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CLEAR STORAGE 1      ,008015,022026,030037,044,049,053053N000000N00001026      1
CLEAR STORAGE 2      L068116,105106,110117B101/I9I#071029C029056B026/B001/0991,001/001117I0?  2
BOOTSTRAP            ,008015,022029,036040,047054,061068,072/061039      ,0010011040      3
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FORTRAN COMPILER -- VARIABLES PHASE 4 -- 16 PAGE 1

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
101			JOB		FORTRAN COMPILER -- VARIABLES PHASE 4 -- 16						
102			CTL		6611						
103			*								
104			*		THE COMPILER FIRST SCANS INPUT-OUTPUT LISTS AND THE LEFT						
105			*		SIDE OF EQUAL SIGNS FOR SIMPLE VARIABLES. EACH UNIQUE						
106			*		VARIABLE IS PLACED IN A TABLE WITH ITS OBJECT-TIME ADDRESS.						
107			*		IN THE SECOND SCAN OF THIS PHASE, ALL VARIABLES ARE MATCHED						
108			*		AGAINST THE TABLE. WHEN AN ENTRY IS FOUND, THE OBJECT-TIME						
109			*		ADDRESS IS SUBSTITUTED IN THE STATEMENT FOR THE VARIABLE						
110			*		NAME. VARIABLE NAMES NOT PRESENT IN THE TABLE ARE UNDEFINED.						
111			*								
112			*		ON ENTRY, 83 IS TOPCOR-2, X1 IS THE PREFIX OF THE FIRST						
113			*		(TOPMOST) STATEMENT, X2 IS X1&1, TOPCD9 (840) IS TOP OF						
114			*		CODE & X00 - 1, DIFF (845) IS TOPCOR-1 - TOPCD9, AND						
115			*		BNDRY (848) IS TOPCD9 + 0.3 * DIFF						
116			*								
117			*		ON EXIT, TOPCOR IS THE TOP OF THE SCALAR SYMBOLS TABLE,						
118			*		83 IS THE BOTTOM, 86 IS THE CODE SIZE, AND X1 IS THE TOP OF						
119			*		THE TRANSFORMED CODE						
120			*								
121			*		EACH ELEMENT OF THE SCALAR SYMBOLS TABLE CONSISTS OF THE						
122			*		THREE-CHARACTER RUN-TIME ADDRESS, WITH A WORD MARK UNDER						
123			*		THE FIRST CHARACTER, A GROUP MARK, WITH A WORD MARK UNDER						
124			*		IT IF THE VARIABLE IS NOT REFERENCED, AND THE VARIABLE, WITH						
125			*		CHARACTERS REVERSED.						
126			*								
127			X1	EQU	89			0089			
128			X2	EQU	94			0094			
129			X3	EQU	99			0099			
130			*								
131			*		STUFF IN THE RESIDENT AREA						
132			*								
133			PHASID	EQU	110	PHASE ID, FOR SNAPSHOT DUMPS		0110			
134			GLOBER	EQU	184	GLOBAL ERROR FLAG -- WM MEANS ERROR		0184			
135			SNAPSH	EQU	333	CORE DUMP SNAPSHOT		0333			
136			IMOD	EQU	690	INTEGER MODULUS -- NUMBER OF DIGITS		0690			
137			MANTIS	EQU	692	FLOATING POINT MANTISSA DIGITS		0692			
138			CLEARL	EQU	707	CS AT START OF OVERLAY LOADER		0707			
139			CDOVLY	EQU	769	1 IF RUNNING FROM CARDS, N IF FROM TAPE		0769			
140			TOPCD9	EQU	840	TOP OF CODE & X00 - 1 IS HASH TABLE BASE		0840			
141			DIFF	EQU	845	DIFF = TOPCOR-1 - TOPCD9 IS 10*(SIZE OF HASH)		0845			
142			BNDRY	EQU	848	TOP OF HASH TABLE		0848			
143			CODSIZ	EQU	853	CODE SIZE, 84-86, IN DECIMAL		0853			
144			TOPCOD	EQU	856	TOP OF CODE & 1 ON ENTRY		0856			
145			*								
146			ORG		857				0857		
147			LOADDD	EQU	*&1	LOAD ADDRESS		0857			

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
148		857	BEGINN	MCW	TOPCD9,GETTOP&3	7		0857	M 840 /89		4
149		864		MZ	X1TAG,GETTOP&2 X1 ZONE TAG	7		0864	Y K82 /88		4
150		871		SW	GM	4		0871	, M93		4
151		875		CW	FLAG	4		0875	) L10		4
152		879	LOOP1	BCE	BOTTOM,0&X1, BOTTOM (END) OF THE CODE?	8		0879	B !57 0 0		4
153		887		MCW	0&X1,SEQCOD	7		0887	M 0 0 K86		4
154		894		LCA	0&X1,PREFIX	7		0894	L 0 0 K96		5
155		901		SAR	X1 X1 AND X3 ARE NOW ONE BELOW THE	4		0901	Q 089		5
156		905		SBR	X3 GM THAT SEPARATES PREFIX FROM BODY	4		0905	H 099		5
157		909		LCA	PREFIX,0&X2 MOVE UP PREFIX	7		0909	L K96 0!0		5
158		916		SBR	X2	4		0916	H 094		5
159		920		BCE	SKIPIT,SEQCOD-3,/ END STATEMENT?	8		0920	B J63 K83 /		5
160		928		BCE	SKIPIT,SEQCOD-3,F FORMAT STATEMENT?	8		0928	B J63 K83 F		6
161		936		MCW	K01,W2	7		0936	M K98 L00		6
162		943	SWREAD	B	TESTRD	4		0943	B W71		6
163		947	FNDVAR	BCE	GOTVAR,0&X1, VARIABLE NAME FOLLOWS?	8		0947	B 981 0 0 _		6
164		955		CHAIN	5					MACRO	
165				BCE		1		0955	B	GEN	6
166				BCE		1		0956	B	GEN	6
167				BCE		1		0957	B	GEN	6
168				BCE		1		0958	B	GEN	7
169				BCE		1		0959	B	GEN	7
170		960		BCE	SKIPIT,0&X1,} BOTTOM OF STATEMENT (GM)?	8		0960	B J63 0 0 }	GMARK	7
171		968		CHAIN	5					MACRO	
172				BCE		1		0968	B	GEN	7
173				BCE		1		0969	B	GEN	7
174				BCE		1		0970	B	GEN	7
175				BCE		1		0971	B	GEN	7
176				BCE		1		0972	B	GEN	8
177		973		SBR	X1	4		0973	H 089		8
178		977		B	FNDVAR	4		0977	B 947		8
179				*							
180				*	X1 GOT TO WITHIN SIX OF A VARIABLE NAME. GET DOWN TO						
181				*	IT EXACTLY.						
182				*							
183		981	GOTVAR	BCE	GOTVR2,0&X1, _	8		0981	B 997 0 0 _		8
184		989		SBR	X1	4		0989	H 089		8
185		993		B	GOTVAR	4		0993	B 981		8
186		997	GOTVR2	SW	1&X1 ONE ABOVE THE UNDERScore	4		0997	, 0 1		8
187	1	001		CW		1		1001	)		9
188	1	002		CW		1		1002	)		9
189	1	003		CW		1		1003	)		9
190	1	004		SAR	X1	4		1004	Q 089		9
191	1	008		BCE	TOPASG,4&X1,} AT TOP (LHS) OF ASG STMT IF GM	8		1008	B  31 0 4 }	GMARK	9
192	1	016		LCA	0&X3,0&X2 MOVE UP	7		1016	L 0?0 0!0		9
193	1	023		SBR	X2	4		1023	H 094		9
194	1	027		CW	1&X2	4		1027	) 0!1		10
195	1	031	TOPASG	SBR	X3,2&X1 TOP OF VARIABLE	7		1031	H 099 0 2		10
196				*							
197				*	GET DOWN TO PUNCTUATION						

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
198					*						
199	1	038	PUNLP	MCW	0&X1,CH	7		1038	M 0 0 L01		10
200	1	045		SAR	X1	4		1045	Q 089		10
201	1	049		MCW	CH,*&8	7		1049	M L01  63		10
202	1	056		BCE	GOTPUN,PUNCT,0	8		1056	B  75 L09 0		10
203	1	064			CHAIN 7					MACRO	
204				BCE		1		1064	B	GEN	10
205				BCE		1		1065	B	GEN	11
206				BCE		1		1066	B	GEN	11
207				BCE		1		1067	B	GEN	11
208				BCE		1		1068	B	GEN	11
209				BCE		1		1069	B	GEN	11
210				BCE		1		1070	B	GEN	11
211	1	071		B	PUNLP	4		1071	B  38		11
212	1	075	GOTPUN	BCE	ASGRHS,CH,#	8		1075	B Y06 L01 #		12
213	1	083		BCE	BRACK,2&X1,]	8		1083	B  95 0 2 ]		12
214	1	091		B	NOBRACK	4		1091	B  99		12
215	1	095	BRACK	SW	FLAG	4		1095	, L10		12
216	1	099	NOBRACK	NOP	NOTRD	4		1099	N J93		12
217	1	103	AFBRACK	SW	2&X1	4		1103	, 0 2		12
218	1	107		ZA	0&X3,W4	7		1107	? 0?0 L14		12
219	1	114		A	4&X1,W4	7		1114	A 0 4 L14		13
220	1	121		MZ	KBNZ3,W4	7		1121	Y L18 L14		13
221	1	128		MZ		1		1128	Y		13
222	1	129		MZ		1		1129	Y		13
223	1	130		MCW		1		1130	M		13
224	1	131	POS	S	DIFF-1,W4	7		1131	S 844 L14		13
225	1	138		BWZ	POS,W4,B	8		1138	V /31 L14 B		13
226	1	146		A	DIFF-1,W4	7		1146	A 844 L14		14
227	1	153		MZ	KNZ,W4	7		1153	Y L19 L14		14
228	1	160		MCW	X2,SX1X2	7		1160	M 094 L27		14
229	1	167		MCW		1		1167	M		14
230	1	168		MCW	W4,X1	7		1168	M L14 089		14
231	1	175		A	X1	4		1175	A 089		14
232	1	179		A	W4,X1	7		1179	A L14 089		15
233	1	186	GETTOP	NOP	0-0	4		1186	N 000		15
234	1	190		SAR	X1	4		1190	Q 089		15
235	1	194		MCW	NOP,SWBIG	7		1194	M L28 Z73		15
236					*						
237					* NOT IN HASH TABLE YET IF BLANK, ELSE CHECK SYMBOL						
238					*						
239	1	201	SWUN	BCE	ENTER,0&X1,	8		1201	B T02 0 0		15
240	1	209		BCE	SWBIG,0&X1,<	8		1209	B Z73 0 0 <		15
241	1	217		MCW	0&X1,X2	7		1217	M 0 0 094		16
242	1	224		SAR	X1	4		1224	Q 089		16
243	1	228		C	0&X3,0&X2	7		1228	C 0?0 0!0		16
244	1	235		BU	SWUN	5		1235	B S01 /		16
245	1	240		C	0&X2,0&X3	7		1240	C 0!0 0?0		16
246	1	247		SAR	CWSW&3	4		1247	Q S59		16
247	1	251		BU	SWUN	5		1251	B S01 /		16

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
248			*								
249			*		FOUND SYMBOL IN SYMBOL TABLE						
250			*								
251	1	256	CWSW	MN	0		4	1256	D 000		17
252	1	260		SAR	GETADR&3		4	1260	Q S75		17
253	1	264	REX1X2	MCW	SX1X2,X2	MEMORIZE X1 AND X2	7	1264	M L27 094		17
254	1	271		MCW			1	1271	M		17
255	1	272	GETADR	LCA	0,0&X2	ADDR FROM SYM TAB REPLACES SYM IN CODE	7	1272	L 000 0!0		17
256	1	279		SBR	X2		4	1279	H 094		17
257	1	283		CW	1&X2		4	1283	) 0!1		17
258	1	287		SBR	X3,1&X1		7	1287	H 099 0!1		18
259	1	294		SBR	X1		4	1294	H 089		18
260	1	298	GETSW	B	GETPUN		4	1298	B X23		18
261			*								
262			*		ENTER VARIABLE IN HASH TABLE AND SYMBOL TABLE						
263			*								
264	1	302	ENTER	MCW	83,X2	BOTTOM OF SYMBOL TABLE TO X2	7	1302	M 083 094		18
265	1	309		MCW	83,0&X1	AND HASH TABLE	7	1309	M 083 0!0		18
266	1	316		MCW	0&X3,0&X2	SYMBOL TO SYMBOL TABLE	7	1316	M 0?0 0!0		18
267	1	323		SBR	X2		4	1323	H 094		19
268	1	327		BCE	TOOBIG,0&X2,<		8	1327	B K11 0!0 <		19
269	1	335		CHAIN	4				MACRO		
270				BCE			1	1335	B	GEN	19
271				BCE			1	1336	B	GEN	19
272				BCE			1	1337	B	GEN	19
273				BCE			1	1338	B	GEN	19
274			*								
275			*		CHECK TYPE OF VARIABLE						
276			*								
277	1	339		SW	0&X3	AT FIRST CHARACTER OF VARIABLE	4	1339	, 0?0		19
278	1	343		MCW	0&X3,*&8		7	1343	M 0?0 T57		20
279	1	350		BCE	INTVAR,IJKLMN,0		8	1350	B !31 L34 0		20
280	1	358		CHAIN	5				MACRO		
281				BCE			1	1358	B	GEN	20
282				BCE			1	1359	B	GEN	20
283				BCE			1	1360	B	GEN	20
284				BCE			1	1361	B	GEN	20
285				BCE			1	1362	B	GEN	20
286			*								
287			*		FLOATING-POINT VARIABLE						
288			*								
289	1	363		MZ	ABZONE,TYPTAG	FLOATING POINT TYPE TAG	7	1363	Y L35 L36		21
290	1	370		BW	SETBRK,FLAG		8	1370	V W49 L10 1		21
291	1	378		A	MANTIS,CODSIZ		7	1378	A 692 853		21
292	1	385	VAR	C	CODSIZ,KP16K	COMPARE CODSIZ TO 16K	7	1385	C 853 L41		21
293	1	392		BH	OKSIZE		5	1392	B U25 U		21
294	1	397		BW	OKSIZE,SIZFLG	PRINTED MESSAGE ALREADY?	8	1397	V U25 K48 1		22
295	1	405		CS	332		4	1405	/ 332		22
296	1	409		CS			1	1409	/		22
297	1	410		MCW	ERR2A,270		7	1410	M L77 270		22

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
298	1	417		W		1		1417	2		22
299	1	418		SW	GLOBER,SIZFLG DONT PRINT MESSAGE TWICE	7		1418	, 184 K48		22
300			*								
301			*		CONVERT CODSIZ TO MACHINE ADDRESS						
302			*								
303	1	425	OKSIZE	MCW	CODSIZ,W5	7		1425	M 853 L82		22
304	1	432		MCW	X3,SX2X3	7		1432	M 099 L90		23
305	1	439		MCW		1		1439	M		23
306	1	440		MN	W5,86	7		1440	D L82 086		23
307	1	447		MN		1		1447	D		23
308	1	448		MN		1		1448	D		23
309	1	449		SAR	*64 WHY NOT JUST W5-3 IN NEXT A FIELD?	4		1449	Q U56		23
310	1	453		MCW	0,X2 THOUSANDS TO X2	7		1453	M 000 094		23
311	1	460		MCW	KZ1 AND A ZERO	4		1460	M L91		24
312	1	464		A	X2 DOUBLE IT	4		1464	A 094		24
313	1	468		MZ	ZONES&1&X2,86	7		1468	Y KN1 086		24
314	1	475		CW		1		1475	)		24
315	1	476		SBR	*67 WHY NOT JUST 84 IN NEXT B FIELD?	4		1476	H U86		24
316	1	480		MZ	ZONES&X2,0	7		1480	Y KNO 000		24
317	1	487		MCW	86,W3	7		1487	M 086 L94		24
318	1	494	BRKSET	CW	0&X3	4		1494	) 0?0		25
319	1	498		CS	299	4		1498	/ 299		25
320	1	502		MN	201	4		1502	D 201		25
321	1	506		MN		1		1506	D		25
322	1	507		SAR	X2 WHY NOT JUST SBR X2,199?	4		1507	Q 094		25
323	1	511		SBR	X3,0&X3 WHY?	7		1511	H 099 0?0		25
324	1	518	MVLP	MCW	0&X3,CH2 MOVE	7		1518	M 0?0 L95		25
325	1	525		SAR	X3 VARIABLE TO	4		1525	Q 099		26
326	1	529		MCW	CH2,2&X2 201... WHILE	7		1529	M L95 0!2		26
327	1	536		SBR	X2 REVERSING TO	4		1536	H 094		26
328	1	540		BW	*5,1&X3 CORRECT ORDER	8		1540	V V52 0?1 1		26
329	1	548		B	MVLP	4		1548	B V18		26
330	1	552		MCW	SX2X3,X3	7		1552	M L90 099		26
331	1	559		MCW		1		1559	M		26
332	1	560		MCW	86,227	7		1560	M 086 227		27
333	1	567		MCS	CODSIZ,219	7		1567	Z 853 219		27
334	1	574		BW	NOVFL1,FLAG	8		1574	V V94 L10 1		27
335	1	582		W		1		1582	2		27
336	1	583		BCV	*5	5		1583	B V92 @		27
337	1	588		B	*3	4		1588	B V94		27
338	1	592		CC	1	2		1592	F 1		27
339	1	594	NOVFL1	SW	1&X2 WM BELOW VARIABLE IN SYMBOL TABLE	4		1594	, 0!1		28
340	1	598		LCA	GM AND GMM BELOW THAT	4		1598	L M93		28
341	1	602		SBR	GETADR&3 STORE SYMBOL TABLE ADDRESS	4		1602	H S75		28
342	1	606		LCA	W3 STORE VARIABLE ADDRESS IN SYM TAB	4		1606	L L94		28
343	1	610		SBR	83 STORE BOTTOM OF SYMBOL TABLE	4		1610	H 083		28
344	1	614		SBR	X2 AND IN X2	4		1614	H 094		28
345	1	618		BCE	*5,SEQCOD-3,D DO STATEMENT?	8		1618	B W30 K83 D		28
346	1	626		B	*5	4		1626	B W34		29
347	1	630		CW	4&X2 MARK IT REFERENCED	4		1630	) 0!4		29

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
348	1	634		MZ	TYPTAG,2&X2 MOVE TYPE TAG TO SYMBOL TABLE	7		1634	Y L36 0!2		29
349	1	641		CW	FLAG	4		1641	) L10		29
350	1	645		B	REX1X2	4		1645	B S64		29
351				*							
352	1	649	SETBRK	MCW	W2,W3	7		1649	M L00 L94		29
353	1	656		MCW	KBRACK	4		1656	M L96		29
354	1	660		A	KP1,W2	7		1660	A L97 L00		30
355	1	667		B	BRKSET	4		1667	B U94		30
356				*							
357				*	TEST FOR A READ STATEMENT (WHICH DEFINES VARIABLES)						
358				*							
359	1	671	TESTRD	BCE	RDSTMT,SEQCOD-3,1 READ TAPE STATEMENT?	8		1671	B X63 K83 1		30
360	1	679		BCE	RDSTMT,SEQCOD-3,5 READ INPUT TAPE STATEMENT?	8		1679	B X63 K83 5		30
361	1	687		BCE	RDSTMT,SEQCOD-3,L READ STATEMENT?	8		1687	B X63 K83 L		30
362	1	695		MCW	BRANCH,NOBRACK	7		1695	M L98 I99		31
363	1	702		MCW	NOP,SWPAR	7		1702	M L28 X31		31
364	1	709		MCW	NOP,ASGRHS	7		1709	M L28 Y06		31
365	1	716		MCW	NOP,SWDOLR	7		1716	M L28 X39		31
366				*							
367				*	GET X1 DOWN TO UNDERSCORE (VARIABLE) ), \$ (SUBSCRIPT) OR GM						
368				*							
369	1	723	GETPUN	BCE	GOTVR2,0&X1, VARIABLE?	8		1723	B 997 0 0 _		31
370	1	731	SWPAR	NOP	UNBRACK,0&X1,) NOP IF NOT DEFINITION	8		1731	N X95 0 0 )		32
371	1	739	SWDOLR	NOP	SUB,0&X1,\$ SUBSCRIPT NOP IF NOT DEFINITION	8		1739	N Z95 0 0 \$		32
372	1	747	GMTEST	BCE	SKIPIIT,0&X1,}	8		1747	B J63 0 0 }	GMARK	32
373	1	755		SBR	X1	4		1755	H 089		32
374	1	759		B	GETPUN	4		1759	B X23		32
375				*							
376				*	READ (INPUT) (TAPE) STATEMENT						
377				*							
378	1	763	RDSTMT	MCW	NOP,NOBRACK	7		1763	M L28 I99		32
379	1	770		MCW	BRANCH,SWPAR	7		1770	M L98 X31		33
380	1	777		MCW	MOVE,ASGRHS	7		1777	M L99 Y06		33
381	1	784		MCW	BRANCH,SWDOLR	7		1784	M L98 X39		33
382	1	791		B	GETPUN	4		1791	B X23		33
383				*							
384	1	795	UNBRACK	MCW	NOP,NOBRACK	7		1795	M L28 I99		33
385	1	802		B	GMTEST	4		1802	B X47		33
386	1	806	ASGRHS	NOP	BRANCH,SWPAR NOP IF NOT DEFINITION	7		1806	N L98 X31		34
387	1	813		MCW	BRANCH,NOBRACK	7		1813	M L98 I99		34
388	1	820		B	AFBRACK	4		1820	B /03		34
389				*							
390				*	UNDEFINED VARIABLE						
391				*							
392	1	824	UNDEF	CS	299	4		1824	/ 299		34
393	1	828		SW	GLOBER	4		1828	, 184		34
394	1	832		MCW	ERR10,230	7		1832	M M29 230		34
395	1	839		MN	231	4		1839	D 231		34
396	1	843		MN		1		1843	D		35
397	1	844		SAR	X1	4		1844	Q 089		35

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
398	1	848		SBR	X3,0&X3	7		1848	H 099 0?0		35
399				*							
400				*	MOVE THE VARIABLE TO THE PRINT LINE, REVERSING THE TEXT						
401				*	BACK TO THE CORRECT ORDER						
402				*							
403	1	855	VARLP	MCW	0&X3,CHVAR	7		1855	M 0?0 M30		35
404	1	862		SAR	X3	4		1862	Q 099		35
405	1	866		MCW	CHVAR,2&X1	7		1866	M M30 0 2		35
406	1	873		SBR	X1	4		1873	H 089		35
407	1	877		BW	VARLPX,1&X3	8		1877	V Y89 0?1 1		36
408	1	885		B	VARLP	4		1885	B Y55		36
409	1	889	VARLPX	MN	SEQCOD,255	7		1889	D K86 255		36
410	1	896		MN		1		1896	D		36
411	1	897		MN		1		1897	D		36
412	1	898		MCW	STMT @STATEMENT @	4		1898	M M40		36
413	1	902		W		1		1902	2		36
414	1	903		BCV	OVFL2	5		1903	B Z12 @		37
415	1	908		B	NOVFL2	4		1908	B Z14		37
416	1	912	OVFL2	CC	1	2		1912	F 1		37
417	1	914	NOVFL2	SBR	GETADR&3,KZ3	7		1914	H S75 K47		37
418	1	921		BM	TOPQR,231	8		1921	V Z40 231 K		37
419	1	929	ISOPQR	MZ	ABZONE,KZ3-1 SET X3 TAG	7		1929	Y L35 K46		37
420	1	936		B	REX1X2	4		1936	B S64		37
421				*							
422	1	940	TOPQR	SW	231	4		1940	, 231		38
423	1	944		MCW	231,*&8	7		1944	M 231 Z58		38
424	1	951		BCE	ISOPQR,OPQR,	8		1951	B Z29 M44		38
425	1	959		B		1		1959	B		38
426	1	960		B		1		1960	B		38
427	1	961		B		1		1961	B		38
428	1	962		MZ	X2TAG,KZ3-1 SET X2 TAG	7		1962	Y M45 K46		38
429	1	969		B	REX1X2	4		1969	B S64		39
430				*							
431				*	GOT TO BOTTOM OF HASH TABLE						
432				*							
433	1	973	SWBIG	NOP	TOOBIG BRANCH IF ALREADY BEEN AROUND	4		1973	N K11		39
434	1	977		MCW	BRANCH,SWBIG NOTE WE'VE BEEN AROUND	7		1977	M L98 Z73		39
435	1	984		MCW	BNDRY,X1 BACK TO TOP OF HASH TABLE	7		1984	M 848 089		39
436	1	991		B	SWUN GO LOOK SOME MORE	4		1991	B S01		39
437				*							
438				*	SUBSCRIPT						
439				*							
440	1	995	SUB	SBR	SWDOLR&3,SUB2	7		1995	H X42 !13		39
441	2	002		MCW	BRANCH,NOBRAK	7		2002	M L98  99		40
442	2	009		B	GMTTEST	4		2009	B X47		40
443	2	013	SUB2	SBR	SWDOLR&3,SUB	7		2013	H X42 Z95		40
444	2	020		MCW	NOP,NOBRAK	7		2020	M L28  99		40
445	2	027		B	GMTTEST	4		2027	B X47		40
446				*							
447				*	INTEGER VARIABLE						

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
448					*						
449	2	031	INTVAR	MZ	BZONE, TYPTAG SET INTEGER VARIABLE ADDRESS TAG	7		2031	Y M46 L36		40
450	2	038		BW	SETBRK, FLAG	8		2038	V W49 L10 1		41
451	2	046		A	IMOD, CODSIZ INCREASE CODSIZ BY INT VAR SIZE	7		2046	A 690 853		41
452	2	053		B	VAR	4		2053	B T85		41
453					*						
454					* HIT THE BOTTOM OF THE CODE. EITHER SET UP FOR PASS 2						
455					* OR QUIT.						
456					*						
457	2	057	BOTTOM	MCW	TOPCOD, X1	7		2057	M 856 089		41
458	2	064		CS	0&X2	4		2064	/ 0!0		41
459	2	068		CS		1		2068	/		41
460	2	069		SBR	CLEARL&3, GMWM	7		2069	H 710 M99		41
461	2	076	SWDONE	NOP	DONE	4		2076	N J47		42
462	2	080		SW	GM	4		2080	, M93		42
463	2	084		MCW	BRANCH, SWDONE EXIT NEXT TIME AROUND	7		2084	M L98 !76		42
464	2	091		MCW	CW, CWSW	7		2091	M M47 S56		42
465	2	098		MCW	NOP, SWREAD	7		2098	M L28 943		42
466	2	105		MCW	NOP, NOBRAK	7		2105	M L28 199		42
467	2	112		SBR	SWUN&3, UNDEF	7		2112	H S04 Y24		43
468	2	119		SBR	GETSW&3, FNDVAR	7		2119	H T01 947		43
469	2	126		CS	0&X2	4		2126	/ 0!0		43
470	2	130		SBR	X2, 1&X1	7		2130	H 094 0!1		43
471	2	137		SBR	TOPCOD	4		2137	H 856		43
472	2	141		CC	J	2		2141	F J		43
473	2	143		B	LOOP1 GO DO PASS 2	4		2143	B 879		43
474					*						
475					* DONE						
476					*						
477	2	147	DONE	BSS	SNAPSH, C	5		2147	B 333 C		44
478	2	152		MCW	VARBL5, PHASID	7		2152	M M56 110		44
479	2	159		B	CDOVLY LOAD NEXT PHASE WITHOUT CLEARING CORE	4		2159	B 769		44
480					*						
481					* STATEMENT HAS NO (MORE) VARIABLES -- SKIP IT						
482					*						
483	2	163	SKIPIT	LCA	0&X3, 0&X2	7		2163	L 0?0 0!0		44
484	2	170		SAR	X3	4		2170	Q 099		44
485	2	174		C	0&X2 DOWN TO	4		2174	C 0!0		44
486	2	178		SAR	X2 NEXT WM IN TARGET	4		2178	Q 094		44
487	2	182		MCW	X3, X1	7		2182	M 099 089		45
488	2	189		B	LOOP1	4		2189	B 879		45
489					*						
490	2	193	NOTRD	SBR	X1, 1&X1	7		2193	H 089 0!1		45
491	2	200		SBR	X3, 1&X3	7		2200	H 099 0?1		45
492	2	207		B	GETPUN	4		2207	B X23		45
493					*						
494					* PROGRAM IS TOO BIG						
495					*						
496	2	211	TOOBIG	CS	332	4		2211	/ 332		45
497	2	215		CS		1		2215	/		45



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
498	2	216		CC	1		2	2216	F 1		46
499	2	218		MCW	ERROR2,270		7	2218	M M92 270		46
500	2	225		W			1	2225	2		46
501	2	226		CC	1		2	2226	F 1		46
502	2	228		BCE	HALT,CDOVLY,1		8	2228	B K41 769 1		46
503	2	236		RWD	1		5	2236	U %U1 R		46
504	2	241	HALT	H	HALT		4	2241	. K41		46
505			*								
506			* DATA								
507			*								
508	2	247	KZ3	DCW	000		3	2247			47
509	2	248	SIZFLG	DC	#1 SET WHEN SIZE MESSAGE PRINTED		1	2248			47
510	2	250	ZONES	DCW	@ 9@		2	2250			47
511	2	281		DCW	@9Z9R9I99ZZZRZIZ9RZRRRIR9IZIRIII@		31	2281			47
512	2	282	X1TAG	DCW	@S@		1	2282			47
513	2	286	SEQCOD	DCW	#4 SEQUENCE NUMBER AND STATEMENT CODE		4	2286			48
514	2	296	PREFIX	DCW	#10 STATEMENT PREFIX		10	2296			48
515	2	298	K01	DCW	01		2	2298			48
516	2	300	W2	DCW	#2		2	2300			48
517	2	301	CH	DCW	#1		1	2301			48
518	2	309	PUNCT	DCW	@@}#*-&),@		8	2309			48
519	2	310	FLAG	DCW	#1		1	2310			48
520	2	314	W4	DCW	#4		4	2314			49
521	2	318	KBNZ3	DCW	#4 USED TO GET A BLANK AND THREE "NO ZONE"		4	2318			49
522	2	319	KNZ	DCW	#1 USED TO GET "NO ZONE"		1	2319			49
523	2	327	SX1X2	DCW	#8 SAVE X1 AND X2		8	2327			49
524	2	328	NOP	NOP			1	2328	N		49
525	2	334	IJKLMN	DCW	@IJKLMN@		6	2334			49
526	2	335	ABZONE	DCW	@A@ X3 TAG, FLOATING POINT TYPE TAG		1	2335			49
527	2	336	TYPTAG	DCW	#1 VARIABLE TYPE TAG		1	2336			50
528	2	341	KP16K	DCW	&16000		5	2341			50
529	2	377	ERR2A	DCW	@MESSAGE 2 - OBJECT PROGRAM TOO LARGE@		36	2377			51
530	2	382	W5	DCW	#5		5	2382			52
531	2	390	SX2X3	DCW	#8		8	2390			52
532	2	391	KZ1	DCW	0		1	2391			52
533	2	394	W3	DCW	#3		3	2394			52
534	2	395	CH2	DCW	#1		1	2395			52
535	2	396	KBRACK	DCW	@]@		1	2396			52
536	2	397	KP1	DCW	&1		1	2397			52
537	2	398	BRANCH	B			1	2398	B		53
538	2	399	MOVE	MCW			1	2399	M		53
539	2	429	ERR10	DCW	@ERROR 10 - UNDEFINED VARIABLE @		30	2429			53
540	2	430	CHVAR	DCW	#1 USED FOR REVERSING VARIABLE TEXT		1	2430			53
541	2	440	STMT	DCW	@STATEMENT @		10	2440			54
542	2	444	OPQR	DCW	@OPQR@		4	2444			54
543	2	445	X2TAG	DCW	@K@		1	2445			54
544	2	446	BZONE	DCW	@J@ INTEGER VARIABLE ADDRESS TAG		1	2446			54
545	2	447	CW	CW			1	2447	)		54
546	2	456	VARBL5	DCW	@VARBLQUIN@		9	2456			54
547	2	492	ERROR2	DCW	@MESSAGE 2 - OBJECT PROGRAM TOO LARGE@		36	2492			55

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
548	2	493	GM	DC	@}@	1		2493		GMARK	55
549	2	498		DC	#5	5		2498			56
550	2	499	GMWM	DCW	@}@	1		2499		GMARK	56
551				ORG	201				0201		
552		203		DSA	LOADDD	3		0203	857		57
553				EX	BEGINN				B 857		58
554				END					/ 000 080		

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
ABZONE	2335	AFBRAK	1103	ASGRHS	1806	BEGINN	857	BNDRY	848	BOTTOM	2057	BRACK	1095
BRANCH	2398	BRKSET	1494	BZONE	2446	CDOVLY	769	CH	2301	CH2	2395	CHVAR	2430
CLEARL	707	CODSIZ	853	CW	2447	CWSW	1256	DIFF	845	DONE	2147	ENTER	1302
ERR10	2429	ERR2A	2377	ERROR2	2492	FLAG	2310	FNDVAR	947	GETADR	1272	GETPUN	1723
GETSW	1298	GETTOP	1186	GLOBER	184	GM	2493	GMTEST	1747	GMWM	2499	GOTPUN	1075
GOTVAR	981	GOTVR2	997	HALT	2241	IJKLMN	2334	IMOD	690	INTVAR	2031	ISOPQR	1929
K01	2298	KBNZ3	2318	KBRACK	2396	KNZ	2319	KP1	2397	KP16K	2341	KZ1	2391
KZ3	2247	LOADDD	857	LOOP1	879	MANTIS	692	MOVE	2399	MVLP	1518	NOBRAK	1099
NOP	2328	NOTRD	2193	NOVFL1	1594	NOVFL2	1914	OKSIZE	1425	OPQR	2444	OVFL2	1912
PHASID	110	POS	1131	PREFIX	2296	PUNCT	2309	PUNLP	1038	RDSTMT	1763	REX1X2	1264
SEQCOD	2286	SETBRK	1649	SIZFLG	2248	SKIPIT	2163	SNAPSH	333	STMT	2440	SUB	1995
SUB2	2013	SWBIG	1973	SWDOLR	1739	SWDONE	2076	SWPAR	1731	SWREAD	943	SWUN	1201
SX1X2	2327	SX2X3	2390	TESTRD	1671	TOOBIG	2211	TOPASG	1031	TOPCD9	840	TOPCOD	856
TOPQR	1940	TYPTAG	2336	UNBRAK	1795	UNDEF	1824	VAR	1385	VARBL5	2456	VARLP	1855
VARLPX	1889	W2	2300	W3	2394	W4	2314	W5	2382	X1	89	X1TAG	2282
X2	94	X2TAG	2445	X3	99	ZONES	2250						