



Figure 2. Memory map of index locations.

In this instruction set extension, any time a memory location from 0002 through 003F is specified as an index, auto-incrementing will occur on the index contents. Also, locations 0040 through 007F will provide autodecrementing. If any other location is specified as the index, no autoincrementing or autodecrementing will occur. Functionally, this is equivalent to 30 autoincrementing and 32 autodecrementing index registers. This is illustrated in figure 2.

A possible instruction set extension is listed in table A. These instructions provide 16 bit operations and feature instructions to move a block of memory to another area (BLT), multiply (MUL and MUI), divide (DIV and DVI), and compare (CM and CMI) which sets the N, Z, and C flags plus sets the overflow flag (O) if FFFF (-1) occurs.

A typical instruction is: MOV Dlabel (Id), Slabel (Is)
This instruction should assemble as:

```

opcode
address lo }
              } source
address hi }
Is          } zero page address of 16 bit source index
address lo }
              } destination
address hi }
Id          } zero page addr of 16 bit destination index

```

<u>NO.</u>	<u>BYTES</u>	<u>MNEMONIC</u>	<u>DESCRIPTION</u>
6	6	BLT Dlabel (#), Slabel	Block Transfer
7	6	MOV Dlabel (Id), Slabel (Is)	Move - memory to memory
6	6	MVI Dlabel (Id), immediate data	Move - immediate to memory
7	7	ADD	Add
7	7	SUB	Subtract
7	7	MUL	Multiply
7	7	DIV Dlabel (Id), Slabel (Is)	Divide
7	7	XOR	Exclusive or
7	7	OR	Logical or
7	7	AN	Logical and
6	6	ADI	Add
6	6	SUI	Subtract
6	6	MUI	Multiply
6	6	DVI Dlabel (Id), immediate data	Divide
6	6	XRI	Exclusive or
6	6	ORI	Logical or
6	6	ANI	Logical and
7	6	CM Dlabel (Id), Slabel (Is)	Compare
6	6	CMI Dlabel (Id), immediate data	Compare immediate
5	5	SHR Dlabel (Id), #	Shift right a number of places
5	5	SHL Dlabel (Id), #	Shift left a number of places
NOTE:		Dlabel = Destination address	
		Slabel = Source address	
		Id = Destination index	
		Is = Source index	

Table A - Possible extension of the 6502 instruction set.

Continued to p. 41