

A

B

C

D

E

A

B

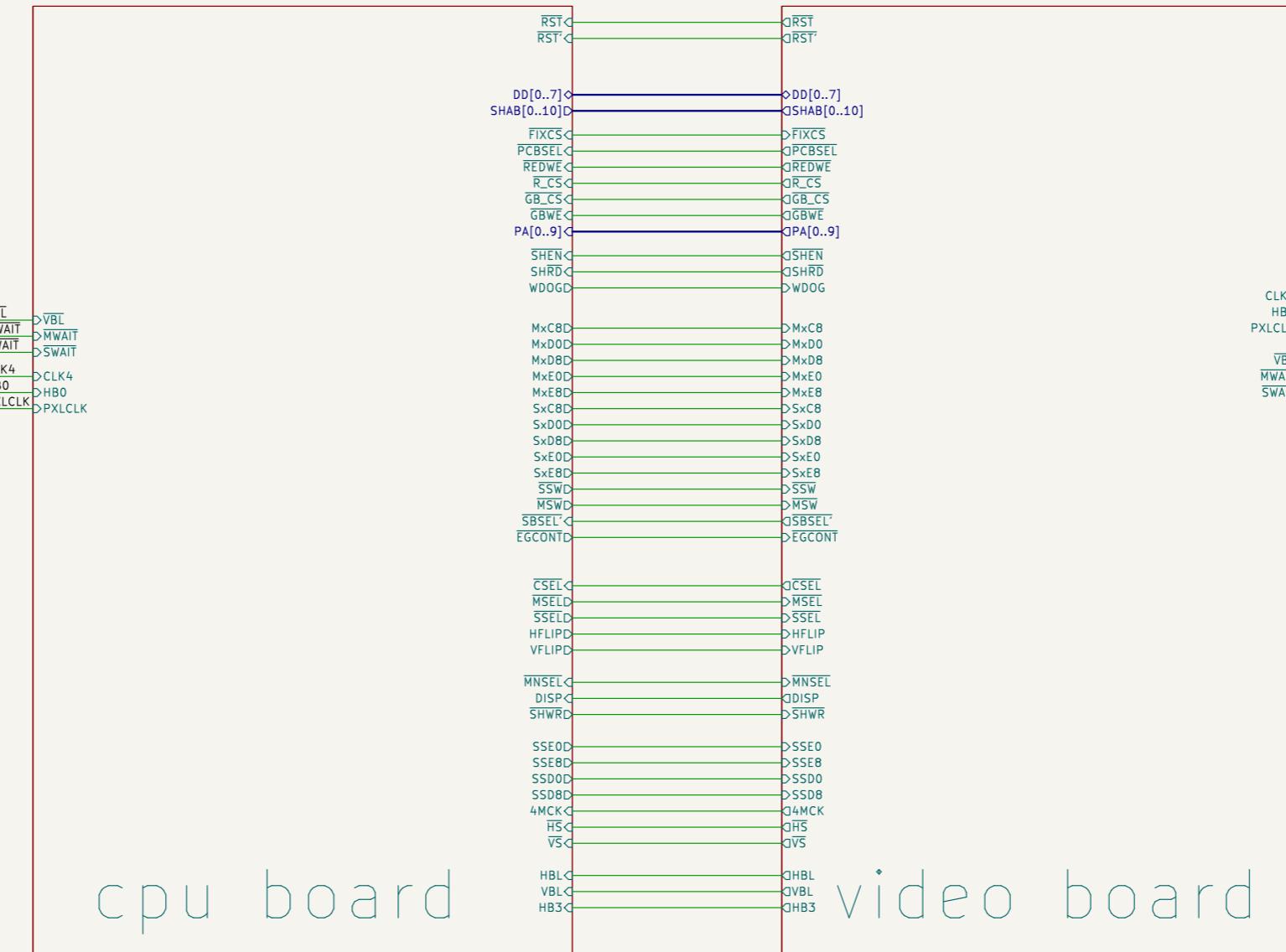
C

D

E

tehkanwch
bootleg board

- original PCB has through-hole vias whereas the bootleg has filled vias
- original uses three custom packages from Mitsubishi with logic inside.
These were replaced by a small daughter board on the bootleg, serving the same functionality
- different edge connectors
- debug edge connector on video board not present on bootleg
- cabinet input logic partly missing and rewired on the bootleg to replace the trackball interface for a joystick one
- different power amplifier for sound without heat sink on the bootleg
- slightly different frequencies for crystal oscillators (cost reduction?)
- device reference markers (silkscreen) on bootleg have reversed order on bootleg



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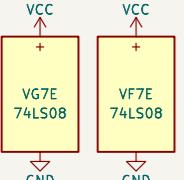
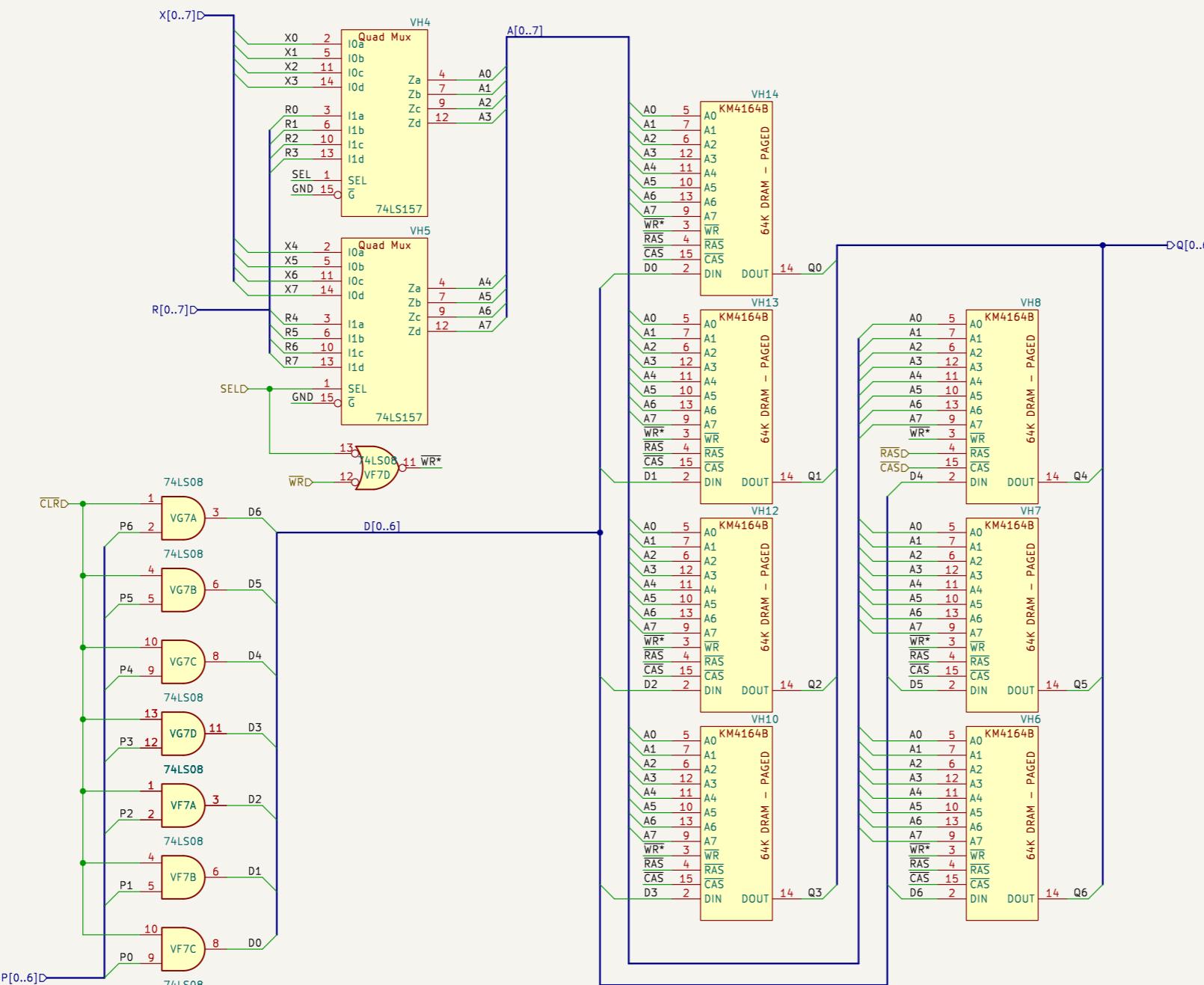
Sheet: /
File: tehkanwch.kicad_sch

Title: TEHKAN WORLD CUP (tehkanwch bootleg)

Size: A3 | Date: 2024-11-15
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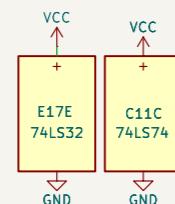
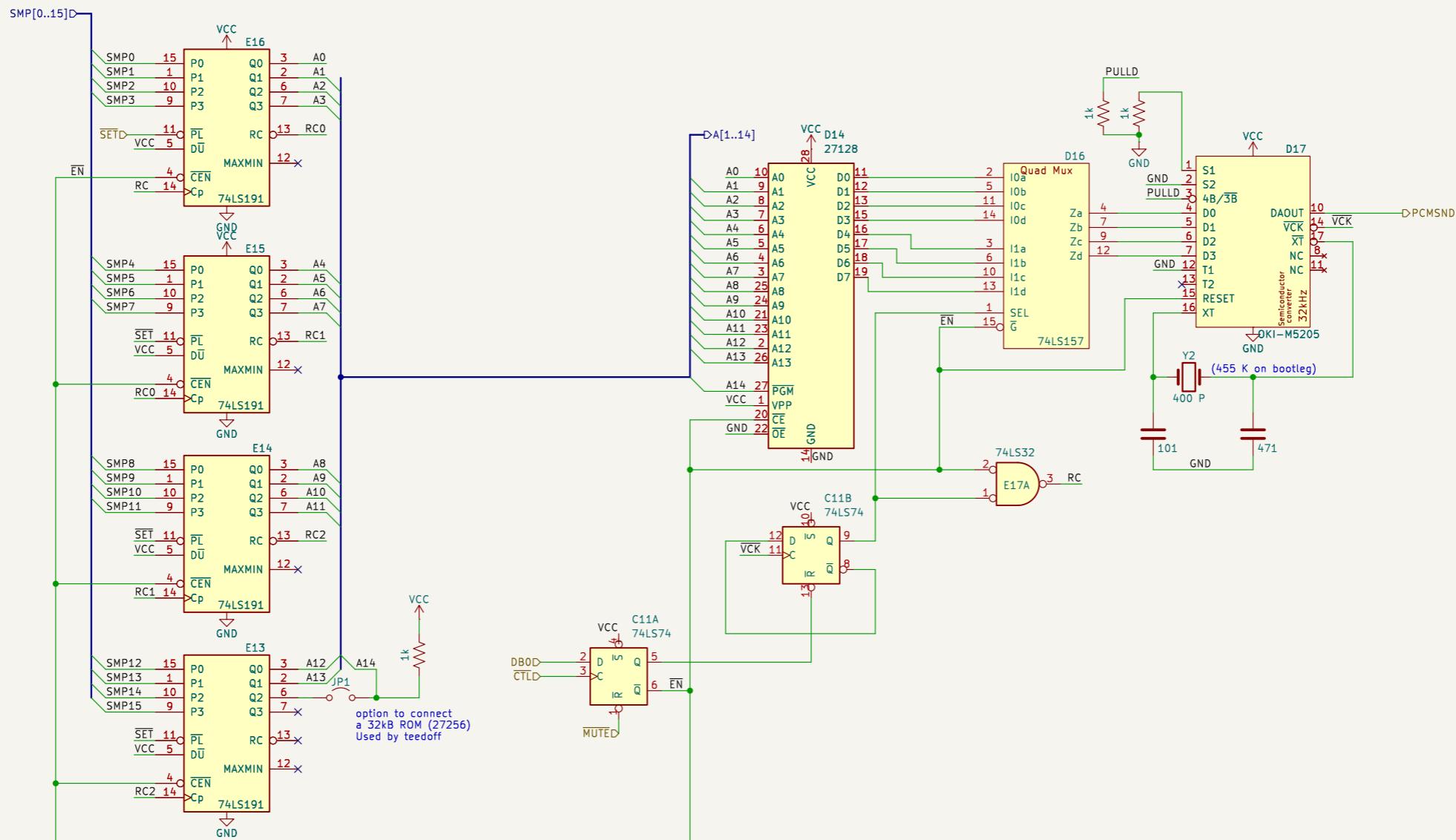
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Sheet: /video board/object/frame buffer B/
File: buffer.kicad_sch

Title: Line Buffer

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

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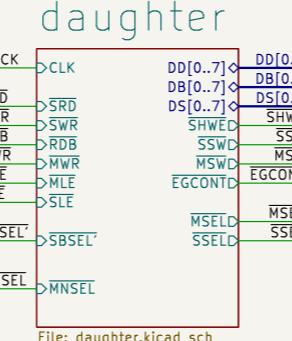
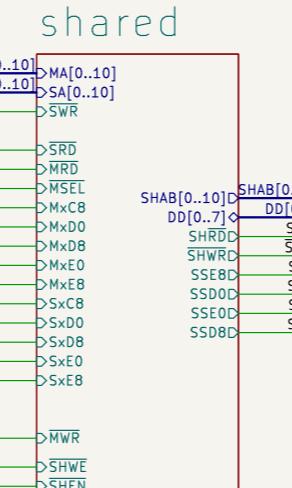
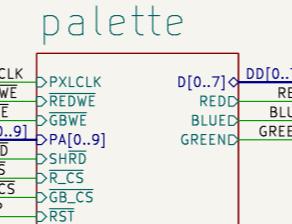
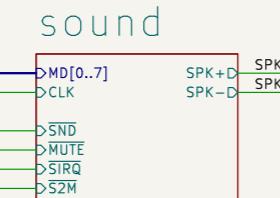
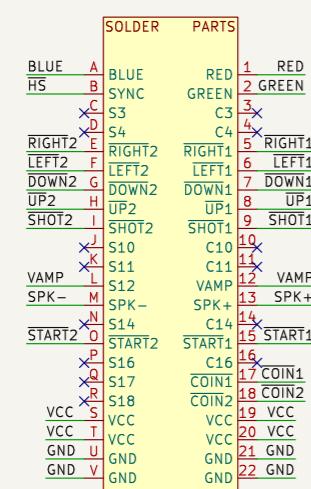
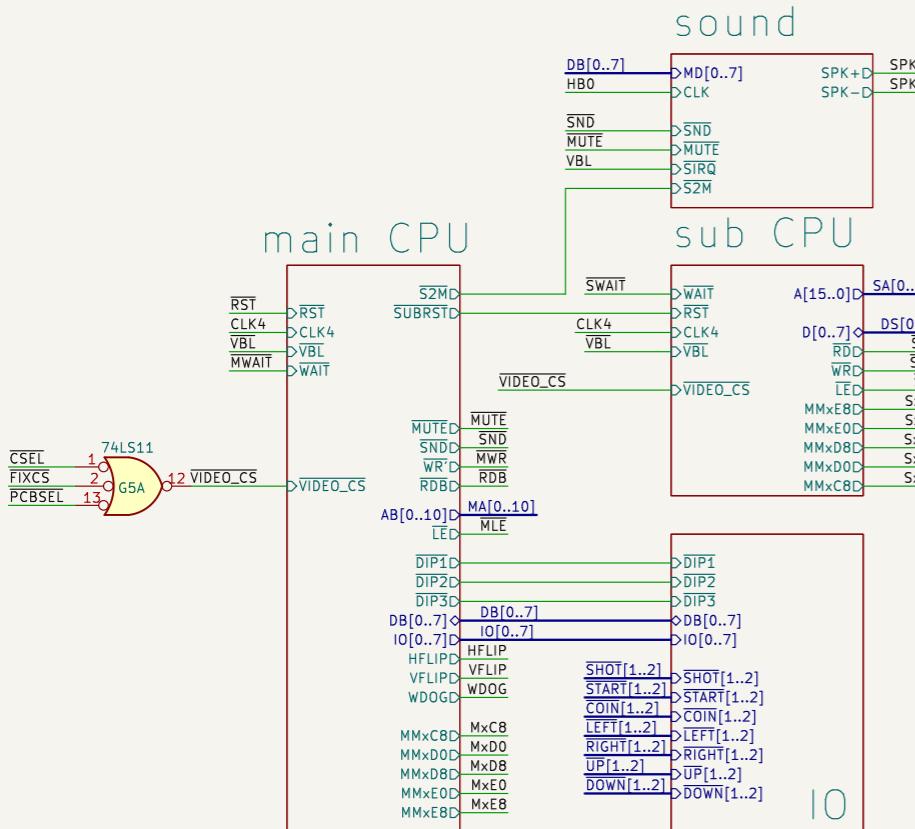
Sheet: /cpu_board/sound/PCM/
File: pcm.kicad_sch

Title: PCM

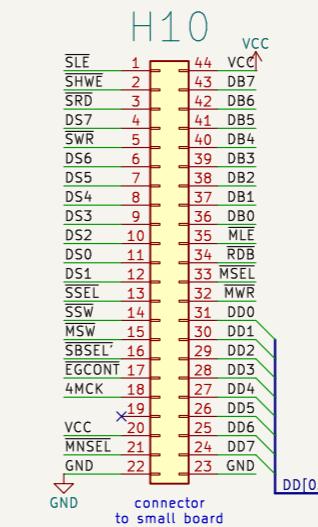
Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: Id: 5/26

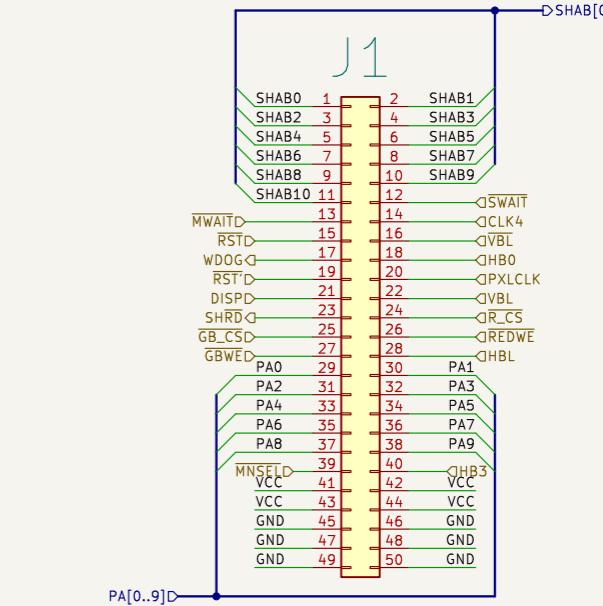
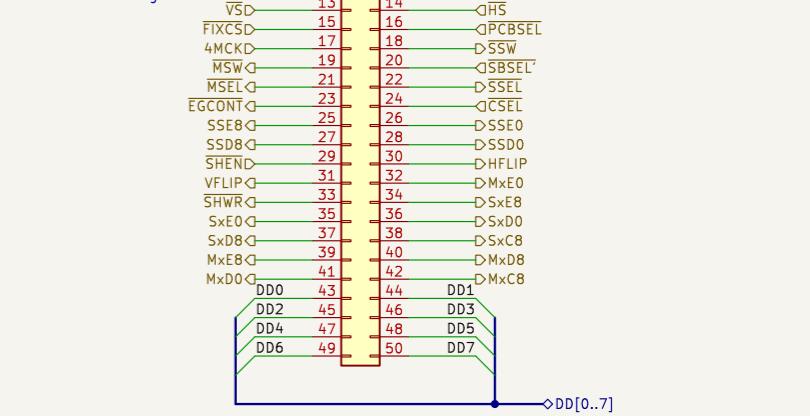
A



File: daughter.kicad_sch



VS goes to a half routed path, not making it to the edge connector
J1 at PCB's bottom right
J2 at PCB's top right
pins counted from board top down, pins at the top row of the connector counted as odd



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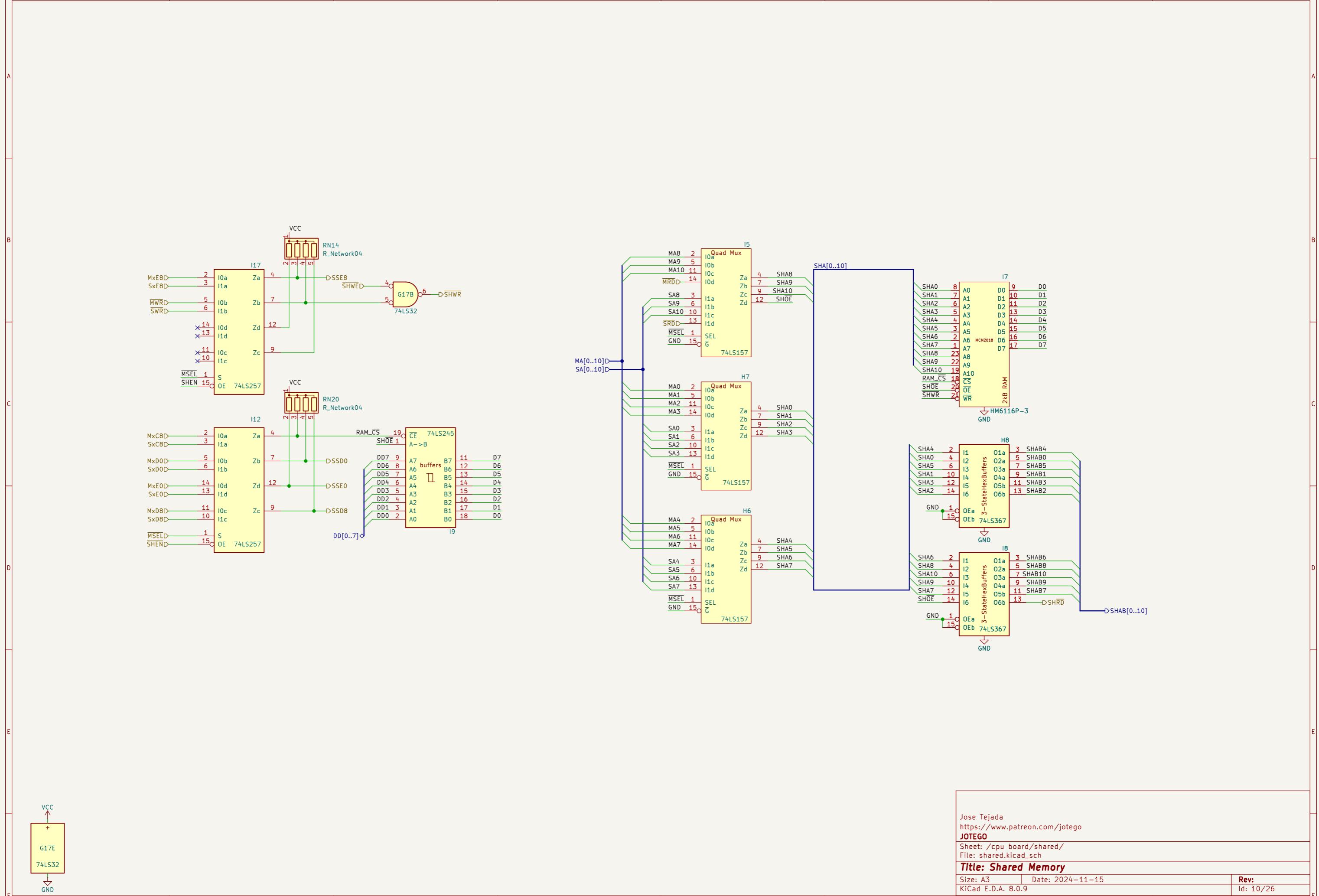
Sheet: /cpu board/
File: cpu.kicad_sch

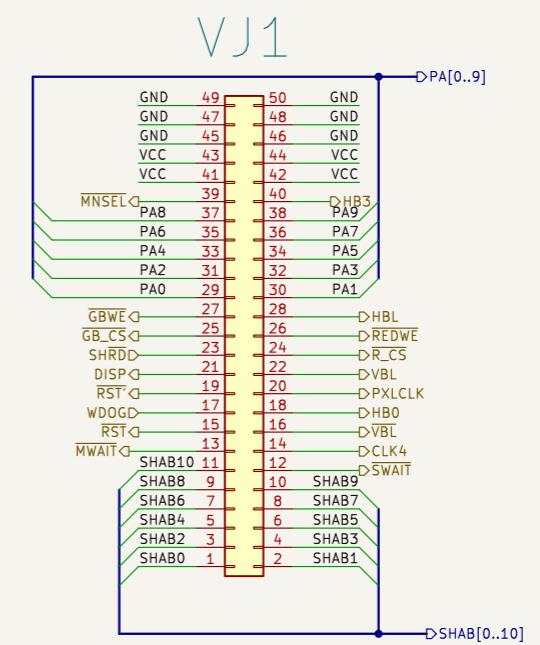
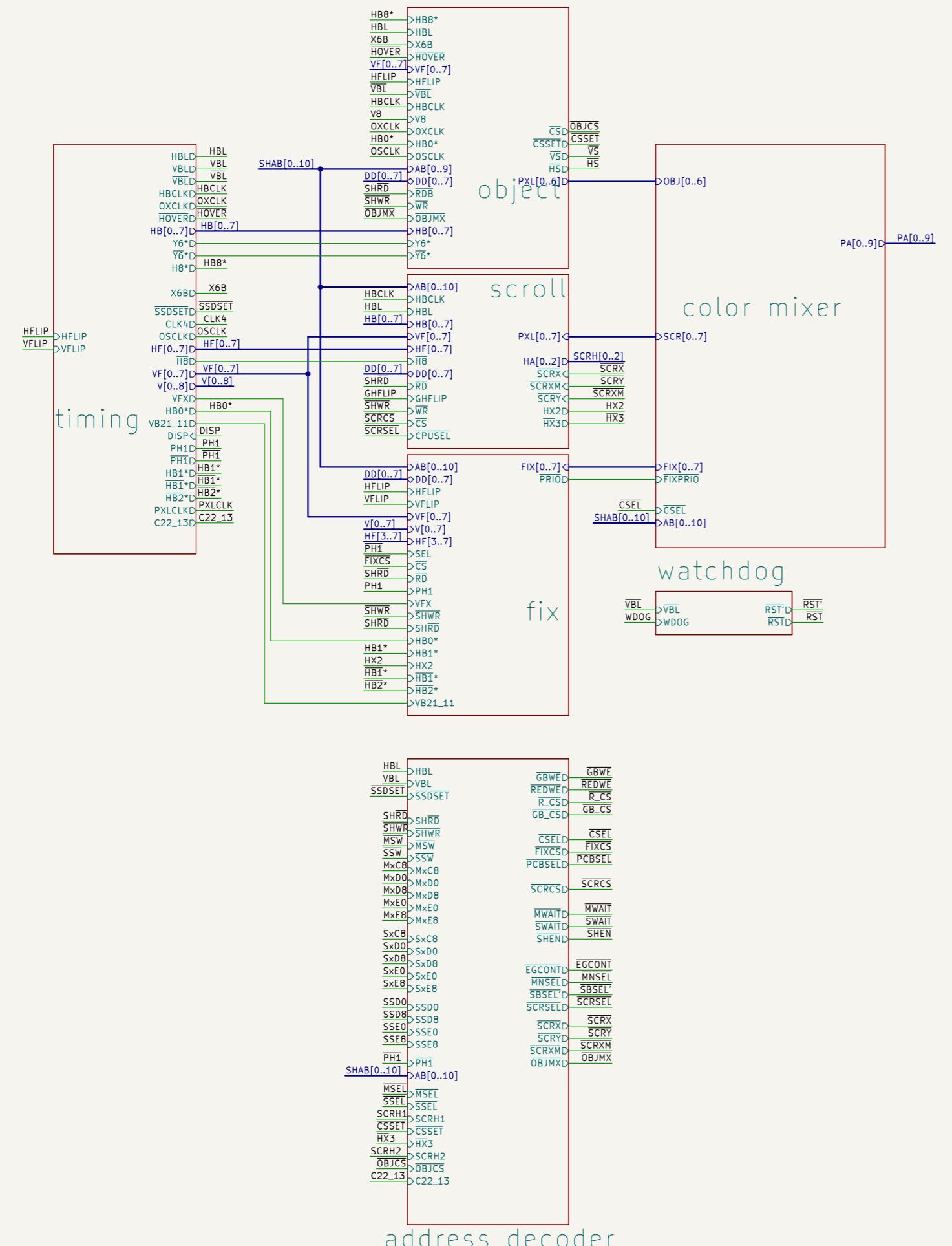
Title: CPU board (top board)

Size: A3 Date: 2024-11-15

KiCad E.D.A. 8.0.9

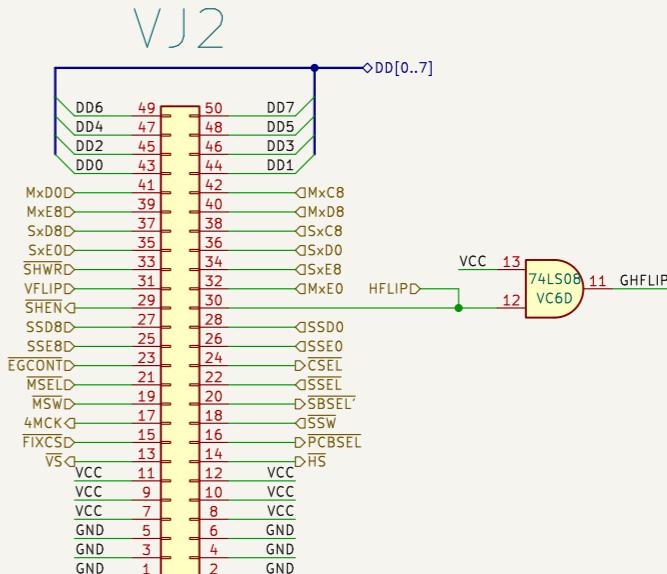
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connectors
to CPU board

/J1 at PCB's top right
/J2 at PCB's bottom right
pins counted from board bottom up,
pins at the top row of the connector
counted as even



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Title: Video board (bottom board)

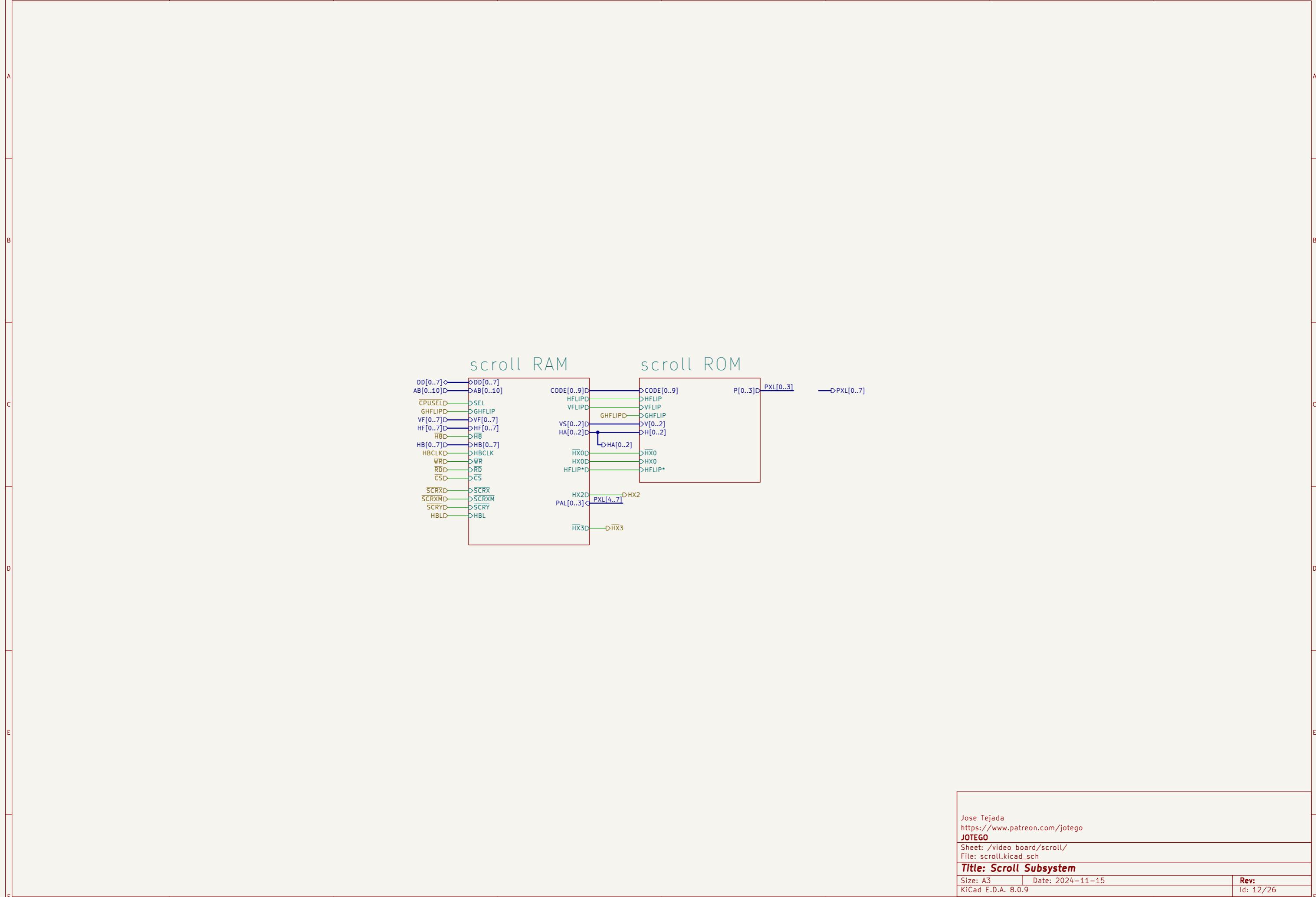
Size: A3 Date: 2024-11-15

Size: A3 Date: 2024-11-15
KiCad EDA 8.0.9

RICHARD E.D.A. 8.0.9

For more information about the study, please contact Dr. John P. Morrissey at (212) 305-6000 or via email at jmorrissey@nyp.edu.

10. 11/20

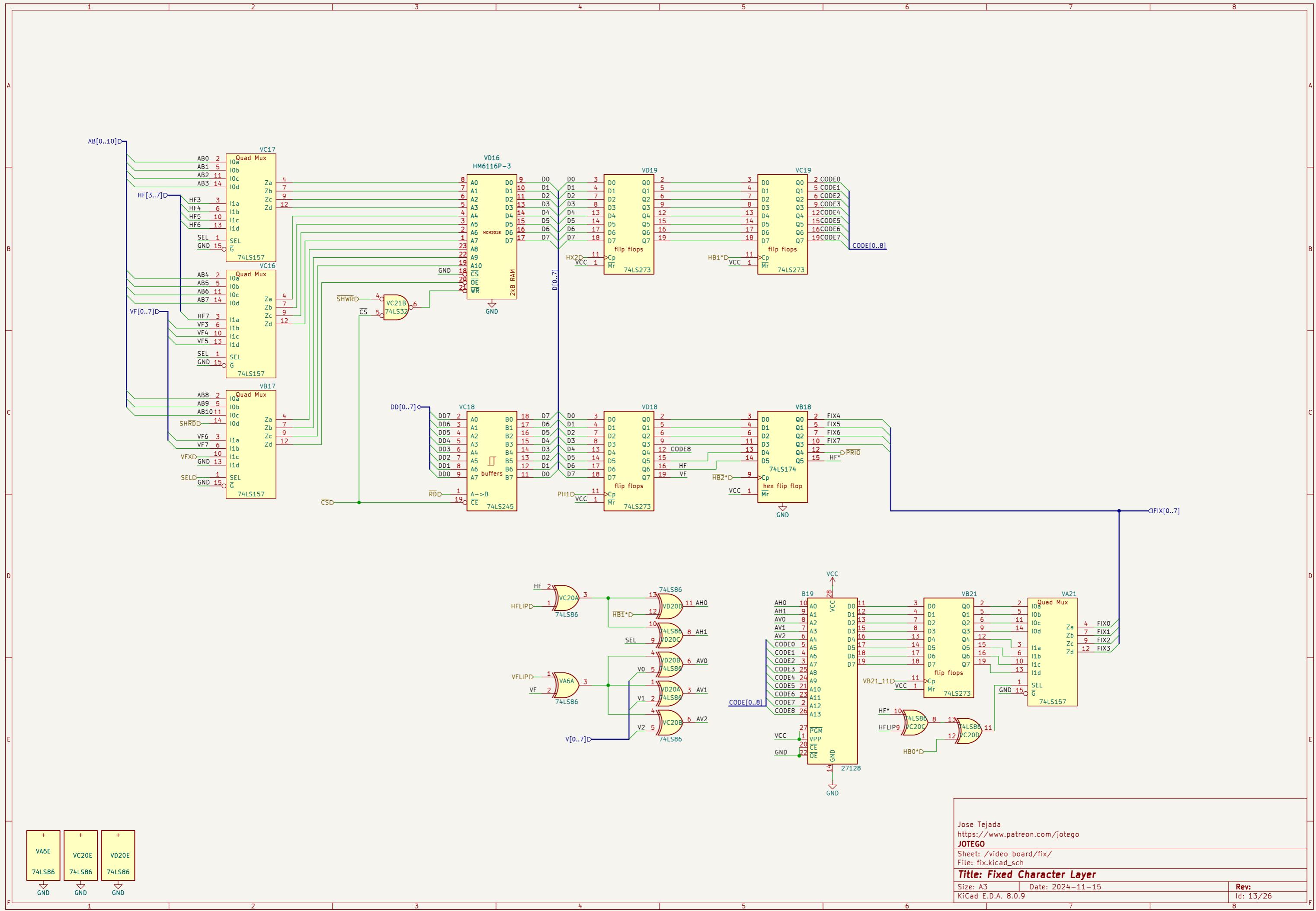


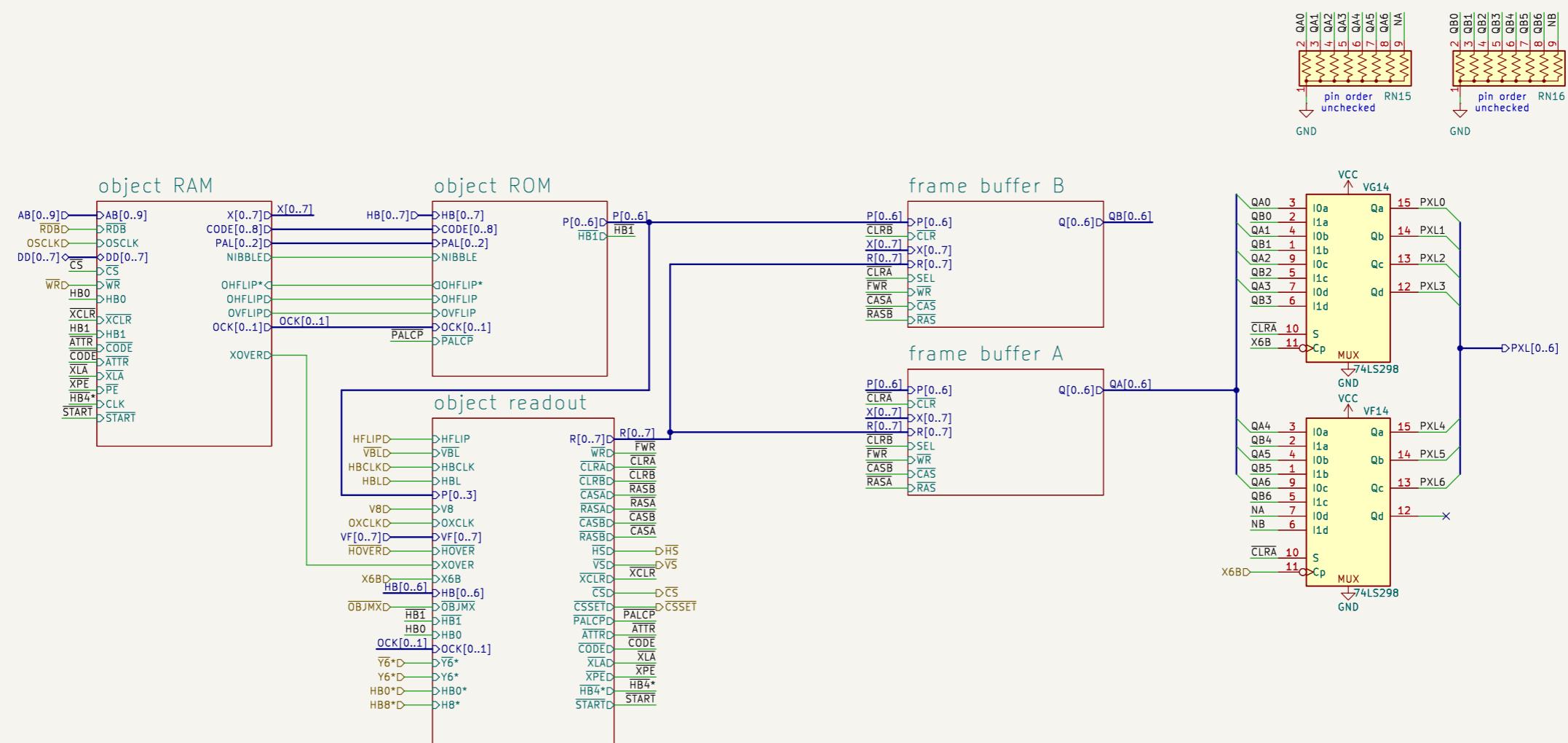
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Sheet: /video board/scroll/
File: scroll.kicad_sch

Title: Scroll Subsystem

Size: A3	Date: 2024-11-15
KiCad E.D.A. 8.0.9	Rev: 12/26





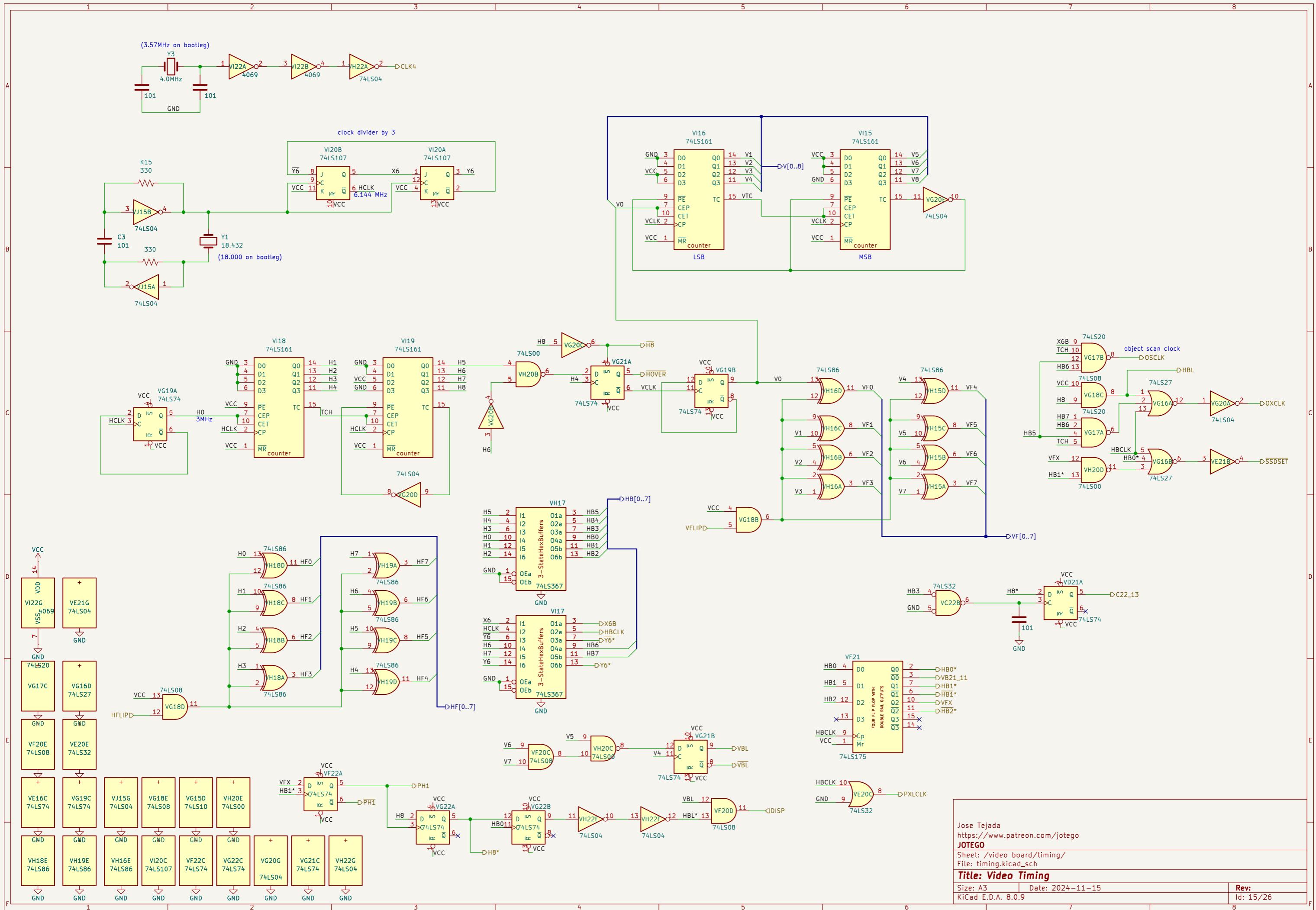
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Sheet: /video board/object/
File: object.kicad_sch

Title: Object Subsystem

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: Id: 14/26



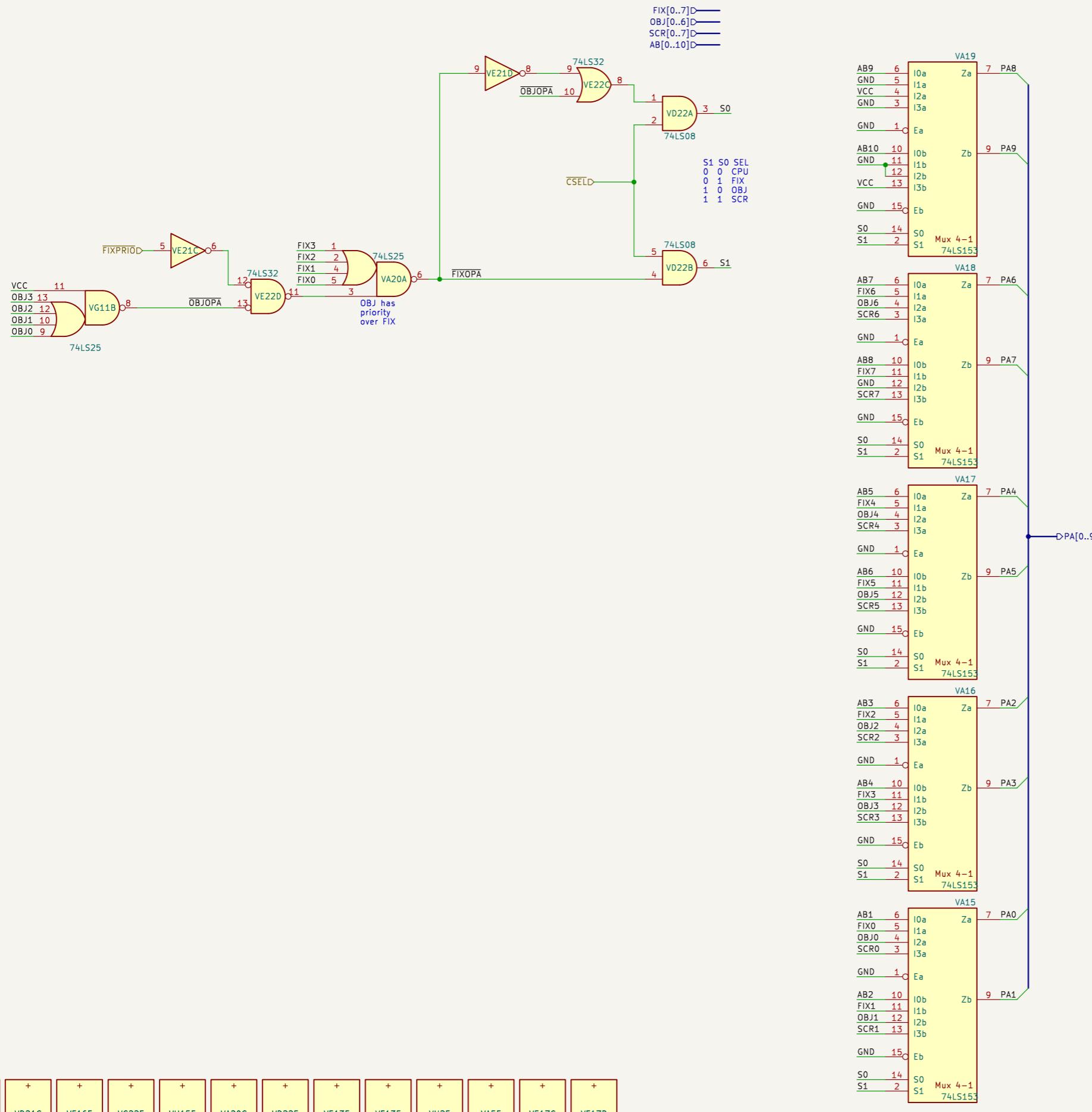
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JOTEGO
Sheet: /video board/timing/
File: timing.kicad_sch

Title: Video Timing

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: Id: 15/26

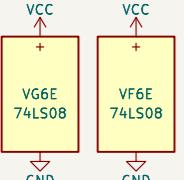
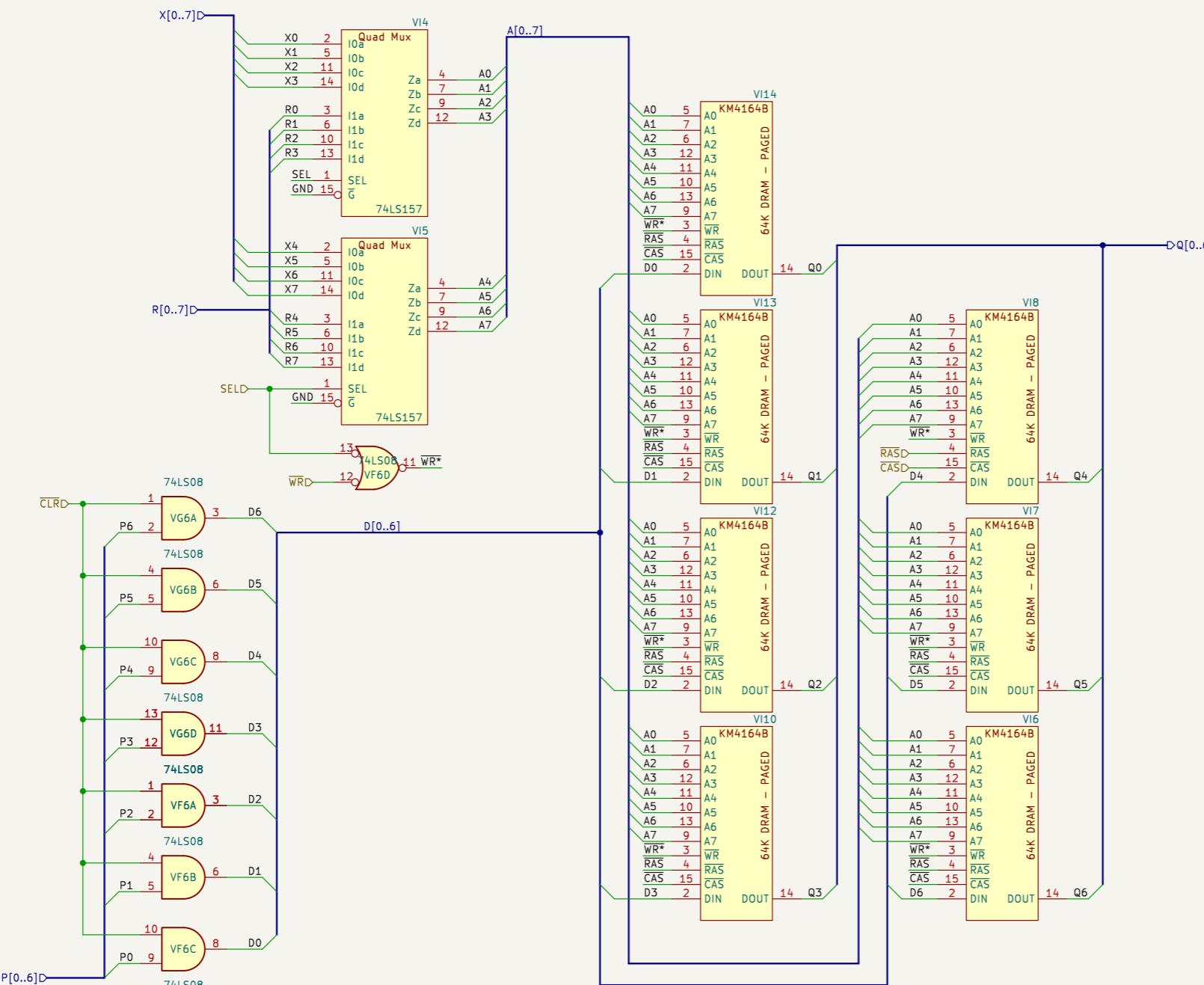


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File: colmix.kicad_sch

Size: A3 Date: 2024-11-
Kicad EDA 8.0.2



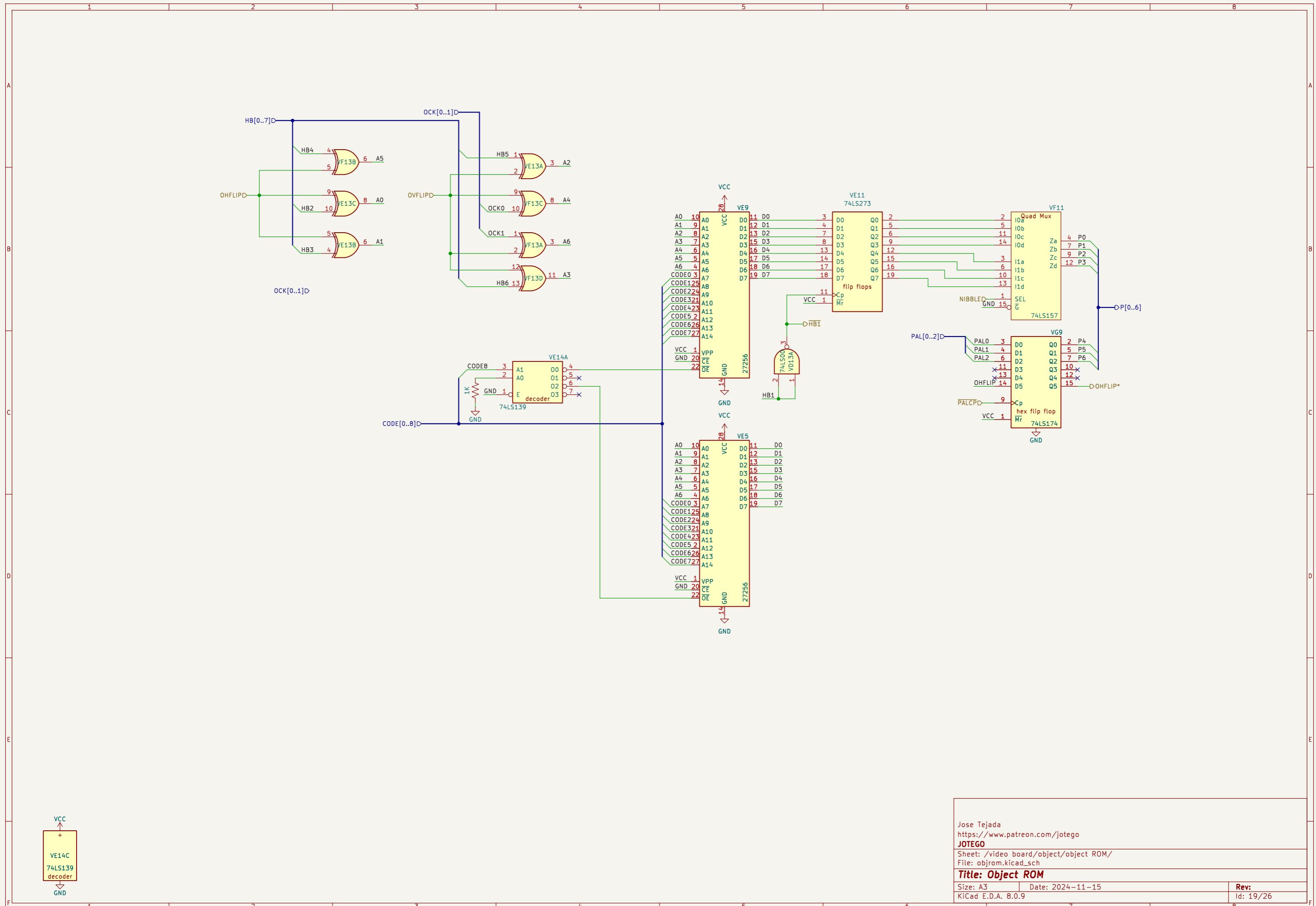
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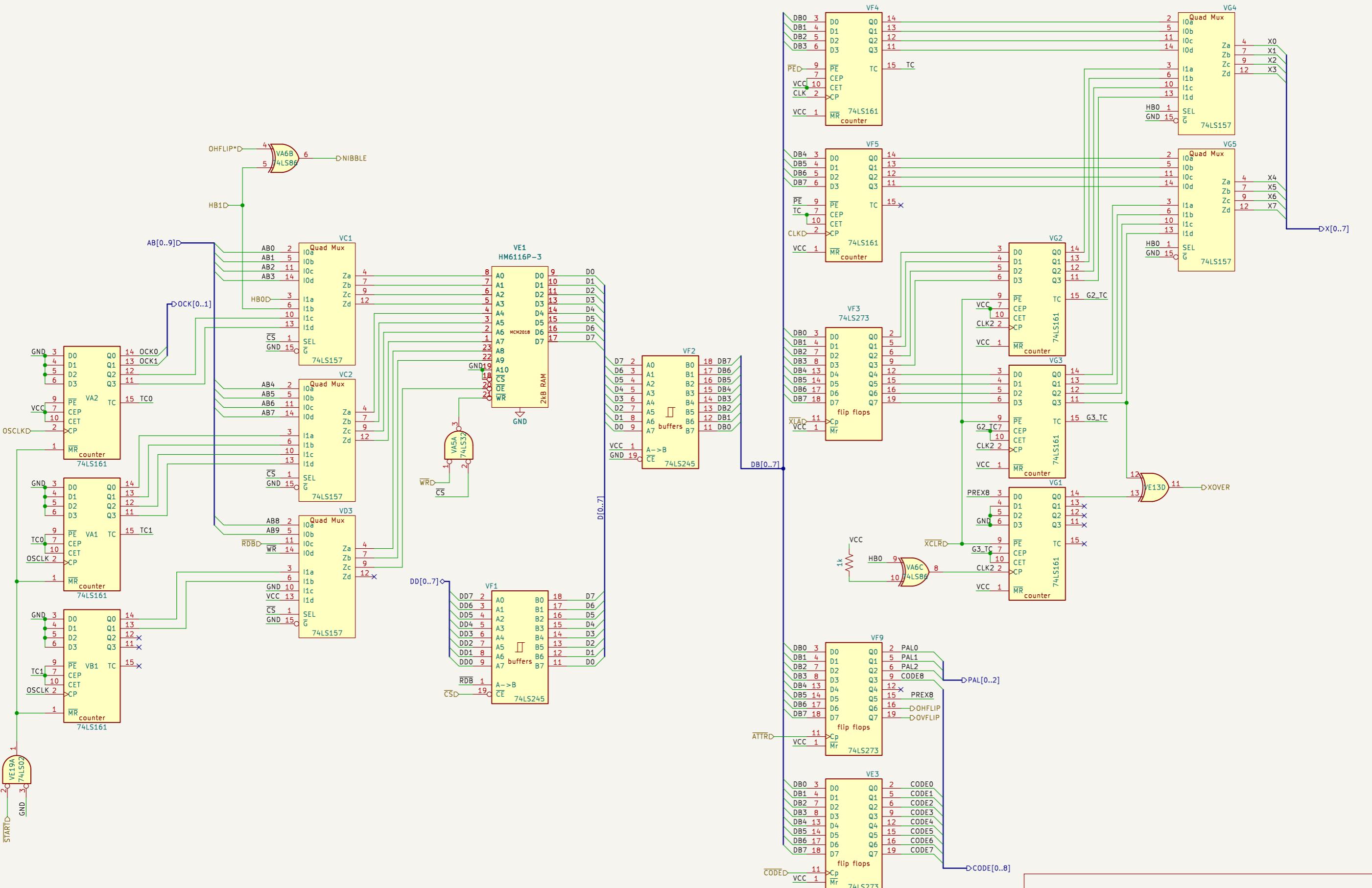
Sheet: /video board/object/frame buffer A/
File: buffer.kicad_sch

Title: Line Buffer

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev:
Id: 17/26





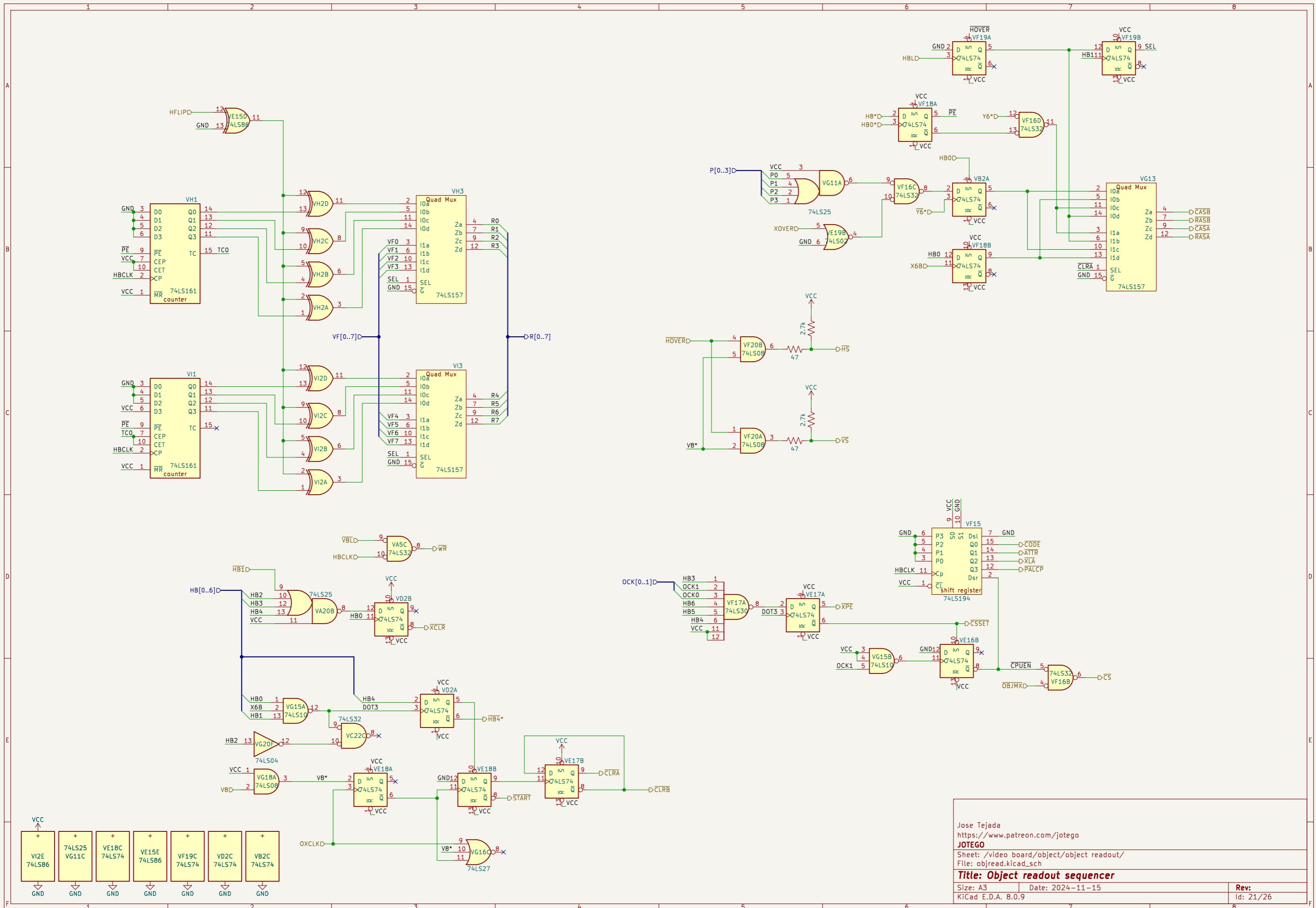
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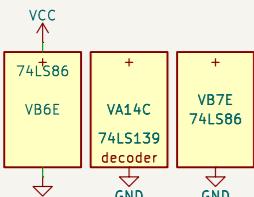
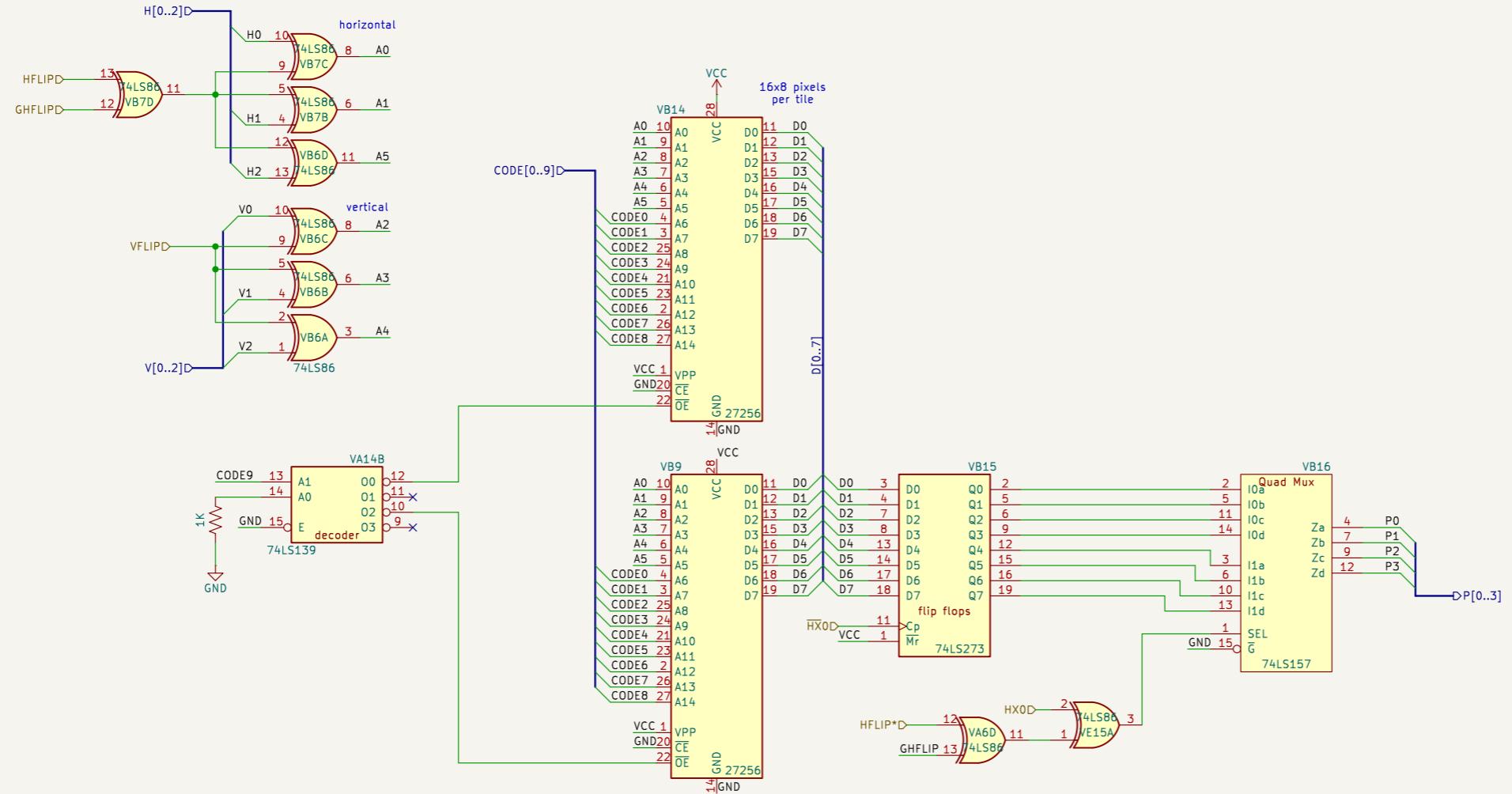
Sheet: /video board/object/object RAM/
File: objram.kicad_sch

Title: Object RAM

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: | Id: 20/26



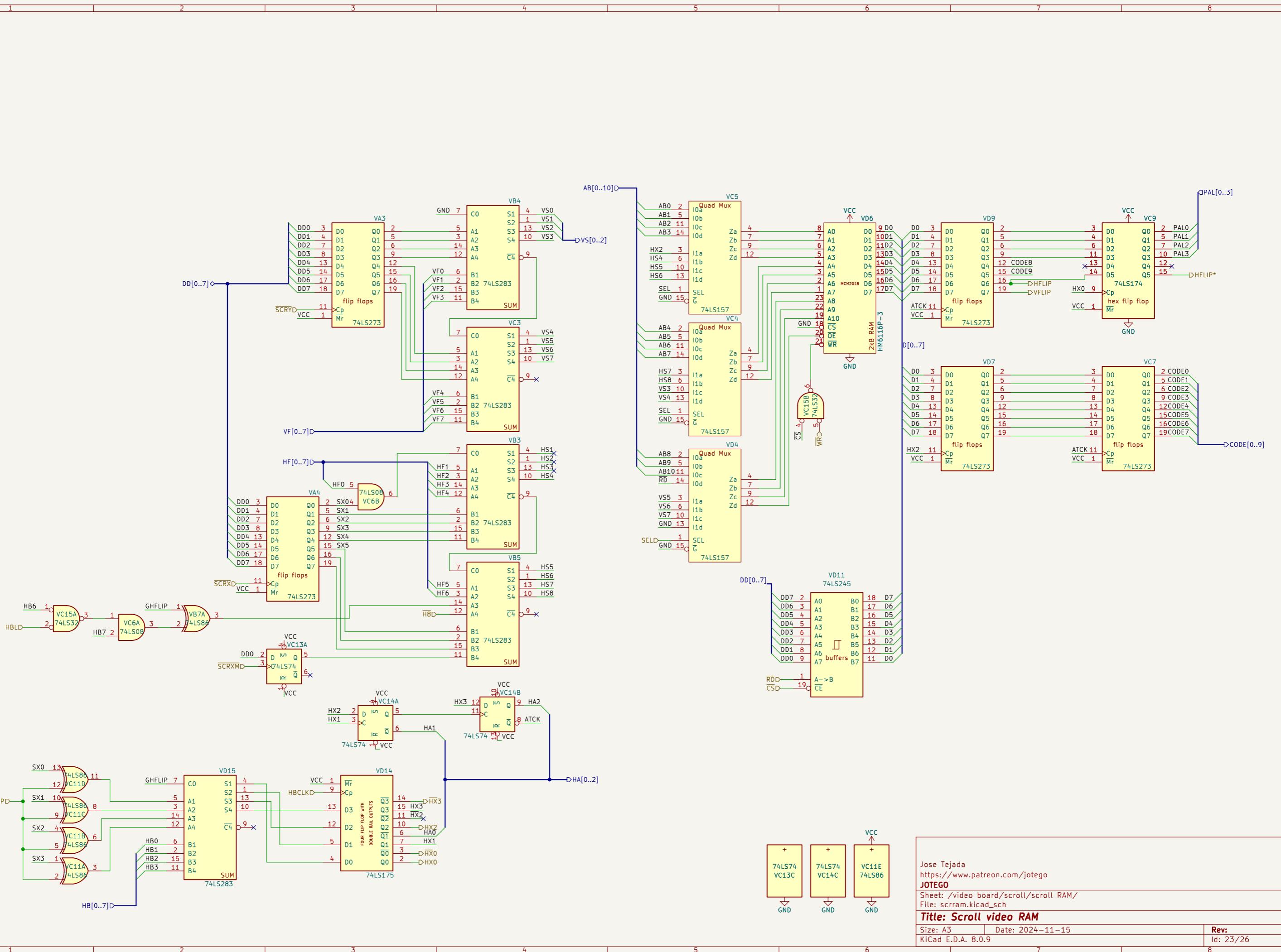


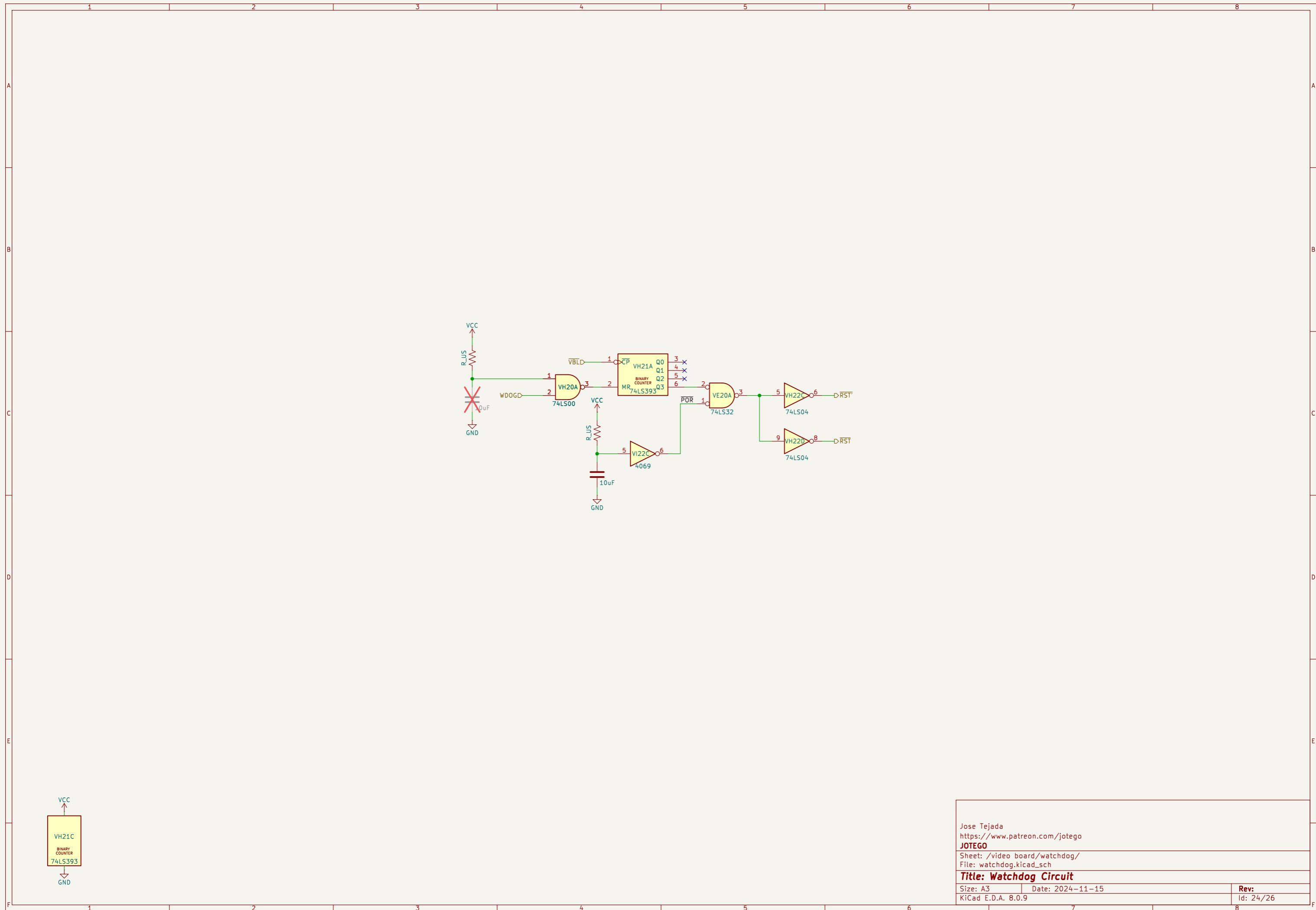
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1077500

JOTEGO
Sheet: /video board/scroll/scroll ROM/
File: scrrom.kicad_sch

Title: scroll ROM

Size: A3 Date: 2024-11-15
KiCad F D A 8 0 9





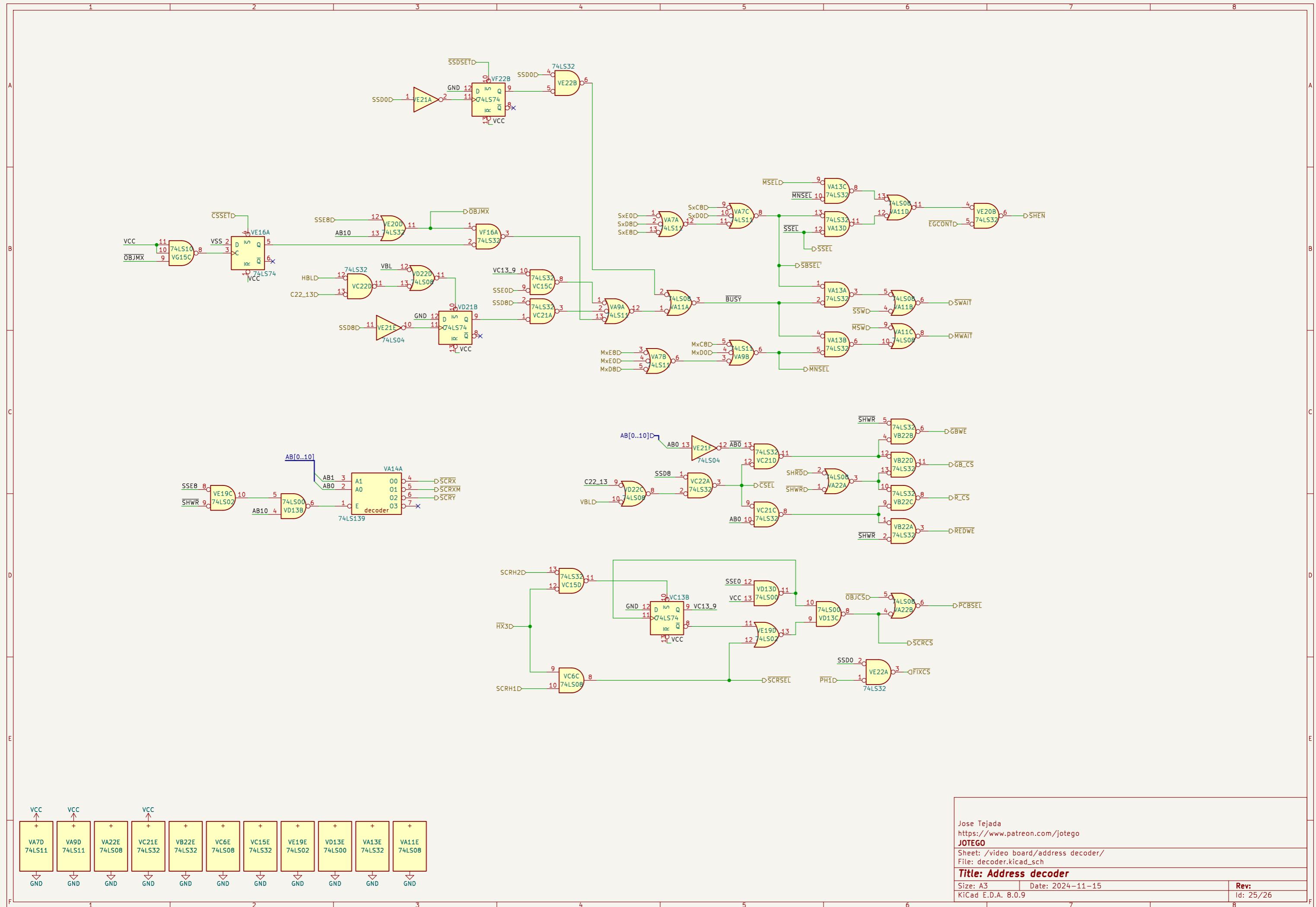
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Sheet: /video board/watchdog/
File: watchdog.kicad_sch

Title: Watchdog Circuit

Size: A3	Date: 2024-11-15
KiCad E.D.A. 8.0.9	Rev:

Id: 24/26



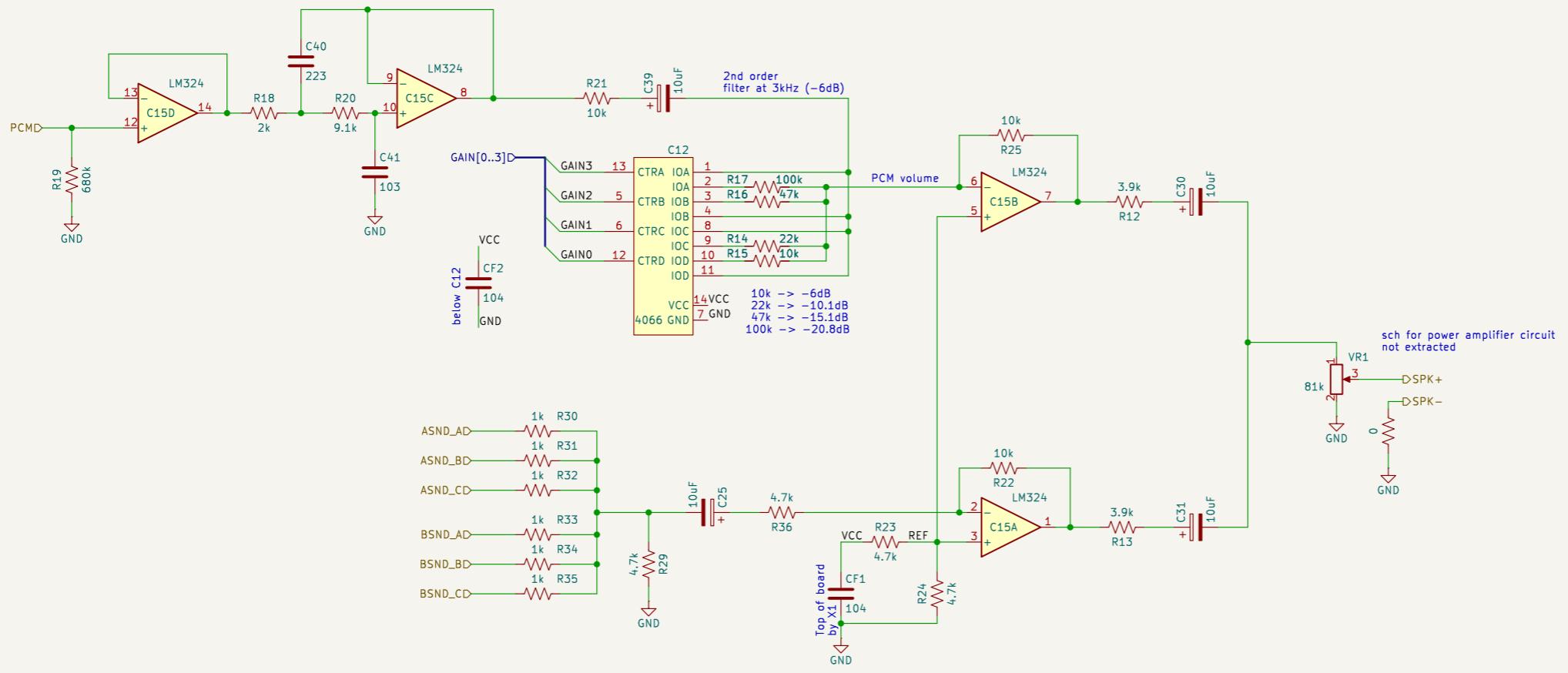
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Sheet: /video board/address decoder/
File: decoder.kicad_sch

Title: Address decoder

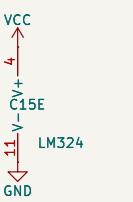
Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

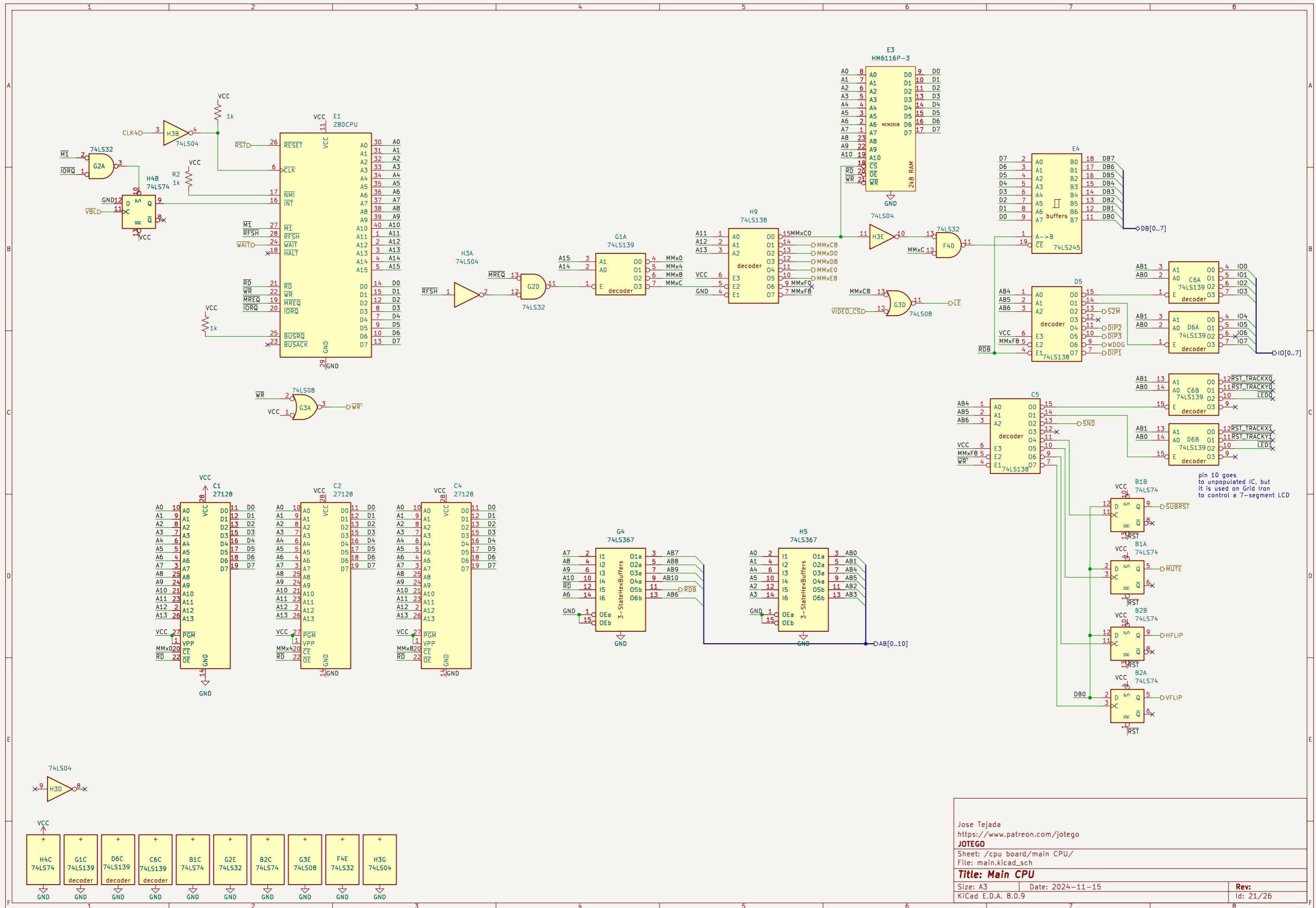
Rev: | Id: 25/26

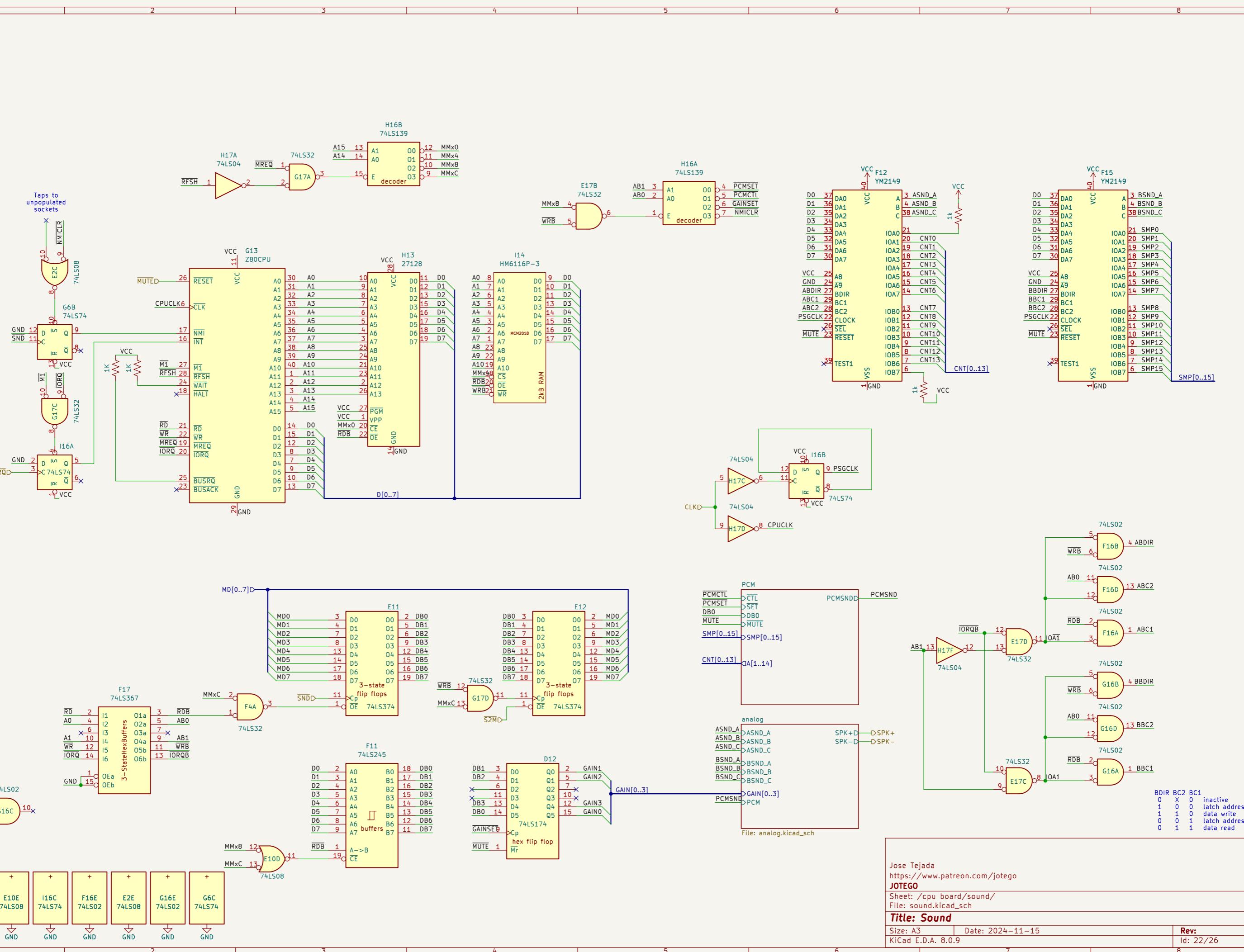


Passive component references
when shown, come from original PCB.
The bootleg did not have
references for passives.

Device components follow bootleg references.
The bootleg counts letters from left to right and numbers from bottom to top.
The original counts numbers left to right and letters bottom to top.







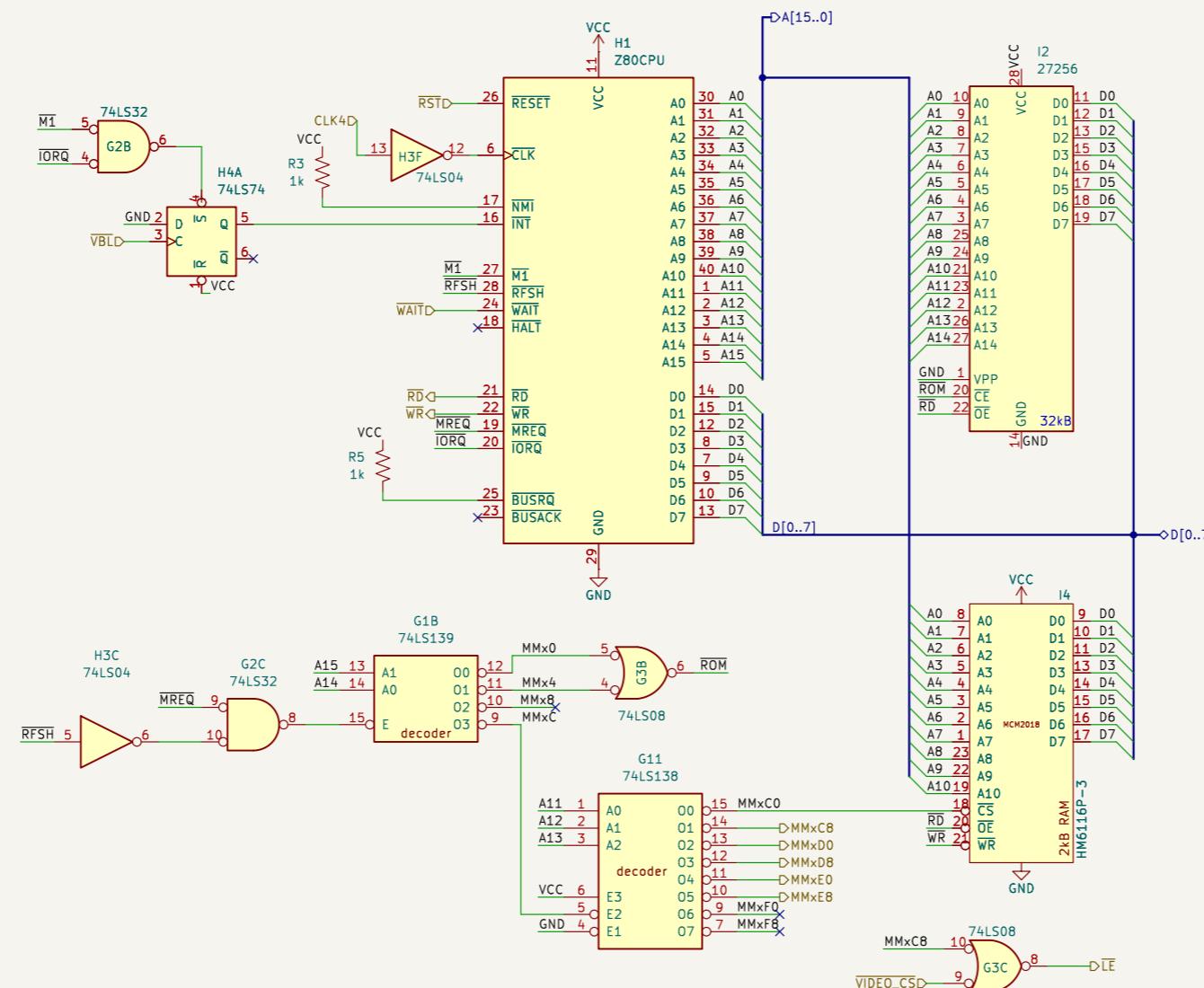
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JOTEGO
 Sheet: /cpu_board/sound/
 File: sound.kicad_sch

Title: Sound

Size: A3 | Date: 2024-11-15
 KiCad E.D.A. 8.0.9

Rev: Id: 22/26



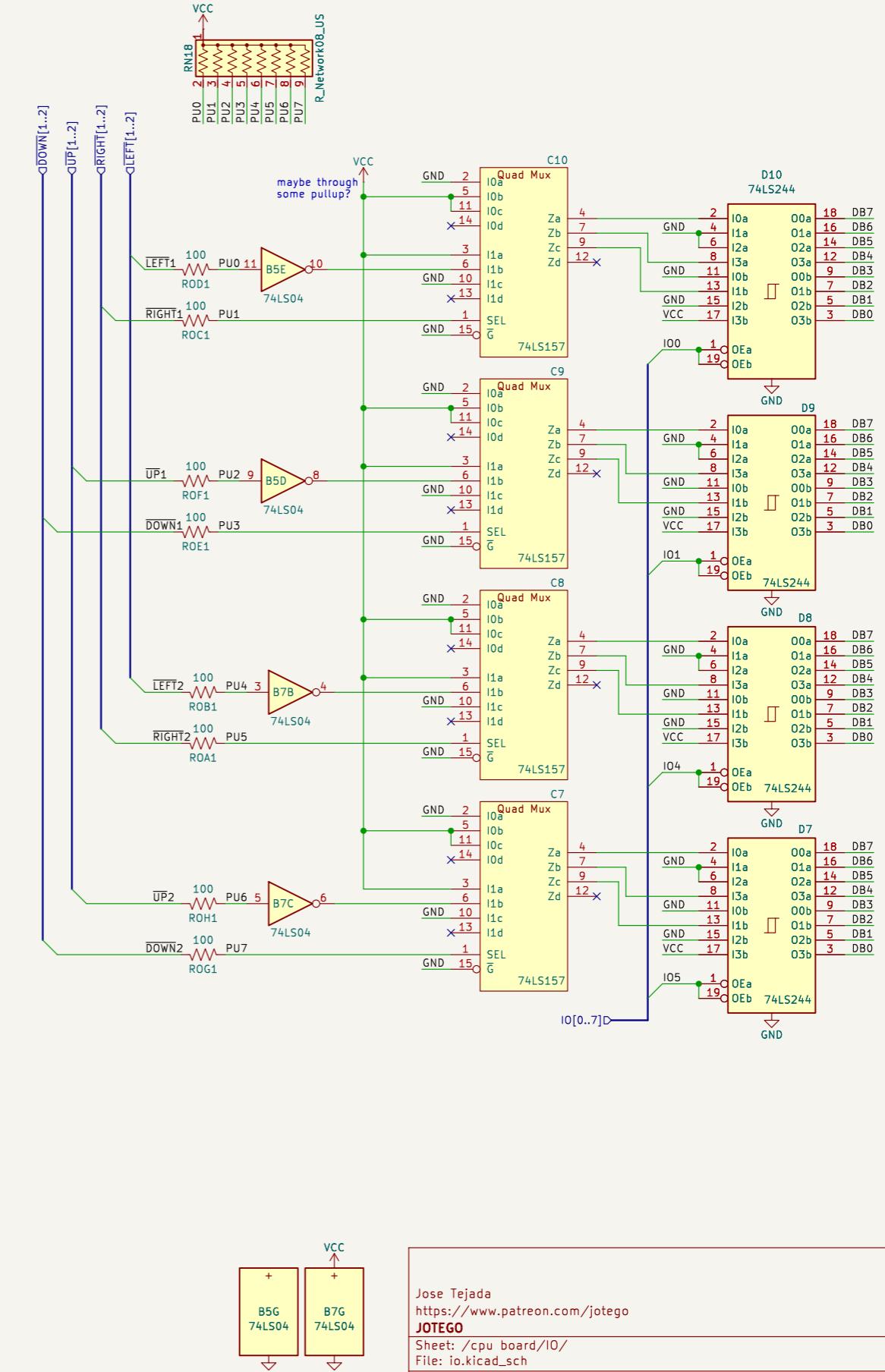
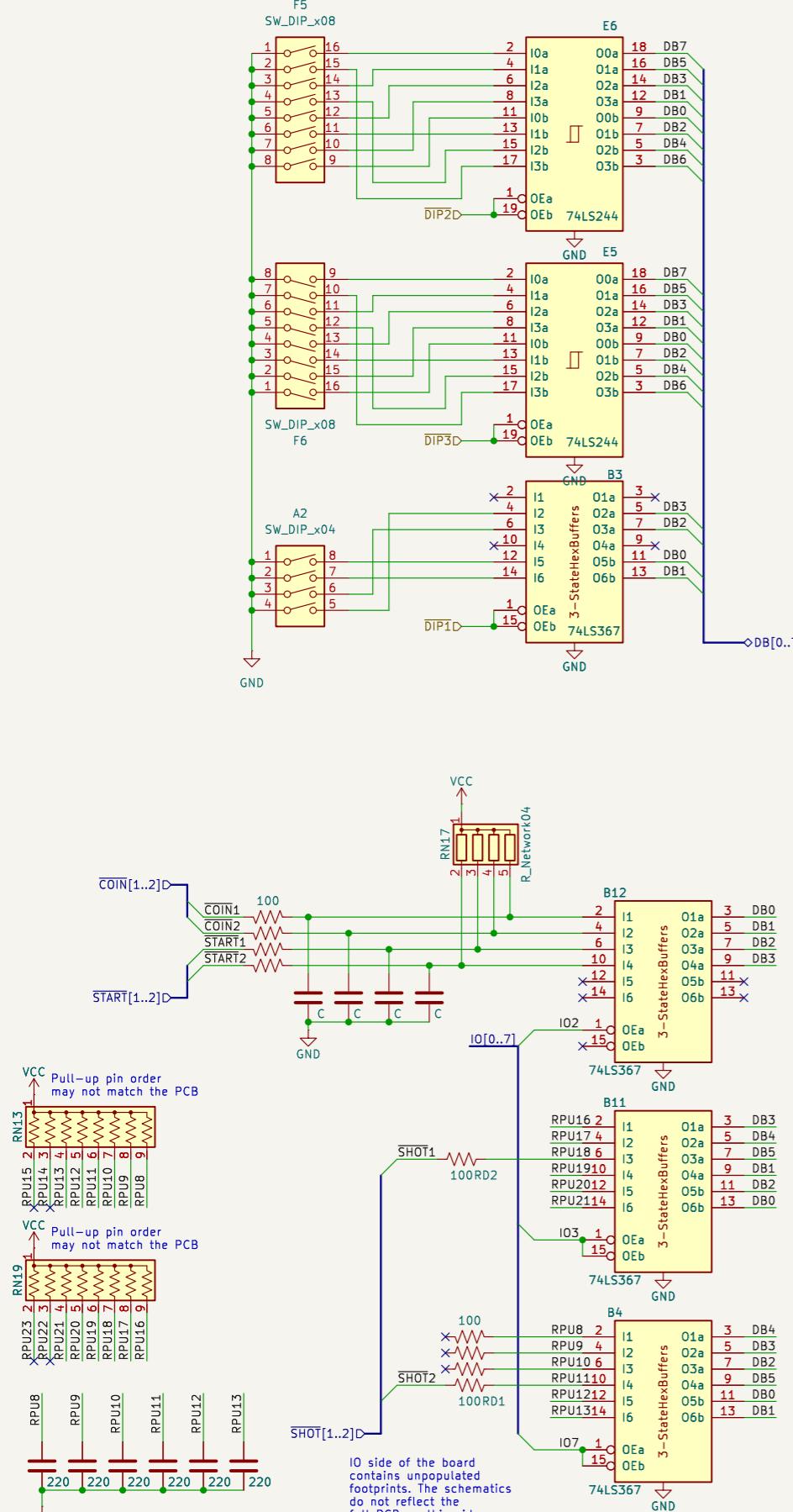
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JOTEGO

Sheet: /cpu board/sub CPU/
File: subcpu.kicad_sch

Title: Subordinate CPU

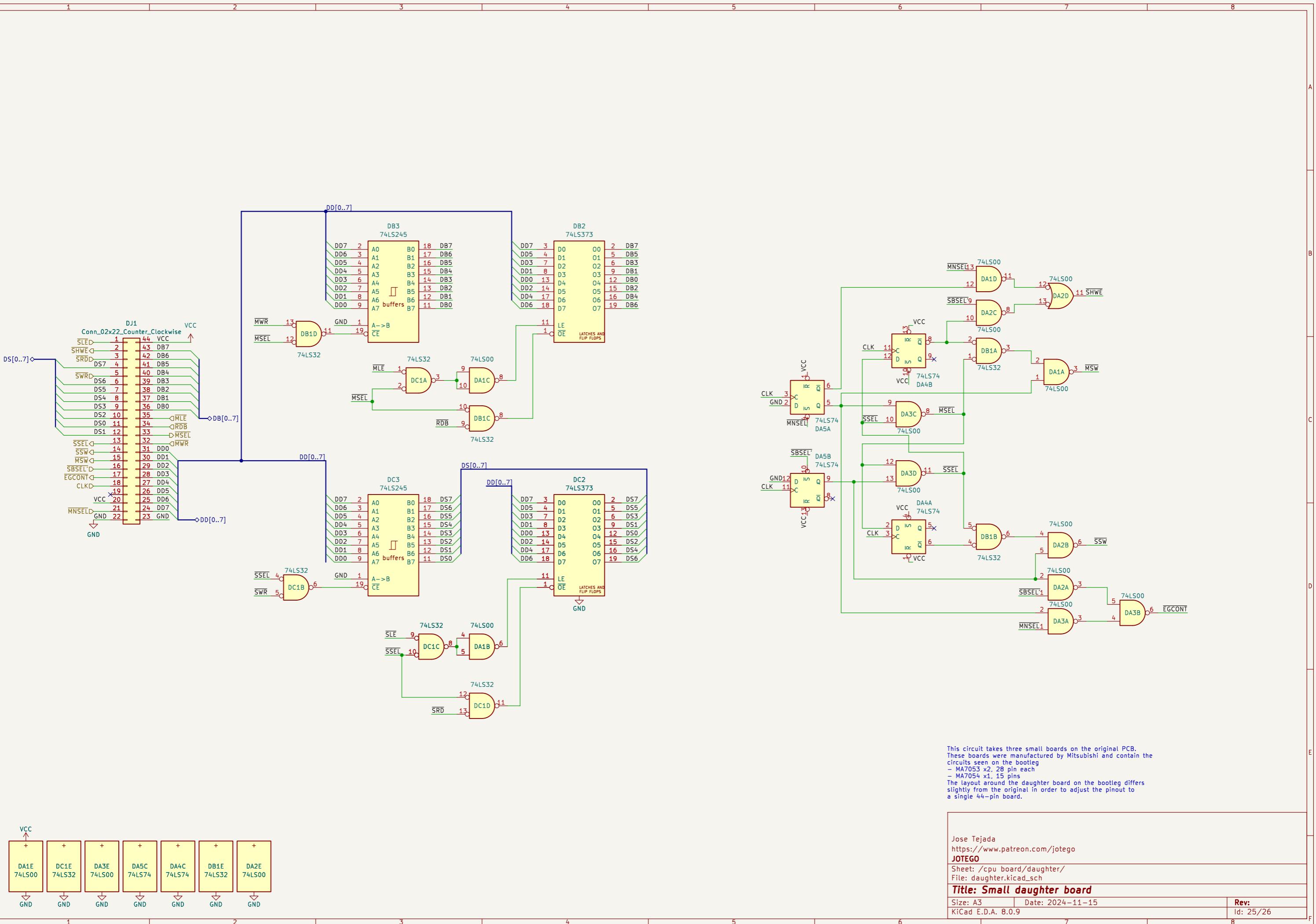
Size: A3 | Date: 2024-11-15
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Id: 23/26



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Sheet: /cpu_board/10/
File: io.kicad_sch



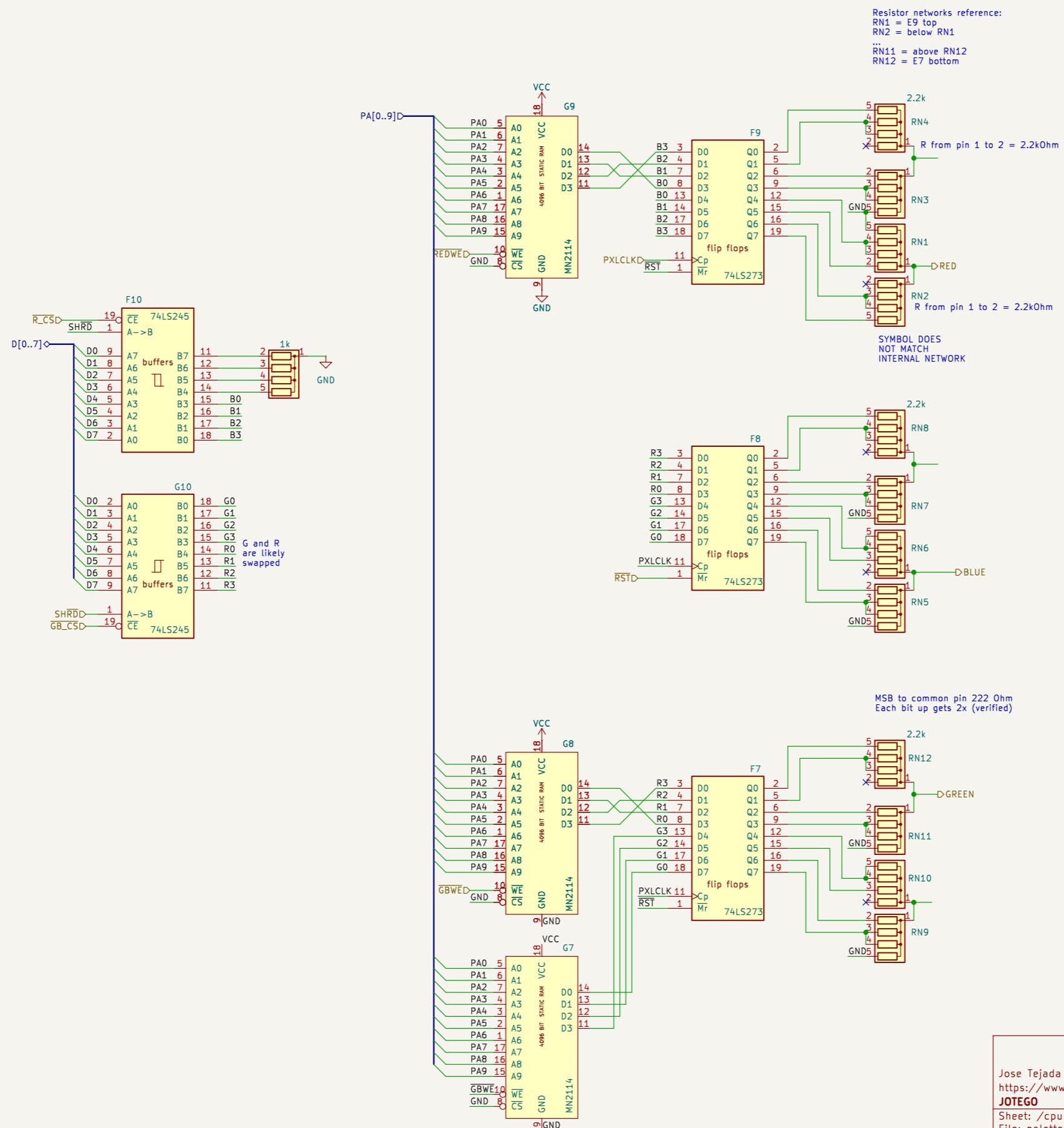
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Sheet: /cpu_board/daughter/
File: daughter.kicad_sch

Title: Small daughter board

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

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Sheet: /cpu_board/palette/
File: palette.kicad_sch

Title: Color Palette

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev:
Id: #/26