



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
145				ORG	201				0201				
146			PHAS22	BSS	)8J002,G	5	0201	B 257	G	GEN	3	257	
147				NOP	TO PATCH IN TRAPS FOR DEBUGGING	1	0206	N		GEN	3		
148			)0J002	EQU	*&1			0207		GEN			
149				LCA	)9J002,)6J002	7	0207	L 281 110		GEN	3	281	110
150				BCE	)1J002,)6K002,1 Q: LOADING FROM CARDS?	8	0214	B 250 700 1		GEN	3	250	700
151				BCE	)1J002,)6L002&4,0 Q: LOADING FROM AUTOCODER TAPE?	8	0222	B 250 708 0		GEN	3	250	708
152				RTW	1,BEGN22 READ THE BLOCK	8	0230	L %U1 838 R		GEN	3	%U1	838
153				BER	)6M002 Q: TAPE ERROR?	5	0238	B 728 L		GEN	4	728	
154				CS	BEGN22,)9R002 ENTER THE BLOCK	7	0243	/ 838 285		GEN	4	838	285
155			)1J002	CS	)6K002,)9R002 LOAD CARDS OR AUTOCODER TAPE	7	0250	/ 700 285		GEN	4	700	285
156			)8J002	SW	)9R002	4	0257	, 285		GEN	4	285	
157				MU	%T0,)8K002,W	8	0261	M %T0 273 W		GEN	4	%T0	273
158				H	)0J002	4	0269	. 207		GEN	4	207	
159			)8K002	EQU	*&1			0273		GEN			
160			)9J002	DCW	@STNUM ONE@ PHASE ID	9	0281			GEN	5		
161				DCW	#1	1	0282			GEN	5		
162				DC	@22@ PHASE NUMBER	2	0284			GEN	5		
163			)9R002	DCW	@}@	1	0285			GEN	5		
164				XFR	PHAS22			B 201			5	201	
165			*										
166				ORG	BEGIN3				0838				
167	838		BEGN22	CS	0&X2 CLEAR BELOW BOTTOM OF STATEMENTS	4	0838	/ 0!0			6	000+2	
168	842			MCW	NXBTM,X2 BELOW NUMBER TABLE	7	0842	M 083 094			6	083	094
169	849			SW	GM	4	0849	, Y53			6	1853	
170	853			LCA	GM,0&X2	7	0853	L Y53 0!0			6	1853	000+2
171	860			SBR	X2	4	0860	H 094			6	094	
172	864		LOOP	BCE	DONE,0&X1,	8	0864	B 700 0 0			6	700	000+1
173	872			LCA	0&X1,PREFIX	7	0872	L 0 0 Z32			7	000+1	1932
174	879			SAR	X1	4	0879	Q 089			7	089	
175	883			CW	1&X1	4	0883	) 0 1			7	001+1	
176	887			SW	PREFIX-3	4	0887	, Z29			7	1929	
177	891			LCA	PREFIX,0&X2 MOVE UP ONLY SEQ NUMBER AND CODE	7	0891	L Z32 0!0			7	1932	000+2
178	898			SBR	X2	4	0898	H 094			7	094	
179	902			CW	1&X2	4	0902	) 0!1			7	001+2	
180	906			BWZ	LBLDEF,PREFIX-4,2	8	0906	V  03 Z28 2			8	1003	1928
181	914		NOLABL	LCA	GM,0&X2	7	0914	L Y53 0!0			8	1853	000+2
182	921			SBR	X2	4	0921	H 094			8	094	
183	925			MCW	PREFIX-3,*&8	7	0925	M Z29 939			8	1929	939
184	932			BCE	LBLREF,STMTS,0 DOES STATEMENT HAVE LABEL REFS?	8	0932	B  26 Z43 0			8	1026	1943
185	940			CHAIN	10					MACRO			
186				BCE		1	0940	B		GEN	8		
187				BCE		1	0941	B		GEN	8		
188				BCE		1	0942	B		GEN	9		
189				BCE		1	0943	B		GEN	9		
190				BCE		1	0944	B		GEN	9		
191				BCE		1	0945	B		GEN	9		
192				BCE		1	0946	B		GEN	9		
193				BCE		1	0947	B		GEN	9		
194				BCE		1	0948	B		GEN	9		



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
245			*										
246	1	130	TAPE	MCW	X1,STMFIN&3	7		1130	M 089 /77		15	089	1177
247	1	137	GETCOM	BCE	GOTCOM,0&X1,, GET	8		1137	B /61 0 0 ,		15	1161	000+1
248	1	145		BCE	SYNTAX,0&X1,} DOWN	8		1145	B X55 0 0 } GMARK		16	1755	000+1
249	1	153		SBR	X1 TO	4		1153	H 089		16	089	
250	1	157		B	GETCOM COMMA	4		1157	B /37		16	1137	
251	1	161	GOTCOM	SW	1&X1	4		1161	, 0 1		16	001+1	
252	1	165		MN		1		1165	D		16		
253	1	166		SAR	X1	4		1166	Q 089		16	089	
254	1	170		B	SAVLAB	4		1170	B U73		16	1473	
255			*										
256	1	174	STMFN	LCA	0,0&X2	7		1174	L 000 0!0		17	000	000+2
257	1	181		SBR	X2	4		1181	H 094		17	094	
258	1	185		CW	1&X2	4		1185	) 0!1		17	001+2	
259	1	189		B	MOVEUP	4		1189	B 958		17	958	
260			*										
261					* IF ( SENSE SWITCH ... ) OR IF ( SENSE LIGHT ... ) STATEMENT								
262			*										
263	1	193	IFSS	MCW	X1,STMFN&3	7		1193	M 089 /77		17	089	1177
264	1	200	GETRP	BCE	GOTRP,0&X1,) GET	8		1200	B S24 0 0 )		17	1224	000+1
265	1	208		BCE	SYNTAX,0&X1,} DOWN	8		1208	B X55 0 0 } GMARK		18	1755	000+1
266	1	216		SBR	X1 TO RIGHT	4		1216	H 089		18	089	
267	1	220		B	GETRP PARENTHESIS	4		1220	B S00		18	1200	
268	1	224	GOTRP	SW	1&X1	4		1224	, 0 1		18	001+1	
269	1	228		MN		1		1228	D		18		
270	1	229		SAR	X1	4		1229	Q 089		18	089	
271	1	233		B	SAVLAB	4		1233	B U73		18	1473	
272	1	237		MN	0&X1	4		1237	D 0 0		19	000+1	
273	1	241		SAR	X1	4		1241	Q 089		19	089	
274	1	245		BCE	SYNTAX,0&X1,} GMARK	8		1245	B X55 0 0 } GMARK		19	1755	000+1
275	1	253		B	SAVLAB	4		1253	B U73		19	1473	
276	1	257	SETCOM	LCA	COMMA,0&X2	7		1257	L Z50 0!0		19	1950	000+2
277	1	264		SBR	X2	4		1264	H 094		19	094	
278	1	268		CW	1&X2	4		1268	) 0!1		19	001+2	
279	1	272		B	STMFN	4		1272	B /74		20	1174	
280			*										
281					* DO STATEMENT								
282			*										
283	1	276	DO	MCW	X1,X3	7		1276	M 089 099		20	089	099
284	1	283	GETEQ	BCE	GOTEQ,0&X3,# FIND THE	8		1283	B S99 0?0 #		20	1299	000+3
285	1	291		SBR	X3 EQUAL SIGN	4		1291	H 099		20	099	
286	1	295		B	GETEQ	4		1295	B S83		20	1283	
287	1	299	GOTEQ	MCW	3&X3,CH2	7		1299	M 0?3 Z51		20	003+3	1951
288	1	306		MCW	COMMA,3&X3	7		1306	M Z50 0?3		21	1950	003+3
289	1	313		SBR	W3,3&X3	7		1313	H Z54 0?3		21	1954	003+3
290	1	320		B	SAVLAB	4		1320	B U73		21	1473	
291	1	324		C	W3,X1	7		1324	C Z54 089		21	1954	089
292	1	331		BU	SYNTAX	5		1331	B X55 /		21	1755	
293	1	336		MCW	CH2,0&X1	7		1336	M Z51 0 0		21	1951	000+1
294	1	343		LCA	COMMA,0&X2	7		1343	L Z50 0!0		22	1950	000+2

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
295	1	350		SBR	X2	4		1350	H 094		22	094	
296	1	354		CW	1&X2	4		1354	) 0!1		22	001+2	
297	1	358		B	MOVEUP	4		1358	B 958		22	958	
298				*									
299				*	IF STATEMENT								
300				*									
301	1	362	IF	MCW	X1,STMFIN&3	7		1362	M 089 /77		22	089	1177
302	1	369	IFLOOP	BCE	IFRP,0&X1,) GET DOWN TO RIGHT PARENTHESIS	8		1369	B T93 0 0 )		22	1393	000+1
303	1	377		BCE	SYNTAX,0&X1,}	8		1377	B X55 0 0 } GMARK		23	1755	000+1
304	1	385		SBR	X1	4		1385	H 089		23	089	
305	1	389		B	IFLOOP	4		1389	B T69		23	1369	
306	1	393	IFRP	MN	0&X1	4		1393	D 0 0		23	000+1	
307	1	397		SAR	X1	4		1397	Q 089		23	089	
308	1	401		BWZ	*&5,0&X1,2 FOLLOWED BY A DIGIT	8		1401	V U13 0 0 2		23	1413	000+1
309	1	409		B	IFLOOP	4		1409	B T69		23	1369	
310	1	413		BCE	IFLOOP,0&X1,@	8		1413	B T69 0 0 @		24	1369	000+1
311	1	421		SW	1&X1	4		1421	, 0 1		24	001+1	
312	1	425		B	SAVLAB	4		1425	B U73		24	1473	
313	1	429		BCE	SYNTAX2,0&X1,}	8	V3M4	1429	B Y01 0 0 } GMARK		24	1801	000+1
314	1	437		MN	0&X1	4	V3M4	1437	D 0 0		24	000+1	
315	1	441		SAR	X1	4	V3M4	1441	Q 089		24	089	
316	1	445		B	SAVLAB	4		1445	B U73		24	1473	
317	1	449		BCE	SYNTAX2,0&X1,}	8	V3M4	1449	B Y01 0 0 } GMARK		25	1801	000+1
318	1	457		MN	0&X1	4	V3M4	1457	D 0 0		25	000+1	
319	1	461		SAR	X1	4	V3M4	1461	Q 089		25	089	
320	1	465		B	SAVLAB	4		1465	B U73		25	1473	
321	1	469		B	SETCOM	4		1469	B S57		25	1257	
322				*									
323				*	MOVE THE LABEL TO THE LABEL WORK AREA								
324				*									
325	1	473	SAVLAB	SBR	SAVLBX&3	4		1473	H V62		25	1562	
326	1	477		MCW	X1,LABMOV&3	7		1477	M 089 V47		25	089	1547
327	1	484		BWZ	*&5,0&X1,2	8		1484	V U96 0 0 2		26	1496	000+1
328	1	492		B	SYNTAX2	4		1492	B Y01		26	1801	
329	1	496	SAVLL	MN	0&X1	4		1496	D 0 0		26	000+1	
330	1	500		SAR	X1	4		1500	Q 089		26	089	
331	1	504		BWZ	SAVLL,0&X1,2	8		1504	V U96 0 0 2		26	1496	000+1
332	1	512		BCE	ENDLAB,0&X1,,	8		1512	B V40 0 0 ,		26	1540	000+1
333	1	520		BCE	ENDLAB,0&X1,}	8		1520	B V40 0 0 } GMARK		27	1540	000+1
334	1	528		BCE	ENDLAB,0&X1,)	8		1528	B V40 0 0 )		27	1540	000+1
335	1	536		B	SYNTAX2	4		1536	B Y01		27	1801	
336	1	540	ENDLAB	B	PATCH	4	V3M4	1540	B !19		27	2019	
337	1	544	LABMOV	LCA	0,LABEL	7		1544	L 000 Z49		27	000	1949
338	1	551		CW	1&X1	4		1551	) 0 1		27	001+1	
339	1	555		B	CONV50	4		1555	B V63		27	1563	
340	1	559	SAVLBX	B	0	4		1559	B 000		28	000	
341				*									
342				*	CONVERT LABELS TO BASE 50								
343				*									
344	1	563	CONV50	SBR	CONV5X&3	4		1563	H X54		28	1754	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
345	1	567		LCA	KZ6,LBLWRK	7		1567	L Z22 Y60		28	1922	1860
346	1	574		C	KZ6,LABEL	7		1574	C Z22 Z49		28	1922	1949
347	1	581		BU	*&5	5		1581	B V90 /		28	1590	
348	1	586		B	ZLAB LABEL IS ZERO	4		1586	B W24		28	1624	
349	1	590		SBR	X3,LABEL&1	7		1590	H 099 Z50		28	099	1950
350	1	597	ZTRIM	MN	0&X3 TRIM	4		1597	D 0?0		29	000+3	
351	1	601		SAR	X3 LEADING ZEROS	4		1601	Q 099		29	099	
352	1	605		BCE	ZTRIM,0&X3,0 FROM LABEL	8		1605	B V97 0?0 0		29	1597	000+3
353	1	613		MCW	0&X3,LBLWRK NONZERO DIGITS OF LABEL	7		1613	M 0?0 Y60		29	000+3	1860
354	1	620		MCW	K1 AND 1	4		1620	M Z55		29	1955	
355	1	624	ZLAB	SW	LBLWRK-1	4		1624	, Y59		29	1859	
356	1	628		CW		1		1628	)		29		
357	1	629		SW		1		1629	,		30		
358	1	630		CW		1		1630	)		30		
359	1	631		SW		1		1631	,		30		
360	1	632		S	K5050,LBLWRK	7		1632	S Z59 Y60		30	1959	1860
361	1	639		S		1		1639	S		30		
362	1	640		BM	*&8,LBLWRK	8		1640	V W55 Y60 K		30	1655	1860
363	1	648		A	K1,LBLWRK-5	7		1648	A Z55 Y55		30	1955	1855
364	1	655		BM	*&8,LBLWRK-2	8		1655	V W70 Y58 K		31	1670	1858
365	1	663		A	K2,LBLWRK-5	7		1663	A Z60 Y55		31	1960	1855
366	1	670		MZ	X1TAGS,LBLWRK	7		1670	Y Z66 Y60		31	1966	1860
367	1	677		CHAIN	5					MACRO			
368				MZ		1		1677	Y	GEN	31		
369				MZ		1		1678	Y	GEN	31		
370				MZ		1		1679	Y	GEN	31		
371				MZ		1		1680	Y	GEN	31		
372				MZ		1		1681	Y	GEN	32		
373	1	682		MCW	X1,SX1	7		1682	M 089 Y64		32	089	1864
374	1	689		MCW	ACHARS,X1	7		1689	M Z69 089		32	1969	089
375	1	696		MCW	ALBLWK,X3	7		1696	M Z72 099		32	1972	099
376	1	703	CONV5L	MCW	0&X3,*&8	7		1703	M 0?0 X17		32	000+3	1717
377	1	710		SAR	X3	4		1710	Q 099		32	099	
378	1	714		MCW	0-0,CH	7		1714	M 000 Y61		33	000	1861
379	1	721		LCA	CH,0&X2	7		1721	L Y61 0!0		33	1861	000+2
380	1	728		SBR	X2	4		1728	H 094		33	094	
381	1	732		CW	1&X2	4		1732	) 0!1		33	001+2	
382	1	736		BWZ	CONV5L,0&X3,2	8		1736	V X03 0?0 2		33	1703	000+3
383	1	744		MCW	SX1,X1	7		1744	M Y64 089		33	1864	089
384	1	751	CONV5X	B	0	4		1751	B 000		34	000	
385				*									
386				*	STATEMENT NUMBER SYNTAX ERROR								
387				*									
388	1	755	SYNTAX	CS	332	4		1755	/ 332		34	332	
389	1	759		CS		1		1759	/		34		
390	1	760		SW	GLOBER	4		1760	, 184		34	184	
391	1	764		MN	PREFIX,249	7		1764	D Z32 249		34	1932	249
392	1	771		MN		1		1771	D		34		
393	1	772		MN		1		1772	D		34		
394	1	773		MCW	ERR13	4		1773	M !18		35	2018	



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
445					* PATCH IN V3M4								
446					*								
447	2	059	PATCH	SW	1&X1			V3M4	4	2019	,	0 1	44 001+1
448	2	063		SW	MOVTST&1			V3M4	4	2023	,	!39	44 2039
449	2	067		MCW	LABMOV&3,MOVTST&3			V3M4	7	2027	M	V47 !41	44 1547 2041
450	2	074		CW	MOVTST&1			V3M4	4	2034	)	!39	44 2039
451	2	078	MOVTST	MCW	0, TEST			V3M4	7	2038	M	000 !69	45 000 2069
452	2	085		BCE	LABMOV, TEST-5, :			V3M4	8	2045	B	V44 !64 :	45 1544 2064
453	2	093		MCW	*-7, TEST-5			V3M4	7	2053	M	!52 !64	45 2052 2064
454	2	100		B	SYNTAX2			V3M4	4	2060	B	Y01	45 1801
455	2	109	TEST	DCW	@: @			V3M4	6	2069			45
456	2	110	GMWM	DCW	@}@			V3M4	1	2070			45
457			XFR		BEGN22						B	838	45 838
458			CLRME	CLRA	BEGN22, TAMR1, C								MACRO
			*	CLRA	CLRBOT, CLRTOP [, SS, HERE, GWMAD]								GEN
			*										GEN
			*		CLEAR CORE AFTER A PHASE USING THE CLRTOP ADDRESS								GEN
			*										GEN
459			ORG		201							0201	
			*										GEN
			*		CLEAR DOWN TO CLRBOT & X00 THE EASY WAY								GEN
			*										GEN
460			CLRME	EQU	*&1					0201			GEN
461				BSS	SNAPSH, C				5	0201	B	333 C	46 333
462			)0J003	CS	TAMR1 CLEAR FROM CLRTOP				4	0206	/	V99	46 1599
463				SBR	)0J003&3				4	0210	H	209	46 209
464				SBR	)0L003&6				4	0214	H	255	46 255
465				C	)0J003&3, )0M003 DOWN TO CLRBOT & X00?				7	0218	C	209 266	46 209 266
466				BU	)0J003				5	0225	B	206 /	46 206
			*										GEN
			*		NOW CLEAR DOWN TO CLRBOT THE HARD WAY								GEN
			*										GEN
467			)0K003	C	)0L003&6, )0N003				7	0230	C	255 269	46 255 269
468				BU	)0L003				5	0237	B	249 /	47 249
469				CS	LOADNX, )0Q003 LOAD THE NEXT BLOCK AT 1				7	0242	/	700 276	47 700 276
470			)0L003	LCA	)0P003, 0-0 CLEAR WITH BLANK AND WORD MARK				7	0249	L	270 000	47 270 000
471				SBR	)0L003&6				4	0256	H	255	47 255
472				B	)0K003				4	0260	B	230	47 230
473			)0M003	DSA	)0R003 CLRBOT & X00 - 1				3	0266		899	47 899
474			)0N003	DSA	BEGN22 CLRBOT				3	0269		838	47 838
475			)0P003	DCW	#1				1	0270			48
476				DC	@CLRA @ IDENTIFY IN A DECK, TAPE, OR DUMP				5	0275			48
477			)0Q003	DCW	@}@				1	0276			48
478				ORG	BEGN22&X00							0900	
479			)0R003	EQU	* CLRBOT & X00 - 1					0899			GEN
480				XFR	CLRME						B	201	48 201



SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J002	0207: 0	)0J003	0206: 0	)0K003	0230: 0	)0L003	0249: 0	)0M003	0266: 0	)0N003	0269: 0
)0P003	0270: 0	)0Q003	0276: 0	)0R003	0899: 0	)1J002	0250: 0	)6J002	0110: 0	)6K002	0700: 0
)6L002	0704: 0	)6M002	0728: 0	)8J002	0257: 0	)8K002	0273: 0	)9J002	0281: 0	)9R002	0285: 0
ACHARS	1969: 0	ALBLWK	1972: 0	BEGIN3	0838: 0	BEGN22	0838: 0	CDOVLY	0700: 0	CGO	1090: 0
CGOFIN	1118: 0	CH	1861: 0	CH2	1951: 0	CHARS	1866: 0	CLRME	0201: 0	COMMA	1950: 0
CONV50	1563: 0	CONV5L	1703: 0	CONV5X	1751: 0	DO	1276: 0	DONE	0700: 0	DOT	1854: 0
ENDLAB	1540: 0	ENDSTM	0981: 0	ERR13	2018: 0	FLAG	1865: 0	GETCOM	1137: 0	GETEQ	1283: 0
GETRP	1200: 0	GETUP	1830: 0	GLOBER	0184: 0	GM	1853: 0	GMWM	2070: 0	GOTCOM	1161: 0
GOTEQ	1299: 0	GOTRP	1224: 0	IF	1362: 0	IFLOOP	1369: 0	IFRP	1393: 0	IFSS	1193: 0
K1	1955: 0	K2	1960: 0	K5050	1959: 0	KZ6	1922: 0	LABEL	1949: 0	LABMOV	1544: 0
LBLDEF	1003: 0	LBLREF	1026: 0	LBLWRK	1860: 0	LOADNX	0700: 0	LOOP	0864: 0	MORE	1809: 0
MOVEUP	0958: 0	MOVTST	2038: 0	NOLABL	0914: 0	NXBTM	0083: 0	PATCH	2019: 0	PHAS22	0201: 0
PHASLD	0381: 0	PREFIX	1932: 0	SAVLAB	1473: 0	SAVLBX	1559: 0	SAVLL	1496: 0	SETCOM	1257: 0
SNAPEX	0564: 0	SNAPSH	0333: 0	STMFIN	1174: 0	STMTS	1943: 0	SX1	1864: 0	SYNTAX	1755: 0
SYNTAX2	1801: 0	TAMR1	1599: 0	TAPE	1130: 0	TEST	2069: 0	TPERR	0728: 0	TPREAD	0704: 0
W3	1954: 0	X1	0089: 0	X1TAGS	1966: 0	X2	0094: 0	X3	0099: 0	ZLAB	1624: 0
ZTRIM	1597: 0										

## UNREFERENCED SYMBOLS

CDOVLY DOT GMWM PHASLD SNAPEX TPERR TPREAD