

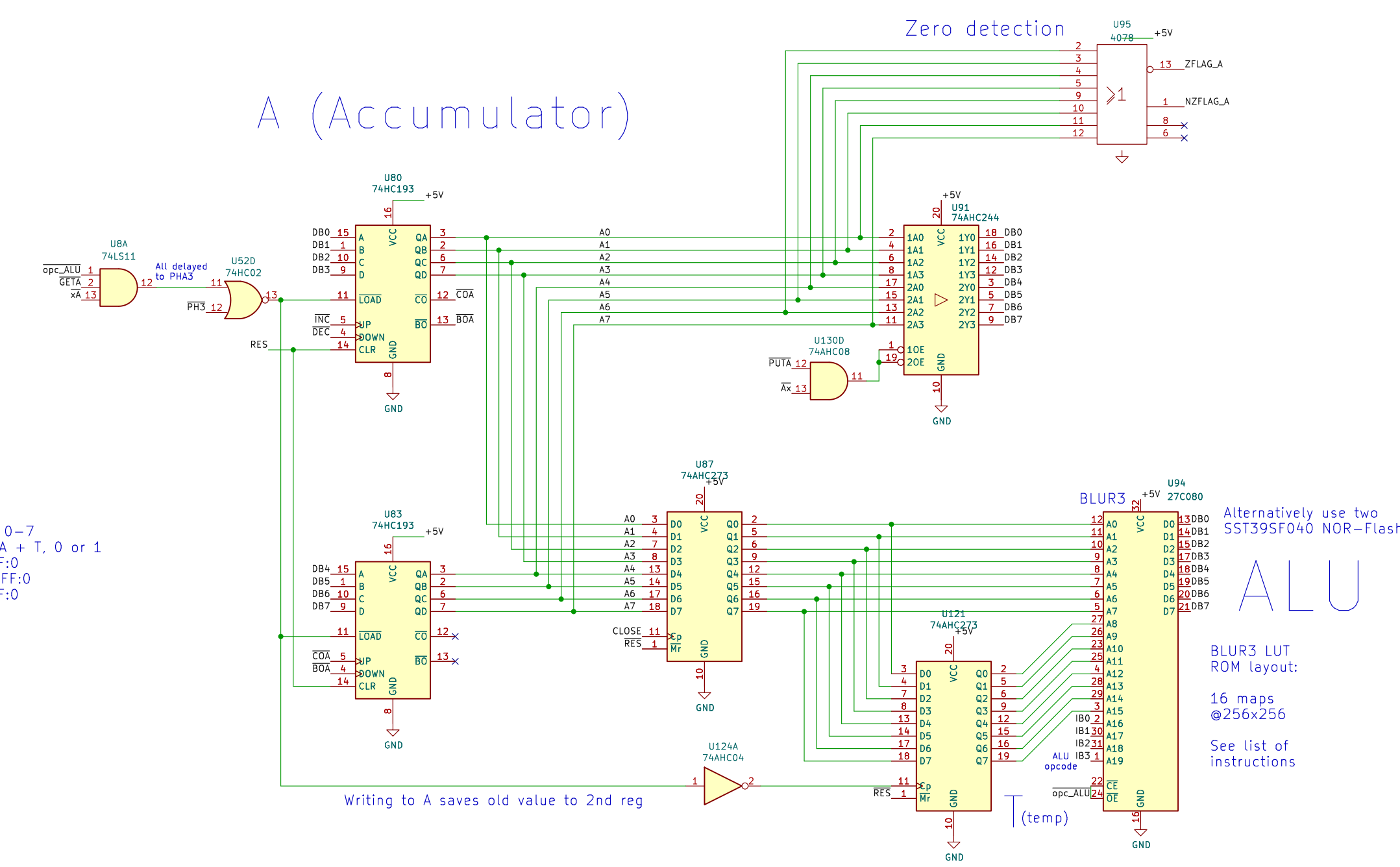
Sonne-8 Microcontroller Reference Schematics Rev. Myth

D(OWN COUNTER) Inner-loops

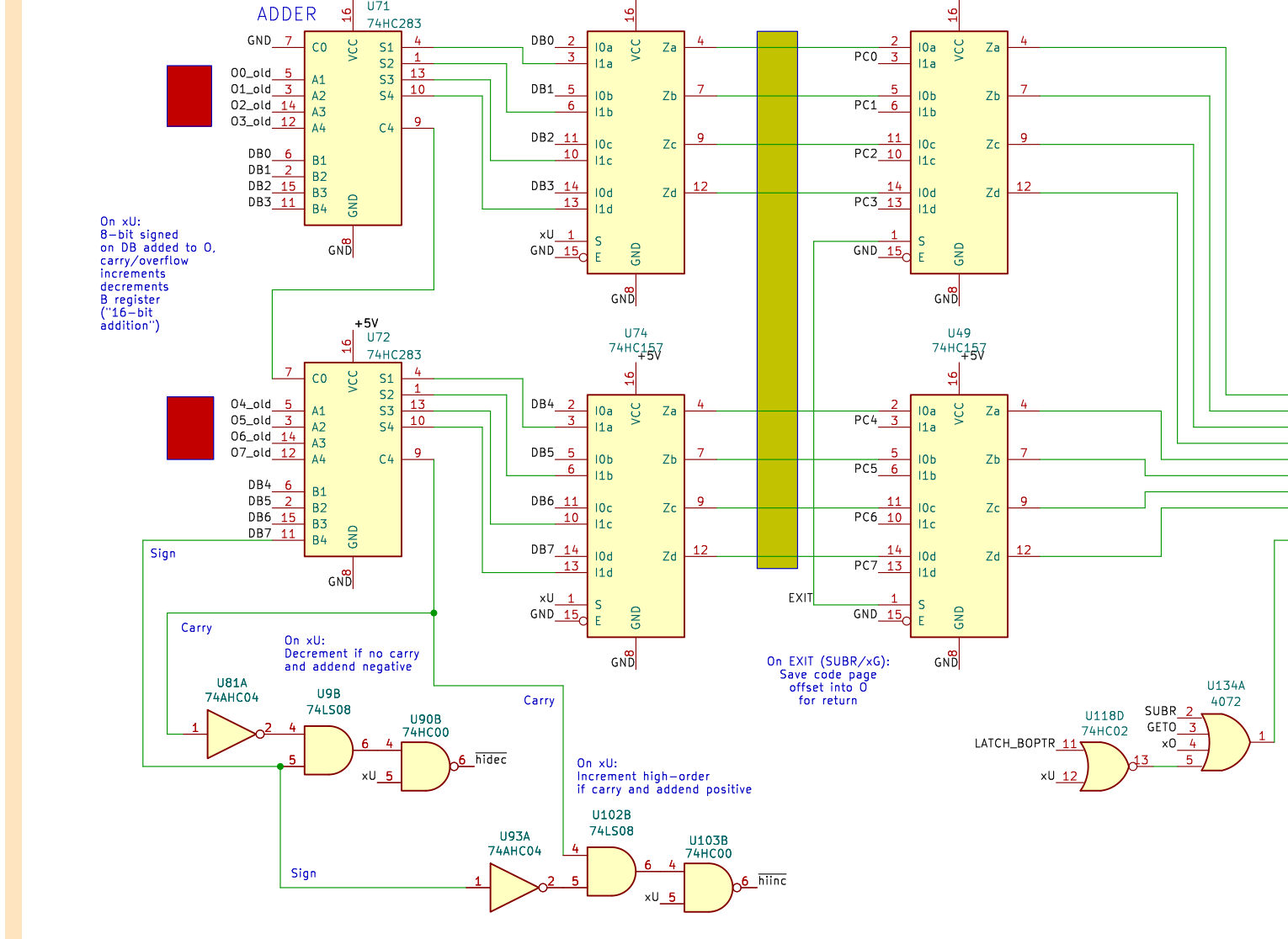
ALU Instructions

- | | |
|----------------------------------|---------------------------|
| 0 IDA ("Identity A") | A ← A |
| 1 IDT ("Identity T") | A ← T |
| 2 OCA ("One's Complement") | A ← ~A |
| 3 OCT ("One's Complement T") | A ← ~T |
| 4 SLA ("A shifted left") | A ← A << 1 |
| 5 SRA ("A shifted right") | A ← A >> 1 |
| 6 SRA ("A shifted right") | A ← A >> 1 |
| 7 SRT ("T shifted right") | A ← T >> 1 |
| 8 AND ("A boolean-and T") | A ← A & T |
| 9 OR ("A inclusive-or T") | A ← A T |
| 10 XOR ("A exclusive-or T") | A ← A ^ T |
| 11 ADD ("Add 1 to A") | A ← A + 1 |
| 12 CAR ("Carry bit of A plus T") | A ← (A > 255) ? 0 : A + T |
| 13 AL ("A less than T") | A ← (A < T) ? 0 : 255 |
| 14 AE ("A equal to T") | A ← (A == T) ? 0 : 255 |
| 15 AG ("A greater than T") | A ← (A > T) ? 0 : 255 |

A (Accumulator)



Pointer low



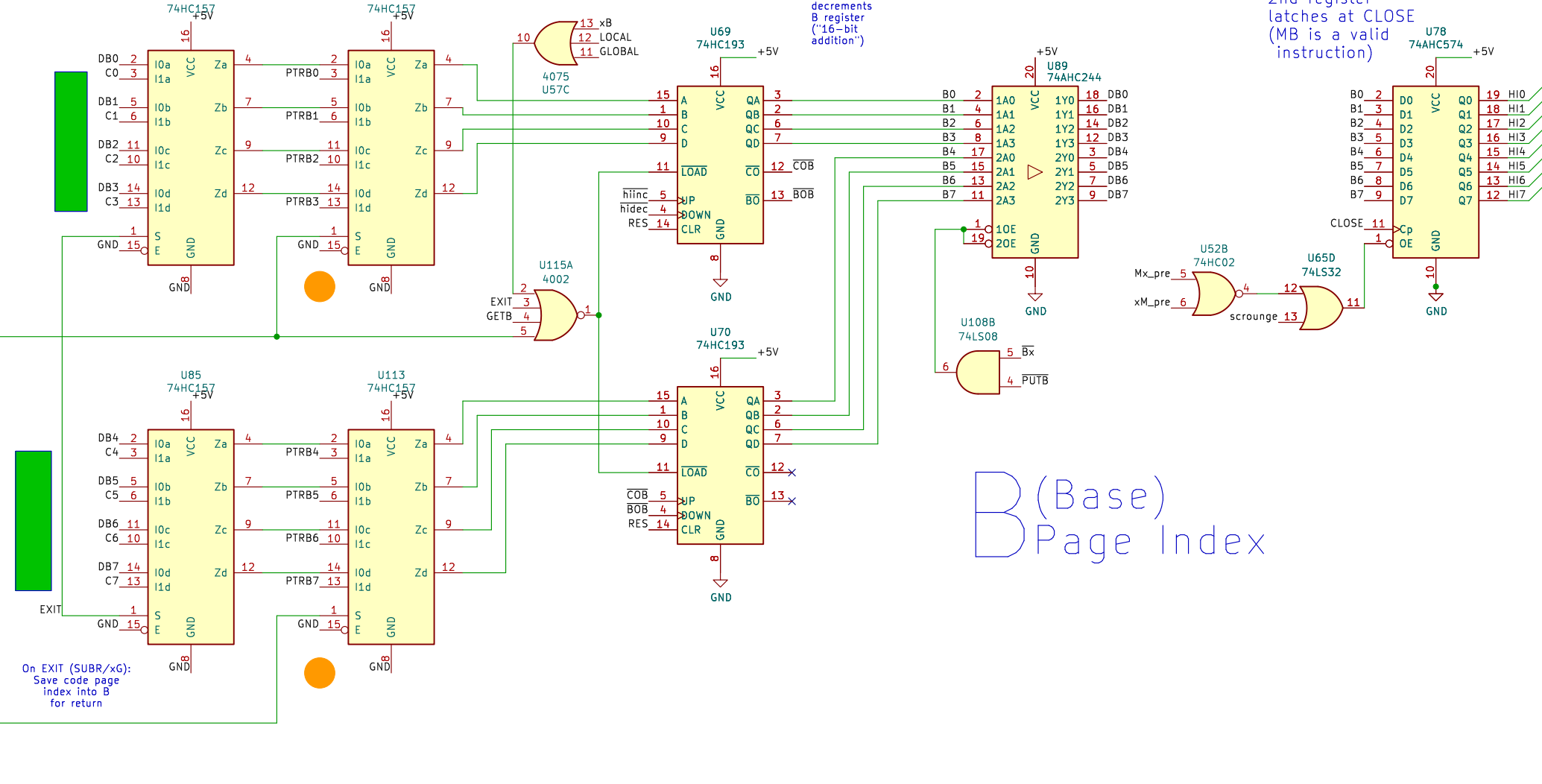
O (Page Offset Register)

Register at CLOSE x0 instruction address would feedback

BO-7 goes to PC module latched during RET

- Saves offset of current instruction byte during call/trap/go
- Outputs return offset during RET
- Is the (only) implied address offset for memory read-write, with the corresponding page index stored in B (Base)
- Together with B forms 16-bit address pointers subject to the x0 instruction.
- The B:O pointer can be loaded from/saved into the B0-Pointers P1-4

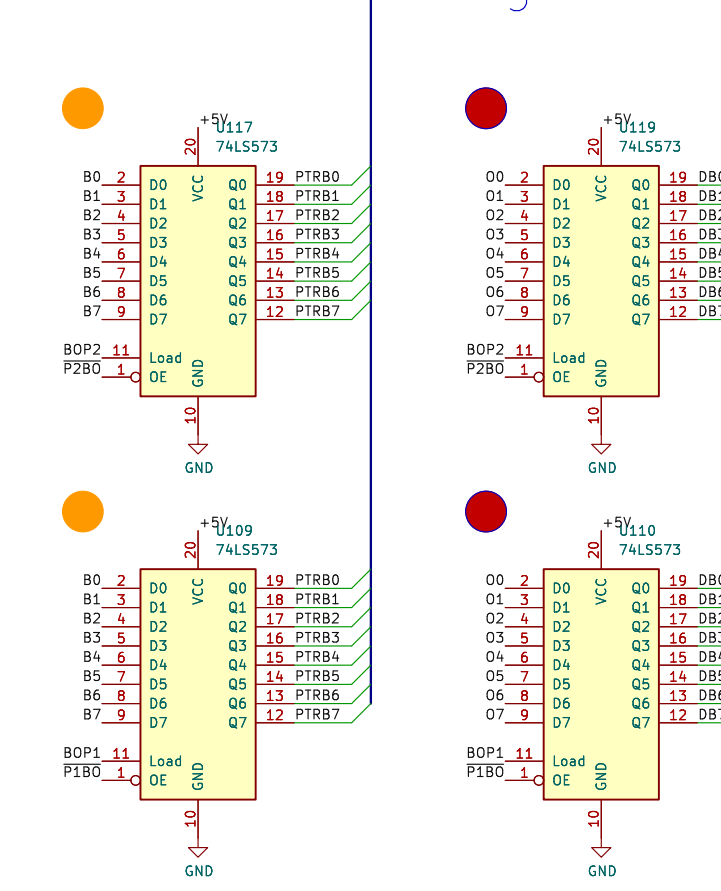
Pointer high



B (Base) Page Index

- Saves page index of current instruction byte during call/trap/go
- Outputs return page index during RET
- Is the implied page index for memory read-write, with the corresponding byte offset stored in O (Offset)
- Together with O forms a 16-bit address pointers subject to the x0 instruction
- The B:O pointer can be loaded from/saved into the B0-Pointers P1-4

B0 Pointer Registers



Input/Output

