INSTRUCTIONS		Immediate			Absolute			Zero Page			Accum.			Implied			(Ind.) X			(Ind.) Y			Z, Page, X			Abs. X			Abs. Y			Relative			Indirect			Z, Page, Y			CONDITION CODES
Mnemonic	Operation	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	OP	N	#	N Z C I D V
LDX	M→X (1)	A2	2	2	AE	4	3	A6	3	2																			BE	4	3							B6	4	2	✓ ✓ – – – –
LDY	M→Y (1)	A0	2	2	AC	4	3	A4	3	2													B4	4	2	BC	4	3												✓ ✓ – – – –
LSR	0→[7 0]→C				4E	6	3	46	5	2	4A	2	1										56	6	2	5E	7	3												0 ✓ ✓ – – –
NOP	NO OPERATION													EA	2	1																									– – – – – –
ORA	AVM→A	09	2	2	0D	4	3	05	3	2							01	6	2	11	5	5	15	4	2	1D	4	3	19	4	3										✓ ✓ – – – –
PHA	A→MS S – 1→S													48	3	1																									– – – – – –
PHP	P→MS S – 1→S													08	3	1																									– – – – – –
PLA	S + 1→S MS→A													68	4	1																									✓ ✓ – – – –
PLP	S + 1→S MS→P													28	4	1																									(RESTORED)
ROL	[7 0]← [C]				2E	6	3	26	5	2	2A	2	1										36	6	2	3E	7	3												✓ ✓ ✓ – – –
ROR	[C]→[7 0]				6E	6	3	66	5	2	6A	2	1										76	6	2	7E	7	3												✓ ✓ ✓ – – –
RTI	(See Figure A-1) RTRN INT													40	6	1																									(RESTORED)
RTS	(See Figure A-1) RTRN SUB													60	6	1																									– – – – – –
SBC	A – M – C̄→A (1)	E9	2	2	ED	4	3	E5	3	2							E1	6	2	F1	5	2	F5	4	2	FD	4	3	F9	4	3										✓ ✓ (3) – – ✓
SEC	1→C													38	2	1																									– – 1 – – –
SED	1→D													F8	2	1																									– – – – 1 –
SEI	1→I													78	2	1																									– – – 1 – –
STA	A→M				8D	4	3	85	3	2							81	6	2	91	6	2	95	4	2	9D	5	3	99	5	3										– – – – – –
STX	X→M				8E	4	3	86	3	2																													96	4	2	– – – – – –
STY	Y→M				8C	4	3	84	3	2													94	4	2																	– – – – – –
TAX	A→X													AA	2	1																									✓ ✓ – – – –
TAY	A→Y													A8	2	1																									✓ ✓ – – – –
TSX	S→X													BA	2	1																									✓ ✓ – – – –
TXA	X→A													8A	2	1																									✓ ✓ – – – –
TXS	X→S													9A	2	1																									– – – – – –
TYA	Y→A													98	2	1																									✓ ✓ – – – –

(1) ADD 1 TO "N" IF PAGE BOUNDARY IS CROSSED.
(2) ADD 1 TO "N" IF BRANCH OCCURS TO SAME PAGE.
ADD 2 TO "N" IF BRANCH OCCURS TO DIFFERENT PAGE.
(3) CARRY NOT = BORROW.
(4) IF IN DECIMAL MODE Z FLAG IS INVALID
ACCUMULATOR MUST BE CHECKED FOR ZERO RESULT.

X INDEX X
Y INDEX Y
A ACCUMULATOR
M MEMORY PER EFFECTIVE ADDRESS
MS MEMORY PER STACK POINTER

+ ADD
– SUBTRACT
∧ AND
∨ OR
∀ EXCLUSIVE OR

✓ MODIFIED
– NOT MODIFIED
M7 MEMORY BIT 7
M6 MEMORY BIT 6
N NO. CYCLES
NO. BYTES

Figure A.4