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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 TWO -- 11      PAGE      1
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SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
101				JOB	FORTRAN COMPILER -- EQUIVALENCE PHASE TWO -- 11						
102				CTL	6611						
103				*							
104				*	THE DIMENSION TABLE IS ALTERED TO SHOW THE RELATIONSHIP						
105				*	BETWEEN ARRAYS. THE PROCEDURE, ESSENTIALLY, IS TO MAKE						
106				*	EVERY ARRAY WHOSE FIRST ELEMENT IS EQUIVALENT TO A SECONDARY						
107				*	ELEMENT OF ANOTHER ARRAY KNOW THE DISTANCE TO THE FIRST						
108				*	ELEMENT OF THE LATTER ARRAY.						
109				*							
110			X1	EQU	89			0089			
111			X2	EQU	94			0094			
112			X3	EQU	99			0099			
113				*							
114				*	STUFF IN THE RESIDENT AREA						
115				*							
116			PHASID	EQU	110	PHASE ID, FOR SNAPSHOT DUMPS		0110			
117			GLOBER	EQU	184	GLOBAL ERROR FLAG -- WM MEANS ERROR		0184			
118			SNAPSH	EQU	333	CORE DUMP SNAPSHOT		0333			
119			LOADNX	EQU	700	LOAD NEXT OVERLAY		0700			
120			CLEARL	EQU	707	CS AT START OF OVERLAY LOADER		0707			
121			TPREAD	EQU	780	TAPE READ INSTRUCTION IN OVERLAY LOADER		0780			
122			LOADXX	EQU	793	EXIT FROM OVERLAY LOADER		0793			
123			CLRBOT	EQU	833	BOTTOM OF CORE TO CLEAR IN OVERLAY LOADER		0833			
124				*							
125				*	STUFF IN THE PREVIOUS OVERLAY						
126				*							
127			GM	EQU	839	GROUP MARK, IN PREVIOUS PHASE		0839			
128			PREFIX	EQU	849			0849			
129			NEXT	EQU	852	ONE BELOW NEXT SLOT IN ARRAY TABLE		0852			
130			OFF1	EQU	857	OFFSET WORK AREA		0857			
131			CLASS1	EQU	860	EQUIVALENCE CLASS LINK		0860			
132			OFF2	EQU	865	OFFSET WORK AREA		0865			
133			CLASS2	EQU	868	EQUIVALENCE CLASS LINK		0868			
134			OFF3	EQU	873	OFFSET WORK AREA		0873			
135			NEXT3	EQU	876	EQUIVALENCE CLASS LINK		0876			
136			SYNTAX	EQU	883	SYNTAX ERROR ROUTINE		0883			
137			NXSTMT	EQU	1115	PROCESS THE NEXT STATEMENT		1115			
138			GOTLP	EQU	1158	GET TO NEXT VARIABLE IN STATEMENT		1158			
139			NXTVAR	EQU	1165	PROCESS NEXT VARIABLE		1165			
140				*							
141				*	THIS PHASE ACTUALLY STARTS AT NXSTMT IN THE PREVIOUS OVERLAY.						
142				*	HERE X1 POINTS ONE BELOW THE BOTTOM CHARACTER OF A VARIABLE IN						
143				*	A STATEMENT AND X2 POINTS AT THE TOPMOST CHARACTER OF THE NAME						
144				*	OF THE CORRESPONDING VARIABLE IN THE ARRAY TABLE.						
145				*							
146				*	EACH ELEMENT OF THE ARRAY TABLE HAS ONE OR TWO VARIABLE-WIDTH						
147				*	DIMENSION FIELDS (FIRST DIMENSION HIGHER IN CORE), WITH THE						

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
148					* DIGITS OF THE DIMENSIONS NOT REVERSED, A FIVE DIGIT OFFSET						
149					* FROM THE BASE OF THE EQUIVALENCE CLASS, A THREE-CHARACTER LINK						
150					* TO THE BASE MEMBER OF THE EQUIVALENCE CLASS, A THREE-CHARACTER						
151					* LINK TO THE NEXT ELEMENT, A THREE-CHARACTER LINK TO THE						
152					* PREVIOUS ELEMENT, THE NAME (VARIABLE WIDTH), AND A GROUP MARK						
153					* WITH A WORD MARK. THE GMWM OF THE TOPMOST ELEMENT IS AT						
154					* TOPCOR-3, AND TOPCOR-2 .. TOPCOR ARE BLANK.						
155					*						
156					* THE NEXT AND PREV POINTERS ARE REDIRECTED SO THAT ELEMENTS OF						
157					* AN EQUIVALENCE CLASS ARE CONSECUTIVE, AND ASCENDING ORDER BY						
158					* OFFSET.						
159					*						
160					* BELOW THE ARRAY TABLE, BUILD A TABLE OF CLASSES, EACH ELEMENT						
161					* HAVING A FIVE-DIGIT OFFSET AND A LINK TO THE FIRST ELEMENT OF						
162					* THE CLASS IN THE ARRAY TABLE.						
163					*						
164					* AT EXIT, X3 IS ONE BELOW THE GM AT THE BOTTOM OF THE ARRAY						
165					* TABLE, AND X1 IS THE TOP (PREFIX) OF THE FIRST STATEMENT						
166					* AFTER (BELOW) THE LAST EQUIVALENCE.						
167					*						
168					* COME HERE FROM FIND ROUTINE IN PREVIOUS PHASE WHEN IT FINDS						
169					* THE VARIABLE IN THE ARRAY TABLE.						
170					*						
171				ORG	1181				1181		
172			LOADDD	EQU	*&1			1181			
173	1	181		LCA	KZ5,OFF2	7	1181	L	Z91 865		4
174	1	188		NOP	0&X2	4	1188	N	0!0		4
175	1	192		MCW		1	1192	M			4
176	1	193		MCW		1	1193	M			4
177	1	194		MCW		1	1194	M			4
178	1	195		MCW		1	1195	M			4
179	1	196		SAR	X2	4	1196	Q	094		4
180	1	200		BAV	*&1	5	1200	B	S05 Z		5
181	1	205		S	W3	4	1205	S	Z94		5
182	1	209	MORE	BCE	NEW,1&X2,	8	1209	B	S47 0!1		5
183	1	217		A	0&X2,OFF2	7	1217	A	0!0 865		5
184	1	224		MCW	3&X2,X2	7	1224	M	0!3 094		5
185	1	231		A	KP1,W3	7	1231	A	Z95 Z94		5
186	1	238		BAV	FIXIT	5	1238	B	Z51 Z		6
187	1	243		B	MORE	4	1243	B	S09		6
188	1	247	NEW	MCW	X2,CLASS2	7	1247	M	094 868		6
189	1	254		BCE	SUBS,0&X1,%	8	1254	B	V92 0!0 %		6
190	1	262		A	K1,OFF2	7	1262	A	Z96 865		6
191	1	269	TOTOP	MCW	NEXT3,X3	7	1269	M	876 099		6
192	1	276		LCA	OFF1,OFF3	7	1276	L	857 873		7
193	1	283		S	OFF2,OFF3	7	1283	S	865 873		7
194	1	290		BM	NEG,OFF3	8	1290	V	W53 873 K		7
195	1	298		LCA	CLASS2,0&X3	7	1298	L	868 0?0		7
196	1	305		SBR	NEXT3	4	1305	H	876		7
197	1	309	GETNXT	BCE	NXTVAR,0&X1,,	8	1309	B	/65 0!0 ,		8

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
198	1	317		BCE	EQVFIN,0&X1,)	8	1317	B T29 0 0)			8
199	1	325		B	SYNTAX	4	1325	B 883			8
200	1	329	EQVFIN	MN	0&X1 SKIP RIGHT PAREN	4	1329	D 0 0			8
201	1	333		MN	SKIP COMMA IF STATEMENT NOT ENDED	1	1333	D			8
202	1	334		SAR	SAVX1 LEFT PAREN IF STATEMENT NOT ENDED	4	1334	Q Z99			8
203	1	338		MCW	NEXT3,X3	7	1338	M 876 099			8
204	1	345		LCA	DOLLAR,0&X3 MARK BOTTOM OF CLASS TABLE	7	1345	L !00 0?0			9
205				*							
206				*	SEARCH THE CLASS TABLE FOR THE LINK TO THE CLASS IN CLASS1						
207				*							
208	1	352		MCW	NEXT,X3 TOP OF CLASS TABLE	7	1352	M 852 099			9
209	1	359	TSTBOT	BCE	ATBOT,0&X3,\$ AT BOTTOM OF CLASS TABLE?	8	1359	B W83 0?0 \$			9
210	1	367		MCW	0&X3,WNEXT	7	1367	M 0?0 !03			9
211	1	374		C	CLASS1,WNEXT	7	1374	C 860 !03			9
212	1	381		BE	TESTRI IT'S EITHER REDUNDANT OR ILLEGAL	5	1381	B Y28 S			10
213	1	386	BACKRI	MCW	0&X3,X2	7	1386	M 0?0 094			10
214	1	393		SAR	NEXT3	4	1393	Q 876			10
215	1	397		BCE	EMPTY,0&X2,	8	1397	B U09 0!0			10
216	1	405		B	FULL ENTRY HAS AN OFFSET	4	1405	B Z72			10
217	1	409	EMPTY	MCW	9&X2,X1 PREV TO X1	7	1409	M 0!9 089			10
218	1	416	EMPTYL	MCW	6&X2,X3 NEXT FROM X3 IS X3	7	1416	M 0!6 099			11
219	1	423		BCE	ENDTAB,X3, AT END OF ARRAY TABLE?	8	1423	B U47 099			11
220	1	431		BCE	ENDTAB,1&X3,	8	1431	B U47 0?1			11
221	1	439		SBR	X2 NEXT TO X2	4	1439	H 094			11
222	1	443		B	EMPTYL	4	1443	B U16			11
223	1	447	ENDTAB	BCE	ENDTB2,X3, AT END OF ARRAY TABLE?	8	1447	B U62 099			11
224	1	455		MCW	X1,9&X3	7	1455	M 089 0?9			12
225	1	462	ENDTB2	BCE	NOPREV,X1, NO PREV LINK?	8	1462	B X24 089			12
226	1	470		MCW	X3,6&X1	7	1470	M 099 0!6			12
227	1	477	ENDTB3	MCW	CLASS1,X1	7	1477	M 860 089			12
228	1	484		MCW	6&X1,6&X2	7	1484	M 0!6 0!6			12
229	1	491		MCW	6&X1,X3	7	1491	M 0!6 099			13
230	1	498		MCW	X2,9&X3	7	1498	M 094 0?9			13
231	1	505		MCW	NEXT3,X3	7	1505	M 876 099			13
232	1	512		MCW	3&X3,X2	7	1512	M 0?3 094			13
233	1	519		MCW	X2,6&X1	7	1519	M 094 0!6			13
234	1	526		MCW	X1,9&X2	7	1526	M 089 0!9			14
235	1	533		MCW	CLASS1,3&X2	7	1533	M 860 0!3			14
236	1	540		MCW		1	1540	M			14
237	1	541		S	0&X3,0&X2	7	1541	S 0?0 0!0			14
238	1	548		SAR	X3	4	1548	Q 099			14
239	1	552		BW	TSTBOT,FLAG	8	1552	V T59 J44 1			14
240	1	560		SW	FLAG	4	1560	, J44			14
241	1	564		C	0&X2,WOFF	7	1564	C 0!0 J43			15
242	1	571		BE	RED1	5	1571	B V84 S			15
243	1	576		B	ILLEGL	4	1576	B Y67			15
244	1	580		B	TSTBOT	4	1580	B T59			15
245				*							
246				*	REDUNDANT EQUIVALENCE						
247				*							

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
248	1	584	RED1	B	REDUND	4		1584	B 209		15
249	1	588		B	TSTBOT	4		1588	B T59		15
250			*								
251			*		VARIABLE IN EQUIVALENCE HAS SUBSCRIPT						
252			*								
253	1	592	SUBS	MN	877	4		1592	D 877		15
254	1	596		MN		1		1596	D		16
255	1	597		SAR	X3 WHY NOT SBR X3,NEXT3-1?	4		1597	Q 099		16
256	1	601		SBR	X1,0&X1	7		1601	H 089 0 0		16
257			*								
258			*		MOVE SUBSCRIPT, IN FORWARD ORDER, TO CLASS TABLE						
259			*								
260	1	608	SUBSL	MCW	0&X1,CHTEST	7		1608	M 0 0 !04		16
261	1	615		SAR	X1	4		1615	Q 089		16
262	1	619		BCE	SUBSX,CHTEST,)	8		1619	B W42 !04)		16
263	1	627		MCW	CHTEST,2&X3	7		1627	M !04 0?2		16
264	1	634		SBR	X3	4		1634	H 099		17
265	1	638		B	SUBSL	4		1638	B W08		17
266			*								
267	1	642	SUBSX	A	1&X3,OFF2	7		1642	A 0?1 865		17
268	1	649		B	TOTOP	4		1649	B S69		17
269			*								
270	1	653	NEG	BCE	FIRST,OFF1, STILL EMPTY?	8		1653	B W72 857		17
271	1	661		LCA	CLASS1,0&X3	7		1661	L 860 0?0		17
272	1	668		SBR	NEXT3	4		1668	H 876		17
273	1	672	FIRST	MCW	CLASS2,CLASS1 CURRENT ONE HAS LEAST OFFSET	7		1672	M 868 860		18
274	1	679		B	GETNXT	4		1679	B T09		18
275			*								
276			*		AT BOTTOM OF CLASS TABLE						
277			*								
278	1	683	ATBOT	MCW	SAVX1,X1	7		1683	M Z99 089		18
279	1	690		LCA	E0FF,OFF1 EMPTY OFFSET TO OFF1	7		1690	L !09 857		18
280	1	697		MCW	NEXT,NEXT3	7		1697	M 852 876		18
281	1	704		BCE	GOTLP,1&X1,,	8		1704	B /58 0 1 ,		19
282	1	712		BCE	NXSTMT,1&X1,}	8		1712	B /15 0 1 } GMARK		19
283	1	720		B	SYNTAX	4		1720	B 883		19
284			*								
285	1	724	NOPREV	MCW	X3,86	7		1724	M 099 086		19
286	1	731		B	ENDTB3	4		1731	B U77		19
287			*								
288			*		CODE IN PREVIOUS OVERLAY COMES HERE WHEN EQUIVALENCE STATEMENTS						
289			*		HAVE ALL BEEN PROCESSED						
290			*								
291	1	735	DONE2	MCW	NEXT,X3	7		1735	M 852 099		19
292	1	742		MCW	GM,1&X3 MARK BOTTOM OF ARRAY TABLE	7		1742	M 839 0?1		20
293	1	749		MCM	5&X1	4		1749	P 0 5		20
294	1	753		MN		1		1753	D		20
295	1	754		MN		1		1754	D		20
296	1	755		SAR	X1 TOP OF STATEMENT AFTER LAST EQUIVALENCE	4		1755	Q 089		20
297	1	759		BSS	SNAPSH,C	5		1759	B 333 C		20

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
298	1	764		SBR	TPREAD&6,838	7		1764	H 786 838		20
299	1	771		SBR	CLRBOT	4		1771	H 833		21
300	1	775		SBR	LOADXX&3,838	7		1775	H 796 838		21
301	1	782		SBR	CLEARL&3,GMWM	7		1782	H 710 J45		21
302	1	789		LCA	DIM2,PHASID	7		1789	L !18 110		21
303	1	796		B	LOADNX	4		1796	B 700		21
304				*							
305				*	CODE IN PREVIOUS OVERLAY COMES HERE FOR VARIABLES IN THE						
306				*	EQUIVALENCE STATEMENT THAT ARE NOT IN THE TABLE						
307				*							
308	1	800	NOTIN2	BCE	GOTRP,0&X1,)	8		1800	B Y16 0 0)		21
309	1	808		SBR	X1	4		1808	H 089		22
310	1	812		B	NOTIN2	4		1812	B Y00		22
311	1	816	GOTRP	MN	0&X1	4		1816	D 0 0		22
312	1	820		SAR	X1	4		1820	Q 089		22
313	1	824		B	NXTVAR	4		1824	B /65		22
314				*							
315				*	TEST FOR REDUNDANT OR ILLEGAL EQUIVALENCE						
316				*							
317	1	828	TESTRI	MCW	0&X3,X2	7		1828	M 0?0 094		22
318	1	835		SAR	X2	4		1835	Q 094		22
319	1	839		C	0&X2,OFF1	7		1839	C 0!0 857		23
320	1	846		BE	RED2	5		1846	B Y59 S		23
321	1	851		B	ILLEGL	4		1851	B Y67		23
322	1	855		B	BACKRI	4		1855	B T86		23
323	1	859	RED2	B	REDUND	4		1859	B Z09		23
324	1	863		B	BACKRI	4		1863	B T86		23
325				*							
326				*	ILLEGAL EQUIVALENCE						
327				*							
328	1	867	ILLEGL	SBR	NOVFL1&3	4		1867	H Z08		23
329	1	871		CS	332	4		1871	/ 332		24
330	1	875		CS		1		1875	/		24
331	1	876		SW	GLOBER	4		1876	, 184		24
332	1	880		MN	PREFIX,244	7		1880	D 849 244		24
333	1	887		MN		1		1887	D		24
334	1	888		MN		1		1888	D		24
335	1	889		MCW	ERROR7	4		1889	M !59		24
336	1	893		W		1		1893	2		25
337	1	894		BCV	OVFL1	5		1894	B Z03 @		25
338	1	899		B	NOVFL1	4		1899	B Z05		25
339	1	903	OVFL1	CC	1	2		1903	F 1		25
340	1	905	NOVFL1	B	0	4		1905	B 000		25
341				*							
342				*	REDUNDANT EQUIVALENCE						
343				*							
344	1	909	REDUND	SBR	NOVFL2&3	4		1909	H Z50		25
345	1	913		CS	332	4		1913	/ 332		25
346	1	917		CS		1		1917	/		26
347	1	918		SW	GLOBER	4		1918	, 184		26

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD
348	1	922		MN	PREFIX,246	7		1922	D 849 246		26
349	1	929		MN		1		1929	D		26
350	1	930		MN		1		1930	D		26
351	1	931		MCW	ERROR8	4		1931	M J02		26
352	1	935		W		1		1935	2		26
353	1	936		BCV	OVFL2	5		1936	B Z45 @		27
354	1	941		B	NOVFL2	4		1941	B Z47		27
355	1	945		OVFL2	CC 1	2		1945	F 1		27
356	1	947		NOVFL2	B 0	4		1947	B 000		27
357				*							
358				*	PRINT "CORRECT ERRORS AND RERUN" MESSAGE AND STOP						
359				*							
360	1	951	FIXIT	CC	L	2		1951	F L		27
361	1	953		CS	332	4		1953	/ 332		27
362	1	957		CS		1		1957	/		27
363	1	958		MCW	FIXMSG,270	7		1958	M J38 270		28
364	1	965		W		1		1965	2		28
365	1	966		CC	1	2		1966	F 1		28
366	1	968	HALT	H	HALT	4		1968	. Z68		28
367				*							
368				*	OFFSET HAS A VALUE						
369				*							
370	1	972	FULL	MCW	0&X2,WOFF	7		1972	M 0!0 J43		28
371	1	979		CW	FLAG	4		1979) J44		28
372	1	983		B	EMPTY	4		1983	B U09		28
373				*							
374				*	DATA						
375				*							
376	1	991	KZ5	DCW	@00000@	5		1991			29
377	1	994	W3	DCW	#3	3		1994			29
378	1	995	KP1	DCW	&1	1		1995			29
379	1	996	K1	DCW	1	1		1996			29
380	1	999	SAVX1	DCW	#3	3		1999			29
381	2	000	DOLLAR	DCW	@\$@	1		2000			29
382	2	003	WNEXT	DCW	#3	3		2003			29
383	2	004	CHTEST	DCW	#1	1		2004			30
384	2	009	EOFF	DCW	#5	5		2009			30
385	2	018	DIM2	DCW	@DIMEN TWO@	9		2018			30
386	2	059	ERROR7	DCW	@ERROR 7 - ILLEGAL EQUIVALENCE, STATEMENT @	41		2059			32
387	2	102	ERROR8	DCW	@ERROR 8 - REDUNDANT EQUIVALENCE, STATEMENT @	43		2102			34
388	2	138	FIXMSG	DCW	@CORRECT ERRORS INDICATED AND RESTART@	36		2138			35
389	2	143	WOFF	DCW	#5 OFFSET WORK AREA	5		2143			36
390	2	144	FLAG	DCW	#1	1		2144			36
391	2	145	GMWM	DCW	@}@	1		2145		GMARK	36
392				ORG	201				0201		
393		203	DSA	LOADDD	LOAD ADDRESS FOR CARD-TO-TAPE PROGRAM	3		0203	/81		37
394			EX	NXSTMT					B /15		38
395			END						/ 000 080		

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
ATBOT	1683	BACKRI	1386	CHTEST	2004	CLASS1	860	CLASS2	868	CLEARL	707	CLRBOT	833
DIM2	2018	DOLLAR	2000	DONE2	1735	EMPTY	1409	EMPTYL	1416	ENDTAB	1447	ENDTB2	1462
ENDTB3	1477	EOFF	2009	EQVFIN	1329	ERROR7	2059	ERROR8	2102	FIRST	1672	FIXIT	1951
FIXMSG	2138	FLAG	2144	FULL	1972	GETNXT	1309	GLOBER	184	GM	839	GMWM	2145
GOTLP	1158	GOTRP	1816	HALT	1968	ILLEGL	1867	K1	1996	KP1	1995	KZ5	1991
LOADDD	1181	LOADNX	700	LOADXX	793	MORE	1209	NEG	1653	NEW	1247	NEXT	852
NEXT3	876	NOPREV	1724	NOTIN2	1800	NOVFL1	1905	NOVFL2	1947	NXSTMT	1115	NXTVAR	1165
OFF1	857	OFF2	865	OFF3	873	OVFL1	1903	OVFL2	1945	PHASID	110	PREFIX	849
RED1	1584	RED2	1859	REDUND	1909	SAVX1	1999	SNAPSH	333	SUBS	1592	SUBSL	1608
SUBSX	1642	SYNTAX	883	TESTRI	1828	TOTOP	1269	TPREAD	780	TSTBOT	1359	W3	1994
WNEXT	2003	WOFF	2143	X1	89	X2	94	X3	99				