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1  * GENERAL AUTOMATION, INC. ALL RIGHTS RESERVED
2  * *****
3  *
4  * PROGRAM NAME   FPH  8
5  *
6  * MODEL NUMBER  80000
7  *
8  * PURPOSE       FORTRAN PHASE-78
9  *
10 * PROGRAMMER    DICK WALLMANN, MODS-MARK ELFIELD
11 *
12 * ***** REVISION LIST *****
13 *
14 * RV DATE      SCO   BY   REASON FOR CHANGE
15 * -----
16 *
17 * 01 11/16/70 NONE  INITIAL RELEASE
18 *
19 * *****
20 * *****
21 * GA 10/30 FORTRAN COMPILER   05/01/70
22 * STATUS-VERSION 1, MODIFICATION
23 * FUNCTION/OPERATION-
24 * * CHECKS VARIABLE NAMES FOUND IN STATEMENT
25 *   SYSTEM AND FORTRAN EQUATES
26 * * ENSURES THAT ALL VARIABLE NAMES CONFORM TO
27 *   THE IMPLICIT OR EXPLICIT MODE SPECIFICATIONS
28 *   REAL OR INTEGER.
29 * * ADDS UNIQUE INTEGER CONSTANTS TO THE SYMBOL
30 *   TABLE.
31 * * REPLACES NAMES AND CONSTANTS IN THE STMT
32 *   STRING BY POINTERS TO THEIR RESPECTIVE
33 *   SYMBOL TABLE ENTRIES.
34 * * REPLACES INTERNAL STATEMENT NUMBERS BY
35 *   POINTERS TO CORRESPONDING SYMBOL TABLE
36 *   ENTRIES.
37 * * PLACES PARAMETERS FROM STATEMENT FUNCTION
38 *   STATEMENTS INTO THE SYMBOL TABLE.
39 * * CONVERTS THE LEFT PARENTHESIS OF SUBSCRIPTS
40 *   TO A SPECIAL DIMENSION INDICATOR
41 * * REPLACES OPERATORS WITH POINTERS TO THE
42 *   SCANFORING TABLE.
43 * ENTRY POINTS-
44 * * START PHASE 0 IS READ INTO CORE BY PHASE 7
45 *   VIA THE ROLPX ROUTINE. EXECUTION IS
46 *   BEGUN AT LOCATION START.
47 * INPUT-
48 * * THE STATEMENT STRING FROM PREVIOUS PHASES
49 * * THE SYMBOL TABLE FROM PREVIOUS PHASES
50 * OUTPUT-
51 * * THE STATEMENT STRING AS MODIFIED BY THIS PHS
52 * * THE SYMBOL TABLE AS MODIFIED BY THIS PHASE
53 * EXTERNAL REFERENCES-
54 *   SUBROUTINES-
55 *     * ROLPX
56 *   OTHER FORTRAN PHASES-
57 *     * NONE
58 * EXITS
59 * * NORMAL-PHASE EXITS TO SUCCEEDING PHASE VIA

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80 *      THE POLRX ROUTINE,
81 *      * ERROR 8-AN OVERLAP ERROR TERMINATES THE PRO-
82 *      CESSING OF THE STRING AND SETS AN
83 *      ERROR WORD IN FCOM. CONTROL IS THEN
84 *      PASSED FROM PHASE 10 PHASE UNTIL FR21
85 *      * ERRORS DETECTED IN THIS PHASE ARE
86 *      NUMBERS 24,25,26 AND 43.
87 *
88 * TABLES/WORK AREAS-
89 *      * THE STATEMENT STRING, THE SYMBOL TABLE AND
90 *      THE FORTRAN COMMUNICATIONS AREA.
91 *
92 * ATTRIBUTE = NONE.
93 *
94 * NOTES- THE SWITCHES USED IN PHASE 8 FOLLOW. IF
95 *      NON-ZERO, THE SWITCH IS TRANSFER=T. IF ZERO,
96 *      THE SWITCH IS NORMAL=N.
97 *
98 *      SW1 - GOTO STATEMENT
99 *      T=GOTO STATEMENT
100 *
101 *      SW2 - IF STATEMENT
102 *      T=IF STATEMENT
103 *
104 *      SW3 - POSSIBLE ASF
105 *      N=POSSIBLE ASF
106 *
107 *      SW4 - READ OR WRITE STMT
108 *      T=READ OR WRITE STMT
109 *
110 *      SW5 - PACK STRING BY CNT
111 *      T=PACK STRING
112 *
113 *      SW6 - ASF NAME TABLE
114 *      T=PUT NAMES IN ASF TABLE
115 *
116 *      SW7 - ASF NAME TABLE
117 *      T=CHECK NAMES IN ASF TABLE
118 *
119 *      SW8 - ASF STMT
120 *      T=ASF STMT
121 *
122 *      SW9 - PHASING SWITCH
123 *      N=PHASING SWITCH
124 *
125 *      SW1 - TWO-WORD NAME
126 *      T=TWO-WORD NAME
127 *
128 * ABS REF CORE
129 *
130 *      SYSTEM EQUATES
131 *
132 * 95 MEMORY EQU 7FFF CPIC MAXIMUM CORE SIZE
133 * 97 PHIZ EQU 4*320 MAXIMUM PHASE SIZE
134 * 98 OVERL EQU MEMORY-PHIZ PHASES 2-29 START
135 * 99 FCOM EQU OVERL-22 FORTRAN COMM. TABLE
136 * 100 PHINTB EQU FCOM-56 PHASE TABLE
137 * 101 POLRX EQU PHINTB-50 INTERPHASE CALL
138 *
139 * FORTRAN COMMUNICATION AREA
140 *
141 * 103 ORG FCOM BEGIN PHASE
142 * 104 SOFS BSC 1 START OF STRING
143 * 105 EOS BSC 1 END OF STRING
144 * 106 SOFST BSC 1 START OF SYMBOL TABLE
145 * 107 SOFNS BSC 1 START OF NON-STMT NUMBERS
146 * 108 SOFXT BSC 1 START OF SUBSC TEMPS
147 * 109 SOFGT BSC 1 START OF GENERATED TEMPS
148 * 110 EOFST BSC 1 END OF SYMBOL TABLE
149 * 111 COMMON BSC 1 NEXT AVAILABLE COMMON
150 * 112 USIZE BSC 1 SIZE OF COMMON
151 * 113 ERROR BSC 1 OVERLAP ERROR
152 * 114 FNAME BSC 1 PROGRAM NAME
153 * 115 SOF BSC 1 SUBR (-) OR FUNCTION (+)
154 * 116 COND BSC 1 CONTROL CARD WORD
155 *
156 * 117 * BIT 15 TRANSFER TRACE
157 * 118 * BIT 14 ARITHMETIC TRACE
158 * 119 * BIT 13 EXTENDED PRECISION

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120 *          BIT 12 LIST SYMBOL TABLE
121 *          BIT 11 LIST SUBPROGRAM NAMES
122 *          BIT 10 LIST SOURCE PROGRAM
123 *          BIT 9 ONE WORD INTEGERS
124 *          BIT 8 PUNCH
125 *          BIT 7 NONPROCESS PROGRAM
126 IOCS BSS 1 IOCS CONTROL CARD WORD
127 *          SEE PHASE ONE FOR BIT PATTERNS
128 DEONT BSS 1 FILE TABLE LENGTH IN WORDS
129 LCOMM BSS 2 SIZE OF INSKEL COMMON
130 ICDER BSS 2 IOCS CONTROL CARD ERROR
131 BSS 2 SYSTEM LOADER USE
132 *          END OF FORTRAN COMMUNICATION
133 ORG OVERL PHASE ORIGIN
134 START LDX 11 00FS START OF STRING ADDRESS
135 LD ERROR OVERLAP ERROR INDICATOR
136 BSC 1 0V1,+ BR TO INITIALIZE STMT SCA
137 *          READ IN NEXT PHASE AND EXECUTE
138 WAIT JSI 1 0DLRX CALL DOWN PHASE 0
139 DC 09 NEXT PHASE NUMBER
140 *          CONSTANT
141 ENDC DC 702 END STMT CONSTANT
142 FIOC DC 71B-702 FIO STMT CONSTANT
143 CONTC DC 716-71B CONTINUE STMT CONSTANT
144 FORC DC 70C-716 FORMAT STMT CONSTANT
145 EQC DC 715-70C EQUIVALENCE STMT CONSTANT
146 ERRON DC 714-715 ERROR STMT CONSTANT
147 CLINK DC 71C-714 CALL LINK STMT CONSTANT
148 DFILE DC 71E-71C DEFINE FILE STMT CONSTANT
149 DATAS DC 71F-71E DATA STMT CONSTANT
150 *          MOVE TO NEXT STATEMENT
151 MOVE LDX 11 +-* ADDR OF CURRENT STMT ID W
152 IDSV1 EQU +-1 LABEL ADDR LAST INSTRUCTIO
153 LD 1 0 CURRENT STMT ID WORD
154 AND 0 007FC EXTRACT STMT WD COUNT
155 BRA 2 RIGHT JUSTIFY
156 STO +-1
157 RDX 11 +-* INCR TO NEXT STMT ID WORD
158 *          INITIALIZE TO SCAN BODY OF STATEMENT
159 0V1 STX 1 0DSV1 SAVE ADDR OF STMT ID WORD
160 LDX 13 ASFT ARITH STMT FUNC TBL ADDR
161 STX 13 ASFNT SAVE ADDRESS NAME TABLE
162 CLA 16 CLEAR ACC
163 STO L 0W1 RESET SWITCH 1
164 STO L 0W2 RESET SWITCH 2
165 STO L 0W4 RESET SWITCH 4
166 STO L 0W5 RESET SWITCH 5
167 STO L 0W6 RESET SWITCH 6
168 STO L 0W7 RESET SWITCH 7
169 STO L 0W8 RESET SWITCH 8
170 STO L 0W9 RESET SWITCH 9
171 STO L 0W10 RESET SWITCH 10
172 STO L 0WT STMT WORD COUNT TEMPORARY
173 STO L 0WR LEFT PARENTHESIS SWITCH
174 LD 1 0 STMT ID WORD
175 BSC 0 SKIP IF STMT NOT NUMBERED
176 RDX 1 1 INCR STMT POINTER
177 RDX 1 1 INCR STMT POINTER
178 *          CHECK STATEMENT TYPE
179 LD 1 0DSV1 STMT ID WORD

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180	BRA		21	POSITION TO TEST STMT TYP	
181	S		ENDC	END STMT CONSTANT	
182	BSC	L	WAIT,+-	BR TO RD NEXT PH IF END	
183	S		F10C	F10 STMT CONSTANT	
184	BSC	L	MOVE,+-	BR IF F10 STMT	
185	S		CONTC	CONTINUE STMT CONSTANT	
186	BSC	L	CV0,+-	BR IF CONTINUE STMT	
187	S		FORMC	FORMAT STMT CONSTANT	
188	BSC	L	MOVE,+-	BR IF FORMAT STMT	
189	S		EQUC	EQUIVALENCE STMT CONSTANT	
190	BSC	L	CV5,+-	BR IF EQUIVALENCE STMT	
191	S		ERRCN	ERROR STMT CONSTANT	
192	BSC	L	MOVE,+-	BR IF ERROR STMT	
193	S		CLINK	CALL LINK STMT CONSTANT	
194	BSC	L	MOVE,+-	BR IF CALL LINK STMT	
195	S		DFILE	DEFINE FILE CONSTANT	
196	BSC	L	MOVE,+-	BR IF DEFINE FILE STMT	
197	S		DATAS	DATA STMT CONSTANT	
198	BSC	L	MOVE,+-	BR IF DATA STMT	
199	LD	L	SW3	ARITH STMT FUNC SWITCH	
200	BSC	L	CV2,Z	BR ASF STMT NOT POSSIBLE	
201	LD	L	INSV1	STMT ID WORD	
202	BRA		21	RIGHT JUSTIFY STMT TYPE	
203	BSC	L	CV5,+-	BR IF ARITHMETIC STMT	
204	STX	L0	SW3	SET SW3 NON-ARITH STMT	
205	CV1	LD	L	INSV1	STMT ID WORD
206	BRA		21	RIGHT JUSTIFY STMT TYPE	
207	S	L	NOTAC	GO TO STMT CONSTANT	
208	BSC	L	CV3,Z	BR IF NOT GOTO STMT	
209	LDX	3	43		
210	STX	L3	BRNO	SET UP ERROR 43	
211	LD	1	0	LD NEXT WORD OF STMT	
212	S	L	LPAR	LEFT PARENTHESIS CONSTANT	
213	BSC	L	CV25A,Z	BR IF NOT LEFT PARENTHESIS	
214	STX	L0	SW1	SET SWITCH 1 FOR GOTO STMT	
215	BSC	L	CV5A	BR TO CHECK FOR OPERATOR	
216	CV3	S	L	DO STMT CONSTANT	
217	BSC	L	CV3A,Z	BR NOT DO STMT	
218	LDX	3	43		
219	STX	L3	BRNO	SET UP ERROR 43	
220	BSC	L	CV25A	BR TO CHK STMT NUMBER OK	
221	CV3A	S	L	IFC	IF STMT CONSTANT
222	BSC	L	CV4,Z	BR IF NOT IF STMT	
223	LDX	3	43		
224	STX	L3	BRNO	SET UP ERROR 43	
225	STX	L0	SW2	SET SW2 =IF STMT	
226	LDX		CV5	BR TO CHK GOTO STMT SWITC	
227	CV4	S	L	RDC	READ STMT CONSTANT
228	BSC	L	CV4,+-	BR TO SET SW4 IF READ	
229	S	L	WTC	WRITE STMT CONSTANT	
230	BSC	L	CV5,Z	BR IF NOT WRITE STMT	
231	STX	L0	SW4	SET SW4=READ OR WRITE STMT	
232	LDX	3	46	INDEX REG 3 = 46	
233	STX	L3	BRNO	SET UP ERROR 46	
234	CV5	LD	L	SW1	SWITCH 1
235	BSC	L	CV26,Z	BR IF .GOTO. STMT	
236	LD		SW2	SWITCH 2	
237	BSC	L	CV29,Z	BR IF .IF. STMT	
238	LD		SW4	SWITCH 4	
239	BSC	L	CV31,Z	BR IF RD OR WRT STMT	

240	*			CHECK FOR OPERATOR
241	CV5A	LD	1	C NEXT STMT WD
242		BSC	L	CV12,Z BR IF NOT OPERATOR
243	CV5B	LD	1	C NEXT STMT WD
244		B	L	SEMIC SEMICOLON CONSTANT
245		BSC	L	CV6,Z BR IF NOT SEMICOLON
246	CV5C	CLA	26	CLEAR ACCUMULATOR
247		STO	1	C CONVERT SEMICOLON OPERATOR
248		IDX	1	C INCR STMT POINTER
249	*			CHECK FOR ARITHMETIC STMT FUNCTION
250	CV5D	LD		SW3 SWITCH 3
251		BSC	L	CV50,Z BR ASF STMT NOT POSSIBLE
252		LD	1	IDSV1 STMT ID WORD
253		BR4	11	C RIGHT JUSTIFY STMT TYPE
254		B		EQC00 EQUIVALENCE STMT CONSTANT
255		BSC	L	CV50,+ BR IF EQUIVALENCE STMT
256		LD		SW8 SWITCH 8
257		BSC	L	CV0A,+ BR IF NOT ASF STMT
258		LD	1	IDSV1 STMT ID WORD
259		BR		ASFID CHANGE ID WD TO ASF TYPE
260		STO	1	IDSV1 RESTORE ID WORD
261	*			CHECK FOR STMT NUMBER
262		BSC	L	C SKIP NEXT IF NO STMT NO.
263		IDX	**+1	C BR IF STMT NUMBERED
264		IDX	CV5D	C BR NO STMT NUMBER
265		STX	1	XR1SV+1 SAVE INDEX REGISTER 1
266		IDX	11	IDSV1 INDEX REG 1 = ADDR ID WORD
267		LD	1	C STMT NUMBER
268		CLA	1	C SHIFT OFF INDR BIT
269		B		MT3 MINUS 3
270		SLT	15	C PRODUCT TO ACCUMULATOR
271		A	L	COFST START OF SYMBOL TBL ADDRESS
272		B		MT2 MINUS 4
273		STO	**+2	C SET STORE ADDRESS
274		CLA	26	C CLEAR ACC
275		STO	L	** ZERO SYMBOL TBL ENTRY
276		STX		SW5 SET SW5 ON-PACK STRING
277		LD	1	C STMT ID WORD
278		FOR		ZONE REMOVE STMT NUMBER INDR
279		STO	1	C RESTORE ID WORD
280		IDX	1	C INCR TO NEXT STMT WD
281		LD	1	C REMOVE STATEMENT NUMBER
282		STO	1	C CLOSE STMT 1 WORD
283		BSC	L	** -5,Z BR TO CONTINUE CLOSING
284		IDX	L	MT,1 ADJUST STMT WORD COUNT
285	XR1SV	LDX	11	** RESTORE INDEX REG 1
286		IDX	1	** ADJUST STMT POINTER
287		IDX		CV5D BR TO CHECK FOR STRING PAC
288	*			TAG SWITCH 3
289	CV5A	STX	0	SW3 ASF STMT NOT POSSIBLE
290	*			CHECK IF STRING CLOSURE REQUIRED
291	CV5D	LD		SW5 SWITCH 5
292		BSC	L	MOVE,+ BR TO GO TO NEXT STATEMENT
293		STX	1	OX0 SAVE INDEX REGISTER 1
294		LD		OX0 CURRENT STRING POINTER
295		A		MT STMT WORD COUNT
296		STO		OX1 STORE ADDR TO MOVE FROM
297		LD	L	COFS END OF STRING ADDRESS
298		B		OX1 MOVE FROM ADDR
299		STO	**+1	C RANGE OF CLOSURE

300		LDX	L3	*--*	INDEX REG 3 = RANGE
301		LDX	L2	*--*	ADDR FIRST WD TO MOVE
302	CX1	LDQ		*-1	LABEL ADDR LAST INSTRUCTIO
303		LDX	3	1	NO. OF WORDS TO MOVE
304	CX1A	LD	2	1	NEXT WORD TO MOVE
305		STJ	1	1	CLOSE UP STRING
306		LDX	1	1	INCR ADDR TO MOVE TO
307		LDX	2	2	INCR ADDR TO MOVE FROM
308		LDX	3	*1	DECR MOVE COUNTER
309		LDX		CX1A	BR TO CONTINUE MOVE
310		LDX	1	*1	
311		STX	L1	EOFS	NEW END OF STRING ADDRESS
312		LDX	L1	*--*	RESTORE INDEX REG 1
313	CX2	LDQ		*-1	LABEL ADDR LAST INSTRUCTIO
314		LD	1	IDSV1	STMT ID WORD
315		GRF		2	RIGHT JUSTIFY STMT NORY
316		S		CJT	CORRECT STMT WORD COUNT
317		SLT		2	SHIFT BACK TO NORMAL FORM
318		STO	1	IDSV1	RESTORE CORRECTED STMT ID
319		BSC	L	MOVE	BR TO GO TO NEXT STATEMENT
320	*			REMOVE C	CONSTANT OPERATOR FROM STMT
321	CV6			CONC	CONSTANT OPERATOR
322		BSC	L	CV8,Z	BR IF NOT CONSTANT OPERATO
323		LDX	1	*1	ADJUST TO REMOVE OPERATOR
324		BST	L	CXB1	BR TO CLOSE STMT ONE WORD
325		LDX	1	1	MOVE STMT POINTER
326		STX	0	SW5	SET SW5 TO CLOSE STRING
327		LDX	L	CJT,1	ADJUST STMT WORD COUNT
328	CV7	LDX	1	1	INCR STMT POINTER
329		LDX		CV5	BR TO TEST SWITCH 1
330	*			CONSTANT	AND WORK AREA
331	SW1	DC		0	GOTO STMT SWITCH
332	SW2	DC		0	IF STMT SWITCH
333	SW3	DC		0	POSSIBLE ASF STMT SWITCH
334	SW4	DC		0	READ OR WRITE STMT SWITCH
335	SW5	DC		0	CLOSE STRING SWITCH
336	SW6	DC		0	ASF NAME TABLE PUT SWITCH
337	SW7	DC		0	ASF NAME TABLE CHECK SWITC
338	SW8	DC		0	ARITH STMT FUNCTION SWITC
339	SW9	DC		0	PHASING SWITCH
340	SW10	DC		0	TWO WORD NAME SWITCH
341	ADHE	DC		1	STMT NO. EXTRACT MASK
342	EQ000	DC		715	EQUIVALENCE STMT CONSTANT
343	ASFID	DC		70000	ARITH STMT FUNC ID CON
344	GOTOC	DC		70E	GOTO STMT CONSTANT
345	DOC	DC		70R-70E	DO STMT CONSTANT
346	IFE	DC		70F-70R	IF STMT CONSTANT
347	RDC	DC		712-70F	EAD STMT CONSTANT
348	WTC	DC		711-712	WRITE STMT CONSTANT
349	SEMIC	DC		71E	SEMICOLON CONSTANT
350	CONC	DC		75E-71E	CONSTANT OPERATOR CONSTANT
351	CNT	DC		0	STMT WORD COUNT TEMPORARY
352	SO7FC	DC		707FC	STMT NUPM EXTRACT MASK
353	MT2	DC		-4	STMT NO. CONVERSION CON
354	MT3	DC		-3	STMT NO. CONVERSION CON
355	*			CHECK FOR	OPERATOR AND CONVERT
356	CV8	LD		SW8	ASF STMT SWITCH
357		BSC	L	CV36,+-	BR IF NOT ASF
358		LD		SW9	PHASING SWITCH
359		BSC	L	CV10,+-	BR NOT SET ON

360	LD	1	0	NEXT STMT WORD	
361	S	L	L PAR	LEFT PARENTHESIS CONSTANT	
362	BSC	L	CV9,Z	BR IF NOT LEFT PARENTHESIS	
363	STX	0	SW6	SET SW6 TO T CONDITION	
364	MDX		CV10	BR TO CONVERT OPERATOR	
365	CV9	LD	1	0	NEXT STMT WORD
366	S	L	R PAR	RIGHT PARENTHESIS CONSTANT	
367	BSC	L	CV10,Z	BR IF NOT RIGHT PARENTHESI	
368	STO		SW9	RESET PHASING SWITCH	
369	STO		SW6	RESET ASF NAME TBL PUT SW	
370	STX	0	SW7	SET ASF NAME TBL CHECK SW	
371	*			CONVERT OPERATOR TO SCAN-FORCING COD	
372	CV10	LDX	L3	TABLE	TABLE ADDRESS
373		LDX	2	OX2-TABLE	INITIALIZE COUNTER
374		LD		INST1	MDX INSTRUCTION
375		STO		INST	INITIALIZE ODD
376		LD	1	0	OPERATOR
377		BSC	L	ODD,E	BR IF ODD
378		LD		INST2	MDX INSTRUCTION
379		STO		INST	INITIALIZE EVEN
380		LDX	2	TABLE-OAL	INITIALIZE COUNTER
381	CV10	LD	3		TABLE ENTRY
382		AND		OFF	EXTRACT OPERATOR
383		S	1	0	COMPARE WITH OPERATOR
384		BSC	L	OZ,+ -	BR IF OPERATOR FOUND
385	INST	NOP			MDX + OZ = 1 MODIFIABLE
386		MDX	2	-1	DECR COUNTER
387		MDX		ODD	BR TO CONTINUE SEARCH
388	OZ	LD	3	0	TABLE ENTRY
389		GRA		0	RIGHT JUSTIFY FORCING CODE
390		STO	1	0	REPLACE OPERATOR
391		MDX		CV7	BR TO MOVE STMT POINTER
392	*			TABLE	TO CONVERT OPERATORS
393	OX1	DC		73000	NOP
394		DC		7323A	COLON
395		DC		70E3E	=
396		DC		70C1C	*
397		DC		70620	-
398		DC		7040E	+
399	TABLE	DC		7021D)
400		DC		7100D	(
401		DC		7122B	,
402		DC		70821	/
403		DC		7423D	QUOTE (APOSTROPHE)
404	OX2	DC		73000	NOP
405	*			CONSTANTS	AND WORK AREA
406	INST1	MDX	3	1	INCR TABLE ADDR INSTRUCTIO
407	INST2	MDX	3	-1	DECR TABLE ADDR INSTRUCTIO
408	S8000	DC		78000	ONE WORD NAME INDICATOR
409	ERR0	DC		0	ERROR NUMBER TEMPORARY
410	S0001	DC		1	DECIMAL ONE CONSTANT
411	ERR1	DC		7AD08	ERROR IDENTIFIER
412	OFF	DC		701FF	OPERATOR EXTRACT MASK
413	*			CHECK FOR	LEGAL NAME
414	CV11	CLA		2	SHIFT INTO SIGN AND CARRY
415		BSC	L	*+2,-	BR TO CHK FOR LEGAL NAME
416		BSC	L	CV22,C	BR TO CHK IF LEGAL CONSTAN
417		CLA		26	CLEAR ACCUMULATOR
418		STO	L	IND	SET INDR = ZERO
419		LD		S8000	ONE WORD NAME INDICATOR

420		STO	L	WORD2	SECOND WORD OF 2-WORD NAME
421		LD	1	0	FIRST HALF OF NAME
422		STO	L	WORD1	FIRST HALF OF NAME TEMP
423		LD	1	2	SECOND HALF OF NAME
424		BSC	L	CV13,-	BR IF ONE WORD NAME
425		STO	L	WORD2	SECOND HALF OF NAME TEMP
426		STX	0	SW10	SET TWO-WORD NAME SWITCH 0
427		LD	1	2	NEXT STMT WORD
428		BSC	L	CV13,-	BR IF NOT NAME WORD
429		LDX	3	7	INDEX REG 3 = 7
430	BK	STX	3	ERNO	SET UP ERROR NO. 7
431	*			REPLACE STATEMENT WITH ERROR	
432	CV12	LDX	I1	IDSV1	STMT ID WORD ADDRESS
433		LD	1	0	STMT ID WORD
434		AND		S07FC	EXTRACT STMT WORD COUNT
435		SRA		2	RIGHT JUSTIFY
436			L	IDSV1	ADDR OF STMT ID WORD
437		STO		**+1	ADDR OF NEXT STMT ID WORD
438		LDX	L2	**	INDEX REG 2 = NEXT STMT I
439		LD	L	EOFS	END OF STRING ADDRESS
440				**4	ADDR OF NEXT STMT ID WORD
441		STO		**+1	ADDR OF NEXT INSTRUCTION
442		LDX	L3	**	INDEX REG 3=RANGE OF CLOSE
443		LDX	3	-	NO. OF WORDS TO MOVE
444		LD	1	0	STMT ID WORD
445		AND		S0001	EXTRACT LOW BIT
446		OR		CRID	ERROR IDENTIFIER
447		STO	1	0	STMT ID WORD
448		EOR		S0001	REVERSE STMT NUMBER INDR
449		BSC	L	**4,E	BR IF BIT 15 ON
450		STX	1	**+1	STMT ID WORD ADDRESS
451		LDX	L	**+,4	INCR STMT ID WORD
452		LDX	1	2	INCR STMT POINTER
453		LD		ERNO	ERROR NUMBER
454		STO	1	2	ERROR NO. INTO STMT
455	CV12A	LD	2	0	NEXT WORD TO MOVE
456		STO	1	2	CLOSE UP STRING
457		LDX	2	1	INCR ADDR TO MOVE FROM
458		LDX	1	1	INCR ADDR TO MOVE TO
459		LDX	3	-1	DECR MOVE WORD COUNT
460		LDX		CV12A	BR TO CONTINUE CLOSING
461		LDX	1	1	ADJUST TO MAKE NEW END OF
462		STX	L1	EOFS	STRING ADDRESS.
463		BSC	L	MOVE	BR TO SCAN NEXT STMT
464	*			PUT NAME IN ASF TABLE	
465	CV13	LD	L	SW6	PUT NAME SWITCH
466		BSC	L	CV14,+	BR TO CHECK FOR NAME IN TB
467		LDD		WORD1	TWO-WORD NAME
468		STO	I	ASFNT	PUT NAME IN ASF TABLE
469		BSI	L	NASFT	CHECK FOR DUPLICATE STMT
470		DC		ER25	FUNCTION PARAMETERS.
471		DC		*	
472		LDX	L	ASFNT,2	INCR NEXT TABLE ENTRY ADDR
473		LD	L	ASFNT	MINUS 3
474			L	ASFNT	NEXT TABLE ADDR
475		BSC	L	CV15,-	BR IF LESS THAN 15 NAMES
476	ER25	LDX	3	25	SET UP ERROR 25
477		LDX		BK	BR TO STORE ERROR NUMBER
478	*			CHECK FOR NAME IN ASF TABLE	
479	CV14	LD	L	SW7	CHECK NAME SWITCH

480		BSC	L	CV16,+-	BR TO CHK FOR INTEGER NAME
481	CV14A	BSI	L	IASFT	CHK FOR NAME ALREADY IN TB
482		DC		CV15	
483		DC		CV16	
484	CV15	LD		WORD2	SECOND WD OF STMT NAME
485		SLA		1	REMOVE SIGN BIT
486		BRA		1	
487		STO		WORD2	RESTORE SECOND WORD OF NAM
488		LD		IND	ADD STATEMENT FUNCTION
489		OR		S0400	PARAMETER TO THE SYMBOL
490		STO		IND	TABLE ID WORD TEMPORARY
491	*				CHECK FOR INTEGER NAME
492	CV16	LD		WORD1	FIRST WORD OF NAME
493		BRA		0	RIGHT JUSTIFY FIRST CHAR
494		S		ILOW	LOW ALPHA LIMIT CONSTANT
495		BSC	L	CV17,+Z	BR IF ALPHA BELOW I
496		S		IHI	HIGH ALPHA LIMIT CONSTANT
497		BSC	L	CV17,-Z	BR IF ALPHA ABOVE N
498		LD		IND	SYMBOL TBL ID WORD TEMP
499		OR		S4000	ADD INTEGER INDR
00		STO		IND	RESTORE SYMBOL TBL ID TEMP
501	*				PUT STMT FUNC NAME IN SYMBOL TABLE
502	CV17	BSI	L	STOOK	BR TO PUT NAME
503		BSI	L	EXTRA	SYMBOL TBL ADDR TO STRING
504	TAN	MDX	1	1	MOVE STMT POINTER
505	*				CHECK FOR LEFT PARENTHESIS OPERATOR
506		LD	1	0	NEXT STMT WORD
507		S		LPAR	LEFT PARENTHESIS CONSTANT
508		BSC	L	CV5,Z	BR IF NOT LEFT PARENTHESIS
509	*				CHK FOR DIMENSIONED NAME, ARITH STMN
510	DIMED	LD	3	0	SYMBOL TABLE ID WORD
511		AND		HK	DIMENSION BIT MASK
512		BSC	L	CV19,Z	BR IF DIMENSIONED NAME
513		LD	I	DSV1	STMT ID WORD
514		BRA		11	RIGHT JUSTIFY STMT TYPE
515		BSC	L	CV5,Z	BR TO CHK CLOSURE REQUIRED
516		LD	L	SW3	ASF POSSIBLE SWITCH
517		BSC	L	CV5,Z	BR ASF NOT POSSIBLE
518		LD	L	SW8	ASF STMT SWITCH
19		BSC	L	CV5,Z	BR IF ASF STMT SW ON
520		CTX	LO	SW8	SET ASF SWITCH ON
521		STX	LO	SW9	SET PHASING SWITCH ON
522		BSC	L	CV5	BR TO CHK CLOSURE REQUIRED
523	*				CONSTANTS AND WORK AREA
524		BSS	E	0	MAKE ADDRESS EVEN
525	WORD1	DC		0	FIRST HALF OF NAME
526	WORD2	DC		0	SECOND HALF OF NAME
527	ILOW	DC		/0049	LOW ALPHA LIMIT CONSTANT
528	IHI	DC		/000C	HIGH ALPHA LIMIT CONSTANT
529	IND	DC		0	SYMBOL TABLE ID WD TEMP
530	LPAR	DC		/000D	LEFT PARENTHESIS CONSTANT
531	SEMS	DC		/001E	SEMICOLON CONSTANT
532	RPAR	DC		/001D	RIGHT PARENTHESIS CONSTANT
533		BSS	E	0	MAKE ADDRESS EVEN
534	NO5	DC		0	2 WORD TEMPORARY FOR
535		DC		0	*CONSTANT TO BE CONVERTED
536	NO5T	DC		0	CUMULATIVE SUM OF CONSTANT
537	NINE	DC		9	DECIMAL NINE CONSTANT
538	TEN	DC		10	DECIMAL TEN CONSTANT
539	YZ1	DC		0	INDEX REGISTER 3 TEMPORARY

540	MK	DC	/1800	DIMENSION BIT MASK
541	S0820	DC	/20020	STMT NO. REFERENCED INDR
542	RDARQ	DC	/2001D-1	RIGHT PARENTHESIS CON
543	S0400	DC	/20400	STMT FUNC PARAMETER INDR
544	S4000	DC	/24000	INTEGER INDICATOR
545	SS1	DC	/2001A	DIMENSION LEVEL 1 OPERATOR
546		DC	/1C	DIMENSION LEVEL 2 OPERATOR
547		DC	/1E	DIMENSION LEVEL 3 OPERATOR
548	H7E00	DC	/27E00	HIGH CHARACTER CONSTANT
549	H6000	DC	/26000	LEADING ZEROES CONSTANT
550	H8000	DC	/28000	SIGN CONSTANT
551	*		CONVERT	SPECIAL LEFT PARENTHESIS
552	CV19	LD	3	SYMBOL TABLE ID WORD
553		AND	1K	DIMENSION BIT MASK
554		SRA	-1	RIGHT JUSTIFY
555		STO	**+1	
556		LDX	L3 +-*	1, 2, OR 3 DIMENSION INDR
557		LD	L3 OS1-1	SPECIAL LEFT PARENTHESIS
558		STO	1	STORE TO STMT STRING
559	CV20	NDX	1	MOVE STMT POINTER
560	*			CHECK FOR OPERATOR
561		LD	1	NEXT STMT WORD
562		S	SEMS	SEMICOLON CONSTANT
563		BSC	L CV21,+	BR IF SEMICOLON OPERATOR
564		S	RRARQ	RIGHT PARENTHESIS CONSTANT
565		BSC	L CV10,+	BR IF RIGHT PARENTHESIS
566		NDX	CV20	BR TO MOVE POINTER
567	CV21	LDX	3 26	
568		STX	L3 ERNO	SET UP ERROR NUMBER 26
569		BSC	L CV12	BR TO REPLACE STMT IN ERR
570	*			CHECK FOR VALID CONSTANT
571	CV22	SLT	32	CLEAR ACC AND EXTENSION
572		STD	WORD1	CLEAR NAME TEMPORARY
573		LD	1	FIRST HALF OF CONSTANT
574		STD	WOS	STORE AND CLEAR 2ND HALF
575		LD	1	SECOND HALF OF CONSTANT
576		BSC	L COOT,-	BR TO CONVERT IF NOT NEG
577		STX	LD SW10	SET TWO-WORD NAME SWITCH
578		SLA	1	SHIFT OFF SIGN BIT
579		STO	WOS+1	SECOND HALF OF CONSTANT
580		LD	1	NEXT STMT WORD
581		BSC	L CV23,+Z	BR IF NEG TO SET NAME ERRO
582	*			COLLECT CONSTANT TO BINARY
583	COOT	LDS	0	RESET OVERFLOW AND CARRY
584		LD	WOS	FIRST HALF OF CONSTANT
585	XX1	SLA	2	SHIFT TO CHK FOR NUMERIC
586		BSC	L +-+3,C	BR IF CARRY
587		BSC	L CV23,Z	BR TO SET ERROR 24
588		NDX	WDC	BR SET SYMBOL TBL ID INDRS
589		BSC	L CV23,-	BR NOT DIGIT TO SET ERROR
590		SLA	1	SHIFT OFF NON-DIGIT BIT
591		SRA	2	RIGHT JUSTIFY 4-BIT DIGIT
592		STO	WOST	TEMPORARY
593		S	NINE	DECIMAL NINE LIMIT CONSTAN
594		BSC	L CV23,-Z	BR IF GREATER THAN NINE
595		LD	WORD1	PREVIOUS CONSTANT VALUE
596		S	TEN	MPY BY 10
597		SLT	1	
598		BSC	L CV23,Z	BR CONSTANT TOO LARGE
599		SLT	15	SHIFT INTO ACCUMULATOR

600				UNITS DIGIT
601	BSC	L	CV23,0	BR IF OVERFLOW TO SET ERROR
602	STO		WORD1	TEMPORARY CUMULATIVE SUM
603	LDD		WDS	TWO-WORD CON TO CONVERT
604	BLT		6	NEXT DIGIT TO HIGH 6 BITS
605	STO		WDS	RESTORE TO TEMP
606	BDX		XX1	BR TO CONVERT NEXT DIGIT
607	JCC	L3	ZC000	INTEGER CONSTANT INDR BITS
608	STX	3	11D	SYMBOL IBL ID WD TEMPORARY
609	BDX	L	WDCS,1	CHK SYMBOL TBL OVERLAP SW
610	PSI	L	ST00K	BR PUT NAME IN SYMBOL TABL
611	PSI	L	EXTRA	SYMBOL IBL ADDR ON STRING
612	BSC	L	CV7	BR TO MOVE STMT POINTER
613	*			SET UP ERROR NO 24
614	CV23	LDA	3 24	INDEX REG 3= 24
615		STX	L3 ERNO	SET UP ERROR 24
616		BSC	L CV12	BR REPLACE STMT WITH ERRO
617	*			CHECK FOR VALID STATEMENT NUMBER
618	CV25A	BLA	-6	CLEAR ACCUMULATOR
619		STO	WORD2	ZERO SECOND WD OF TEMPORAR
620		LD	1 6	NEXT STMT WORD
621		BSC	L CV12,-	BR REPLACE STMT WITH ERRO
622		STO	WORD1	FIRST HALF OF STMT NUMBER
623		LD	1 4	NEXT STMT WORD
624		BSC	L YYX,-	BR TO CHK FOR DUPLICATE NO
625		SLA	-	SHIFT OFF SIGN BIT
626		STO	WORD2	SECOND HALF OF STMT NUMBE
627		STX	L6 SW10	SET TWO-WORD SWITCH ON
628		LD	1 2	NEXT STMT WORD
629		BSC	L CV12,+Z	BR TO SET ERROR IF 3RD WOR
630	*			ADJUST FOR LEADING ZEROES
631	YYX	LD	L WORD1	FIRST HALF OF NUMBER
632	ZEROT	AND	H7E00	EXTRACT FIRST DIGIT
633		LOR	H6000	REMOVE NON-DIGIT BITS
634		BSC	L ZSLT,Z	BR NO LEADING ZERO
635		LDD	L WORD1	TWO-WORD NUMBER TEMPORARY
636		BLT	6	SHIFT OFF LEADING ZERO
637		OR	H8000	REPLACE SIGN BIT
638		STO	L WORD1	RESTORE NUMBER
639		BDX	ZEROT	BR TO TEST FOR LEADING ZER
640	ZSLT	LD	L WORD2	SECOND HALF OF STMT NUMBE
641		BRA	-	RIGHT JUSTIFY
642		OR	H8000	REPLACE SIGN BIT
643		STO	L WORD2	RESTORE TO TEMPORARY
644	*			CHK FOR DUPLICATE NO. IN SYMBOL TABL
645		LDX	13 SDFST	START OF STRING ADDRESS
646		BDX	YY1	BR TO INITIALIZE LOOP
647	YY0	LD	3 -	FIRST HALF SYMBOL TBL ENTR
648		LD	L WORD1	FIRST HALF STMT NUMBER
649		BSC	L YE0Z,Z	BR NOT FOUND
650		LD	3 2	2ND HALF SYMBOL TABLE ENTR
651		LD	L WORD2	2ND HALF STMT NUMBER
652		BSC	L YYZ,+-	BR IF STMT NUMBER FOUND
653	YE0Z	BDX	3 -3	DECR SYMBOL TABLE ADDRESS
654	YY1	STX	L3 YZ1	STORE IN TEMPORARY
655		LD	L YZ1	CURRENT SEARCH ADDRESS
656		LD	L SDFNS	START OF NON-STMT NUMBERS
657		BSC	L CV12,+	BR REPLACE STMT WITH ERRO
658		BDX	YY0	BR TO CHECK NEXT ENTRY
659	YY1	LD	1 DSV1	STMT ID WORD TEMP

660		BR	L1	RIGHT JUSTIFY STMT TYPE
661		S	DOCC	DO STMT CONSTANT
662		BSC	L YYZ0,+	BR IF DO STATEMENT
663	YYZ	LD	3	SET STATEMENT NUMBER REFER
664		BR	L S0020	ENCED INDICATOR IN THE
665		STO	3	SYMBOL TABLE ID WORD.
666	YYZ0	PSI	L EXTRA	SYMBOL TABLE ADDR ON STRIN
667		BSC	L CV7	BR TO MOVE INCP
668	*		CHECK FOR	SEMICOLON OPERATOR
669	CV26	LD	L SW2	IF STMT SWITCH
670		BSC	L CV27,+	BR NOT IF STMT
671		LD	1	NEXT STMT WORD
672		S	L SEM5	SEMICOLON CONSTANT
673		BSC	L CV23,Z	BR IF NOT SEMICOLON
674		STO	L SW1	RESET GOTO STMT SWITCH
675		STO	L SW2	RESET IF STMT SWITCH
676		BSC	L CV50	BR TO CONVERT SEMICOLON
677	*		CHECK FOR	RIGHT PARENTHESIS OPERATOR
678	CV27	LD	1	NEXT STMT WORD
679		S	L RPAR	RIGHT PARENTHESIS CONSTANT
680		BSC	L CV28,Z	BR NOT RIGHT PARENTHESIS
681		STO	L SW1	RESET GOTO STMT SWITCH
682	LM0Z	BSC	L CV10	BR TO CONVERT OPERATOR
683	CV18	LD	1	NEXT STMT WORD
684		BSC	L CV58,-	BR IF OPERATOR
685		NDX	CV25A	BR CHK VALID STMT NUMBER
686	*		CHECK FOR	LEFT PARENTHESIS OPERATOR
687	CV29	LD	1	NEXT STMT WORD
688		S	L LPAR	LEFT PARENTHESIS CONSTANT
689		BSC	L CV30,Z	BR IF NOT LEFT PARENTHESIS
690		NDX	L PAR,1	PARENTHESIS INDICATOR
691		NDX	LM0Z	BR TO CONVERT OPERATOR
692	*		CHECK FOR	RIGHT PARENTHESIS OPERATOR
693	CV30	S	RPPO	RIGHT PARENTHESIS CONSTANT
694		BSC	L CV5A,Z	BR IF NOT RIGHT PARENTHESI
695		NDX	L PAR,-1	PARENTHESIS INDICATOR
696		NDX	LM0Z	BR TO CONVERT OPERATOR
697		STX	L0 SW1	SET GOTO STMT SW ON
698		NDX	LM0Z	BR TO CONVERT OPERATOR
699	*		CHECK FOR	APDSTROPHE
700	CV31	LD	1	NEXT STMT CHARACTER
701		S	L QJRK	QUOTE (APDSTROPHE) CONSTAN
702		BSC	L CV31A,Z	BR IF NOT QUOTE CHARACTER
703	NSW4	STO	L SW4	ZERO READ-WRITE STMT SW
704		BSC	L CV5A	BR TO CHK FOR OPERATOR
705	*		CHECK FOR	A FORMAL STMT NUMBER IN A
706	*		READ OR WRITE STATEMENT.	
707	CV31A	LD	1	NEXT STMT CHARACTER
708		BSC	L CV5A,-	BR TO CHK FOR OPERATOR
709		LD	1	STMT POINTER+1 CHARACTER
710		S	L RPAR	BRANCH IF RIGHT PARENTHESI
711		BSC	L CV32,+	AT STMT POINTER + 1,
712		LD	1	STMT POINTER+2 CHARACTER
713		S	L RPAR	BRANCH IF NO RIGHT PAREN-
714		BSC	L CV5A,Z	THESIS AT POINTER + 2.
715	CV32	LD	1	STMT POINTER-1 CHARACTER
716		S	L LONIL	BRANCH IF LEFT PARENTHESIS
717		BSC	L NSW4,+	AT STMT POINTER - 1,
718		CLA	16	CLEAR ACCUMULATOR
719		STO	L SW4	ZERO READ OR WRITE STMT S

720	LDX	3	46	SET UP ERROR NUMBER 46
721	STX	L3	BRND	BR CHK FOR VALID STMT NO.
722	BSC	L	CV25A	EQUAL CHARACTER
723	*		CHECK FOR	NEXT STMT CHARACTER
724	CV33	LD	1	EQUAL CHAR
725			LXE	BR IF NOT EQUAL
726	BSC	L	CV10,Z	SET SW3 ASF NOT POSSIBLE
727	STX	L0	SW3	BR TO CONVERT OPERATOR
728	LDX		LIQZ	AND WORK AREA
729	*		CONSTANT	CONSTANT
730	CGJVL	DC	710	CONVERTED LEFT PARENTHESIS
731	EQOP	DC	700SE	EQUAL SIGN
732	LXE	DC	EQOP	EQUAL SIGN
733	DQCC	DC	70R	DO STMT CONSTANT
734	QNRK	DC	73D	QUOTE (APOSTROPHE) CONSTAN
735	PAB	DC		PARENTHESIS INDICATOR
736	MRPO	DC	700LD-70	RIGHT PARENTHESIS CON
737	BSS	L		MAKE ADDRESS EVEN
738	ASFT	BSS	72	ARITH STMT FUNC NAME TABL
739	AFONT	DC	--3	ADDR OF LAST TABLE ELEMENT
740	ASFNT	DC		TABLE ADDRESS TEMPORARY
741	SIGN1	DC	78001	NUMBERED STMT INDICATOR
742	SAVE	DC	0	INDEX REG 3 TEMPORARY
743	THRE	DC	3	DECIMAL 3 ADDRESS CONSTANT
744	SWCS	DC	0	SYMBOL TABLE OVERLAP SWITC
745	SAVES	DC	0	INDEX REG 3 TEMPORARY
746	*		PLACE NAME AND ID WD IN SYMBOL TABLE	
747	STOOK	DC	0	RETURN ADDRESS
748	LDX	3	SOEJS	START OF NON-STMT NUMBERS
749	LDX		HACK	BR TO INITIALIZE
750	LP	LD	3	FIRST WD OF NAME-NEXT ENTR
751		L	WORD1	COMPARE FIRST WORD OF NAME
752	BSC	L	HACK-1,Z	BR NOT EQUAL, LOOK AT NEXT
753	LD	3	2	2ND WD OF NAME
754		L	WORD2	COMPARE SECOND WORD OF NAM
755	BSC	L	HACK-1,Z	BR NOT EQUAL, LOOK AT NEXT
756	LD		DQCS	
757	BSC	L	PJTF,+-	BR CHK FOR OVERLAP
758	LD	3	0	SYMBOL TBL ID WORD
759	CLA		1	SHIFT INTEGER INDR TO SIGN
760	BSC	L	PJT,+Z	BR IF INTEGER BIT SET ON
761	LDX	3	-3	DECK SYMBOL TABLE ADDRESS
762	HACK	STX	3	SAVES
763	LD		SAVES	CURRENT SEARCH ADDRESS
764		L	EOFST	END OF SYMBOL TABLE ADDR
765	BSC	L	LP,-Z	BR TO CONTINUE IF NOT END
766	*		PJT NAME	IN SYMBOL TABLE
767	LD	L	ID	SYMBOL TBL ID WD TEMPORARY
768	STO	3	0	STORE AS SYMBOL TBL ID WOR
769	LD	L	WORD1	FIRST HALF NAME
770	STO	3	1	STORE IN SYMBOL TABLE
771	LD	L	WORD2	SECOND HALF NAME
772	STO	3	2	STORE IN SYMBOL TABLE
773	LDX	L	EOFST,-3	NEW END OF SYMBOL TBL ADDR
774	LDX	L	SOEFT,-3	NEW START OF GENERATED TEM
775	LDX	L	SOEFT,-3	NEW START OF SUBSC TEMPS
776	PJT	CLA	16	CLEAR ACCUMULATOR
777	STO		SWCS	ZERO CHK FOR OVERLAP SWITC
778	*		CHECK FOR	SYMBOL TABLE OVERLAP
779	PJT	LD	L	EOFST

780				EOFS	END OF STRING
781		BSC	L	OFF,+Z	BR IF OVERLAP
782		BSC	L	STOOK	EXIT FROM PLACE NAME
783	JFF	LDX	L	ERROR,1	SET UP OVERLAP ERROR
784		BSC	L	WAIT	READ AND EXECUTE NEXT PHAS
785	*			PUT NAME	POINTER ON STRING
786	EXTRA	DC			RETURN ADDRESS
787		STX	3	SAVE	SYMBOL TABLE ADDRESS
788		LD	L	SOFST	START OF SYMBOL TABLE ADDR
789				SAVE	CURRENT SYMBOL TABLE ADDR
790		BRT		26	FORM NORMAL DIVIDEND
791				THRE	NO. OF WORDS PER ENTRY
792				SIGN1	SYMBOL TABLE POINTER
793		STO	1		STORE ON STRING
794	*			CHK IF 1	WORD STMT CLOSURE REQUIRED
795		LD	L	SW1E	TWO-WORD NAME SWITCH
796		BSC	L	FRANK,+	BR IF NO CLOSURE REQUIRED
797		CLA		26	CLEAR ACCUMULATOR
798		STO	L	SW1B	RESET TWO-WORD NAME SWITCH
799		LDX	L	SW5,1	SET STRING PACK SWITCH
800		BSI	L	SXB1	BR TO CLOSE STMT 1 WORD
801		LDX	L	CJT,1	ADJUST CNT FOR CLOSURE
802	FRANK	BSC	L	EXTRA	EXIT
803	*			SJBROUT; IE	TO CLOSE STMT BY ONE WOR
804	SXB1	DC			RETURN ADDRESS
805		STX	1	FRAN+1	SAVE STMT POINTER
806		LDX	1	2	INCR STMT CLOSE POINTER
807		LD	1	2	NEXT WORD TO MOVE TO CLOSE
808		STO	1	0	CLOSE STMT ONE WORD
809			L	SEMS	SEMICOLON
810		BSC	L	SXB1+2,Z	BR TO CONTINUE IF NON-ZERO
811	FRAN	LDX	L1		RESTORE STMT POINTER
812		BSC	L	SXB1	EXIT
813	*			CHECK WORD1 AND WORD2 AGAINST	
814	*			ARITHMETIC STATEMENT FUNCTION TABLE.	
815	*			IF THEY ARE IN THE TABLE,	
816	*			BRANCH INDIRECT THROUGH FIRST DC,	
817	*			IF NOT- GO THROUGH SECOND DC.	
818	NASFT	DC			RETURN ADDRESS
819		LD		NASFT	RETURN ADDRESS
820		STO		NAX1+1	SET UP EXIT
821		LDX	L3	ASFT	ADDR ARITH STMT FUNC TABL
822	NAX2	LDX	L3	-ASFT	BASE OF TABLE ADDRESS
823		LDX		**4	BR TO SEARCH IF NON-ZERO
824		LDX	L	NAX1+1,1	INCR EXIT ADDR POINTER
825	NAX1	BSC	L	*-*	EXIT MODIFIABLE
826		LDX	L3	ASFT-2	ADDR OF NEXT ELEMENT
827		LDD	L3	0	TWO-WORD NAME OF TBL ENTRY
828		SD	L	WORJ1	COMPARE WITH TWO-WORD NAME
829		BSC	L	NAX2,Z	BR IF NOT EQUAL
830		CLT		26	SECOND HALF TO ACCUMULATOR
831		BSC	L	NAX2,Z	BR IF NAME NOT FOUND
832		LDX		NAX1	BR IF NAME FOUND
833	*			END OF PHASE 8	
834		BSS		OVERL-**2-**3	PHASE- 8 PATCH AREA
835		END		START	