

```

00000 R 740040 A
00001 R 123153 E
00002 R 600005 R
00003 R 000000 A
00004 R 000000 A
00005 R 220004 R
00006 R 652000 A
00007 R 220003 R

```

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/1      SUITE           : P.C.B. LAYOUT
/2      PROGRAM TITLE   : REDAL23 MARK2
/3      ROUTINE TITLE   :
/

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/4      AUTHOR          :
/5      DATE            :
/

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/6      PURPOSE         :
/

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/7      CALLING SEQUENCE AND DESCRIPTION OF ARGUMENTS :
/

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/8      I/O DEVICES AND FUNCTIONS :
/

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/9      REGISTERS USED :
/

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/10     EXTERNAL COMMON AREAS :
/

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/11     INTERNAL COMMON AREAS :
/

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/12     EXTERNAL GLOBALS :
/

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/13     INTERNAL GLOBALS :
/

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/14     CONDITIONAL ASSEMBLY PARAMETERS :
/

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/15     METHOD :
/

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/16     AMENDMENTS :
/

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/      .GLOBL DRAW, .DA, XYAD, IGRID, IWIDTH, CWL

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DRAW XX
JMS* .DA
JMP .+3
NNNN1 0
NNNN2 0
LAC* NNNN2
LMQ
LAC* NNNN1

```

PAGE	2	DRAW	SRC	
53		00010 R	100032 R	JMS DRAWCP
54		00011 R	620000 R	JMP* DRAW
55		00012 R	740040 A	NNN1 XX
56		00013 R	740040 A	NNN2 XX
57				/
58				/
59				/
60				/
61				/
62				/

```

63      .TITLE DRAWCP
64      .IODEV 10
65      .GLOBL DRAWCP,X0,Y0,XU,YU,SCALE,PRAMTR,PLOT,SCALUP
66      .GLOBL LINE,TEXT,COPY,DFAD,DFREP,DFDEL,DFINIT,DINIT
67      .GLOBL PARWRD,SUBNOD,READRT,DFADDR,POINT,STATE
68      00014 R 000000 A COPCOM .CBD COPPER 1 / PASS ARRAY ADDRESSES THRO COMMON
69      00015 R 000000 A BORCOM .CBD BOARD 1
70      00016 R 000000 A LIBCOM .CBD LIBRY 1
71      00017 R 000000 A CONCOM .CBD CONNX 1
72      00020 R 000000 A COMCOM .CBD COMPS 1
73      00021 R 000000 A RUTCOM .CBD ROUTE 1
74      00022 R 000000 A DFCOM .CBD DF 1
75      00023 R 000000 A EOCOPP .CBD EOCPAD 1
76      00024 R 000000 A EOBRD .CBD EOBRAD 1
77      00025 R 000000 A EOLIB .CBD EOLBAD 1
78      00026 R 000000 A EOCOMP .CBD EOCMAD 1
79      00027 R 000000 A NOSLAY .CBD LAYER 1
80      00030 R 000000 A LIGHT .CBD LITB 1
81      00031 R 000000 A MESS .CBD PUSH 1
82      00032 R 740040 A DRAWCP XX
83      00033 R 042477 R DAC N1 /FIRST ARG
84      00034 R 641002 A LACQ
85      00035 R 042500 R DAC N2 /SECOND ARG
86      /
87      / UNPACK ADDRESSES AND POINTERS FROM COMMON
88      00036 R 220014 R LAC* COPCOM / COPPER
89      00037 R 042456 R DAC COPPAD
90      /
91      00040 R 220015 R LAC* BORCOM / BOARD
92      00041 R 042457 R DAC BRDAD
93      /
94      00042 R 220016 R LAC* LIBCOM / LIBRARY
95      00043 R 042460 R DAC LIBAD
96      /
97      00044 R 220017 R LAC* CONCOM / CONNECTIONS
98      00045 R 042461 R DAC CONNAD
99      /
100     00046 R 220020 R LAC* COMCOM / COMPONENTS
101     00047 R 042462 R DAC COMPAD
102     /
103     00050 R 220022 R LAC* DFCOM
104     00051 R 042501 R DAC MAINFL
105     00052 R 220021 R LAC* RUTCOM / ROUTES
106     00053 R 042463 R DAC ROUTAD
107     / ALL ADDRESSES ARE HELD
108     /
109     /
110     /
111     /
112     /
113     /
114     /

```

PAGE	4	DRAW	SRC	DRAWCP
115				/
116				/
117				/
118				/
119				/
120	00054	R	143121 R	DZM REPFLG# /INDICATES IF COMPONENT REPLACED
121	00055	R	143124 R	DZM TFLAG1# /INDICATES COPPER BEING DRAWN IF NON ZERO
122				/
123				/
124				/
125				/
126				/
127	00056	R	202477 R	LAC N1
128	00057	R	741200 A	SNA
129	00060	R	600067 R	JMP DRWALL /DRAW WHOLE PICTURE
130	00061	R	741100 A	SPA
131	00062	R	600437 R	JMP DELETE
132	00063	R	723772 A	AAC -6
133	00064	R	741100 A	SPA
134	00065	R	600360 R	JMP ROUTES
135	00066	R	600544 R	JMP REPLAC
136				/
137				/
138				/
139				/
140				/
141	00067	R	162501 R	DRWALL DZM* MAINFL
142	00070	R	143123 R	DZM TFLAG
143	00071	R	142473 R	DZM DSCAN
144	00072	R	123143 E	JMS* DINIT
145	00073	R	600075 R	JMP .+2
146	00074	R	402501 R	.DSA MAINFL!400000 /INITIALISE DISP.
147	00075	R	202501 R	LAC MAINFL
148	00076	R	723050 A	AAC 50
149	00077	R	042467 R	DAC DFADDR
150	00100	R	123141 E	JMS* DFINIT
151	00101	R	123145 E	JMS* PLOT /CREATE SUBPIC ENTRY
152	00102	R	600106 R	JMP .+4
153	00103	R	003154 R	.DSA (0
154	00104	R	003154 R	.DSA (0
155	00105	R	402467 R	.DSA DFADDR!400000
156	00106	R	777777 A	LAW -1
157	00107	R	042474 R	DAC NAME
158	00110	R	123137 E	JMS* DFAD
159	00111	R	600115 R	JMP .+4
160	00112	R	002474 R	.DSA NAME
161	00113	R	003123 R	.DSA TFLAG
162	00114	R	000573 R	.DSA SCREEN
163	00115	R	142543 R	DZM BUFF1
164	00116	R	200031 R	LAC MESS
165	00117	R	102001 R	JMS SUBCOP /DRAW PUSHBUTTONS
166	00120	R	200030 R	LAC LIGHT

PAGE	5	DRAW	SRC	DRAWCP
167		00121	R 102001 R	JMS SUBCOP /DRAW LIGHTBUTTONS
168		00122	R 203155 R	LAC (XYBUF
169		00123	R 102001 R	JMS SUBCOP
170		00124	R 777776 A	LAW -2
171		00125	R 042474 R	DAC NAME
172		00126	R 102435 R	JMS ADDIT
173				/
174				/
175				/
176				/
177				/
178		00127	R 202457 R	LAC BRDAD
179		00130	R 042476 R	DAC SCAN
180		00131	R 360024 R	TAD* EOBRD
181		00132	R 723777 A	AAC -1
182		00133	R 043103 R	DAC ENDBOD#
183		00134	R 202476 R	BRDLUP LAC SCAN
184		00135	R 543103 R	SAD ENDBOD
185		00136	R 600215 R	JMP COMPS /DRAWN ALL BOARDS
186		00137	R 063156 R	DAC* (11
187		00140	R 222476 R	LAC* SCAN
188		00141	R 723777 A	AAC -1
189		00142	R 740031 A	TCA
190		00143	R 042464 R	DAC CNTR / -NO OF SEGMENTS
191		00144	R 143101 R	DZM DRAWN
192		00145	R 142543 R	DZM BUFF1
193		00146	R 143112 R	DZM MODE
194		00147	R 101711 R	JMS LPONOF /DISABLE LP.
195		00150	R 143123 R	DZM TFLAG
196		00151	R 203157 R	LAC (500
197		00152	R 042466 R	DAC BRIGHT
198		00153	R 220011 A	LOOPY4 LAC* 11
199		00154	R 042532 R	DAC X1
200		00155	R 220011 A	LAC* 11
201		00156	R 042535 R	DAC Y1
202		00157	R 220011 A	LAC* 11
203		00160	R 042533 R	DAC X2
204		00161	R 220011 A	LAC* 11
205		00162	R 042536 R	DAC Y2
206		00163	R 101226 R	JMS FILL
207		00164	R 442464 R	ISZ CNTR
208		00165	R 600203 R	JMP NXTSGT /DRAW NEXT SEGMENT
209		00166	R 203101 R	LAC DRAWN
210		00167	R 741200 A	SNA
211		00170	R 600207 R	JMP NXTBOD
212		00171	R 202476 R	LAC SCAN
213		00172	R 740031 A	TCA
214		00173	R 042474 R	DAC NAME
215		00174	R 443112 R	ISZ MODE
216		00175	R 101711 R	JMS LPONOF /ENABLE LP.
217		00176	R 123137 E	JMS* DFAD
218		00177	R 600207 R	JMP NXTBOD

PAGE	6	DRAW	SRC	DRAWCP
219		00200	R 002474	R .DSA NAME
220		00201	R 003123	R .DSA TFLAG
221		00202	R 002543	R .DSA BUFF1
222		00203	R 223156	R NXTSGT LAC* (11
223		00204	R 723776	A AAC -2
224		00205	R 063156	R DAC* (11
225		00206	R 600153	R JMP LOOPY4
226		00207	R 222476	R NXTBOD LAC* SCAN
227		00210	R 744010	A RCL
228		00211	R 740030	A IAC
229		00212	R 342476	R TAD SCAN
230		00213	R 042476	R DAC SCAN
231		00214	R 600134	R JMP BRDLUP
232				/
233				/
234				/
235				/
236		00215	R 203160	R COMPS LAC (JMP RUTFIN
237		00216	R 040233	R DAC COMLUP+2
238		00217	R 203161	R LAC (NOP
239		00220	R 040307	R DAC TAG4
240		00221	R 040311	R DAC TAG4+2
241		00222	R 202462	R LAC COMPAD
242		00223	R 043076	R DAC CSCAN
243		00224	R 360026	R TAD* EOCOMP
244		00225	R 343162	R TAD (-1
245		00226	R 042475	R DAC ENDCOM
246		00227	R 142502	R DZM CONCNT
247		00230	R 442502	R ISZ CONCNT /SET SO THAT 1 CANNOT BE USED AS D.F. ADDR
248		00231	R 203076	R COMLUP LAC CSCAN#
249		00232	R 542475	R SAD ENDCOM
250		00233	R 600341	R JMP RUTFIN
251		00234	R 100644	R JMS COMDRW /DRAW COMPONENT
252		00235	R 223076	R LAC* CSCAN
253		00236	R 741200	A SNA
254		00237	R 600335	R JMP NOCONS
255		00240	R 342461	R TAD CONNAD
256		00241	R 723777	A AAC -1
257		00242	R 042476	R DAC SCAN
258		00243	R 222476	R LAC* SCAN
259		00244	R 652000	A LMQ
260		00245	R 503163	R AND (777
261		00246	R 740001	A CMA
262		00247	R 042504	R DAC NOFCNS
263		00250	R 641611	A 641000!LLS 11
264		00251	R 042505	R DAC PTR1
265		00252	R 442476	R LOOPY1 ISZ SCAN
266		00253	R 442504	R ISZ NOFCNS
267		00254	R 741000	A SKP
268		00255	R 600335	R JMP NOCONS
269		00256	R 222476	R LAC* SCAN
270		00257	R 652000	A LMQ

PAGE	7	DRAW	SRC	DRAWCP
271		00260	R 503164 R	AND (77
272		00261	R 042510 R	DAC NOD1
273		00262	R 641611 A	641000 ILLS 11
274		00263	R 042506 R	DAC PTR2
275		00264	R 442476 R	ISZ SCAN
276		00265	R 222476 R	LAC* SCAN
277		00266	R 652000 A	LMQ
278		00267	R 503164 R	AND (77
279		00270	R 042511 R	DAC NOD2
280		00271	R 442476 R	ISZ SCAN
281		00272	R 222476 R	LAC* SCAN
282		00273	R 744010 A	RCL
283		00274	R 742010 A	RTL
284		00275	R 503165 R	AND (3
285		00276	R 640614 A	LLS 14
286		00277	R 042513 R	DAC RUTPTR
287		00300	R 202476 R	LAC SCAN
288		00301	R 042474 R	DAC NAME
289		00302	R 202505 R	LAC PTR1
290		00303	R 740031 A	TCA
291		00304	R 342506 R	TAD PTR2
292		00305	R 740100 A	SMA
293		00306	R 600311 R	JMP .+3
294		00307	R 740000 A	TAG4 NOP / OR JMP SWOPIT
295		00310	R 600252 R	JMP LOOPY1
296		00311	R 740000 A	NOP /OR JMP SWITCH
297		00312	R 600326 R	JMP LABEL1
298		00313	R 222476 R	SWOPIT LAC* SCAN
299		00314	R 503166 R	AND (77777
300		00315	R 102112 R	JMS MARK
301		00316	R 202516 R	LAC TEMP
302		00317	R 042474 R	DAC NAME /POINTS AT OTHER END
303		00320	R 222476 R	SWITCH LAC* SCAN
304		00321	R 503166 R	AND (77777
305		00322	R 343167 R	TAD (-10000
306		00323	R 142473 R	DZM DSCAN
307		00324	R 740100 A	SMA
308		00325	R 042473 R	DAC DSCAN
309		00326	R 202513 R	LABEL1 LAC RUTPTR
310		00327	R 740200 A	SZA
311		00330	R 600333 R	JMP .+3
312		00331	R 102011 R	JMS CONDRW
313		00332	R 600252 R	JMP LOOPY1
314		00333	R 102175 R	JMS ROOTS
315		00334	R 600252 R	JMP LOOPY1
316		00335	R 203076 R	NOCONS LAC CSCAN
317		00336	R 723006 A	AAC 6
318		00337	R 043076 R	DAC CSCAN
319		00340	R 600231 R	JMP COMLUP /DRAW NEXT COMP.
320				/
321				/
322				/

PAGE	8	DRAW	SRC	DRAWCP
323				/
324				/NOW DRAW COPPER
325				/
326				/
327				/
328				/
329				/
330				/
331	00341	R	443124	R RUTFIN ISZ TFLAG1
332	00342	R	220023	R LAC* EOCOPP
333	00343	R	543170	R SAD (1
334	00344	R	620032	R JMP* DRAWCP /NO COPPER
335	00345	R	203170	R LAC (1
336	00346	R	042513	R DAC RUTPTR
337	00347	R	102175	R TAGG JMS ROOTS
338	00350	R	443073	R ISZ ARG#
339	00351	R	223073	R LAC* ARG#
340	00352	R	744000	A CLL
341	00353	R	640512	A LRS 12
342	00354	R	342513	R TAD RUTPTR
343	00355	R	560023	R SAD* EOCOPP
344	00356	R	620032	R JMP* DRAWCP
345	00357	R	600346	R JMP TAGG-1
346				/
347				/
348				/
349				/
350				/
351				/
352	00360	R	202477	R ROUTES LAC N1
353	00361	R	543171	R SAD (4
354	00362	R	600405	R JMP DRWRUT
355	00363	R	543165	R SAD (3
356	00364	R	600374	R JMP DELCU /DELETE COPPER
357	00365	R	723777	A AAC -1
358	00366	R	042473	R DAC DSCAN /0 TO ADD, 1 TO REPLACE
359	00367	R	202500	R LAC N2
360	00370	R	042513	R DAC RUTPTR
361	00371	R	443124	R ISZ TFLAG1
362	00372	R	102175	R JMS ROOTS
363	00373	R	620032	R JMP* DRAWCP
364	00374	R	143123	R DELCU DZM TFLAG
365	00375	R	443123	R ISZ TFLAG
366	00376	R	202500	R LAC N2
367	00377	R	342456	R TAD COPPAD
368	00400	R	723777	A AAC -1
369	00401	R	740031	A TCA
370	00402	R	042474	R DAC NAME
371	00403	R	102451	R JMS REMOVE
372	00404	R	620032	R JMP* DRAWCP
373	00405	R	202500	R DRWRUT LAC N2
374	00406	R	443121	R ISZ REPFLG

PAGE	9	DRAW	SRC	DRAWCP
375		00407	R 042474	R DAC NAME
376		00410	R 222474	R LAC* NAME
377		00411	R 503166	R AND (77777
378		00412	R 042473	R DAC DSCAN
379		00413	R 600463	R JMP RUTE
380		00414	R 202473	R LAC DSCAN
381		00415	R 343167	R TAD (-10000
382		00416	R 750100	A SMA CLA
383		00417	R 600431	R JMP INDFIL /IN DISPLAY FILE
384		00420	R 042473	R DAC DSCAN /SET TO ZERO FOR ADD
385		00421	R 202505	R LAC PTR1
386		00422	R 740031	A TCA
387		00423	R 342506	R TAD PTR2
388		00424	R 740100	A SMA
389		00425	R 600435	R JMP OK20
390		00426	R 202516	R LAC TEMP
391		00427	R 042474	R DAC NAME
392		00430	R 600435	R JMP OK20
393		00431	R 222473	R INDFIL LAC* DSCAN /SOMETHING ON SCREEN FOR THIS ITEM
394		00432	R 542474	R SAD NAME
395		00433	R 741000	A SKP
396		00434	R 042474	R DAC NAME
397		00435	R 102175	R OK20 JMS ROOTS
398		00436	R 620032	R JMP* DRAWCP
399				/
400				/
401				/
402				/
403				/
404				/
405				/
406				/
407		00437	R 740031	A DELETE TCA
408		00440	R 042473	R DAC DSCAN
409		00441	R 222473	R LAC* DSCAN
410		00442	R 042474	R DAC NAME
411		00443	R 143123	R DZM TFLAG
412		00444	R 202500	R LAC N2
413		00445	R 543171	R SAD (4
414		00446	R 600463	R JMP RUTE /ROUTE
415		00447	R 543170	R SAD (1
416		00450	R 600461	R JMP .+11 /COMPONENT
417		00451	R 443123	R ISZ TFLAG
418		00452	R 202474	R LAC NAME
419		00453	R 741100	A SPA
420		00454	R 600461	R JMP .+5
421		00455	R 222474	R LAC* NAME /DISPL ADDR
422		00456	R 343167	R TAD (-10000
423		00457	R 741100	A SPA
424		00460	R 620032	R JMP* DRAWCP /NOT ON SCREEN
425		00461	R 102451	R JMS REMOVE
426		00462	R 620032	R JMP* DRAWCP

PAGE	10	DRAW	SRC	DRAWCP
427		00463	R 202474	R RUTE LAC NAME
428		00464	R 723776	A AAC -2
429		00465	R 042476	R DAC SCAN
430		00466	R 222476	R LAC* SCAN
431		00467	R 744000	A CLL
432		00470	R 640511	A LRS 11
433		00471	R 042506	R DAC PTR2 /POINTER TO OTHER COMP
434		00472	R 744010	A RCL
435		00473	R 342506	R TAD PTR2 /*3
436		00474	R 744010	A RCL /*6
437		00475	R 342462	R TAD COMPAD
438		00476	R 042516	R DAC TEMP
439		00477	R 222516	R LAC* TEMP
440		00500	R 723777	A AAC -1
441		00501	R 342461	R TAD CONNAD /OTHER COMPS CONNS.
442		00502	R 740030	A LOOPY8 IAC
443		00503	R 042516	R DAC TEMP
444		00504	R 222516	R LAC* TEMP
445		00505	R 744000	A CLL
446		00506	R 640511	A LRS 11
447		00507	R 042505	R DAC PTR1 /POINTER TO THIS COMP?
448		00510	R 442516	R ISZ TEMP
449		00511	R 442516	R ISZ TEMP
450		00512	R 222516	R LAC* TEMP
451		00513	R 503166	R AND (777777
452		00514	R 542473	R SAD DSCAN
453		00515	R 600520	R JMP .+3
454		00516	R 202516	R LAC TEMP
455		00517	R 600502	R JMP LOOPY8 /NO!
456		00520	R 222476	R LAC* SCAN /YES
457		00521	R 503164	R AND (77
458		00522	R 042510	R DAC NOD1 /PAD ON THIS COMP
459		00523	R 442476	R ISZ SCAN
460		00524	R 222476	R LAC* SCAN
461		00525	R 652000	A LMQ
462		00526	R 503164	R AND (77
463		00527	R 042511	R DAC NOD2 /PAD ON OTHER COMP
464		00530	R 442476	R ISZ SCAN
465		00531	R 222476	R LAC* SCAN
466		00532	R 744010	A RCL
467		00533	R 742010	A RTL
468		00534	R 503165	R AND (3
469		00535	R 640614	A LLS 14
470		00536	R 042513	R DAC RUTPTR
471		00537	R 202477	R LAC N1
472		00540	R 543171	R SAD (4
473		00541	R 600414	R JMP DRWRUT+7
474		00542	R 102011	R JMS CONDRW /REPLACE WITH CONN
475		00543	R 620032	R JMP* DRAWCP
476		00544	R 443121	R REPLAC ISZ REPFLG
477		00545	R 202477	R LAC N1
478		00546	R 043076	R DAC CSCAN

PAGE	11	DRAW	SRC	DRAWCP
479		00547	R 723004 A	AAC
480		00550	R 042475 R	DAC ENDCOM
481		00551	R 222475 R	LAC* ENDCOM
482		00552	R 742020 A	RTR
483		00553	R 503172 R	AND (177400
484		00554	R 042473 R	DAC DSCAN
485		00555	R 442475 R	ISZ ENDCOM
486		00556	R 222475 R	LAC* ENDCOM
487		00557	R 640512 A	LRS 12
488		00560	R 503173 R	AND (377
489		00561	R 342473 R	TAD DSCAN
490		00562	R 042473 R	DAC DSCAN
491		00563	R 442475 R	ISZ ENDCOM
492		00564	R 203174 R	LAC (JMP* DRAWCP
493		00565	R 040233 R	DAC COMLUP+2
494		00566	R 203175 R	LAC (JMP SWOPIT
495		00567	R 040307 R	DAC TAG4
496		00570	R 203176 R	LAC (JMP SWITCH
497		00571	R 040311 R	DAC TAG4+2
498		00572	R 600231 R	JMP COMLUP
499				/
500				/
501				/
502				/
503				/
504				.EBREL
505				/
506				/
507		00573	R 000015 A	SCREEN 15
508		00574	R 740040 A	XX
509		00575	R 220004 A	220004 / SET SOLID LINE
510		00576	R 210014 A	210014 /LP ENABLE
511		00577	R 234401 A	234401 /NAME REG. SET TO 1
512		00600	R 236000 A	236000
513		00601	R 203220 A	203220
514		00602	R 140000 A	140000
515		00603	R 144000 A	144000
516		00604	R 421777 A	421777
517		00605	R 425777 A	425777
518		00606	R 431777 A	431777
519		00607	R 435777 A	435777
520		00610	R 620574 R	JMP* SCREEN+1 /SCREEN OUTLINE
521				/
522				/
523				/
524		00611	R 000032 A	XYBUF 32
525		00612	R 000000 A	0
526		00613	R 210013 A	210013
527		00614	R 234400 A	234400 /SET NAME REG TO ZERO
528		00615	R 203200 A	203200
529		00616	R 144000 A	144000
530		00617	R 141400 A	141400

PAGE	12	DRAW	SRC	DRAWCP
531		00620	R 000040 A	XYAD 40
532		00621	R 000040 A	40
533		00622	R 000040 A	40
534		00623	R 000040 A	40
535		00624	R 000040 A	40
536		00625	R 000040 A	40
537		00626	R 000040 A	40
538		00627	R 000040 A	40
539		00630	R 000015 A	15
540		00631	R 000012 A	12
541		00632	R 000040 A	40
542		00633	R 000040 A	40
543		00634	R 000040 A	40
544		00635	R 000040 A	40
545		00636	R 000040 A	40
546		00637	R 000040 A	40
547		00640	R 000040 A	40
548		00641	R 000040 A	40
549		00642	R 210016 A	210016
550		00643	R 620612 R	JMP* XYBUF+1
551				/
552				/
553				.DBREL
554				/
555				/
556				/
557				/
558				/ THIS SUBROUTINE DRAWS A COMPONENT
559				/ IF OUTLINE IS NOT ON SCREEN NOTHING IS DRAWN
560				/ IF DSCAN=0 COMPONENT IS ADDED TO END
561				/ OF MAIN DISPLAY FILE. OTHERWISE COMPONENT
562				/ IS DRAWN IN SPACE POINTED TO BY DSCAN
563				/ ACC CONTAINS ADDRESS OF FIRST WORD OF COMP.
564				/
565		00644	R 740040 A	COMDRW XX
566		00645	R 143123 R	DZM TFLAG
567		00646	R 142543 R	DZM BUFF1
568		00647	R 723003 A	AAC 3
569		00650	R 042516 R	DAC TEMP
570		00651	R 203177 R	LAC (PARWRD / GET BRIGHTNESS OF COMPS PADS TAGS
571		00652	R 042465 R	DAC WORD
572		00653	R 202517 R	LAC PARWRD
573		00654	R 503200 R	AND (700700
574		00655	R 740200 A	SZA
575		00656	R 600664 R	JMP .+6
576		00657	R 442465 R	ISZ WORD
577		00660	R 222465 R	LAC* WORD
578		00661	R 503201 R	AND (700000
579		00662	R 741200 A	SNA
580		00663	R 620644 R	JMP* COMDRW /INVISIBLE
581		00664	R 143112 R	DZM MODE#
582		00665	R 202462 R	LAC COMPAD

PAGE	13	DRAW	SRC	DRAWCP
583		00666	R 740031 A	TCA
584		00667	R 342516 R	TAD TEMP
585		00670	R 673000 A	LMQ!661000
586		00671	R 640323 A	DIV
587		00672	R 000006 A	6
588		00673	R 641002 A	LACQ
589		00674	R 042507 R	DAC PTR
590		00675	R 222516 R	LAC* TEMP
591		00676	R 741200 A	SNA
592		00677	R 620644 R	JMP* COMDRW / COMP DELETED
593		00700	R 652000 A	LMQ
594		00701	R 503163 R	AND (777
595		00702	R 342460 R	TAD LIBAD
596		00703	R 740030 A	IAC
597		00704	R 043111 R	DAC LIBPTR
598		00705	R 641602 A	641000!LLS 2
599		00706	R 043115 R	DAC ORIENT# / ORIENTATION
600		00707	R 223111 R	LAC* LIBPTR#
601		00710	R 101632 R	JMS REPOS
602		00711	R 043126 R	DAC XCOM# / LENGTH AND BREADTH
603		00712	R 641002 A	LACQ
604		00713	R 043131 R	DAC YCOM# / OF COMPONENT
605		00714	R 442516 R	ISZ TEMP
606		00715	R 202516 R	LAC TEMP
607		00716	R 042474 R	DAC NAME
608		00717	R 222516 R	LAC* TEMP
609		00720	R 503202 R	AND (1777
610		00721	R 043127 R	DAC XCOMP# / ABSOLUTE POSITION
611		00722	R 442516 R	ISZ TEMP
612		00723	R 222516 R	LAC* TEMP
613		00724	R 503202 R	AND (1777
614		00725	R 043132 R	DAC YCOMP# / OF COMPONENT
615		00726	R 203126 R	LAC XCOM
616		00727	R 740100 A	SMA
617		00730	R 600736 R	JMP .+6
618		00731	R 343127 R	TAD XCOMP
619		00732	R 043127 R	DAC XCOMP
620		00733	R 203126 R	LAC XCOM
621		00734	R 740031 A	TCA
622		00735	R 043126 R	DAC XCOM
623		00736	R 203131 R	LAC YCOM
624		00737	R 740100 A	SMA
625		00740	R 600746 R	JMP .+6
626		00741	R 343132 R	TAD YCOMP
627		00742	R 043132 R	DAC YCOMP
628		00743	R 203131 R	LAC YCOM
629		00744	R 740031 A	TCA
630		00745	R 043131 R	DAC YCOM
631		00746	R 203127 R	LAC XCOMP
632		00747	R 042532 R	DAC X1
633		00750	R 343126 R	TAD XCOM
634		00751	R 042533 R	DAC X2

PAGE	14	DRAW	SRC	DRAWCP
635		00752	R 203132	R LAC YCOMP
636		00753	R 042535	R DAC Y1
637		00754	R 042536	R DAC Y2
638		00755	R 143101	R DZM DRAWN#
639		00756	R 143114	R DZM OLBRT# /SO FILL CALL COLRIT 1ST TIME
640		00757	R 202517	R LAC PARWRD
641		00760	R 742030	A SWHA
642		00761	R 503163	R AND (777
643		00762	R 042466	R DAC BRIGHT
644		00763	R 101226	R JMS FILL
645		00764	R 203127	R LAC XCOMP
646		00765	R 343126	R TAD XCOM
647		00766	R 042532	R DAC X1
648		00767	R 042533	R DAC X2
649		00770	R 203132	R LAC YCOMP
650		00771	R 042535	R DAC Y1
651		00772	R 343131	R TAD YCOM
652		00773	R 042536	R DAC Y2
653		00774	R 101226	R JMS FILL
654		00775	R 203127	R LAC XCOMP
655		00776	R 042533	R DAC X2
656		00777	R 343126	R TAD XCOM
657		01000	R 042532	R DAC X1
658		01001	R 203132	R LAC YCOMP
659		01002	R 343131	R TAD YCOM
660		01003	R 042535	R DAC Y1
661		01004	R 042536	R DAC Y2
662		01005	R 101226	R JMS FILL
663		01006	R 203127	R LAC XCOMP
664		01007	R 042532	R DAC X1
665		01010	R 042533	R DAC X2
666		01011	R 203132	R LAC YCOMP
667		01012	R 042536	R DAC Y2
668		01013	R 343131	R TAD YCOM
669		01014	R 042535	R DAC Y1
670		01015	R 101226	R JMS FILL
671		01016	R 203101	R COMEND LAC DRAWN
672		01017	R 741200	A SNA
673		01020	R 601211	R JMP ZEROIN / COMPONENT OFFSCREEN
674		01021	R 202517	R PADS LAC PARWRD
675		01022	R 503203	R AND (700 /GET PAD BRIGHTNESS
676		01023	R 042466	R DAC BRIGHT
677		01024	R 741200	A SNA
678		01025	R 601140	R JMP TAG
679		01026	R 203111	R LAC LIBPTR
680		01027	R 723776	A AAC -2
681		01030	R 043113	R DAC NOFPAD#
682		01031	R 223113	R LAC* NOFPAD
683		01032	R 723775	A AAC -3
684		01033	R 043113	R DAC NOFPAD
685		01034	R 744010	A RCL
686		01035	R 343113	R TAD NOFPAD

PAGE	15	DRAW	SRC	DRAWCP
687	01036	R	660502	A 660001LRS 2 IV4
688	01037	R	740001	A CMA
689	01040	R	043113	R DAC NOFPAD / (NO OF PADS +1)
690	01041	R	143074	R DZM COLOR
691	01042	R	142512	R DZM NOD
692	01043	R	442512	R NODLUP ISZ NOD
693	01044	R	443113	R ISZ NOFPAD
694	01045	R	741000	A SKP
695	01046	R	601140	R JMP TAG
696	01047	R	202507	R LAC PTR
697	01050	R	101675	R JMS XY / GET PAD POSN IN DS UNITS
698	01051	R	101612	R JMS SCALUP / CONVERT TO SCREEN UNITS
699	01052	R	101054	R JMS PADHOL / DRAW IF ON SCREEN
700	01053	R	601043	R JMP NODLUP
701				/
702				/
703	01054	R	740040	A PADHOL XX / SET SPOT TO DRAW +,X,O FOR PADS AND P.T HOLES
704	01055	R	101130	R JMS CUTT
705	01056	R	723774	A AAC -4 / NOD=0 FOR PT HOLES
706	01057	R	043077	R DAC DELTAX#
707	01060	R	641002	A LACQ
708	01061	R	101130	R JMS CUTT / EXIT PADHOL IF OFFSCREEN
709	01062	R	723772	A AAC -6
710	01063	R	652000	A LMQ
711	01064	R	203101	R LAC DRAWN / HAS POINT BEEN DRAWN YET
712	01065	R	740200	A SZA /NO, DRAWPT
713	01066	R	601073	R JMP DVEC /YE, DRAW VECTOR
714	01067	R	203077	R LAC DELTAX
715	01070	R	101756	R JMS POSIT
716	01071	R	443101	R ISZ DRAWN /POINT IN BUFFER NOW
717	01072	R	601075	R JMP UPSPOT
718	01073	R	203077	R DVEC LAC DELTAX
719	01074	R	101271	R JMS MAINVC
720	01075	R	203130	R UPSPOT LAC XSPOT
721	01076	R	723016	A AAC 16
722	01077	R	043130	R DAC XSPOT /UPDATE POSITION
723	01100	R	202466	R LAC BRIGHT
724	01101	R	543114	R SAD OLBRT
725	01102	R	601105	R JMP NOCHG / DOESNT NEED BRIGHTNESS
726	01103	R	043114	R DAC OLBRT / SAVE NEW BRIGHTNESS
727	01104	R	101717	R JMS COLRIT / CHANGE BRIHGTNESS
728	01105	R	202543	R NOCHG LAC BUFF1
729	01106	R	343204	R TAD (BUFF1
730	01107	R	043077	R DAC DELTAX
731	01110	R	723777	A AAC -1
732	01111	R	063205	R DAC* (13
733	01112	R	220013	A LAC* 13 / MOVE JUMP AT
734	01113	R	060013	A DAC* 13 / END OF BUFFER
735	01114	R	202512	R LAC NOD
736	01115	R	740200	A SZA
737	01116	R	601121	R JMP NOPTH
738	01117	R	343206	R TAD (10117 / CODE FOR 0

PAGE	16	DRAW	SRC	DRAWCP
739		01120	R 601125	R JMP STBF
740		01121	R 723777	A NOPTH AAC -1
741		01122	R 751200	A SNA!CLA /SKIP IF NOT PAD 1
742		01123	R 723255	A AAC 255
743		01124	R 343207	R TAD (10053 / * FOR PAD1 ELSE +
744		01125	R 063077	R STBF DAC* DELTAX
745		01126	R 442543	R ISZ BUFF1
746		01127	R 621054	R JMP* PADHOL
747				/
748				/
749				/ SIMPLE SCISSOR FOR PADS
750				/
751				/
752		01130	R 740040	A CUTT XX /IF OFFSCREEN EXIT PADHOL, ELSE EXIT CUTT
753		01131	R 741100	A SPA
754		01132	R 621054	R JMP* PADHOL
755		01133	R 343210	R TAD (-1777
756		01134	R 740300	A SMA!SZA
757		01135	R 621054	R JMP* PADHOL
758		01136	R 343202	R TAD (1777
759		01137	R 621130	R JMP* CUTT
760				/
761				/
762				/
763				/
764		01140	R 203177	R TAG LAC (PARWRD
765		01141	R 740030	A IAC
766		01142	R 042465	R DAC WORD
767		01143	R 222465	R LAC* WORD
768		01144	R 503211	R AND (777000
769		01145	R 742030	A SWHA
770		01146	R 042466	R DAC BRIGHT
771		01147	R 503203	R AND (700
772		01150	R 741200	A SNA
773		01151	R 601202	R JMP NOTAG
774		01152	R 101717	R JMS COLRIT
775		01153	R 143074	R DZM COLOR#
776		01154	R 203132	R LAC YCOMP
777		01155	R 343131	R TAD YCOM
778		01156	R 652000	A LMQ
779		01157	R 203127	R LAC XCOMP
780		01160	R 101612	R JMS SCALUP
781		01161	R 043127	R DAC XCOMP
782		01162	R 641002	A LACQ
783		01163	R 723004	A AAC 4
784		01164	R 652000	A LMQ
785		01165	R 203127	R LAC XCOMP
786		01166	R 101271	R JMS MAIN/C
787		01167	R 101711	R JMS LPONOF / DISENABLE LITEPEN
788		01170	R 202516	R LAC TEMP
789		01171	R 723774	A AAC -4
790		01172	R 041175	R DAC .+3

PAGE	17	DRAW	SRC	DRAWCP
791	01173	R	123152	E JMS TEXT
792	01174	R	601200	R JMP .+4
793	01175	R	000000	A 0
794	01176	R	003171	R .DSA (4
795	01177	R	002543	R .DSA BUFF1
796	01200	R	443112	R ISZ MODE
797	01201	R	101711	R JMS LPONOF / ENABLE LITEPEN
798	01202	R	202473	R NOTAG LAC DSCAN
799	01203	R	740200	A SZA
800	01204	R	601207	R JMP .+3
801	01205	R	102435	R JMS ADDIT
802	01206	R	620644	R JMP* COMDRW
803	01207	R	102443	R JMS SUBSIT
804	01210	R	620644	R JMP* COMDRW
805	01211	R	202473	R ZEROIN LAC DSCAN
806	01212	R	740200	A SZA
807	01213	R	102451	R JMS REMOVE
808	01214	R	222516	R LAC* TEMP
809	01215	R	503202	R AND (1777
810	01216	R	062516	R DAC* TEMP
811	01217	R	202516	R LAC TEMP
812	01220	R	723777	A AAC -1
813	01221	R	042516	R DAC TEMP
814	01222	R	222516	R LAC* TEMP
815	01223	R	503202	R AND (1777
816	01224	R	062516	R DAC* TEMP
817	01225	R	620644	R JMP* COMDRW
818				/
819				/
820				/
821				/
822				/
823				/
824				/
825				/
826	01226	R	740040	A FILL XX
827	01227	R	101316	R JMS CHOPER
828	01230	R	202514	R LAC NOLINE
829	01231	R	741200	A SNA
830	01232	R	621226	R JMP* FILL /OFF SCREEN
831	01233	R	203101	R LAC DRAWN
832	01234	R	740200	A SZA
833	01235	R	601250	R JMP SECOND /NOT FIRST ENTRY IN BUFFER
834	01236	R	443101	R ISZ DRAWN
835	01237	R	202535	R LAC Y1
836	01240	R	652000	A LMQ
837	01241	R	202532	R LAC X1
838	01242	R	101756	R JMS POSIT /DRAWS POINT AND STORES IN XSPOT, YSPOT
839	01243	R	202466	R LAC BRIGHT
840	01244	R	503203	R AND (700
841	01245	R	741200	A SNA
842	01246	R	601021	R JMP PADS /OUTLINE IN/IS. BUT ON SCREEN

PAGE	18	DRAW	SRC	DRAWCP
843	01247	R	601255	R JMP SETVS
844	01250	R	143074	R SECOND DZM COLOR
845	01251	R	202535	R LAC Y1
846	01252	R	652000	A LMQ
847	01253	R	202532	R LAC X1
848	01254	R	101271	R JMS MAINVC
849	01255	R	443074	R SETVS 192 COLOR /SET FOR VISIBLE LINE
850	01256	R	202466	R LAC BRIGHT
851	01257	R	503203	R AND (700 /GET BRIGHTNESS
852	01260	R	543114	R SAD OLBRT /SAME AS LAST
853	01261	R	601264	R JMP SAMBRT /YES
854	01262	R	043114	R DAC OLBRT /NO, UPDATE LAST
855	01263	R	101717	R JMS COLRIT /AND SET BRIGHTNESS PARAMETER
856	01264	R	202536	R SAMBRT LAC Y2
857	01265	R	652000	A LMQ
858	01266	R	202533	R LAC X2
859	01267	R	101271	R JMS MAINVC
860	01270	R	621226	R JMP* FILL
861	01271	R	740040	A MAINVC XX /DRAWS LINE FROM XSPOT, YSPOT TO (AC, NO)
862	01272	R	740031	A TCA /AND UPDATES XSPOT YSPOT
863	01273	R	343130	R TAD XSPOT#
864	01274	R	740031	A TCA
865	01275	R	043077	R DAC DELTAX
866	01276	R	343130	R TAD XSPOT
867	01277	R	043130	R DAC XSPOT
868	01300	R	641002	A LACQ
869	01301	R	740031	A TCA
870	01302	R	343134	R TAD YSPOT#
871	01303	R	740031	A TCA
872	01304	R	043100	R DAC DELTAY#
873	01305	R	343134	R TAD YSPOT
874	01306	R	043134	R DAC YSPOT
875	01307	R	123144	E JMS* LINE /IGNORES ZERO MOVES
876	01310	R	601315	R JMP .+5
877	01311	R	003077	R .DSA DELTAX
878	01312	R	003100	R .DSA DELTAY
879	01313	R	003074	R .DSA COLOR
880	01314	R	002543	R .DSA BUFF1
881	01315	R	621271	R JMP* MAINVC
882	01316	R	740040	A CHOPER XX
883	01317	R	143105	R DZM FLAG1#
884	01320	R	143106	R DZM FLAG2#
885	01321	R	202534	R LAC X0
886	01322	R	740031	A TCA
887	01323	R	042542	R DAC XOM
888	01324	R	342532	R TAD X1
889	01325	R	101574	R JMS SCALED
890	01326	R	042532	R DAC X1
891	01327	R	202542	R LAC XOM
892	01330	R	342533	R TAD X2
893	01331	R	101574	R JMS SCALED
894	01332	R	042533	R DAC X2

PAGE	19	DRAW	SRC	DRAWCP
895		01333	R 202537	R LAC X0
896		01334	R 740031	A TCA
897		01335	R 042542	R DAC XOM
898		01336	R 342535	R TAD Y1
899		01337	R 101574	R JMS SCALED
900		01340	R 042535	R DAC Y1
901		01341	R 202542	R LAC XOM
902		01342	R 342536	R TAD Y2
903		01343	R 101574	R JMS SCALED
904		01344	R 042536	R DAC Y2
905				/
906				/
907				/
908				/
909		01345	R 202532	R LAC X1
910		01346	R 740031	A TCA
911		01347	R 342533	R TAD X2
912		01350	R 041513	R DAC XINC
913		01351	R 741100	A SPA
914		01352	R 740031	A TCA
915		01353	R 042542	R DAC XOM
916		01354	R 202535	R LAC Y1
917		01355	R 740031	A TCA
918		01356	R 342536	R TAD Y2
919		01357	R 043133	R DAC YINC#
920		01360	R 740100	A SMA
921		01361	R 740031	A TCA
922		01362	R 342542	R TAD XOM
923		01363	R 741100	A SPA
924		01364	R 101522	R JMS SWOP1
925				/
926				/
927				/
928				/
929		01365	R 201513	R LAC XINC
930		01366	R 741100	A SPA
931		01367	R 101547	R JMS SWOP2
932		01370	R 142514	R DZM NOLINE
933		01371	R 202533	R LAC X2
934		01372	R 741300	A SPA SNA
935		01373	R 601470	R JMP EGGZIT /LEFT
936		01374	R 202532	R LAC X1
937		01375	R 343210	R TAD (-1777
938		01376	R 740100	A SMA
939		01377	R 601470	R JMP EGGZIT /RIGHT
940				/
941				/
942				/
943				/
944		01400	R 202532	R LAC X1
945		01401	R 740100	A SMA
946		01402	R 601407	R JMP .+5

PAGE	20	DRAW	SRC	DRAWCP
947		01403	R 143135	R DZM Z#
948		01404	R 101471	R JMS SCISS
949		01405	R 042535	R DAC Y1
950		01406	R 142532	R DZM X1
951		01407	R 202533	R LAC X2
952		01410	R 343210	R TAD (-1777
953		01411	R 741100	A SPA
954		01412	R 601420	R JMP .+6
955		01413	R 203202	R LAC (1777
956		01414	R 043135	R DAC Z
957		01415	R 042533	R DAC X2
958		01416	R 101471	R JMS SCISS
959		01417	R 042536	R DAC Y2
960				/
961				/
962				/
963				/
964		01420	R 203133	R LAC YINC
965		01421	R 741100	A SPA
966		01422	R 101547	R JMS SWOP2
967		01423	R 202536	R LAC Y2
968		01424	R 741300	A SPA SNA
969		01425	R 601470	R JMP EGGZIT /BELOW
970		01426	R 202535	R LAC Y1
971		01427	R 343210	R TAD (-1777
972		01430	R 740100	A SMA
973		01431	R 601470	R JMP EGGZIT /ABOVE
974				/
975				/
976				/
977				/
978		01432	R 203133	R LAC YINC
979		01433	R 741200	A SNA
980		01434	R 601457	R JMP FINISH
981		01435	R 101522	R JMS SWOP1
982		01436	R 202532	R LAC X1
983		01437	R 740100	A SMA
984		01440	R 601446	R JMP .+6
985		01441	R 143135	R DZM Z
986		01442	R 101471	R JMS SCISS
987		01443	R 042535	R DAC Y1
988		01444	R 142532	R DZM X1
989		01445	R 601457	R JMP FINISH
990		01446	R 202533	R LAC X2
991		01447	R 343210	R TAD (-1777
992		01450	R 741300	A SPA SNA
993		01451	R 601457	R JMP FINISH
994		01452	R 203202	R LAC (1777
995		01453	R 043135	R DAC Z
996		01454	R 042533	R DAC X2
997		01455	R 101471	R JMS SCISS
998		01456	R 042536	R DAC Y2

PAGE	21	DRAW	SRC	DRAWCP
999		01457	R 203105	R FINIS LAC FLAG
1000		01460	R 740020	A RAR
1001		01461	R 741400	A SZL
1002		01462	R 101522	R JMS SWOP1
1003		01463	R 203106	R LAC FLAG2
1004		01464	R 740020	A RAR
1005		01465	R 741400	A SZL
1006		01466	R 101547	R JMS SWOP2
1007		01467	R 442514	R ISZ NOLINE
1008		01470	R 621316	R EGGZIT JMP* CHOPER
1009				/
1010				/
1011				/
1012				/
1013				/
1014		01471	R 740040	A SCISS XX
1015		01472	R 203133	R LAC YINC
1016		01473	R 741200	A SNA
1017		01474	R 601520	R JMP ZERINC
1018		01475	R 741100	A SPA
1019		01476	R 740031	A TCA
1020		01477	R 041511	R DAC AA
1021		01500	R 202532	R LAC X1
1022		01501	R 740031	A TCA
1023		01502	R 343135	R TAD Z
1024		01503	R 243133	R XOR YINC
1025		01504	R 043122	R DAC SIGN#
1026		01505	R 243133	R XOR YINC
1027		01506	R 741100	A SPA
1028		01507	R 740031	A TCA
1029		01510	R 673122	A 660000!MUL
1030		01511	R 000000	A AA 0
1031		01512	R 640323	A DIV
1032		01513	R 000000	A XINC 0
1033		01514	R 203122	R LAC SIGN
1034		01515	R 661002	A 660000!LACQ
1035		01516	R 741400	A SZL
1036		01517	R 740031	A TCA
1037		01520	R 342535	R ZERINC TAD Y1
1038		01521	R 621471	R JMP* SCISS
1039				/
1040				/
1041				/
1042				/
1043		01522	R 740040	A SWOP1 XX
1044		01523	R 201513	R LAC XINC
1045		01524	R 042542	R DAC XOM
1046		01525	R 203133	R LAC YINC
1047		01526	R 041513	R DAC XINC
1048		01527	R 202542	R LAC XOM
1049		01530	R 043133	R DAC YINC
1050		01531	R 202532	R LAC X1

PAGE	22	DRAW	SRC	DRAWCP
1051		01532	R 042542	R DAC XOM
1052		01533	R 202535	R LAC Y1
1053		01534	R 042532	R DAC X1
1054		01535	R 202542	R LAC XOM
1055		01536	R 042535	R DAC Y1
1056		01537	R 202533	R LAC X2
1057		01540	R 042542	R DAC XOM
1058		01541	R 202536	R LAC Y2
1059		01542	R 042533	R DAC X2
1060		01543	R 202542	R LAC XOM
1061		01544	R 042536	R DAC Y2
1062		01545	R 443105	R ISZ FLAG1
1063		01546	R 621522	R JMP* SWOP1
1064				/
1065				/
1066				/
1067				/
1068		01547	R 740040	A SWOP2 XX
1069		01550	R 201513	R LAC XINC
1070		01551	R 740031	A TCA
1071		01552	R 041513	R DAC XINC
1072		01553	R 203133	R LAC YINC
1073		01554	R 740031	A TCA
1074		01555	R 043133	R DAC YINC
1075		01556	R 202532	R LAC X1
1076		01557	R 042542	R DAC XOM
1077		01560	R 202533	R LAC X2
1078		01561	R 042532	R DAC X1
1079		01562	R 202542	R LAC XOM
1080		01563	R 042533	R DAC X2
1081		01564	R 202535	R LAC Y1
1082		01565	R 042542	R DAC XOM
1083		01566	R 202536	R LAC Y2
1084		01567	R 042535	R DAC Y1
1085		01570	R 202542	R LAC XOM
1086		01571	R 042536	R DAC Y2
1087		01572	R 443106	R ISZ FLAG2
1088		01573	R 621547	R JMP* SWOP2
1089				/
1090				/
1091				/
1092				/
1093		01574	R 740040	A SCALED XX / MULTIPLIES AC BY SCALE (AC CAN BE +VE OR -VE)
1094		01575	R 143122	R DZM SIGN
1095		01576	R 740100	A SMA
1096		01577	R 601602	R JMP .+3
1097		01600	R 443122	R ISZ SIGN
1098		01601	R 740031	A TCA
1099		01602	R 673122	A 660000!MUL
1100		01603	R 000000	A SCALE 0
1101		01604	R 203122	R LAC SIGN
1102		01605	R 740020	A RAR

PAGE	23	DRAW	SRC	DRAWCP
1103		01606 R	641002 A	LAC
1104		01607 R	741400 A	SZL
1105		01610 R	740031 A	TCA
1106		01611 R	621574 R	JMP* SCALED
1107				/
1108				/
1109				/
1110				/
1111		01612 R	740040 A	SCALUP XX / ENTER WITH X,Y IN AC,MQ(DS UNITS)
1112		01613 R	041513 R	DAC XINC
1113		01614 R	641002 A	LACQ
1114		01615 R	043133 R	DAC YINC
1115		01616 R	202534 R	LAC X0 / LOWER LIMIT OF WINDOW
1116		01617 R	740031 A	TCA
1117		01620 R	341513 R	TAD XINC
1118		01621 R	101574 R	JMS SCALED
1119		01622 R	041513 R	DAC XINC
1120		01623 R	202537 R	LAC Y0
1121		01624 R	740031 A	TCA
1122		01625 R	343133 R	TAD YINC
1123		01626 R	101574 R	JMS SCALED
1124		01627 R	652000 A	LMQ
1125		01630 R	201513 R	LAC XINC
1126		01631 R	621612 R	JMP* SCALUP / EXIT WITH X,Y IN AC,MQ(SCREEN UNITS)
1127				/
1128				/
1129				/
1130		01632 R	740040 A	REPOS XX
1131		01633 R	652000 A	LMQ
1132		01634 R	503163 R	AND (777
1133		01635 R	043133 R	DAC YINC
1134		01636 R	641611 A	641000!LLS 11
1135		01637 R	041513 R	DAC XINC
1136		01640 R	203115 R	LAC ORIENT /ORIENTATION
1137		01641 R	740200 A	SZA
1138		01642 R	601647 R	JMP .+5
1139		01643 R	203133 R	LAC YINC
1140		01644 R	652000 A	LMQ
1141		01645 R	201513 R	LAC XINC
1142		01646 R	621632 R	JMP* REPOS
1143		01647 R	723777 A	AAC -1
1144		01650 R	740200 A	SZA
1145		01651 R	601657 R	JMP .+6
1146		01652 R	201513 R	LAC XINC
1147		01653 R	652000 A	LMQ
1148		01654 R	203133 R	LAC YINC
1149		01655 R	740031 A	TCA
1150		01656 R	621632 R	JMP* REPOS
1151		01657 R	723777 A	AAC -1
1152		01660 R	740200 A	SZA
1153		01661 R	601670 R	JMP .+7
1154		01662 R	203133 R	LAG YINC

PAGE	24	DRAW	SRC	DRAWCP
1155		01663	R 740031 A	TCA
1156		01664	R 652000 A	LMQ
1157		01665	R 201513 R	LAC XINC
1158		01666	R 740031 A	TCA
1159		01667	R 621632 R	JMP* REPOS
1160		01670	R 201513 R	LAC XINC
1161		01671	R 740031 A	TCA
1162		01672	R 652000 A	LMQ
1163		01673	R 203133 R	LAC YINC
1164		01674	R 621632 R	JMP* REPOS
1165				/
1166				/
1167				/
1168				/
1169		01675	R 740040 A	XY XX
1170		01676	R 043117 R	DAC PPTR#
1171		01677	R 123151 E	JMS* SUBNOD
1172		01700	R 601705 R	JMP .+5
1173		01701	R 001513 R	ARG3 .DSA XINC
1174		01702	R 003133 R	.DSA YINC
1175		01703	R 003117 R	.DSA PPTR
1176		01704	R 002512 R	.DSA NOD
1177		01705	R 203133 R	LAC YINC
1178		01706	R 652000 A	LMQ
1179		01707	R 201513 R	LAC XINC
1180		01710	R 621675 R	JMP* XY
1181				/
1182				/
1183				/
1184				/
1185				/
1186				/
1187				/
1188				/
1189		01711	R 740040 A	LPONOF XX
1190		01712	R 203171 R	LAC (4
1191		01713	R 652000 A	LMQ
1192		01714	R 203112 R	LAC MODE
1193		01715	R 101767 R	JMS FEAT
1194		01716	R 621711 R	JMP* LPONOF
1195				/
1196				/
1197				/
1198				/
1199				/
1200		01717	R 000000 A	COLRIT / UNPACK BRIGHT TO GIVE INTENSITY AND LINE TYPE
1201				/
1202		01720	R 203212 R	LAC (200
1203		01721	R 652000 A	LMQ
1204		01722	R 202466 R	LAC BRIGHT
1205		01723	R 503203 R	AND (700
1206		01724	R 660506 A	660000!LRS 6

PAGE	25	DRAW	SRC	DRAWCP
1207		01725 R	101767 R	JMS FEAT
1208		01726 R	621717 R	JMP* COLRIT
1209				/
1210				/
1211				/
1212				/
1213				/
1214		01727 R	740040 A	PAR XX /GETS PARAMETER WORD FOR LAYER
1215		01730 R	723003 A	AAC 3
1216		01731 R	744020 A	CLLIRAR /((LAYER+3)/2, LINK SET IF EVEN LAYER
1217		01732 R	343177 R	TAD (PARWRD /POINTER TO RELEVANT ENTRY IN PARWRD TABLE
1218		01733 R	043116 R	DAC PARPT#
1219		01734 R	223116 R	LAC* PARPT /GET 2 LAYER ENTRY
1220		01735 R	740400 A	SNL /EVEN LAYER NO
1221		01736 R	742030 A	SWHA /GET TOP 9 BITS
1222		01737 R	503163 R	AND (777
1223		01740 R	621727 R	JMP* PAR
1224				/
1225				/
1226				/
1227		01741 R	740040 A	CHKDSH XX
1228		01742 R	202466 R	LAC BRIGHT
1229		01743 R	503165 R	AND (3 /IS DASH REQUIRED
1230		01744 R	543102 R	SAD DSHMRK
1231		01745 R	621741 R	JMP* CHKDSH
1232		01746 R	043102 R	DAC DSHMRK
1233		01747 R	042465 R	DAC WORD
1234		01750 R	123147 E	JMS* PRAMTR
1235		01751 R	601755 R	JMP .+4
1236		01752 R	003213 R	.DSA (20
1237		01753 R	002465 R	.DSA WORD
1238		01754 R	002543 R	.DSA BUFF1
1239		01755 R	621741 R	JMP* CHKDSH
1240				/
1241				/
1242				/
1243		01756 R	740040 A	POSIT XX
1244		01757 R	043130 R	DAC XSPOT
1245		01760 R	641002 A	LACQ
1246		01761 R	043134 R	DAC YSPOT
1247		01762 R	123146 E	JMS* POINT
1248		01763 R	621756 R	JMP* POSIT
1249		01764 R	003130 R	.DSA XSPOT
1250		01765 R	003134 R	.DSA YSPOT
1251		01766 R	002543 R	.DSA BUFF1
1252				/
1253				/
1254				/
1255				/
1256				/
1257		01767 R	740040 A	FEAT XX
1258		01770 R	043125 R	DAC VALUE#

PAGE	26	DRAW	SRC	DRAWCP
1259		01771	R 641002 A	LACQ
1260		01772	R 043104 R	DAC FEATR#
1261		01773	R 123147 E	JMS* PRAMTR
1262		01774	R 602000 R	JMP .+4
1263		01775	R 003104 R	.DSA FEATR
1264		01776	R 003125 R	.DSA VALUE
1265		01777	R 002543 R	.DSA BUFF1
1266		02000	R 621767 R	JMP* FEAT
1267				/
1268				/
1269				/
1270				/
1271				/
1272		02001	R 740040 A	SUBCOP XX
1273		02002	R 042006 R	DAC .+4
1274		02003	R 123136 E	JMS* COPY
1275		02004	R 602010 R	JMP .+4
1276		02005	R 003154 R	.DSA (0
1277		02006	R 000000 A	0
1278		02007	R 002543 R	.DSA BUFF1
1279		02010	R 622001 R	JMP* SUBCOP
1280				/
1281				/
1282				/
1283				/
1284				/
1285				/
1286				/
1287				/
1288		02011	R 740040 A	CONDRW XX
1289		02012	R 143123 R	DZM TFLAG#
1290		02013	R 443123 R	ISZ TFLAG
1291		02014	R 142543 R	DZM BUFF1
1292		02015	R 203177 R	LAC (PARWRD
1293		02016	R 740030 A	IAC
1294		02017	R 042465 R	DAC WORD
1295		02020	R 222465 R	LAC* WORD
1296		02021	R 503163 R	AND (777
1297		02022	R 042466 R	DAC BRIGHT
1298		02023	R 503203 R	AND (700
1299		02024	R 741200 A	SNA
1300		02025	R 602076 R	JMP END7
1301		02026	R 202510 R	LAC NOD1
1302		02027	R 042512 R	DAC NOD
1303		02030	R 202505 R	LAC PTR1
1304		02031	R 101675 R	JMS XY
1305		02032	R 042532 R	DAC X1
1306		02033	R 641002 A	LACQ
1307		02034	R 042535 R	DAC Y1
1308		02035	R 202511 R	LAC NOD2
1309		02036	R 042512 R	DAC NOD
1310		02037	R 202506 R	LAC PTR2

PAGE	27	DRAW	SRC	DRAWCP	
1311	02040	R	101675	R	JMS WY
1312	02041	R	042533	R	DAC X2
1313	02042	R	641002	A	LACQ
1314	02043	R	042536	R	DAC Y2
1315	02044	R	101316	R	JMS CHOPER
1316	02045	R	202514	R	LAC NOLINE
1317	02046	R	741200	A	SNA
1318	02047	R	602076	R	JMP END7 /OFFSCREEN
1319	02050	R	101717	R	JMS COLRIT
1320	02051	R	143102	R	DZM DSHMRK
1321	02052	R	101741	R	JMS CHKDSH
1322	02053	R	202535	R	LAC Y1
1323	02054	R	652000	A	LMQ
1324	02055	R	202532	R	LAC X1
1325	02056	R	101756	R	JMS POSIT
1326	02057	R	443074	R	ISZ COLOR
1327	02060	R	202536	R	LAC Y2
1328	02061	R	652000	A	LMQ
1329	02062	R	202533	R	LAC X2
1330	02063	R	101271	R	JMS MAIN/C
1331	02064	R	142466	R	DZM BRIGHT
1332	02065	R	101741	R	JMS CHKDSH
1333	02066	R	202473	R	LAC DSCAN
1334	02067	R	740230	A	SZA! IAC
1335	02070	R	602074	R	JMP .+4
1336	02071	R	102112	R	JMS MARK
1337	02072	R	102435	R	JMS ADDIT
1338	02073	R	741000	A	SKP
1339	02074	R	102443	R	JMS SUBSIT
1340	02075	R	622011	R	JMP* CONDRW
1341	02076	R	202473	R	END7 LAC DSCAN
1342	02077	R	741200	A	SNA
1343	02100	R	602103	R	JMP .+3
1344	02101	R	102451	R	JMS REMOVE
1345	02102	R	602106	R	JMP .+4
1346	02103	R	203121	R	LAC REPFLG
1347	02104	R	740200	A	SZA
1348	02105	R	622011	R	JMP* CONDRW
1349	02106	R	442502	R	ISZ CONCNT
1350	02107	R	202502	R	LAC CONCNT
1351	02110	R	102112	R	JMS MARK
1352	02111	R	622011	R	JMP* CONDRW
1353					/
1354					/ THIS SUBROUTINE MARKS BOTH ENDS OF CONNEX.
1355					/ WITH DISPLAY FILE ADDRESS OF CONNEXION.
1356					/
1357	02112	R	740040	A	MARK XX
1358	02113	R	042515	R	DAC DISFAD
1359	02114	R	222476	R	LAC* SCAN
1360	02115	R	503214	R	AND (6000000
1361	02116	R	342515	R	TAD DISFAD
1362	02117	R	062476	R	DAC* SCAN

PAGE	28	DRAW	SRC	DRAWCP
1363		02120	R 202506 R	LAC PTR2
1364		02121	R 542505 R	SAD PTR1
1365		02122	R 622112 R	JMP* MARK
1366		02123	R 744010 A	RCL
1367		02124	R 342506 R	TAD PTR2
1368		02125	R 744010 A	RCL /*6
1369		02126	R 342462 R	TAD COMPAD
1370		02127	R 042516 R	DAC TEMP
1371		02130	R 202476 R	LAC SCAN
1372		02131	R 723776 A	AAC -2
1373		02132	R 042512 R	DAC NOD
1374		02133	R 222512 R	LAC* NOD
1375		02134	R 503164 R	AND (77
1376		02135	R 042510 R	DAC NOD1
1377		02136	R 442512 R	ISZ NOD
1378		02137	R 222512 R	LAC* NOD
1379		02140	R 503164 R	AND (77
1380		02141	R 042511 R	DAC NOD2
1381		02142	R 222516 R	LAC* TEMP
1382		02143	R 342461 R	TAD CONNAD
1383		02144	R 042516 R	DAC TEMP
1384		02145	R 202505 R	LAC PTR1
1385		02146	R 660711 A	ALSS 11
1386		02147	R 342511 R	TAD NOD2
1387		02150	R 042512 R	DAC NOD
1388		02151	R 222516 R	FIND LAC* TEMP
1389		02152	R 503215 R	AND (777077
1390		02153	R 442516 R	ISZ TEMP
1391		02154	R 542512 R	SAD NOD
1392		02155	R 602161 R	JMP .+4
1393		02156	R 442516 R	ISZ TEMP
1394		02157	R 442516 R	ISZ TEMP
1395		02160	R 602151 R	JMP FIND
1396		02161	R 222516 R	LAC* TEMP
1397		02162	R 503164 R	AND (77
1398		02163	R 442516 R	ISZ TEMP
1399		02164	R 542510 R	SAD NOD1
1400		02165	R 602170 R	JMP .+3
1401		02166	R 442516 R	ISZ TEMP
1402		02167	R 602151 R	JMP FIND
1403		02170	R 222516 R	LAC* TEMP
1404		02171	R 503214 R	AND (600000
1405		02172	R 342515 R	TAD DISFAD
1406		02173	R 062516 R	DAC* TEMP
1407		02174	R 622112 R	JMP* MARK
1408				/
1409				/
1410				/
1411				/
1412				/
1413				/
1414				/

PAGE	29	DRAW	SRC	DRAWCP
1415				/
1416				/
1417	02175	R	740040	A ROOTS XX
1418	02176	R	143120	R DZM PTHFLG# /1 FOR PT HOLE MODE, 0 FOR ROUTE MODE
1419	02177	R	143123	R DZM TFLAG
1420	02200	R	443123	R ISZ TFLAG
1421	02201	R	203124	R LAC TFLAG1
1422	02202	R	740200	A SZA
1423	02203	R	602213	R JMP CUPPER
1424	02204	R	123150	E JMS* READRT
1425	02205	R	602211	R JMP .+4
1426	02206	R	002707	R ARGG .DSA BUFF1+144 /BUFFER FOR ROUTE
1427	02207	R	003170	R .DSA (1
1428	02210	R	002513	R .DSA RUTPTR
1429	02211	R	040012	R DAC NNN1 /STORE VALIDITY BIT
1430	02212	R	602232	R JMP CONT
1431	02213	R	202513	R CUPPER LAC RUTPTR
1432	02214	R	740031	A TCA
1433	02215	R	043075	R DAC CPTR# /NEGATE POINTER TO COPPER
1434	02216	R	123150	E JMS* READRT
1435	02217	R	602223	R JMP .+4
1436	02220	R	002707	R .DSA BUFF1+144
1437	02221	R	003170	R .DSA (1
1438	02222	R	003075	R .DSA CPTR
1439	02223	R	140012	R DZM NNN1 /COPPER ALL VALID
1440	02224	R	202513	R LAC RUTPTR
1441	02225	R	342456	R TAD COPPAD
1442	02226	R	723777	A AAC -1 /ABS PTR TO COPPER
1443	02227	R	043073	R DAC ARGC /SET FOR RUTFIN SCAN
1444	02230	R	740031	A TCA
1445	02231	R	042474	R DAC NAME
1446	02232	R	142543	R CONT DZM BUFF1 /INITIALISE BUFFER
1447	02233	R	143101	R DZM DRAWN /IF ZERO ON EXIT NOTHING DRAWN
1448	02234	R	143114	R DZM OLBRT
1449	02235	R	202206	R MODLP LAC ARGG / ADDRESS OF 1ST WORD OF ROUTE/COPPER IN BUFF1
1450	02236	R	723777	A AAC -1
1451	02237	R	063216	R DAC* (12
1452	02240	R	777777	A LAW -1
1453	02241	R	043110	R DAC LAYUR
1454	02242	R	220012	A LAC* 12
1455	02243	R	740031	A TCA /NEGATED NUMBER OF POINTS
1456	02244	R	740030	A IAC /+1 = - NO SEGMENTS
1457	02245	R	042464	R DAC CNTR
1458	02246	R	200012	R LAC NNN1 /VALIDITY
1459	02247	R	741200	A SNA
1460	02250	R	602256	R JMP .+6
1461	02251	R	543162	R SAD (-1
1462	02252	R	602255	R JMP .+3
1463	02253	R	440012	R ISZ NNN1
1464	02254	R	741030	A SKP! IAC
1465	02255	R	202464	R LAC CNTR
1466	02256	R	040013	R DAC NNN2

PAGE	30	DRAW	SRC	DRAWCP
1467		02257	R 143102 R	DZM DSHMRK#
1468		02260	R 220012 A	LOOPY? LAC* 12 /GET NEXT POINT
1469		02261	R 042532 R	DAC X1
1470		02262	R 220012 A	LAC* 12
1471		02263	R 042535 R	DAC Y1
1472		02264	R 220012 A	LAC* 12
1473		02265	R 043107 R	DAC LAYER /SEGMENT LAYER
1474		02266	R 220012 A	LAC* 12
1475		02267	R 042533 R	DAC X2
1476		02270	R 220012 A	LAC* 12
1477		02271	R 042536 R	DAC Y2
1478		02272	R 203120 R	LAC PTHFLG /ROUTE MODE?
1479		02273	R 740200 A	SZA /YES
1480		02274	R 602321 R	JMP PTHDRW /NO
1481		02275	R 202531 R	LAC STATE
1482		02276	R 750200 A	SZA!CLA
1483		02277	R 440012 R	ISZ NNN1
1484		02300	R 602305 R	JMP NBLNK
1485		02301	R 723010 A	AAC 10
1486		02302	R 652000 A	LMQ
1487		02303	R 723771 A	AAC -7
1488		02304	R 101767 R	JMS FEAT /TURN ON BLINK
1489		02305	R 203107 R	NBLNK LAC LAYER#
1490		02306	R 101727 R	JMS PAR
1491		02307	R 042466 R	DAC BRIGHT
1492		02310	R 503203 R	AND (700 /GET BRIGHTNESS BITS
1493		02311	R 740200 A	SZA
1494		02312	R 602317 R	JMP NOINV /NOT VISIBLE
1495		02313	R 203124 R	LAC TFLAG1 /COPPER?
1496		02314	R 740200 A	SZA /NO
1497		02315	R 602413 R	JMP OFFSCR /NO COPPER ON SCREEN
1498		02316	R 602337 R	JMP TSBLNK
1499		02317	R 101741 R	NOINV JMS CHKDSH /TURN ON DASH IF REQUIRED
1500		02320	R 602336 R	JMP DRNSEG /FILL WILL CALL COLRIT IF REQUIRED
1501				/
1502		02321	R 203110 R	PTHDRW LAC LAYUR#
1503		02322	R 741100 A	SPA /1ST SEG?
1504		02323	R 602347 R	JMP EOFLUP /YES, NO PT HOLE
1505		02324	R 543107 R	SAD LAYER
1506		02325	R 602347 R	JMP EOFLUP /SAME LAYER NO P.T.HOLE
1507		02326	R 202535 R	LAC Y1
1508		02327	R 652000 A	LMQ
1509		02330	R 202532 R	LAC X1
1510		02331	R 143074 R	DZM COLOR /SET FOR INVISIBLE MOVE
1511		02332	R 101612 R	JMS SCALUP /CONVERT TO SCREEN UNITS
1512		02333	R 142512 R	DZM NOD /TELL PADHOL TO DRAW 0
1513		02334	R 101054 R	JMS PADHOL /POSITION HOLE
1514		02335	R 602347 R	JMP EOFLUP
1515		02336	R 101226 R	DRNSEG JMS FILL
1516		02337	R 440013 R	TSBLNK ISZ NNN2
1517		02340	R 602347 R	JMP EOFLUP /NOW TURN OFF BLINK IF NECESSARY
1518		02341	R 202531 R	LAC STATE /CHECK ON?

PAGE	31	DRAW	SRC	DRAWCP
1519		02342	R 751200 A	SNA LA /YES
1520		02343	R 602347 R	JMP EOFLUP /NO
1521		02344	R 723010 A	AAC 10
1522		02345	R 653000 A	LMQ!641000
1523		02346	R 101767 R	JMS FEAT /TURN OFF BLINK
1524				/
1525		02347	R 223216 R	EOF LUP LAC* (12
1526		02350	R 723776 A	AAC -2
1527		02351	R 063216 R	DAC* (12
1528		02352	R 203107 R	LAC LAYER
1529		02353	R 043110 R	DAC LAYUR /UPDATE LAST SEG LAYER
1530		02354	R 442464 R	ISZ CNTR
1531		02355	R 602260 R	JMP LOOPY7
1532		02356	R 142466 R	DZM BRIGHT
1533		02357	R 101741 R	JMS CHKDSH
1534		02360	R 203124 R	LAC TFLAG1 /COPPER
1535		02361	R 740200 A	SZA /NO
1536		02362	R 602376 R	JMP DRWNOW /YES, GO AND DRAW
1537		02363	R 203120 R	LAC PTHFLG /P.T. HOLE MODE?
1538		02364	R 740200 A	SZA /NO
1539		02365	R 602376 R	JMP DRWNOW /GO AND DRAW ROUTE
1540		02366	R 443120 R	ISZ PTHFLG /SET P.T.HOLE MODE
1541		02367	R 202517 R	LAC PARWRD
1542		02370	R 503203 R	AND (700 /PAD BRIGHTNESS
1543		02371	R 042466 R	DAC BRIGHT
1544		02372	R 741200 A	SNA /NOT INVISIBLE
1545		02373	R 602376 R	JMP DRWNOW /NO P.T.HOLES
1546		02374	R 143114 R	DZM OLBRT /SO PADHOL WILL CALL COLRIT 1ST TIME
1547		02375	R 602235 R	JMP MODLP /GO AND DRAW P.T.HOLES
1548				/
1549		02376	R 203101 R	DRWNOW LAC DRAWN /HAS ANYTHING BEEN ENTERED INTO BUFFER
1550		02377	R 741200 A	SNA
1551		02400	R 602413 R	JMP OFFSCR /NO
1552		02401	R 202473 R	LAC DSCAN /YES
1553		02402	R 740200 A	SZA
1554		02403	R 602411 R	JMP .+6
1555		02404	R 243124 R	XOR TFLAG1
1556		02405	R 741230 A	SNA IAC
1557		02406	R 102112 R	JMS MARK
1558		02407	R 102435 R	JMS ADDIT /ADD ITEM
1559		02410	R 622175 R	JMP* ROOTS
1560		02411	R 102443 R	JMS SUBSIT
1561		02412	R 622175 R	JMP* ROOTS
1562				/
1563		02413	R 202473 R	OFFSCR LAC DSCAN
1564		02414	R 741200 A	SNA
1565		02415	R 602423 R	JMP NODEL
1566		02416	R 102451 R	JMS REMOVE /DELETE ITEM
1567		02417	R 203124 R	LAC TFLAG1
1568		02420	R 740200 A	SZA
1569		02421	R 622175 R	JMP* ROOTS /COPPER
1570		02422	R 602431 R	JMP MKIT

PAGE	32	DRAW	SRC	DRAWCP
1571		02423	R 203124 R	MODEL LAC TFLAG1
1572		02424	R 740200 A	SZA
1573		02425	R 622175 R	JMP* ROOTS /COPPER
1574		02426	R 203121 R	LAC REPFLG
1575		02427	R 740200 A	SZA
1576		02430	R 622175 R	JMP* ROOTS
1577		02431	R 442502 R	MKIT ISZ CONCNT /MARK CONN DF ADDRESS
1578		02432	R 202502 R	LAC CONCNT
1579		02433	R 102112 R	JMS MARK
1580		02434	R 622175 R	JMP* ROOTS
1581				/
1582				/
1583				/
1584				/
1585				/
1586				/
1587				/
1588				/
1589		02435	R 740040 A	ADDIT XX
1590		02436	R 123137 E	JMS* DFAD
1591		02437	R 622435 R	JMP* ADDIT
1592		02440	R 002474 R	.DSA NAME
1593		02441	R 003123 R	.DSA TFLAG
1594		02442	R 002543 R	.DSA BUFF1
1595				/
1596				/
1597				/
1598		02443	R 000000 A	SUBSIT
1599		02444	R 123142 E	JMS* DFREP
1600		02445	R 622443 R	JMP* SUBSIT
1601		02446	R 002474 R	.DSA NAME
1602		02447	R 003123 R	.DSA TFLAG
1603		02450	R 002543 R	.DSA BUFF1
1604				/
1605				/
1606				/
1607				/
1608		02451	R 740040 A	REMOVE XX
1609		02452	R 123140 E	JMS* DFDEL
1610		02453	R 622451 R	JMP* REMOVE
1611		02454	R 002474 R	.DSA NAME
1612		02455	R 003123 R	.DSA TFLAG
1613				/
1614				/
1615				/
1616				/
1617				/
1618		02456	R 000000 A	COPPAD 0
1619		02457	R 000000 A	BRDAD 0
1620		02460	R 000000 A	LIBAD 0
1621		02461	R 000000 A	CONNAD 0
1622		02462	R 000000 A	COMPAD 0

PAGE	33	DRAW	SRC	DRAWCP
1623		02463	R 000000	A ROUTE 0
1624				/
1625				/
1626				/
1627		02464	R 000000	A CNTR 0
1628		02465	R 000000	A WORD
1629		02466	R 000000	A BRIGHT
1630		02467	R 000000	A DFADDR 0
1631		02470	R 000002	A IGRID 2
1632		02471	R 000002	A IWIDTH 2
1633		02472	R 000001	A CWL 1
1634		02473	R 000000	A DSCAN
1635		02474	R 000000	A NAME
1636		02475	R 000000	A ENDCOM
1637		02476	R 000000	A SCAN
1638		02477	R 000000	A N1
1639		02500	R 000000	A N2
1640		02501	R 000000	A MAINFL
1641		02502	R 000000	A CONCNT
1642		02503	R 000000	A ENDCON
1643		02504	R 000000	A NOFCNS
1644		02505	R 000000	A PTR1
1645		02506	R 000000	A PTR2
1646		02507	R 000000	A PTR
1647		02510	R 000000	A NOD1
1648		02511	R 000000	A NOD2
1649		02512	R 000000	A NOD
1650		02513	R 000000	A RUTPTR
1651		02514	R 000000	A NOLINE
1652		02515	R 000000	A DISFAD
1653		02516	R 000000	A TEMP
1654		02517	R 700700	A PARWRD 700700
1655		02520	R 700700	A 700700
1656		02521	R 700300	A 700300
1657		02522	R 703303	A 703303
1658		02523	R 700300	A 700300
1659		02524	R 703303	A 703303
1660		02525	R 700300	A 700300
1661		02526	R 703303	A 703303
1662		02527	R 700300	A 700300
1663		02530	R 703303	A 703303
1664		02531	R 000000	A STATE
1665		02532	R 000000	A X1
1666		02533	R 000000	A X2
1667		02534	R 000000	A X0
1668		02535	R 000000	A Y1
1669		02536	R 000000	A Y2
1670		02537	R 000000	A Y0
1671		02540	R 000000	A XU 0
1672		02541	R 000000	A YU 0
1673		02542	R 000000	A XOM
1674		02543	R	A BUFF1 .BLOCK 330

1675

```
000000 A .END
03136 R 003136 E *E
03137 R 003137 E *E
03140 R 003140 E *E
03141 R 003141 E *E
03142 R 003142 E *E
03143 R 003143 E *E
03144 R 003144 E *E
03145 R 003145 E *E
03146 R 003146 E *E
03147 R 003147 E *E
03150 R 003150 E *E
03151 R 003151 E *E
03152 R 003152 E *E
03153 R 003153 E *E
03154 R 000000 A *L
03155 R 000611 R *L
03156 R 000011 A *L
03157 R 000500 A *L
03160 R 600341 R *L
03161 R 740000 A *L
03162 R 777777 A *L
03163 R 000777 A *L
03164 R 000077 A *L
03165 R 000003 A *L
03166 R 077777 A *L
03167 R 770000 A *L
03170 R 000001 A *L
03171 R 000004 A *L
03172 R 177400 A *L
03173 R 000377 A *L
03174 R 620032 R *L
03175 R 600313 R *L
03176 R 600320 R *L
03177 R 002517 R *L
03200 R 700700 A *L
03201 R 700000 A *L
03202 R 001777 A *L
03203 R 000700 A *L
03204 R 002543 R *L
03205 R 000013 A *L
03206 R 010117 A *L
03207 R 010053 A *L
03210 R 776001 A *L
03211 R 777000 A *L
03212 R 000200 A *L
03213 R 000020 A *L
03214 R 600000 A *L
03215 R 777077 A *L
03216 R 000012 A *L
```

SIZE=03222 NO ERROR LINES

PAGE 35 DRAW CROSS REFERENCE

AA	01511	1020	1030*						
ADDIT	02435	172	801	1337	1558	1589*	1591		
ARGC	03073	338	339	1443					
ARGG	02206	1426*	1449						
ARG3	01701	1173*							
BORCOM	00015	69*	91						
BRDAD	02457	92	178	1619*					
BRDLUP	00134	183*	231						
BRIGHT	02466	197	643	676	723	770	839	850	1204
		1228	1297	1331	1491	1532	1543	1629*	
BUFF1	02543	163	192	221	567	728	729	745	795
		880	1238	1251	1265	1278	1291	1426	1436
		1446	1594	1603	1674*				
CHKDSH	01741	1227*	1231	1239	1321	1332	1499	1533	
CHOPER	01316	827	882*	1008	1315				
CNTR	02464	190	207	1457	1465	1530	1627*		
COLOR	03074	690	775	844	849	879	1326	1510	
COLRIT	01717	727	774	855	1200*	1208	1319		
COMCOM	00020	72*	100						
COMDRW	00644	251	565*	580	592	802	804	817	
COMEND	01016	671*							
COMLUP	00231	237	248*	319	493	498			
COMPAD	02462	101	241	437	582	1369	1622*		
COMPS	00215	72	185	236*					
CONCNT	02502	246	247	1349	1350	1577	1578	1641*	
CONCOM	00017	71*	97						
CONDRW	02011	312	474	1288*	1340	1348	1352		
CONNAD	02461	98	255	441	1382	1621*			
CONT	02232	1430	1446*						
COPCOM	00014	68*	88						
COPPAD	02456	89	367	1441	1618*				
COPY	03136	66	1274						
CPTR	03075	1433	1438						
CSCAN	03076	242	248	252	316	318	478		
CUPPER	02213	1423	1431*						
CUTT	01130	704	708	752*	759				
CWL	02472	44	1633*						
DELCU	00374	356	364*						
DELETE	00437	131	407*						
DELTAX	03077	706	714	718	730	744	865	877	
DELTAY	03100	872	878						
DFAD	03137	66	158	217	1590				
DFADDR	02467	67	149	155	1630*				
DFCOM	00022	74*	103						
DFDEL	03140	66	1609						
DFINIT	03141	66	150						
DFREP	03142	66	1599						
DINIT	03143	66	144						
DISFAD	02515	1358	1361	1405	1652*				
DRAW	00000	44	45*	54					
DRAWCP	00032	53	63	65	82*	334	344	363	372
		398	424	426	475	492			
DRAWN	03101	191	209	638	671	711	716	831	834

		1447	1549						
DRNSEG	02336	1500	1515*						
DRWALL	00067	129	141*						
DRWNOW	02376	1536	1539	1545	1549*				
DRWRUT	00405	354	373*	473					
DSCAN	02473	143	306	308	358	378	380	384	393
		408	409	452	484	489	490	798	805
		1333	1341	1552	1563	1634*			
DSHMRK	03102	1230	1232	1320	1467				
DVEC	01073	713	718*						
EGGZIT	01470	935	939	969	973	1008*			
ENDBOD	03103	182	184						
ENDCOM	02475	245	249	480	481	485	486	491	1636*
ENDCON	02503	1642*							
END7	02076	1300	1318	1341*					
EOBRD	00024	76*	180						
EOCOMP	00026	78*	243						
EOCOPP	00023	75*	332	343					
EOFLUP	02347	1504	1506	1514	1517	1520	1525*		
EOLIB	00025	77*							
FEAT	01767	1193	1207	1257*	1266	1488	1523		
FEATR	03104	1260	1263						
FILL	01226	206	644	653	662	670	826*	830	860
		1515							
FIND	02151	1388*	1395	1402					
FINISH	01457	980	989	993	999*				
FLAG1	03105	883	999	1062					
FLAG2	03106	884	1003	1087					
IGRID	02470	44	1631*						
INDFIL	00431	383	393*						
IWIDTH	02471	44	1632*						
LABEL1	00326	297	309*						
LAYER	03107	79	1473	1489	1505	1528			
LAYUR	03110	1453	1502	1529					
LIBAD	02460	95	595	1620*					
LIBCOM	00016	70*	94						
LIBPTR	03111	597	600	679					
LIGHT	00030	80*	166						
LINE	03144	66	875						
LOOPY1	00252	265*	295	313	315				
LOOPY4	00153	198*	225						
LOOPY7	02260	1468*	1531						
LOOPY8	00502	442*	455						
LPONOF	01711	194	216	787	797	1189*	1194		
MAINFL	02501	104	141	146	147	1640*			
MAINVC	01271	719	786	848	859	861*	881	1330	
MARK	02112	300	1336	1351	1357*	1365	1407	1557	1579
MESS	00031	81*	164						
MKIT	02431	1570	1577*						
MODE	03112	193	215	581	796	1192			
MODLP	02235	1449*	1547						
NAME	02474	157	160	171	214	219	288	302	370
		375	376	391	394	396	410	418	421

		427	607	1445	2	1601	1611	1635*	
NBLNK	02305	1484	1489*						
NNNN1	00003	48*	52						
NNNN2	00004	49*	50						
NNN1	00012	55*	1429	1439	1458	1463	1483		
NNN2	00013	56*	1466	1516					
NOCHG	01105	725	728*						
NOCONS	00335	254	268	316*					
NOD	02512	691	692	735	1176	1302	1309	1373	1374
		1377	1378	1387	1391	1512	1649*		
MODEL	02423	1565	1571*						
NODLUP	01043	692*	700						
NOD1	02510	272	458	1301	1376	1399	1647*		
NOD2	02511	279	463	1308	1380	1386	1648*		
NOFCNS	02504	262	266	1643*					
NOFPAD	03113	681	682	684	686	689	693		
NOINV	02317	1494	1499*						
NOLINE	02514	828	932	1007	1316	1651*			
NOPTH	01121	737	740*						
NOSLAY	00027	79*							
NOTAG	01202	773	798*						
NXTBOD	00207	211	218	226*					
NXTSGT	00203	208	222*						
N1	02477	83	127	352	471	477	1638*		
N2	02500	85	359	366	373	412	1639*		
OFFSCR	02413	1497	1551	1563*					
OK20	00435	389	392	397*					
OLBRT	03114	639	724	726	852	854	1448	1546	
ORIENT	03115	599	1136						
PADHOL	01054	699	703*	746	754	757	1513		
PADS	01021	674*	842						
PAR	01727	1214*	1223	1490					
PARPT	03116	1218	1219						
PARWRD	02517	67	570	572	640	674	764	1217	1292
		1541	1654*						
PLOT	03145	65	151						
POINT	03146	67	1247						
POSIT	01756	715	838	1243*	1248	1325			
PPTR	03117	1170	1175						
PRAMTR	03147	65	1234	1261					
PTHDRW	02321	1480	1502*						
PTHFLG	03120	1418	1478	1537	1540				
PTR	02507	589	696	1646*					
PTR1	02505	264	289	385	447	1303	1364	1384	1644*
PTR2	02506	274	291	387	433	435	1310	1363	1367
		1645*							
READRT	03150	67	1424	1434					
REMOVE	02451	371	425	807	1344	1566	1608*	1610	
REPFLG	03121	120	374	476	1346	1574			
REPLAC	00544	135	476*						
REPOS	01632	601	1130*	1142	1150	1159	1164		
ROOTS	02175	314	337	362	397	1417*	1559	1561	1569
		1573	1576	1580					

ROUTAD	02463	106	1623*						
ROUTES	00360	134	352*						
RUTCOM	00021	73*	105						
RUTE	00463	379	414	427*					
RUTFIN	00341	236	250	331*					
RUTPTR	02513	286	309	336	342	360	470	1428	1431
		1440	1650*						
SAMBRT	01264	853	856*						
SCALE	01603	65	1100*						
SCALED	01574	889	893	899	903	1093*	1106	1118	1123
SCALUP	01612	65	698	780	1111*	1126	1511		
SCAN	02476	179	183	187	212	226	229	230	257
		258	265	269	275	276	280	281	287
		298	303	429	430	456	459	460	464
		465	1359	1362	1371	1637*			
SCISS	01471	948	958	986	997	1014*	1038		
SCREEN	00573	162	507*	520					
SECOND	01250	833	844*						
SETVS	01255	843	849*						
SIGN	03122	1025	1033	1094	1097	1101			
STATE	02531	67	1481	1518	1664*				
STBF	01125	739	744*						
SUBCOP	02001	165	167	169	1272*	1279			
SUBNOD	03151	67	1171						
SUBSIT	02443	803	1339	1560	1598*	1600			
SWITCH	00320	303*	496						
SWOPIT	00313	298*	494						
SWOP1	01522	924	981	1002	1043*	1063			
SWOP2	01547	931	966	1006	1068*	1088			
TAG	01140	678	695	764*					
TAGG	00347	337*	345						
TAG4	00307	239	240	294*	495	497			
TEMP	02516	301	390	438	439	443	444	448	449
		450	454	569	584	590	605	606	608
		611	612	788	808	810	811	813	814
		816	1370	1381	1383	1388	1390	1393	1394
		1396	1398	1401	1403	1406	1653*		
TEXT	03152	66	791						
TFLAG	03123	142	161	195	220	364	365	411	417
		566	1289	1290	1419	1420	1593	1602	1612
TFLAG1	03124	121	331	361	1421	1495	1534	1555	1567
		1571							
TSBLNK	02337	1498	1516*						
UPSPOT	01075	717	720*						
VALUE	03125	1258	1264						
WORD	02465	571	576	577	766	767	1233	1237	1294
		1295	1628*						
XCOM	03126	602	615	620	622	633	646	656	
XCOMP	03127	610	618	619	631	645	654	663	779
		781	785						
XINC	01513	912	929	1032*	1044	1047	1069	1071	1112
		1117	1119	1125	1135	1141	1146	1157	1160
		1173	1179						

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XOM	02542	887 1051 1673*	891 1054	897 1057	901 1060	915 1076	922 1079	1045 1082	1048 1085
XSPOT	03130	720	722	863	866	867	1244	1249	
XU	02540	65	1671*						
XY	01675	697	1169*	1180	1304	1311			
XYAD	00620	44	531*						
XYBUF	00611	168	524*	550					
X0	02534	65	885	1115	1667*				
X1	02532	199 890 1050 1665*	632 909 1053	647 936 1075	657 944 1078	664 950 1305	837 982 1324	847 988 1469	888 1021 1509
X2	02533	203 911 1077	634 933 1080	648 951 1312	655 957 1329	665 990 1475	858 996 1666*	892 1056	894 1059
YCOM	03131	604	623	628	630	651	659	668	777
YCOMP	03132	614	626	627	635	649	658	666	776
YINC	03133	919 1072 1163	964 1074 1174	978 1114 1177	1015 1122	1024 1133	1026 1139	1046 1148	1049 1154
YSPOT	03134	870	873	874	1246	1250			
YU	02541	65	1672*						
Y0	02537	65	895	1120	1670*				
Y1	02535	201 900 1081	636 916 1084	650 949 1307	660 970 1322	669 987 1471	835 1037 1507	845 1052 1668*	898 1055
Y2	02536	205 918 1314	637 959 1327	652 967 1477	661 998 1669*	667 1058	856 1061	902 1083	904 1086
Z	03135	947	956	985	995	1023			
ZERINC	01520	1017	1037*						
ZEROIN	01211	673	805*						
.DA	03153	44	46						