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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 -- EQUIVALENCE PHASE ONE -- 10 PAGE 1

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
101			JOB		FORTRAN COMPILER -- EQUIVALENCE PHASE ONE -- 10						
102			CTL		6611						
103			*								
104			*		1. ASSURE ALL ARRAYS PRESENT IN EQUIVALENCE STATEMENTS ARE						
105			*		DEFINED						
106			*		2. ADD SIMPLE VARIABLES PRESENT IN EQUIVALENCE STATEMENTS						
107			*		TO THE TABLE OF ARRAYS GENERATED BY THE PREVIOUS PHASE.						
108			*		THESE VARIABLES ARE TREATED, IN EFFECT, AS ONE-ELEMENT						
109			*		ARRAYS.						
110			*								
111			*		ON ENTRY, 81-83 = START (TOP ADDRESS) OF FIRST (TOP IN MEMORY)						
112			*		STATEMENT (REMEMBER, STATEMENTS ARE SORTED BY TYPE NOW, AND						
113			*		PUSHED TO THE BOTTOM OF AVAILABLE CORE), 84-86 = ADDRESS OF THE						
114			*		TOPMOST (FIRST) DIMENSION TABLE (ELEVEN BELOW THE BOTTOM OF THE						
115			*		NAME), X1 = ADDRESS OF THE LAST DIGIT OF THE SEQUENCE NUMBER OF						
116			*		THE FIRST (TOPMOST) UNPROCESSED STATEMENT, X2 = ADDRESS OF THE						
117			*		LOWEST-ADDRESS CHARACTER OF THE ARRAY TABLE, AND X3 = ADDRESS						
118			*		OF THE FIRST (TOPMOST) CHARACTER OF THE X1 STATEMENT (FIRST						
119			*		CHARACTER AFTER KEYWORD AND LEFT PAREN IF NOT ARITHMETIC). 6&X2						
120			*		IS THE "NEXT" LINK AND 9&X2 IS THE "PREVIOUS" LINK IN EACH						
121			*		ARRAY TABLE ELEMENT. BLANK MEANS "END OF CHAIN".						
122			*								
123			*		EACH ELEMENT OF THE ARRAY TABLE HAS ONE OR TWO VARIABLE-WIDTH						
124			*		DIMENSION FIELDS (FIRST DIMENSION HIGHER IN CORE), WITH THE						
125			*		DIGITS OF THE DIMENSIONS NOT REVERSED, A FIVE DIGIT OFFSET FROM						
126			*		THE BASE OF THE EQUIVALENCE CLASS (X2 POINTS AT THE LOW-ORDER						
127			*		DIGIT), A THREE-CHARACTER LINK TO THE NEXT MEMBER OF THE						
128			*		EQUIVALENCE CLASS, A THREE-CHARACTER LINK TO THE NEXT ELEMENT,						
129			*		A THREE-CHARACTER LINK TO THE PREVIOUS ELEMENT, THE NAME						
130			*		(VARIABLE WIDTH), AND A GROUP MARK WITH A WORD MARK. THE GMWM						
131			*		OF THE TOPMOST ELEMENT IS AT TOPCOR-3, AND TOPCOR-2 .. TOPCOR						
132			*		ARE BLANK.						
133			*								
134			X1	EQU	89			0089			
135			X2	EQU	94			0094			
136			X3	EQU	99			0099			
137			*								
138			*		STUFF IN THE RESIDENT AREA						
139			*								
140			PHASID	EQU	110	PHASE ID, FOR SNAPSHOT DUMPS		0110			
141			SNAPSH	EQU	333	CORE DUMP SNAPSHOT		0333			
142			LOADNX	EQU	700	LOAD NEXT OVERLAY		0700			
143			CLEARL	EQU	707	CS AT START OF OVERLAY LOADER		0707			
144			CDOVLY	EQU	769	READ (1) INSTRUCTION IF RUNNING FROM CARDS		0769			
145			TPREAD	EQU	780	TAPE READ INSTRUCTION IN OVERLAY LOADER		0780			
146			LOADXX	EQU	793	EXIT FROM OVERLAY LOADER		0793			
147			CLRBOT	EQU	833	BOTTOM OF CORE TO CLEAR IN OVERLAY LOADER		0833			

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
148			*								
149			*		FROM DIMENSION ONE PHASE						
150			*								
151			DIFF	EQU	838 WM IF FP WIDTH /= INTEGER WIDTH			0838			
152			*								
153			*		IN EQUIVALENCE TWO PHASE						
154			*								
155			DONE2	EQU	1735			1735			
156			NOTIN2	EQU	1800			1800			
157			*								
158				ORG	839				0839		
159			LOADDD	EQU	*&1 LOAD ADDRESS			0839			
160	839		GM	DC	@}0		1	0839		GMARK	4
161	849		PREFIX	DC	#10		10	0849			4
162	852		NEXT	DCW	#3 ONE BELOW NEXT SLOT IN ARRAY TABLE		3	0852			4
163	860			DCW	#8 OFFSET AND LINK WORK FOR NEXT PHASE		8	0860			4
164	868			DCW	#8 OFFSET AND LINK WORK FOR NEXT PHASE		8	0868			4
165	876		NEXT3	DCW	#8 OFFSET AND LINK WORK FOR NEXT PHASE		8	0876			4
166	877			DC	#1		1	0877			4
167	882			DCW	#5		5	0882			5
168			*								
169			*		ANNOUNCE SYNTAX ERROR						
170			*								
171	883		SYNTAX	CS	332		4	0883 / 332			5
172	887			CS			1	0887 /			5
173	888			SW	184 IS THIS A GLOBAL ERROR FLAG?		4	0888 , 184			5
174	892		MN	PREFIX,243 SEQUENCE			7	0892 D 849 243			5
175	899		MN		NUMBER TO		1	0899 D			5
176	900		MN		ERROR MESSAGE		1	0900 D			5
177	901		MCW	ERROR4			4	0901 M Y21			6
178	905			W			1	0905 2			6
179	906		BCV	OVFL1			5	0906 B 915 @			6
180	911			B	NOVFL1		4	0911 B 917			6
181	915		OVFL1	CC	1		2	0915 F 1			6
182	917		NOVFL1	C	0&X1 GET DOWN BELOW PREFIX OF		4	0917 C 0 0			6
183	921		SAR	X1 STATEMENT -- NEXT WORD MARK			4	0921 Q 089			6
184	925			B	NXSTMT		4	0925 B /15			7
185			*								
186			*		GET TO THE NEXT VARIABLE IN THE STATEMENT AND THEN						
187			*		CHECK WHETHER IT'S ALREADY IN THE ARRAY TABLE						
188			*								
189	929		FIND	BCE	ATVAR,0&X1,, SKIP PUNCTUATION BEFORE VARIABLE		8	0929 B 969 0 0 ,			7
190	937			BCE	ATVAR,0&X1,%		8	0937 B 969 0 0 %			7
191	945			BCE	ATVAR,0&X1,)		8	0945 B 969 0 0 )			7
192	953			BCE	SYNTAX,0&X1,}		8	0953 B 883 0 0 } GMARK			7
193	961		SBR	X1			4	0961 H 089			8
194	965			B	FIND		4	0965 B 929			8
195			*								
196			*		X1 IS NOW BELOW A VARIABLE NAME IN THE STATEMENT, AND						
197			*		X2 IS NOW AT THE TOP OF A VARIABLE NAME IN THE TABLE						



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
248					*						
249	1	181	CHKTYP	MN	0&X1,TSTINT&7 GET READY TO TEST FIRST	7		1181	D 0 0 S02		14
250	1	188	MZ		0&X1,TSTINT&7 CHARACTER OF VARIABLE NAME	7		1188	Y 0 0 S02		14
251	1	195	TSTINT	BCE	INTVAR,INTCHR,X INTEGER VARIABLE NAME?	8		1195	B S16 Y34 X		15
252	1	203			CHAIN 5					MACRO	
253					BCE	1		1203	B	GEN	15
254					BCE	1		1204	B	GEN	15
255					BCE	1		1205	B	GEN	15
256					BCE	1		1206	B	GEN	15
257					BCE	1		1207	B	GEN	15
258	1	208			CW FPFLG2	4		1208	) Y28		15
259	1	212			B NOTINT	4		1212	B S20		16
260	1	216	INTVAR	CW	FPFLG1	4		1216	) Y27		16
261	1	220	NOTINT	BW	FIND,FPFLG2	8		1220	V 929 Y28 1		16
262	1	228			BWZ	1		1228	V		16
263					*						
264					* ERROR -- MIXED FP AND INTEGER IN EQUIVALENCE WHILE INTEGER						
265					* AND FP HAVE DIFFERENT WIDTH						
266					*						
267	1	229			CS 332	4		1229	/ 332		16
268	1	233			CS	1		1233	/		16
269	1	234			SW 184 IS THIS A GLOBAL ERROR FLAG?	4		1234	, 184		16
270	1	238			MN PREFIX,251 SEQUENCE NUMBER	7		1238	D 849 251		17
271	1	245			MN TO ERROR	1		1245	D		17
272	1	246			MN MESSAGE	1		1246	D		17
273	1	247			MCW ERROR5	4		1247	M Y82		17
274	1	251			W	1		1251	2		17
275	1	252			BCV OVFL2	5		1252	B S61 @		17
276	1	257			B NOVFL2	4		1257	B S63		17
277	1	261	OVFL2	CC	1	2		1261	F 1		18
278	1	263	NOVFL2	SW	FPFLG1,FPFLG2	7		1263	, Y27 Y28		18
279	1	270			B FIND	4		1270	B 929		18
280					*						
281					* NOT IN THE TABLE YET. X1 ==(?) X3 = PUNCTUATION BELOW						
282					* THE VARIABLE IN THE STATEMENT						
283					*						
284	1	274	NOTIN	MCW	X1,X3 DOES THIS CHANGE X3?	7		1274	M 089 099		18
285	1	281			BCE SUBSND,0&X1,% SUBSCRIPT PRESENT?	8		1281	B V05 0 0 %		18
286	1	289			MCW NEXT,X2 ONE BELOW BOTTOM SLOT IN TABLE	7		1289	M 852 094		18
287	1	296			LCA GM,1&X2 SET BOUNDARY	7		1296	L 839 0!1		19
288	1	303			SBR X2 DOES THIS CHANGE X2?	4		1303	H 094		19
289	1	307			MCW TESTV&3,X3 VARIABLE SOUGHT IN TABLE	7		1307	M  09 099		19
290	1	314			LCA 0&X3,0&X2 MOVE VARIABLE TO TABLE	7		1314	L 0?0 0!0		19
291	1	321			SBR X2 X2 NOW POINTS AT "PREV" LINK	4		1321	H 094		19
292	1	325			MCW TABADR,X3 CURRENT BOTTOM-OF-TABLE	7		1325	M Y26 099		19
293	1	332			LCA TABADR,0&X2 SET "PREV" LINK IN NEW ENTRY	7		1332	L Y26 0!0		20
294	1	339			LCA W3 SPACE FOR "NEXT" LINK	4		1339	L Y85		20
295	1	343			LCA W3 SPACE FOR ???	4		1343	L Y85		20
296	1	347			SBR TABADR SET CURRENT BOTTOM-OF-TABLE	4		1347	H Y26		20
297	1	351			SBR X2 SET X2 NINE BELOW NAME IN TABLE	4		1351	H 094		20

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
298	1	355		LCA	W5,0&X2	7		1355	L Y87 0!0		20
299	1	362		LCA	K1 DIMENSION == 1 FOR SCALAR	4		1362	L Y88		20
300	1	366		SBR	X2 X2 IS NOW ONE BELOW BOTTOM ELEMENT	4		1366	H 094		21
301	1	370		MCW	TABADR,6&X3 SET "NEXT" LINK IN PREV ENTRY	7		1370	M Y26 0?6		21
302	1	377		BCE	NOTAB,86, NO TABLE YET?	8		1377	B U35 086		21
303				*							
304				*	SAVE BOTTOM OF TABLE AND CHECK SIZE						
305				*							
306	1	385	SAVBOT	MN	0&X2	4		1385	D 0!0		21
307	1	389		SAR	NEXT	4		1389	Q 852		21
308	1	393	TSTFUL	BCE	ITFITS,0,<	8		1393	B U46 000 <		21
309				*							
310				*	PROGRAM IS TOO BIG -- CLOBBERED THE SENTINEL						
311				*							
312	1	401		CS	332	4		1401	/ 332		21
313	1	405		CS		1		1405	/		22
314	1	406		CC	1	2		1406	F 1		22
315	1	408		MCW	ERROR2,270	7		1408	M Z24 270		22
316	1	415		W		1		1415	2		22
317	1	416		CC	1	2		1416	F 1		22
318	1	418		BCE	CARDS,CDOVLY,1	8		1418	B U31 769 1		22
319	1	426		RWD	1	5		1426	U %U1 R		22
320	1	431	CARDS	H	CARDS	4		1431	. U31		23
321				*							
322				*	NO TABLE YET						
323				*							
324	1	435	NOTAB	MCW	TABADR,86 STORE TOP OF TABLE	7		1435	M Y26 086		23
325	1	442		B	SAVBOT SAVE BOTTOM OF TABLE AND CHECK SIZE	4		1442	B T85		23
326				*							
327				*	HAVEN'T CLOBBERED THE SENTINEL -- THE PROGRAM FITS						
328				*							
329	1	446	ITFITS	BCE	DONEQV,0&X1,) DONE WITH THIS EQUIVALENCE?	8		1446	B U58 0!0 )		23
330	1	454		B	MOREQV	4		1454	B U65		23
331	1	458	DONEQV	SW	FPFLG1,FPFLG2 ASSUME EQUIVALENCE IS OK	7		1458	, Y27 Y28		23
332	1	465	MOREQV	MN	0&X1 SKIP PUNCTUATION BELOW VARIABLE	4		1465	D 0!0		23
333	1	469		SBR	X1	4		1469	H 089		24
334	1	473		SBR	TESTV&3 VARIABLE TO FIND IN TABLE	4		1473	H !09		24
335	1	477		BCE	NOTHER,0&X1,, ANOTHER VARIABLE IN EQUIVALENCE?	8		1477	B W61 0!0 ,		24
336	1	485		BCE	ITFITS,0&X1,}	8		1485	B U46 0!0 } GMARK		24
337	1	493		BCE	NXSTMT,1&X1,}	8		1493	B /15 0!1 } GMARK		24
338	1	501		B	SWITCH GO TEST TYPES	4		1501	B /77		24
339				*							
340				*	SUBSCRIPT APPEARS IN EQUIVALENCE STATEMENT BUT THE VARIABLE						
341				*	WAS NOT FOUND IN THE ARRAY TABLE						
342				*							
343	1	505	SUBSND	CS	299	4		1505	/ 299		25
344	1	509		MCW	X3,X1 DOES THIS CHANGE X1?	7		1509	M 099 089		25
345	1	516		MCW	X2,SAVX2	7		1516	M 094 Z27		25
346	1	523		MN	248 WHY NOT	4		1523	D 248		25
347	1	527		MN	JUST DO	1		1527	D		25

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
348	1	528		SAR	X2 SBR X1,246?	4		1528	Q 094		25
349	1	532		SBR	X1,0&X1 THIS CAN'T CHANGE X1	7		1532	H 089 0 0		25
350	1	539	FINDLP	MCW	0&X1,SAVECH	7		1539	M 0 0 Z28		26
351	1	546		SAR	X1	4		1546	Q 089		26
352	1	550		BCE	GOTLP2,SAVECH,% GOT TO START OF SUBSCRIPT?	8		1550	B V73 Z28 %		26
353	1	558		MCW	SAVECH,2&X2 MOVE SAVED CHARACTER TO MESSAGE	7		1558	M Z28 0!2		26
354	1	565		SBR	X2 REVERSING VARIABLE BACK INTO ORDER	4		1565	H 094		26
355	1	569		B	FINDLP	4		1569	B V39		26
356	1	573	GOTLP2	MCW	SAVX2,X2	7		1573	M Z27 094		27
357	1	580		SW	184 IS THIS A GLOBAL ERROR FLAG?	4		1580	, 184		27
358	1	584		MN	PREFIX,240 SEQUENCE NUMBER	7		1584	D 849 240		27
359	1	591		MN	TO ERROR	1		1591	D		27
360	1	592		MN	MESSAGE	1		1592	D		27
361	1	593		MCW	ERROR6	4		1593	M Z65		27
362	1	597		BCV	OVFL3	5		1597	B W06 @		27
363	1	602		B	NOVFL3	4		1602	B W08		28
364	1	606	OVFL3	CC	1	2		1606	F 1		28
365	1	608	NOVFL3	W		1		1608	2		28
366	1	609	SKIPV	MN	0&X1	4		1609	D 0 0		28
367	1	613		SAR	X1	4		1613	Q 089		28
368	1	617		BCE	NOTHER,0&X1,) FOUND END OF SUBSCRIPT	8		1617	B W61 0 0 )		28
369	1	625		BCE	SYNTAX,0&X1,% SYNTAX ERROR IF LEFT PAREN	8		1625	B 883 0 0 %		28
370	1	633		BCE	SYNTAX,0&X1,} SYNTAX ERROR IF END OF STATEMENT	8		1633	B 883 0 0 } GMARK		29
371	1	641		BCE	SKIPV,0&X1,, SKIP MORE IF COMMA (IS THIS OK?)	8		1641	B W09 0 0 ,		29
372	1	649		BWZ	SKIPV,0&X1,2 SKIP MORE IF NUMERIC	8		1649	V W09 0 0 2		29
373	1	657		B	SYNTAX ELSE SYNTAX ERROR	4		1657	B 883		29
374			*								
375			*		ANOTHER VARIABLE IN EQUIVALENCE						
376			*								
377	1	661	NOTHER	MN	0&X1	4		1661	D 0 0		29
378	1	665		SAR	X1	4		1665	Q 089		29
379	1	669		B	ITFITS	4		1669	B U46		30
380			*								
381			*		FOUND VARIABLE IN ARRAY TABLE						
382			*								
383	1	673	FOUND	BCE	SKIPV,0&X1,% SUBSCRIPT OK SINCE WE FOUND VAR	8		1673	B W09 0 0 %		30
384	1	681		B	ITFITS	4		1681	B U46		30
385			*								
386	1	685	DONE	SBR	FINTST&3,DONE2 THESE	7		1685	H /29 X35		30
387	1	692		SBR	FINBR&3,DONE2 ADDRESSES ARE	7		1692	H /45 X35		30
388	1	699		SBR	UNEQ&3,NOTIN2 IN NEXT OVERLAY	7		1699	H 983 Y00		30
389	1	706		SBR	TSTEQL&3,CHKTYP	7		1706	H  25 /81		31
390	1	713		MCW	NEXT,NEXT3	7		1713	M 852 876		31
391	1	720		MCW	SAVEX1,X1	7		1720	M Z68 089		31
392	1	727		MCW	BRANCH,SWITCH	7		1727	M Y22 /77		31
393	1	734		MCW	NOP,GOTLP	7		1734	M Z69 /58		31
394	1	741		BSS	SNAPSH,C	5		1741	B 333 C		32
395	1	746		SBR	TPREAD&6,CHKTYP SET LOAD ADDR FOR NEXT OVERLAY	7		1746	H 786 /81		32
396	1	753		SBR	CLRBOT	4		1753	H 833		32
397	1	757		SBR	LOADXX&3,NXSTMT SET ENTRY ADDR FOR NEXT OVERLAY	7		1757	H 796 /15		32

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
398	1	764		SBR	CLEARL&3,GMWM	7		1764	H 710 Z79		32
399	1	771		LCA	EQUIV2,PHASID	7		1771	L Z78 110		32
400	1	778		B	LOADNX	4		1778	B 700		33
401				*							
402				*	MORE DATA						
403				*							
404	1	821	ERROR4	DCW	@ERROR 4 - EQUIVALENCE SYNTAX, STATEMENT @	40		1821			35
405	1	822	BRANCH	B		1		1822	B		35
406	1	823	LESS	DCW	@<@ LESS-THAN SIGN	1		1823			35
407	1	826	TABADR	DCW	#3 CURRENT ARRAY TABLE ADDRESS	3		1826			35
408	1	827	FPFLG1	DCW	#1	1		1827			35
409	1	828	FPFLG2	DCW	#1 WM IF FP VARIABLE	1		1828			36
410	1	834	INTCHR	DCW	@IJKLMN@ FIRST CHARACTER OF INTEGER VARIABLES	6		1834			36
411	1	882	ERROR5	DCW	@ERROR 5 - ILLEGAL EQUIVALENCE MIXING, STATEMENT @	48		1882			38
412	1	885	W3	DCW	#3 USED TO CREATE	3		1885			38
413	1	887	W5	DC	#2 EMPTY TABLE ENTRY	2		1887			38
414	1	888	K1	DCW	1 DIMENSION FOR SCALARS	1		1888			38
415	1	924	ERROR2	DCW	@MESSAGE 2 - OBJECT PROGRAM TOO LARGE@	36		1924			39
416	1	927	SAVX2	DCW	#3	3		1927			39
417	1	928	SAVECH	DCW	#1	1		1928			40
418	1	965	ERROR6	DCW	@ERROR 6 - UNDEFINED ARRAY, STATEMENT @	37		1965			40
419	1	968	SAVEX1	DCW	#3	3		1968			41
420	1	969	NOP	NOP		1		1969	N		41
421	1	978	EQUIV2	DCW	@EQUIV TWO@	9		1978			41
422	1	979	GMWM	DCW	@j@	1		1979		GMARK	41
423				ORG	201				0201		
424		203		DSA	LOADDD LOAD ADDRESS FOR CARD-TO-TAPE PROGRAM	3		0203	839		42
425				EX	BEGINN				B 134		43
426				END					/ 000 080		

