0157	
@UCB	001	0087	0039	2605 2662 2702 2725 3229 3396 3568 3832
@UPARW	001	005A	0078	
@VADDR	001	0002	0141	

CROSS REFERENCE																				
SYMBOL	LEN	VALUE	DEFN	REFERENCES												VER 15, MOD 00	19/12/23	PAGE	75	
@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	2518	2536	2539	2792	3800	3802	3806	3922	3933	3939	3948						
@VQ	001	0001	0025	3893*	3908															
@WSFIT	001	0500	0101																	
@WSTBL	001	0503	0102																	
@XR	001	0002	0014	2494*	2495	2498	2505*	2518	2519	2520	2539	2545*	2546	2549	2568					
				2575	2577	2578*	2579	2580	2599*	2601	2606	2607	2617	2618	2685					
				2699	2728*	2731	2759	2759*	2762	3131	3132*	3133	3148	3161	3163					
				3167	3169	3173	3175	3179	3181	3188	3190	3203	3205	3210	3211					
				3212	3215	3236	3241*	3277	3389	3403*	3404	3405	3405*	3407	3409					
				3409*	3417	3418	3423	3432*	3558	3569*	3574	3577	3582	3583	3583*					
				3586	3588	3588*	3599	3601*	3602	3603	3605*	3612	3791	3800*	3802					
				3804	3806	3806*	3841*	3921*	3924	3924*	3925	3928	3931	3934	3937					
				3940	3940*	3941	3941*	3942	3945	4077	4081*	4084	4085	4085*	4092					
				4098	4099	4099*	4107	4117	4117	4121	4121*	4124*	4125	4130*	4142					
				4143	4144	4145	4146	4150	4151											
@ZERO	001	0000	0062	2517	2539	2626	2642	2654	2656	2686	2727	2731	2791	2960	3146					
				3147	3148	3161	3167	3173	3179	3188	3203	3421	3584	3802	3829					
				3925	3934	3937	3942	3945	3948	4144										
DL2C01	002	119D	3003	2943	2945	2953														
DL2C05	002	119F	3004	2949																
DL2C48	001	1199	3001	2951	2955															
DL2DPL	006	11A5	3009	2950*																
DL2END	001	11A8	3014																	
DL2E01	001	0001	2933	2951	2953	2955	2959	2971	2979											
DL2E02	001	0002	2934	2964	2967	2985														
DL2E18	001	0018	2935	2965																
DL2E60	001	0060	2936	2980																
DL2E7C	001	007C	2938	2977																
DL2ICS	001	110F	2939	2583	2612	2706	3213	3398	3424	3578										
DL2K18	002	119B	3002	2968																
DL2K60	002	1196	2999	2986																
DL2K80	002	1198	3000	2967	2985															
DL2LST	001	11A0	3008	2951*	2953*	2955*	2959	2960*	2964*	2967*	2971	2977*	2985*	2988*	2993					
				3010																
DL2PHY	001	11A2	3010	2616	2710															
DL2RAD	002	11A7	3013	2703*	2964</															

## CROSS REFERENCE

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DL2910 004 1191 2995 2946\*

I\$ADJX 001 0D56 1453

I\$ADST 001 0C9D 1408

I\$BASE 001 0C60 1410

I\$BRCN 001 117B 1462

I\$BSET 001 119D 1461

I\$B1SW 001 0040 1518

I\$B2SW 001 0020 1520

I\$CADR 001 144C 1499

I\$CALL 001 12B1 1493

I\$CBM1 001 0D43 1429

I\$CBN1 001 0D3E 1425

I\$CBN2 001 0D3F 1426

I\$CBN3 001 0D40 1427

I\$CBN4 001 0D41 1428

I\$CFBS 001 0AE3 1476

I\$CLFA 001 0D4A 1435

I\$CLVA 001 0D49 1434

I\$CL1C 001 0D46 1432

I\$CL1F 001 0D44 1430

I\$CL2C 001 0D47 1433

I\$CL2F 001 0D45 1431

I\$CPG1 001 1600 1390

I\$CPUF 001 0A27 1472

I\$CSCT 001 0D5A 1448

I\$CSSW 001 0010 1522

I\$CSXA 001 2000 1389

I\$CUPF 001 0A85 1474

I\$CVAD 001 1358 1487

I\$DATA 001 0D53 1416

I\$DAT1 001 0D55 1417

I\$DMSW 001 0BC1 1470

I\$ECSW 001 0004 1526

I\$ERRC 001 0CBC 1415

I\$FACT 001 0DD1 1455

I\$FADD 001 075D 1478

I\$FATE 001 0DE6 1456

I\$FATP 001 0DE8 1457

I\$FDVD 001 0919 1483

I\$FMPY 001 082A 1481

I\$FSUB 001 0751 1479

I\$FWRK 001 0607 1399

I\$IMC1 001 0DCE 1446

I\$IMLN 001 0DC6 1442

I\$IMPT 001 0DCC 1445

I\$INDR 001 0DC5 1441

I\$INIT 001 0607 1398

I\$INTR 001 0C5C 1402

I\$IRSW 001 0CDE 1422

I\$I700 001 0E24 1484

I\$LBFR 001 12B6 1494

I\$LDBR 001 1329 1491

I\$LDXR 001 1330 1492

I\$LOCK 001 1354 1489

I\$MDFY 001 1349 1488

I\$MOD4 001 130B 1485

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I\$NCPG	001	000A	1510	
I\$NDSW	001	0002	1528	
I\$NISW	001	0080	1516	
I\$NPAG	001	0C68	1403	
I\$PARM	001	0D57	1418	2573
I\$PGDS	001	144A	1497	
I\$PGNO	001	1449	1496	
I\$PGTB	001	14CA	1500	
I\$PLRT	001	15E2	1501	
I\$PSTK	001	15CA	1502	
I\$PUB1	001	0DC8	1443	
I\$PUB2	001	0DCA	1444	
I\$RESW	001	0CE9	1423	
I\$RNMK	001	0001	1438	
I\$RNSW	001	0D5C	1437	
I\$RTRN	001	12D3	1495	
I\$SDCT	001	0D59	1450	
I\$SDPT	001	0DD0	1447	
I\$SFCT	001	0D5A	1451	
I\$SFFO	001	0D5D	1459	
I\$SICT	001	0D5B	1452	
I\$SLLC	001	0BA1	1466	
I\$SLNG	001	0BA2	1465	
I\$SNSW	001	0001	1530	
I\$SSCT	001	0D58	1449	
I\$STAK	001	0D4E	1411	
I\$STCK	001	0B50	1464	
I\$STHA	001	0D51	1421	
I\$STKB	001	0639	1400	
I\$STKI	001	0D4F	1412	
I\$STSW	001	0008	1524	
I\$TFSW	001	0D28	1424	
I\$ULNG	001	0C3A	1469	
I\$UNLK	001	1350	1490	
I\$USTK	001	0BB0	1468	
I\$VADR	001	144A	1498	
I\$WRK1	001	0D59	1419	2506 2640 2726 2749
I\$WRK2	001	0D5B	1420	
I\$XAD1	001	0C89	1407	
I\$XAD2	001	0C82	1406	
I\$XAD3	001	0C7B	1405	
I\$XAD4	001	0C74	1404	
I\$XERR	001	0CAB	1409	
I\$XIAR	001	0D4C	1414	
I\$XPAG	001	0C61	1413	
SFD1P2	001	00C0	2824	2733
SFFARR	002	10CA	2790	2493* 2629
SFFCTR	001	10D1	2806	2540* 2644* 2651* 2659 2693 2752
SFFCT4	001	10D4	2805	
SFFCT8	001	10D3	2804	2736* 2746*
SFFDPN	001	10C1	2780	2665* 2667* 2672 2703 2787 4261
SFFDPU	001	10CF	2795	2579* 2580* 2584 2606* 2608* 2613 2803 2806
SFFIAR	002	10C8	2789	2630
SFFIND	004	0E07	2456	
SFFIOR	001	10D5	2809	2503
SFFNDA	002	1099	2756	2648

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SFFND2	001	10E1	2826	2647* 2756
SFFNUL	001	11A8	4263	2784 2830
SFFOVR	001	10DB	2817	2496
SFFPDA	001	15EA	4264	2707
SFFVOL	002	10CE	2792	2652 2653
SFFZER	002	10CC	2791	2607* 2608 2617 2690 2766
SFF001	001	10C4	2787	2540 2651 2746
SFF050	006	0E90	2493	2456
SFF100	004	0EB0	2505	2495*
SFF130	003	0EE1	2536	2541
SFF150	006	0EF0	2540	2538
SFF170	004	0EFA	2543	2533*
SFF200	003	0F12	2561	
SFF210	003	0F23	2568	
SFF220	003	0F29	2571	2563
SFF240	003	0F54	2589	2547 2566 2569 2574
SFF300	004	0F57	2599	
SFF310	004	0F64	2605	2602
SFF380	005	0F86	2617	
SFF410	004	0F8F	2626	2723 2757
SFF420	001	0F93	2627	2525 2551 2628
SFF460	004	0F93	2629	
SFF480	004	0F97	2630	
SFF520	004	0F9B	2640	2499
SFF540	006	0FC4	2651	2643 2660 2694
SFF560	004	0FD6	2654	2645* 2652* 2655 2753
SFF590	006	0FEC	2665	2646* 2649 2653* 2657 2666 2754
SFF595	001	0FF2	2668	2648*
SFF600	005	0FFE	2685	2769
SFF620	003	101C	2696	2663 2768
SFF630	004	1022	2699	2691
SFF634	006	102A	2703	
SFF670	005	1036	2710	
SFF700	003	103B	2720	2697 2725*
SFF720	004	1068	2736	2730 2732
SFF730	003	106F	2738	2734
SFF750	006	1072	2746	2720 2763 2767
SFF780	003	109E	2759	2747
SFF800	003	10A4	2762	2738
SFF815	004	10B9	2768	2662*
SFIAST	001	005C	3266	3144
SFIBSE	003	11E6	3273	3128 3129
SFICTR	001	12BA	3250	3146* 3155 3158 3164* 3170* 3176* 3182* 3225
SFIDPL	001	12BB	3253	3214
SFIEFE	001	00FE	3269	3164 3225
SFIEFF	001	00FF	3270	3252
SFIEND	001	12C3	3274	
SFIERR	001	0F93	2628	3206 3265
SFIETD	001	0006	3275	3231
SFIEXT	004	12B9	3246	3130*
SFIE02	001	0002	3267	3176
SFIE03	001	0003	3268	3158 3182
SFIE06	001	0006	3271	3161 3167 3173 3179
SFIE07	001	0007	3272	3163 3169 3175 3181
SFIFND	003	1294	3230	
SFINDF	001	11A8	3126	2522 4263



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SFINTR	001	12C2	3258	3231 3234 3259
SFIONE	001	12C3	3261	3233
SFIRDA	002	12BD	3254	3212*
SFISBR	004	12B5	3244	3127*
SFISTR	003	1291	3228	
SFISXR	004	12B1	3242	3131*
SFITTC	001	12C1	3257	3147* 3233* 3234
SFIVOL	004	11C9	3139	
SFI050	004	11C8	3138	3139
SFI100	004	11CF	3144	3137
SFI200	003	11E6	3155	3227 3235 3273
SFI210	003	11F5	3161	3180
SFI220	003	1206	3167	3156
SFI230	003	1217	3173	3157 3168
SFI240	003	1228	3179	3159 3174
SFI320	003	1239	3188	3145
SFI340	005	123F	3190	3149
SFI350	004	1244	3194	3140 3165 3171 3177 3183
SFI500	003	1259	3203	3135
SFI505	003	125F	3205	3189
SFI510	005	1266	3210	3204
SFI520	004	127F	3219	3199
SFI540	003	128A	3225	3196
SFI542	003	1290	3227	3228
SFI543	003	1293	3229	3230
SFI545	003	12A7	3236	3162 3229 3232
SFI550	004	12AE	3241	3198 3221 3226 3242
SFI560	004	12B2	3243	3244
SFI570	004	12B6	3245	3246
SGECNT	001	134D	3447	3404* 3410* 3421
SGEC01	002	134F	3448	3410
SGEDPL	001	1345	3439	3399 3403 3423* 3425 3428*
SGEEND	001	1350	3450	
SGERAD	002	134C	3446	3428
SGETDB	001	12C4	3386	3194 3385 3388
SGE050	003	12DA	3395	3396* 3427*
SGE055	003	12F2	3403	3395
SGE060	005	12FC	3407	3411
SGE070	004	1312	3417	3408
SGE080	004	1328	3423	
SGE900	004	1339	3431	3387* 3420 3422
SGE901	004	133D	3432	3389*
SGE902	004	1341	3433	3390*
SMAEND	001	0A00	4276	
SMALES	001	15CC	4228	4229
SMBFDA	001	15E6	4239	2537 3163* 3169* 3175* 3181* 3190* 3211* 3397 3804* 3829 3960* 4240
SMDAAD	001	10C8	4262	3603*
SMFNAM	001	15E2	4237	2518* 3586 4238
SMFUDA	001	15F6	4247	3215* 3418*
SMIND1	001	15CC	4229	2517* 2524 2686* 3150* 3195 3197 3220 3237* 3394* 3412* 3419 3600* 3613* 4235
SMNDBA	001	10C6	4261	4081 4124 4262
SMNDEA	001	15EC	4242	2690 2764* 4107* 4135* 4243 4264
SMNETD	001	15F0	4244	4245
SMNSCT	001	15EE	4243	2685* 4092 4142 4145 4244
SMNULT	001	15EA	4241	4082* 4098* 4242



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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SMPDB1	001	0600	4273	3443 4274
SMPEAD	001	15F4	4246	3417* 4247
SMPSWD	001	15DA	4236	2562 2565 3134 3144 3407 4237
SMUDBA	001	15E8	4240	2578 3602* 4241
SMUDB1	001	0600	4274	3256 3622 4275
SMUDB2	001	0800	4275	3623 4276 4277
SMUDEA	001	15E4	4238	2545 2599 3599* 3612* 4239
SMUPEN	001	15F2	4245	4246
SMVOID	001	15D2	4235	3136 3802 3948 4236
SM1FNE	001	0080	4230	2524 3220 3237 3600 3613
SM1NPD	001	0040	4231	
SM1PDS	001	0010	4233	3197 3419
SM1PNF	001	0008	4234	2524 3150 3195 3394 3412
SM1STN	001	0020	4232	
SRCACT	002	13F3	3621	3563* 3569 3593 3594* 3601
SRCBA1	002	13F5	3622	3561
SRCBA2	002	13F7	3623	3562
SRCBFR	002	1400	3630	3576*
SRCBF1	002	13EF	3619	3561* 3563 3592* 3594
SRCBF2	002	13F1	3620	3562* 3576 3592 3593*
SRCCNT	001	13F8	3624	3582* 3584 3589*
SRCC01	002	13FA	3625	3574 3589
SRCDAD	002	13FD	3628	3577*
SRCDPL	001	13FB	3626	3579
SRCGET	001	13FB	3627	
SRCHFN	001	1350	3554	3219
SRC SCT	001	13FE	3629	
SRC010	004	1354	3557	3556 3557
SRC020	004	136E	3565	3595
SRC030	004	1392	3582	3575
SRC035	005	139F	3586	3590
SRC040	004	13C3	3599	3587
SRC050	003	13CB	3601	3614
SRC055	003	13B1	3591	3568* 3581* 3585
SRC060	004	13E3	3612	3591
SRC900	004	13D7	3604	3555*
SRC910	004	13DB	3605	3558*
SRC920	004	13DF	3606	3559*
SURCHN	001	152A	4072	2688
SURCNT	003	154D	4087	4084* 4100* 4118*
SURC00	002	15C8	4158	4082 4086 4135
SURC01	001	15C9	4159	4100 4118 4125 4148
SURC48	002	15CB	4160	4146 4150
SURE01	001	0001	4073	4084 4100 4118
SURE02	001	0002	4157	4082 4125 4145 4146 4150
SURSWK	003	15C2	4152	4143* 4148*
SUR0A2	005	1569	4107	4093
SUR0A3	005	159E	4142	4111
SUR0G2	005	1596	4135	4088
SUR000	004	152E	4076	4074 4076
SUR010	003	154C	4086	4087 4101
SUR020	004	1571	4117	4122
SUR024	004	1582	4124	4119
SUR03C	003	15C1	4151	4152
SUR033	004	15BD	4150	4147
SUR034	004	15AF	4146	4149

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SYMBOL	LEN	VALUE	DEFN	REFERENCES
SUR900	004	158A	4129	4075* 4136 4153
SUR910	004	158E	4130	4077*
SUR920	004	1592	4131	4078*
SVOBSE	001	1413	3801	3788 3790
SVOBUF	001	0800	4277	
SVOCT1	001	145A	3854	3807* 3855
SVOCT2	001	145B	3858	3805* 3818 3859
SVODSK	008	151D	3975	2519*
SVOEND	001	00FF	3779	
SVOERR	001	0F93	3265	3843
SVOINP	001	0100	3778	
SVOIOF	008	1529	3981	2520*
SVOLID	001	1401	3787	3138
SVOLN1	001	0001	3773	3805 3807
SVOMES	001	1522	3979	3978
SVOMMS	001	1516	3973	3972
SVOONE	001	145C	3861	3805 3807
SVOPPL	001	151E	3976	3888
SVOPPM	001	1512	3970	3883
SVO001	001	00F1	3775	3928
SVO002	001	00F2	3776	3931
SVO100	005	1413	3802	3808
SVO200	003	1424	3806	3803
SVO260	004	143B	3829	3962
SVO270	004	1446	3832	3820 3871 3950
SVO274	004	144A	3840	3789* 3830
SVO276	004	144E	3841	3791*
SVO280	004	1452	3843	3832*
SVO290	004	1456	3844	3792*
SVO300	004	145D	3869	3821
SVO310	004	1461	3870	
SVO315	003	1465	3871	
SVO320	001	1468	3879	3932 3938 3946
SVO330	001	1492	3903	
SVO333	004	1492	3905	
SVO335	004	149C	3908	3893*
SVO350	004	14A4	3910	3911
SVO360	003	14BA	3924	3926
SVO400	003	14D4	3934	3929
SVO440	003	14E4	3940	3935
SVO445	003	14E7	3941	3943
SVO450	005	14F8	3948	

TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0

OL105 I THE CODE LENGTH OF #SFFI IS 5580 DECIMAL.