

A

B

C

D

E

A

B

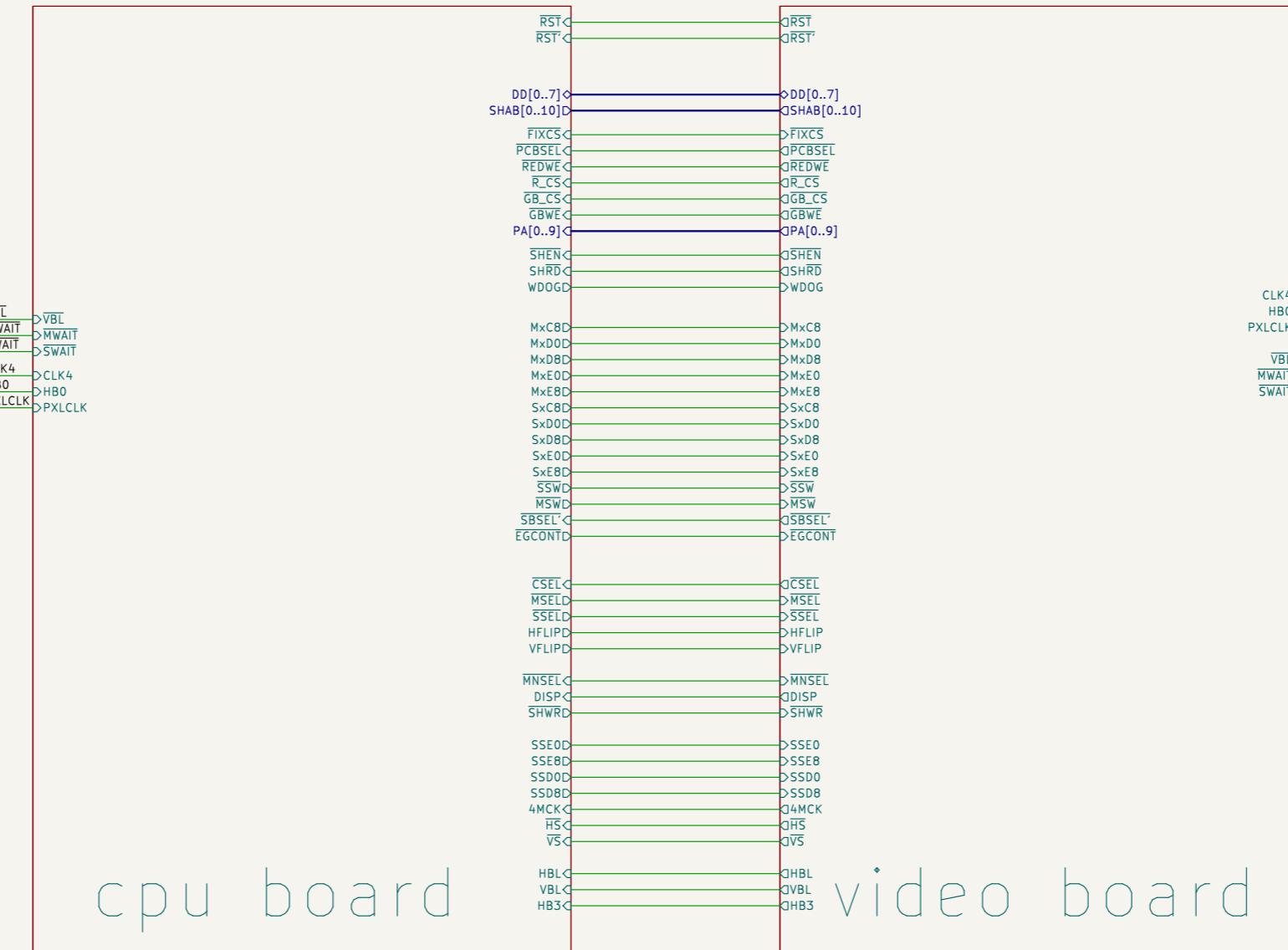
C

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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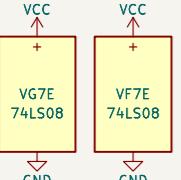
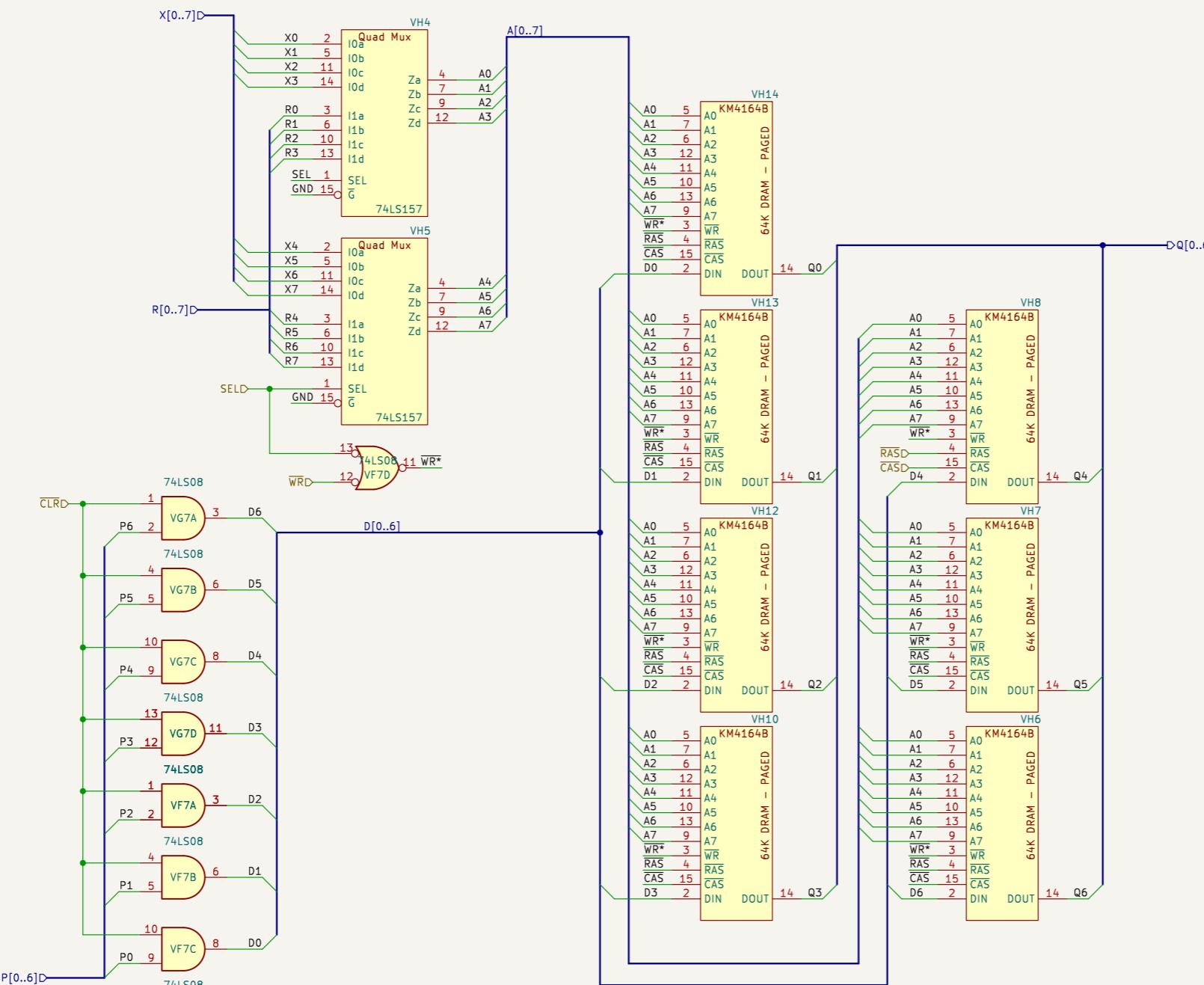
Sheet: /
File: tehkanwch.kicad_sch

Title: TEHKAN WORLD CUP (tehkanwch bootleg)

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6



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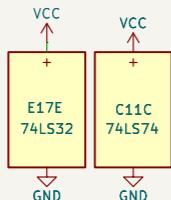
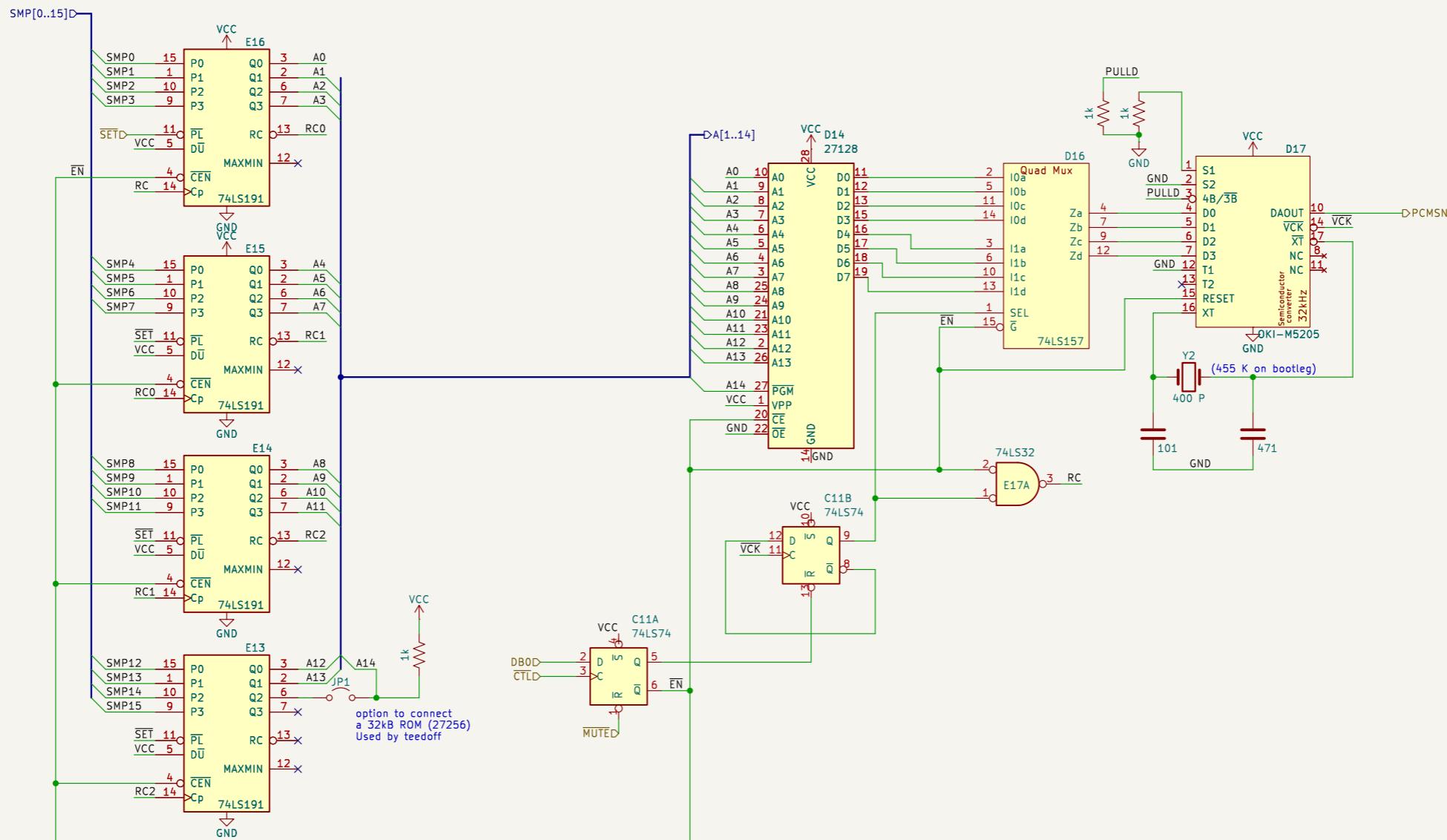
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Sheet: /video board/object/frame buffer B/
File: buffer.kicad_sch

Title: Line Buffer

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 2/26



tion to connect
32kB ROM (2725)
ed by teedoff

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

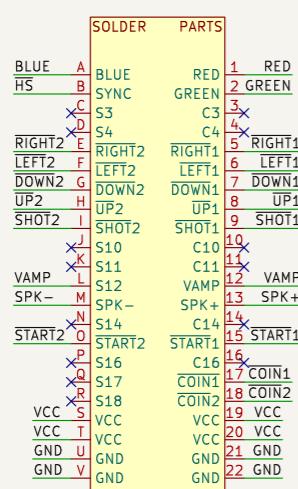
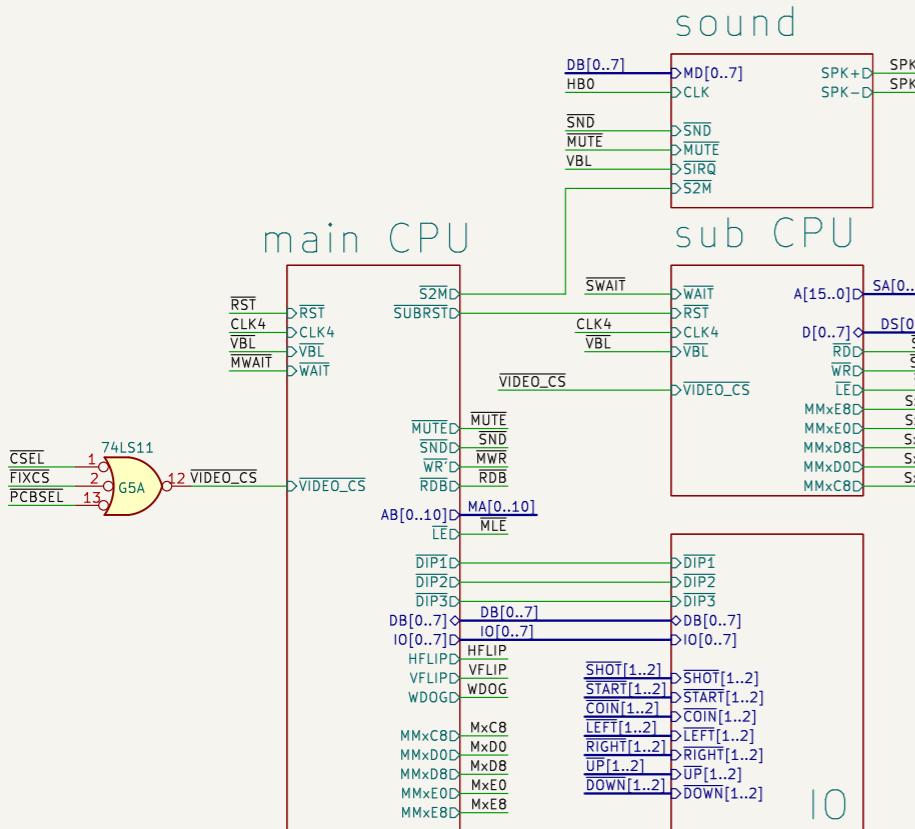
Title: PCM

Size: A3 Date: 2024-11-15
KiCad_EDA_8.0.6

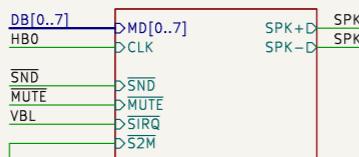
KiCad E.D.A. 8.0.6

_____ / _____

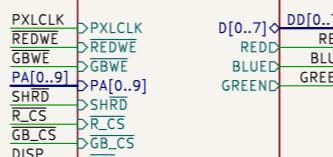
A



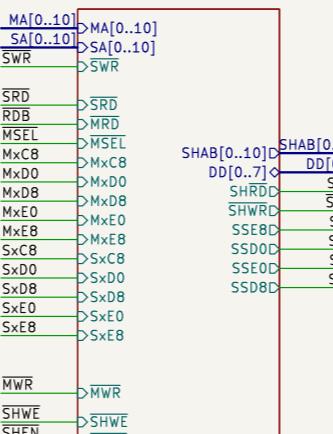
sound



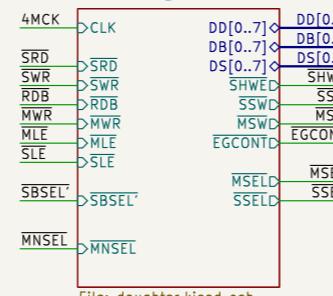
palette



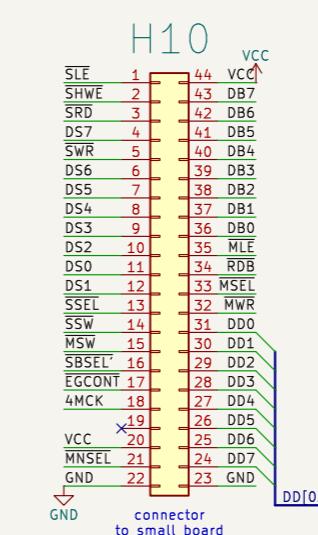
shared



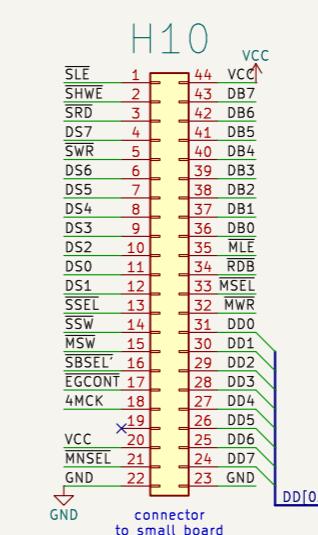
daughter



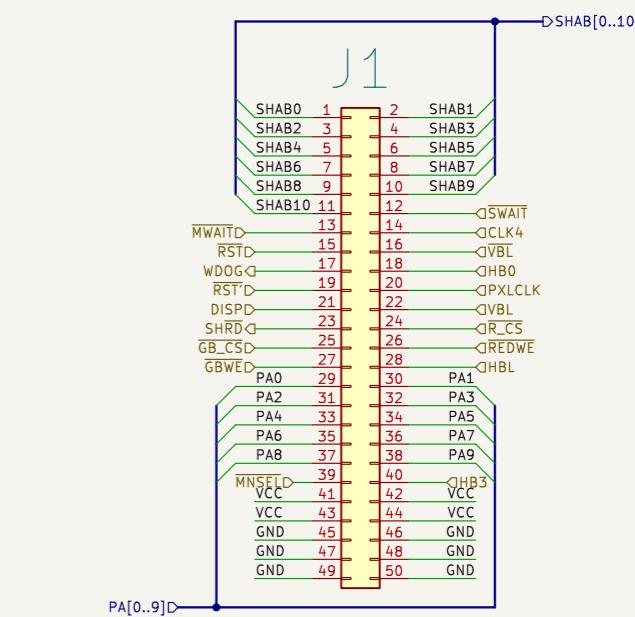
File: daughter.kicad_sch



GND connector to small board



connectors to video board
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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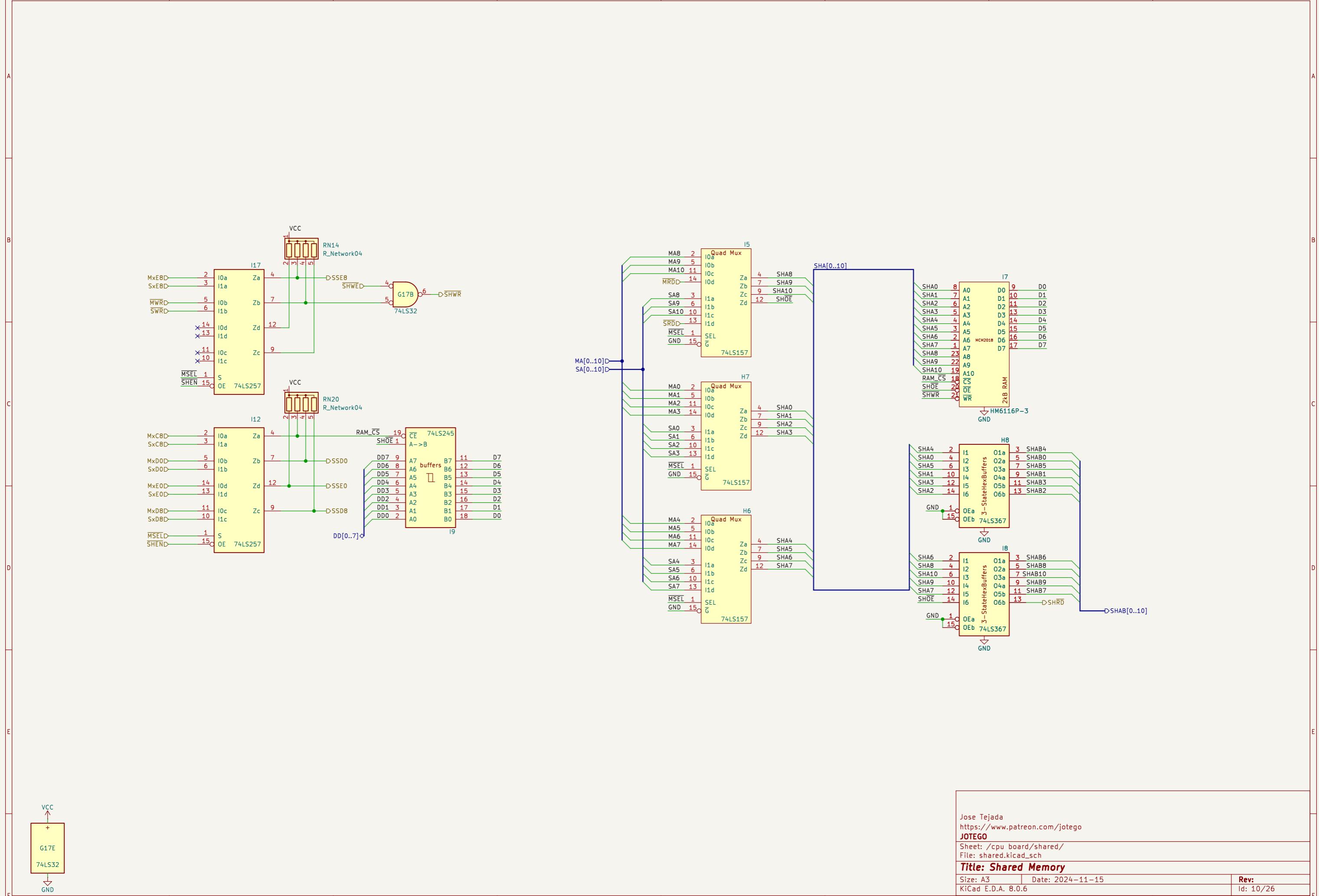
Sheet: /cpu board/
File: cpu.kicad_sch

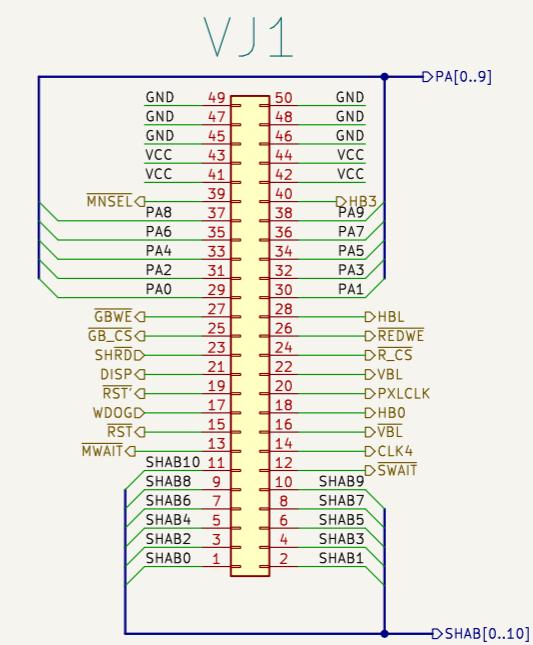
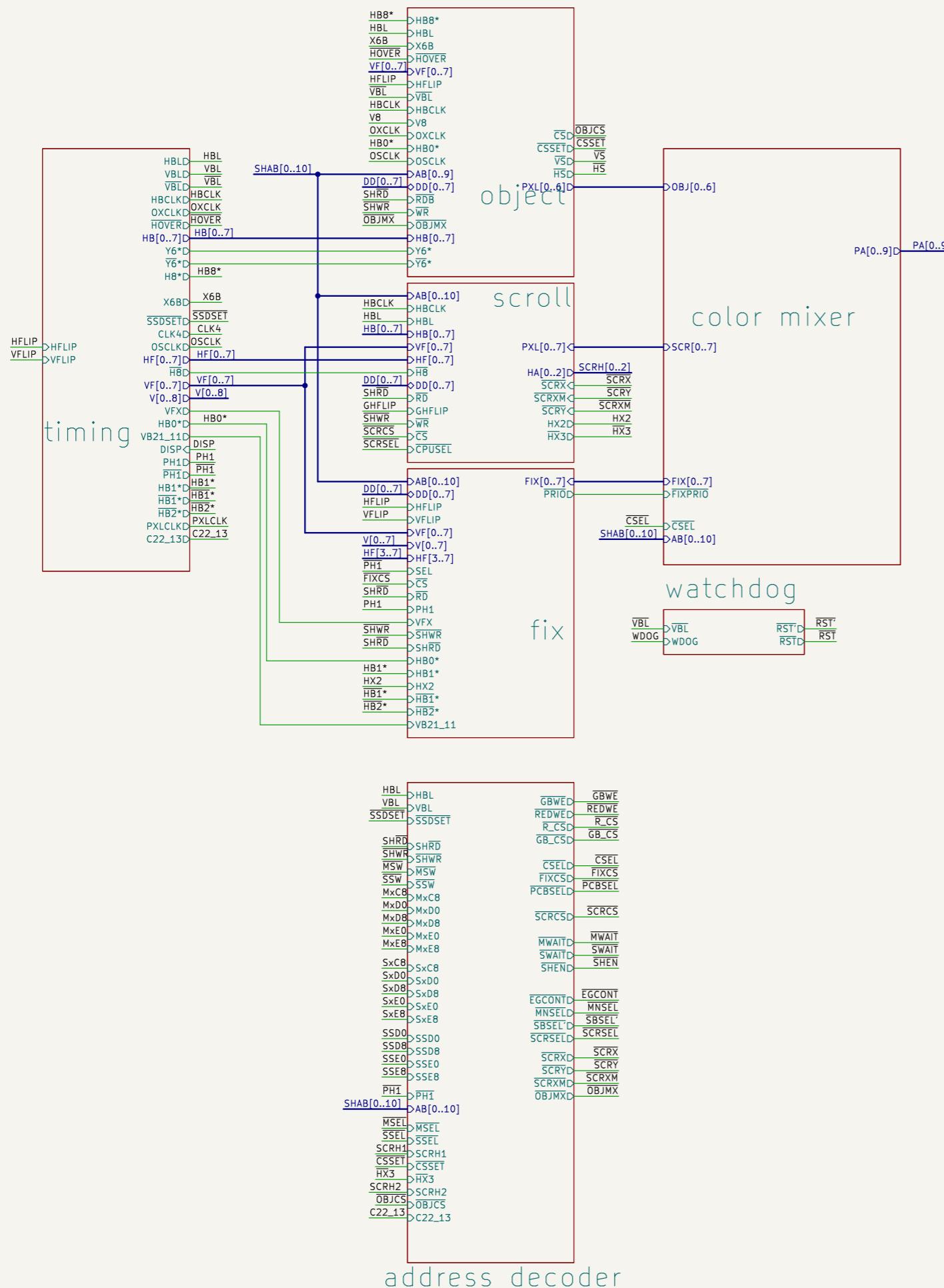
Title: CPU board (top board)

Size: A3 Date: 2024-11-15

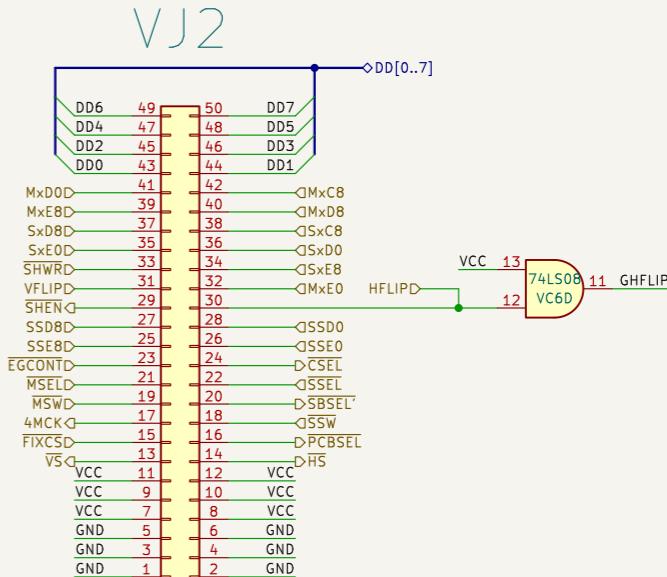
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connectors to CPU board
VJ1 at PCB's top right,
VJ2 at PCB's bottom right,
pins counted from board bottom up,
pins at the top row of the connector
counted as even



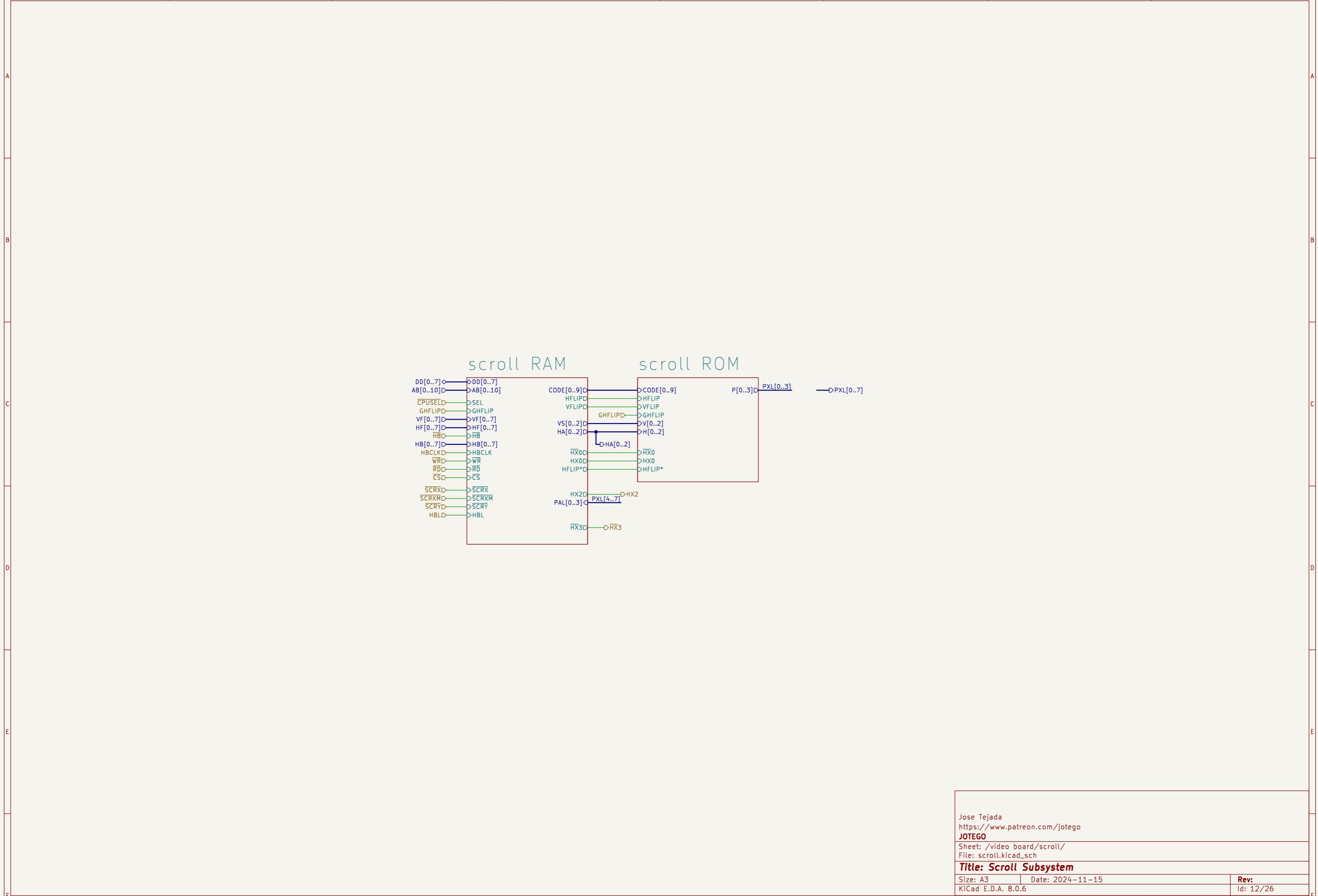
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Sheet: /video board/
File: video.kicad_sch

Title: Video board (bottom board)

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev: Id: 11/26



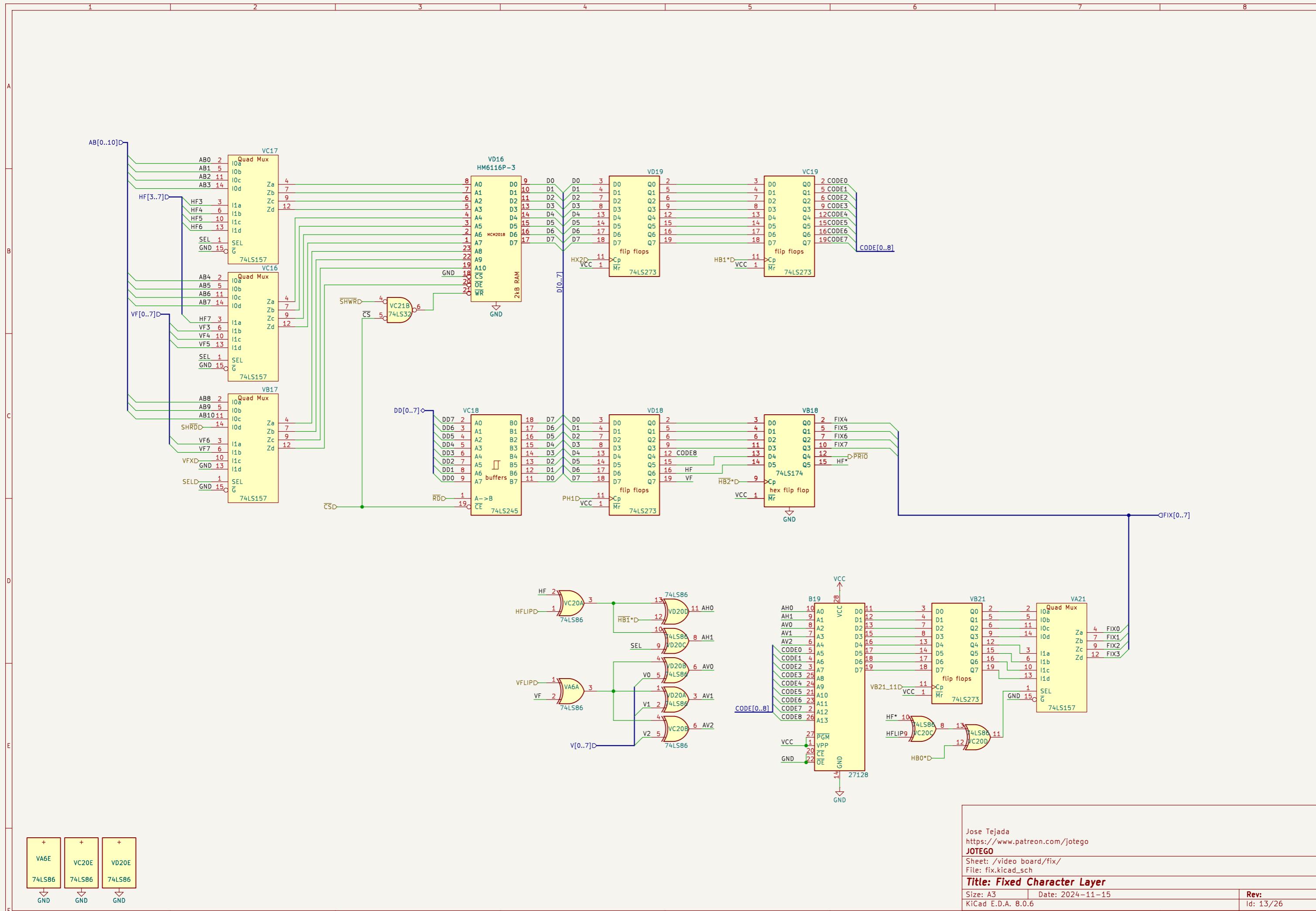
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Sheet: /video board/scroll/
File: scroll.kicad_sch

Title: Scroll Subsystem

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 12/26



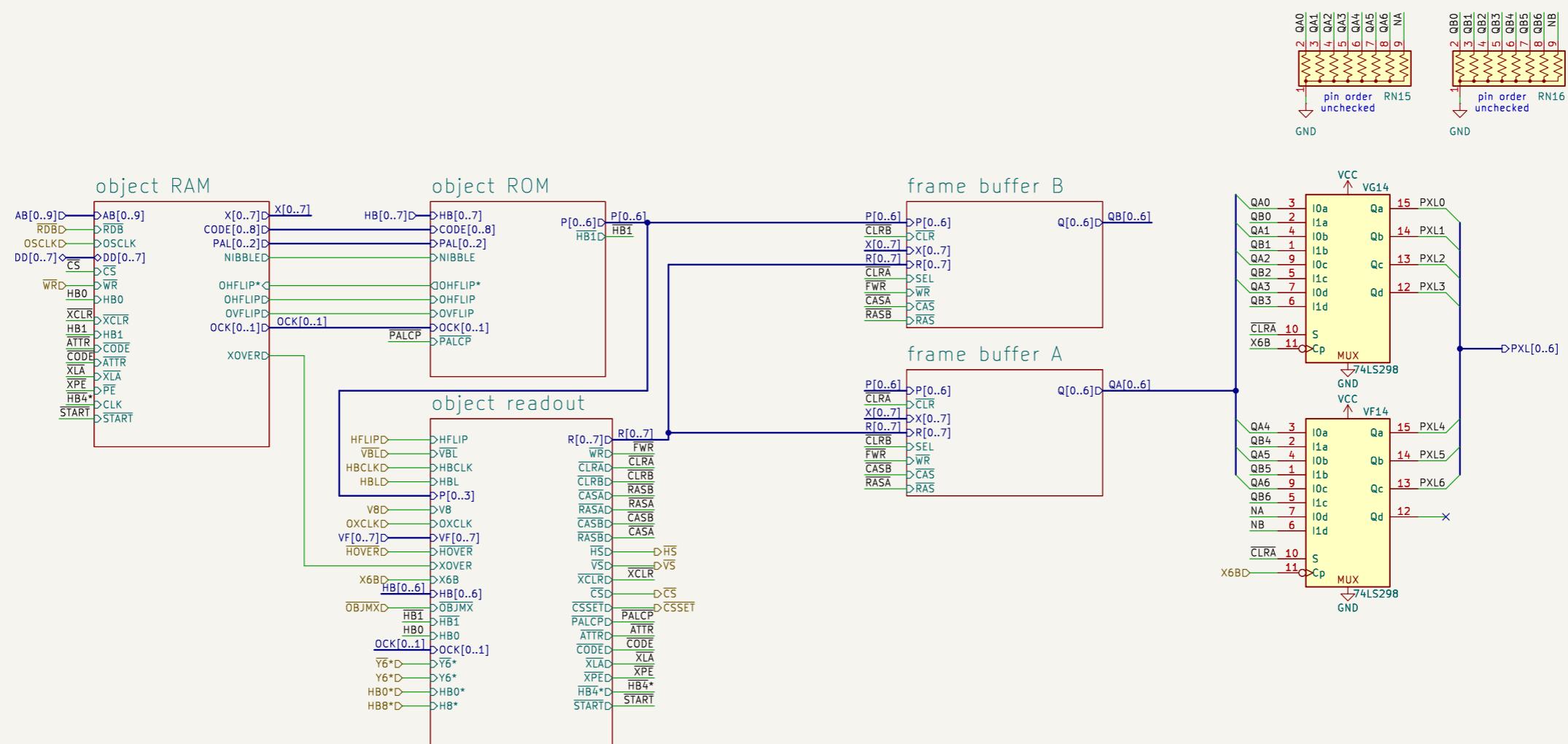
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Sheet: /video board/fix/
File: fix.kicad_sch

Title: Fixed Character Layer

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 13/26



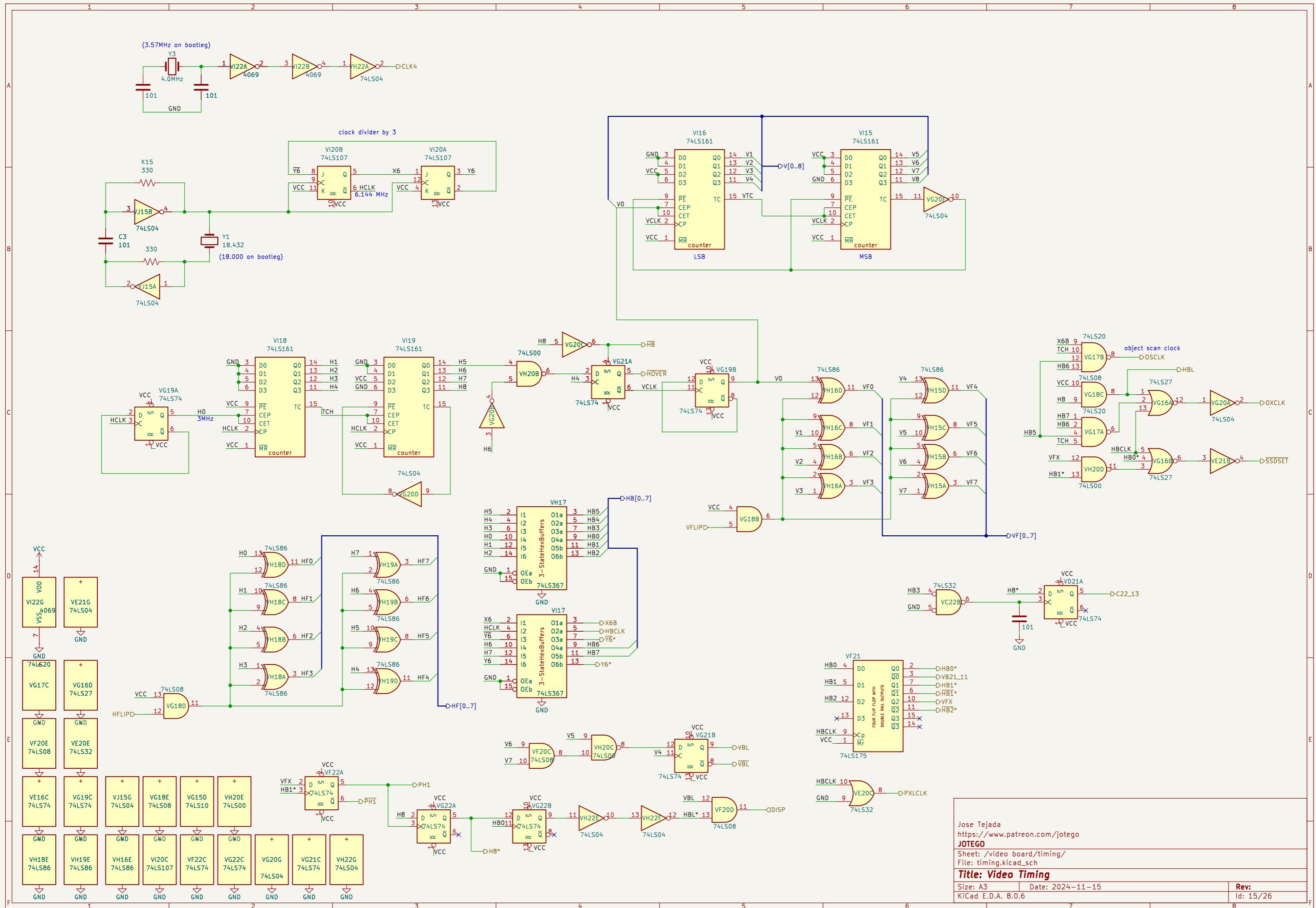
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Sheet: /video board/object/
File: object.kicad_sch

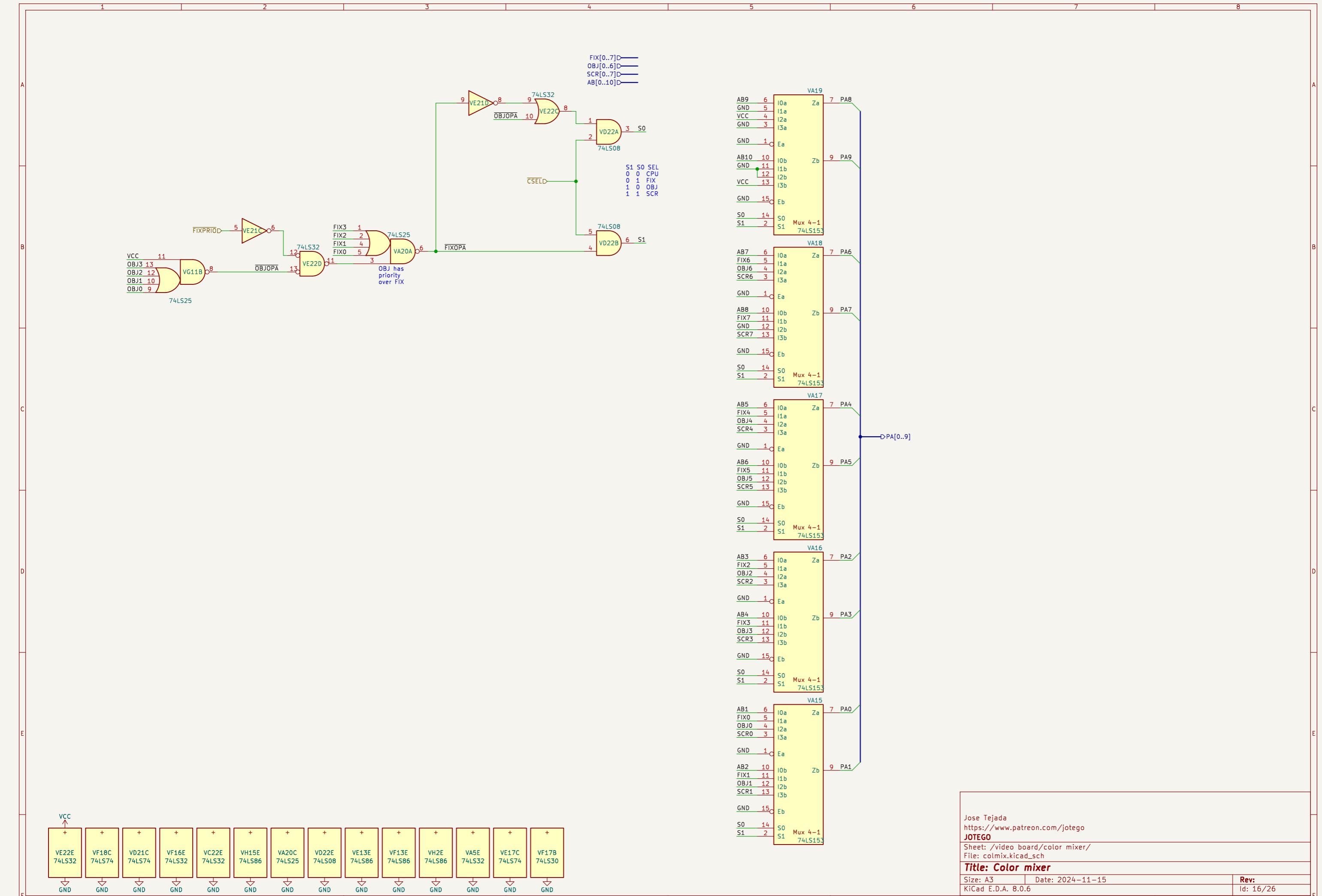
Title: Object Subsystem

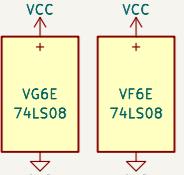
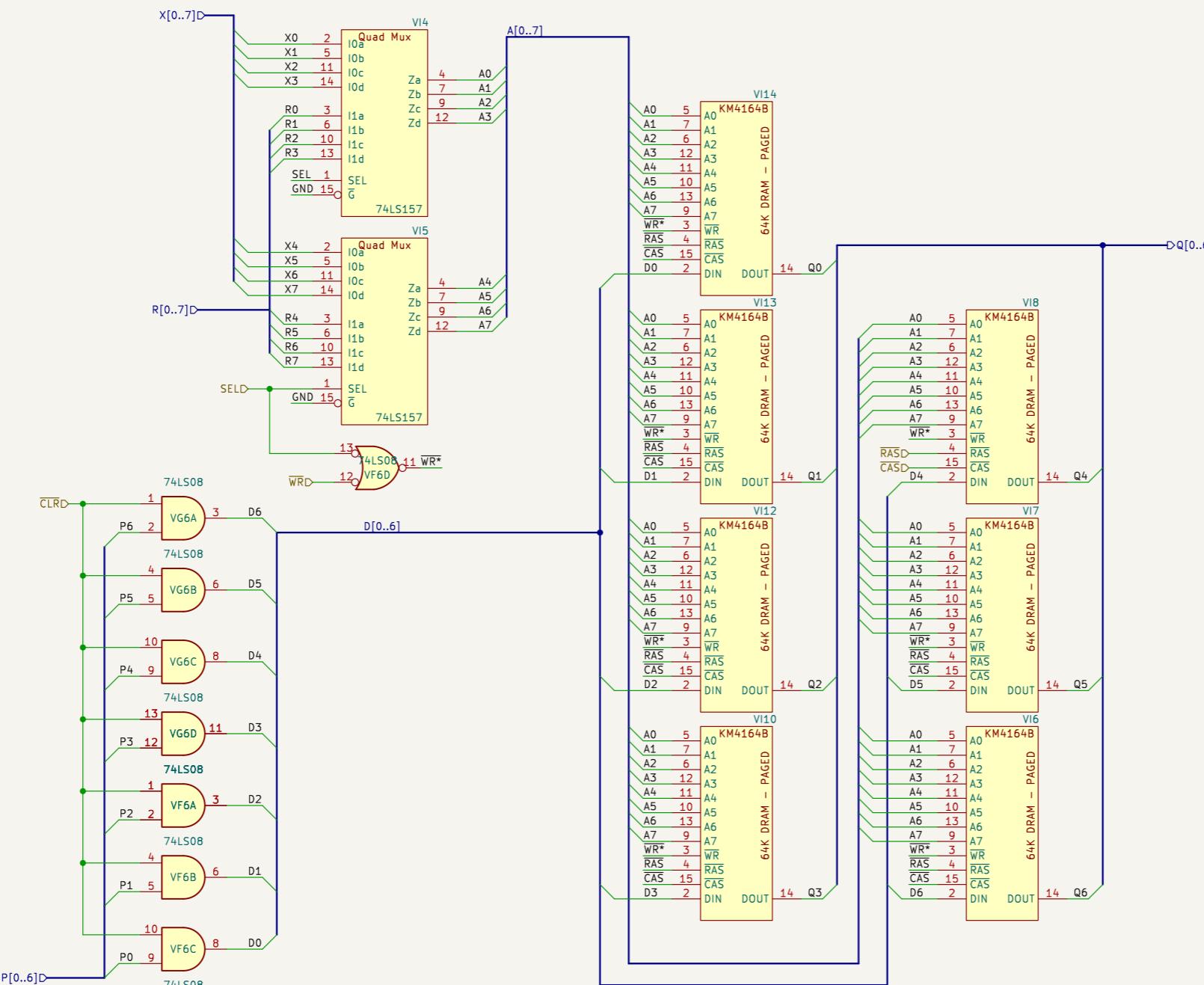
Size: A3 | Date: 2024-11-15
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1 2 3 4 5 6 7 8





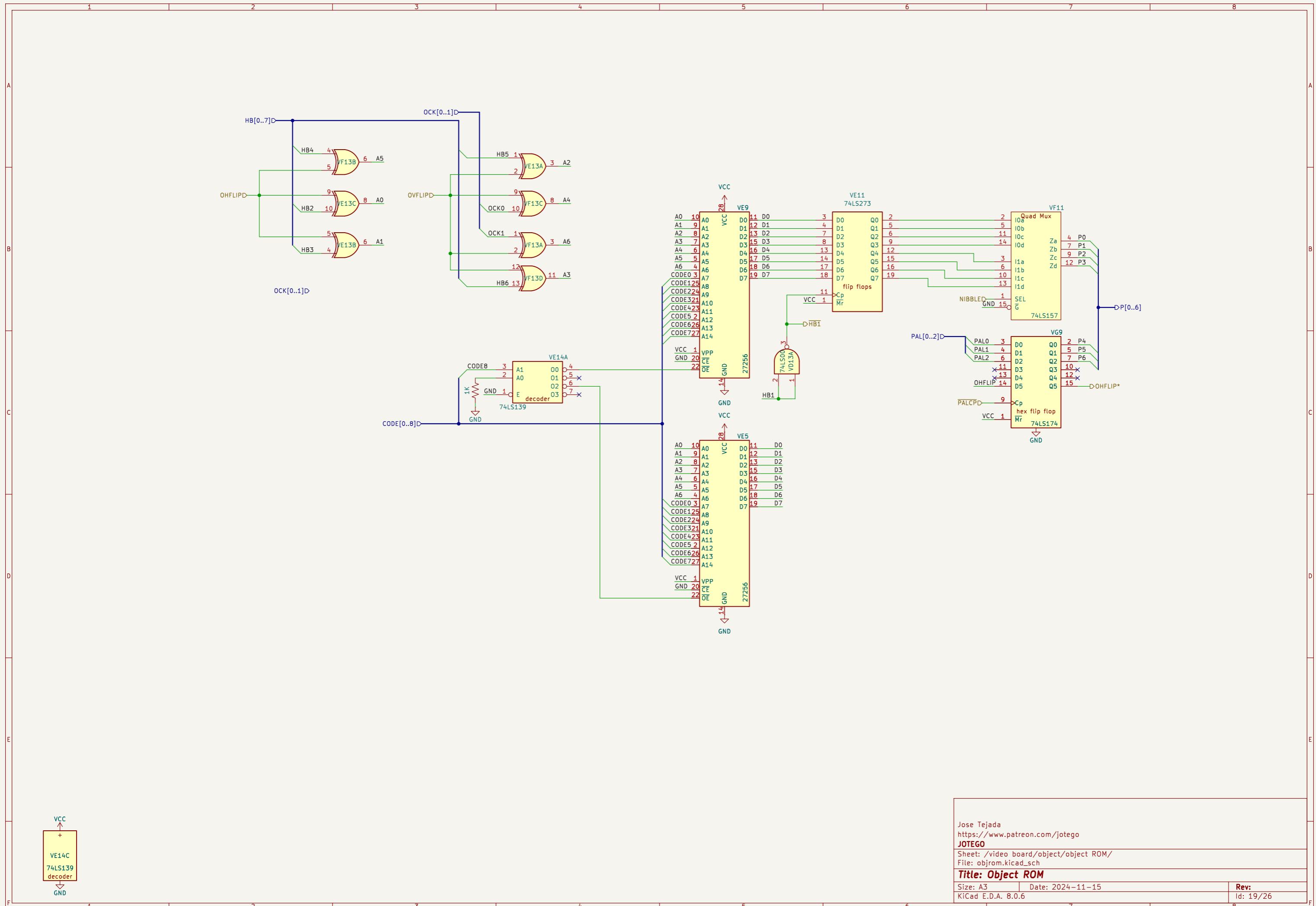
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Sheet: /video board/object/frame buffer A/
File: buffer.kicad_sch

Title: Line Buffer

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 17/26



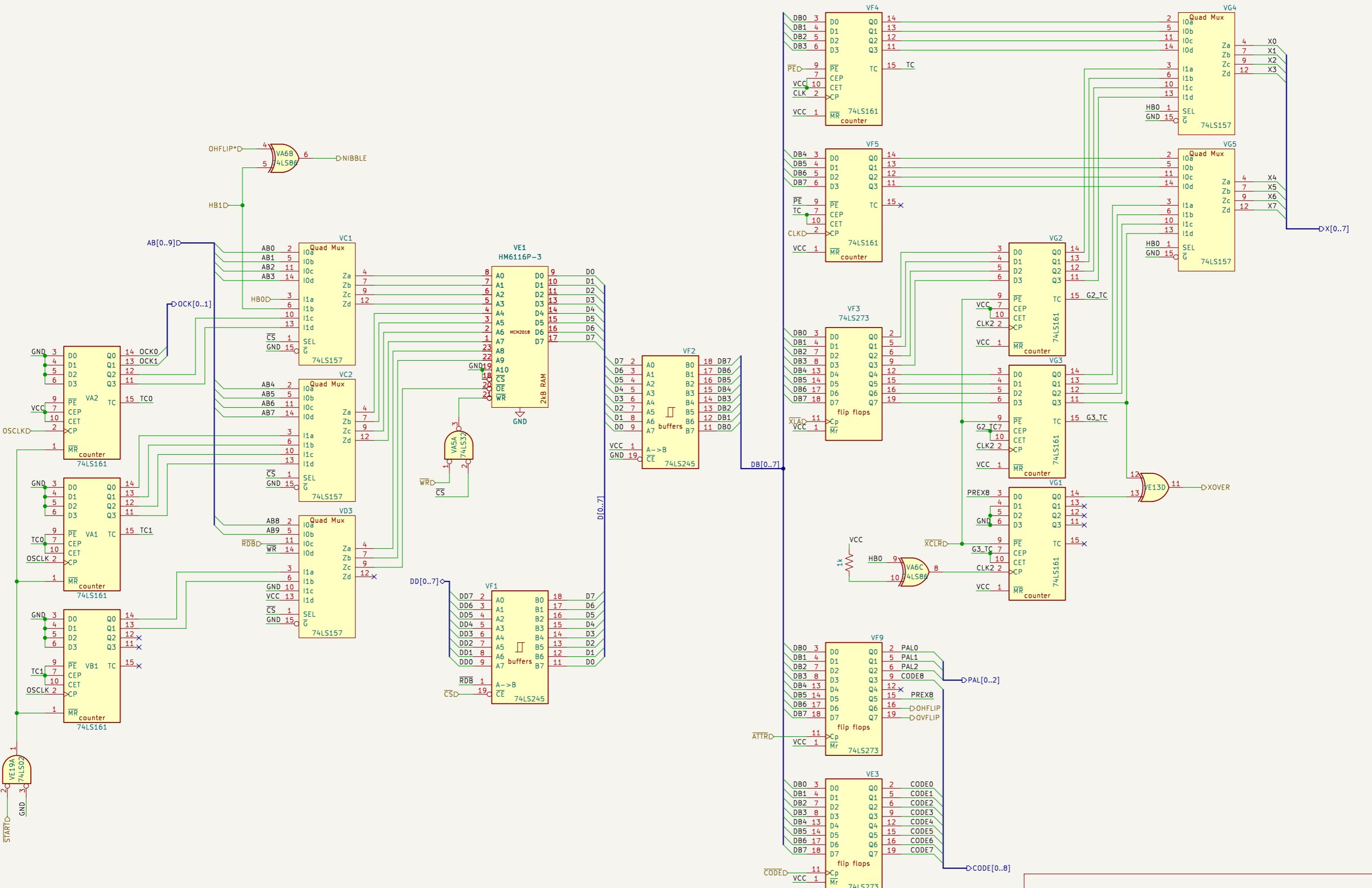
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Sheet: /video board/object/object ROM/
File: objrom.kicad_sch

Title: Object ROM

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 19/26



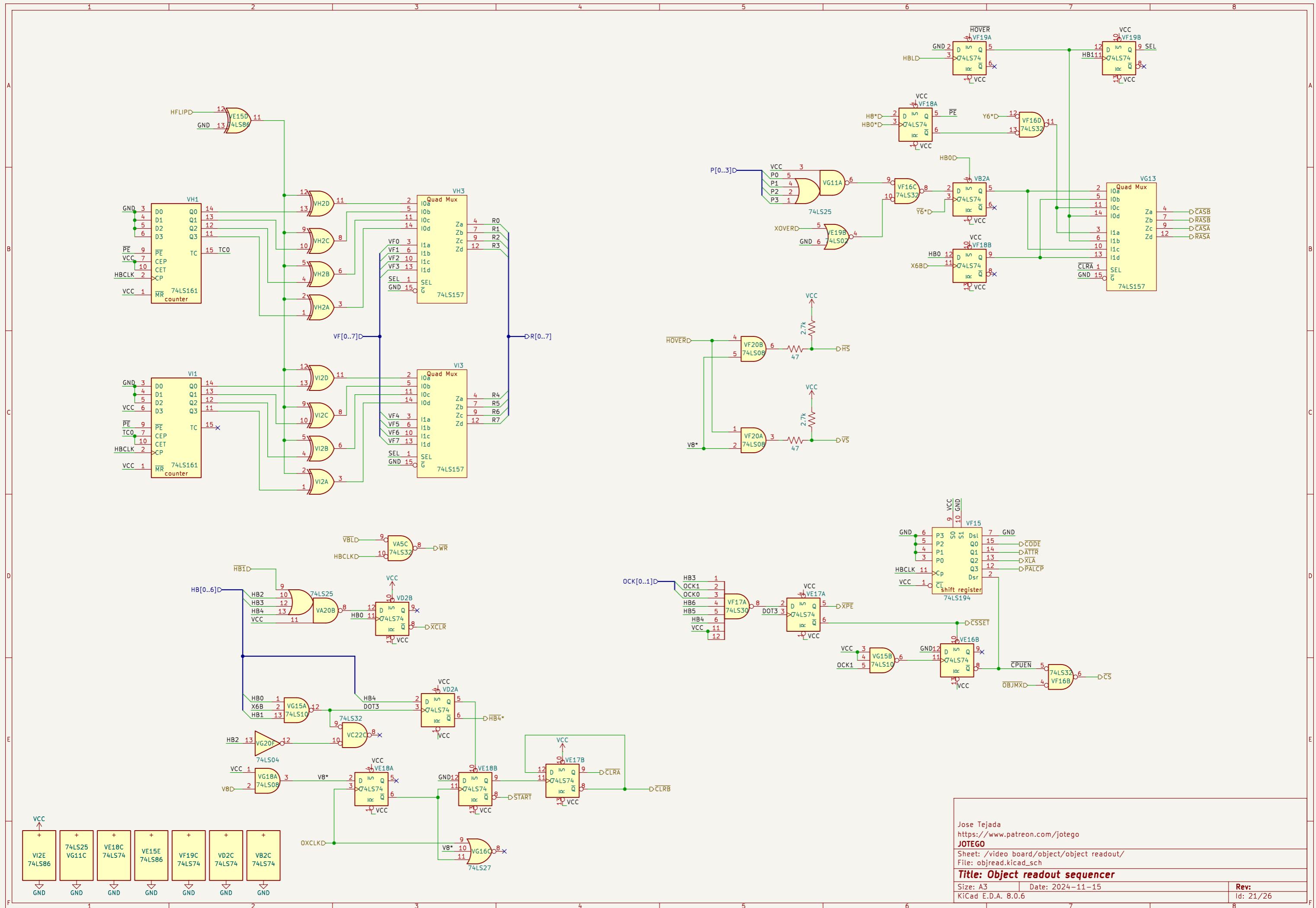
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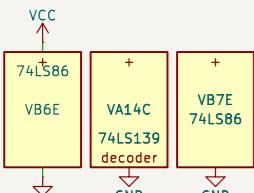
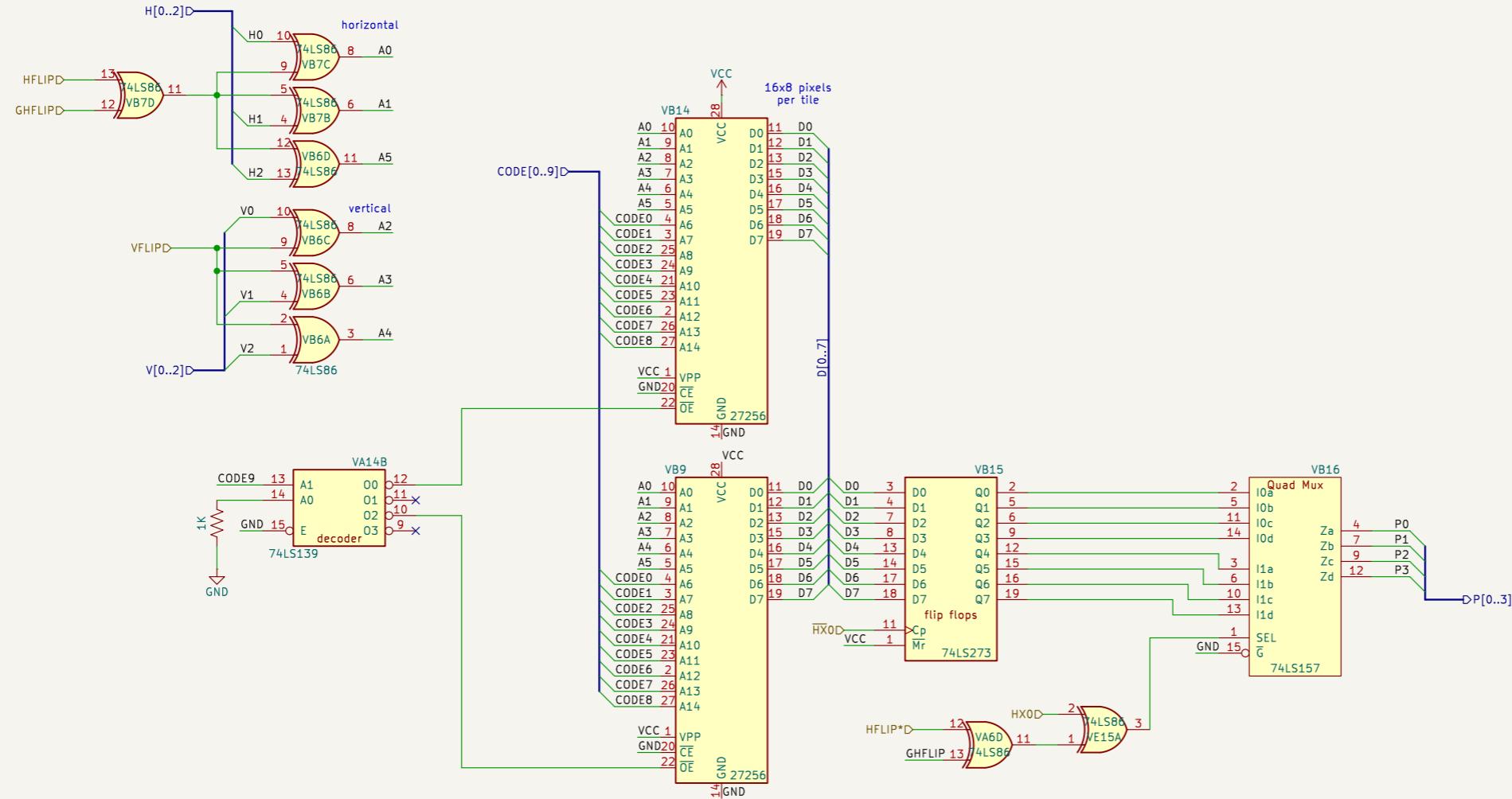
Sheet: /video board/object/object RAM/
File: objram.kicad_sch

Title: Object RAM

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev: | Id: 20/26





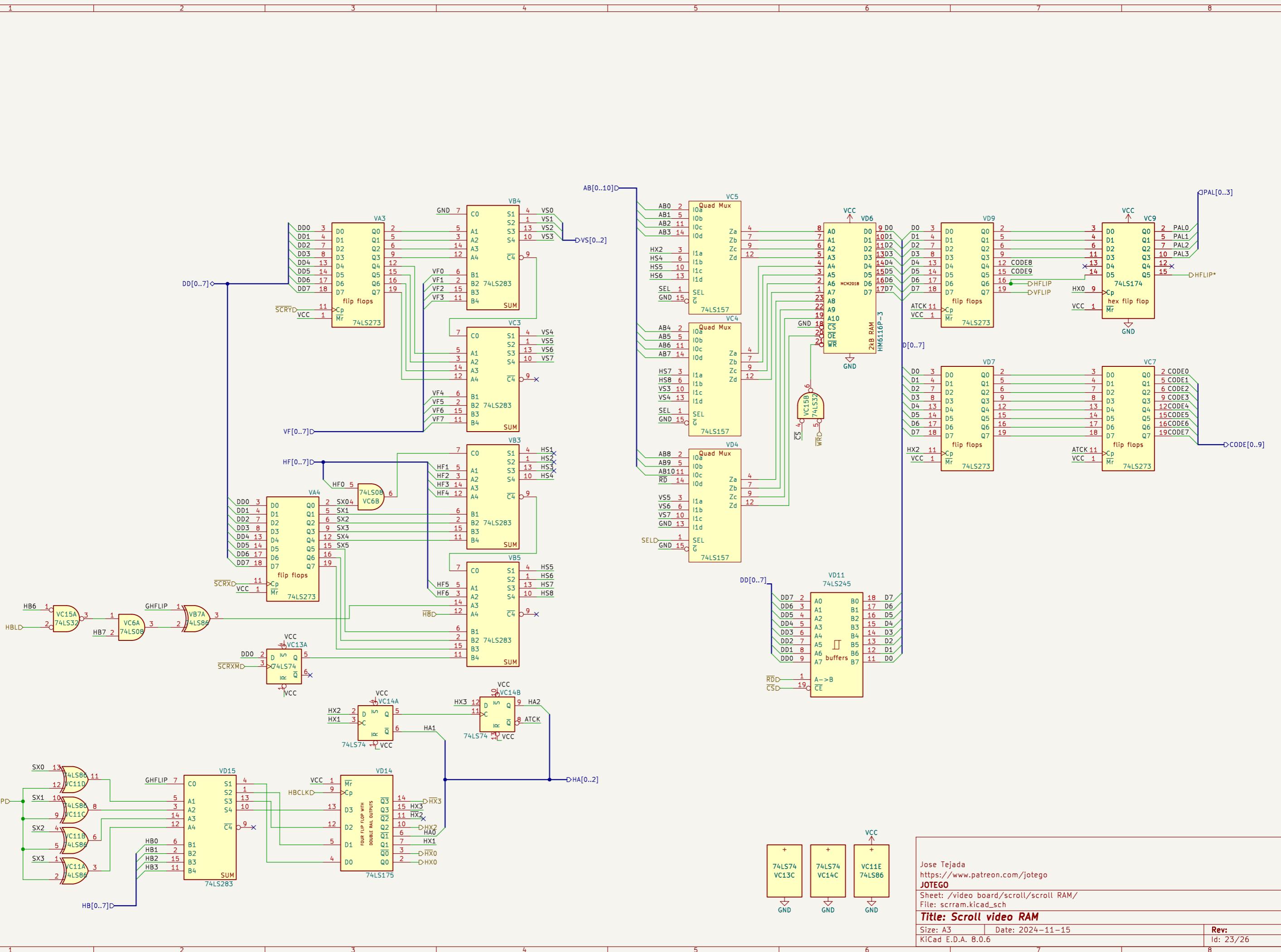
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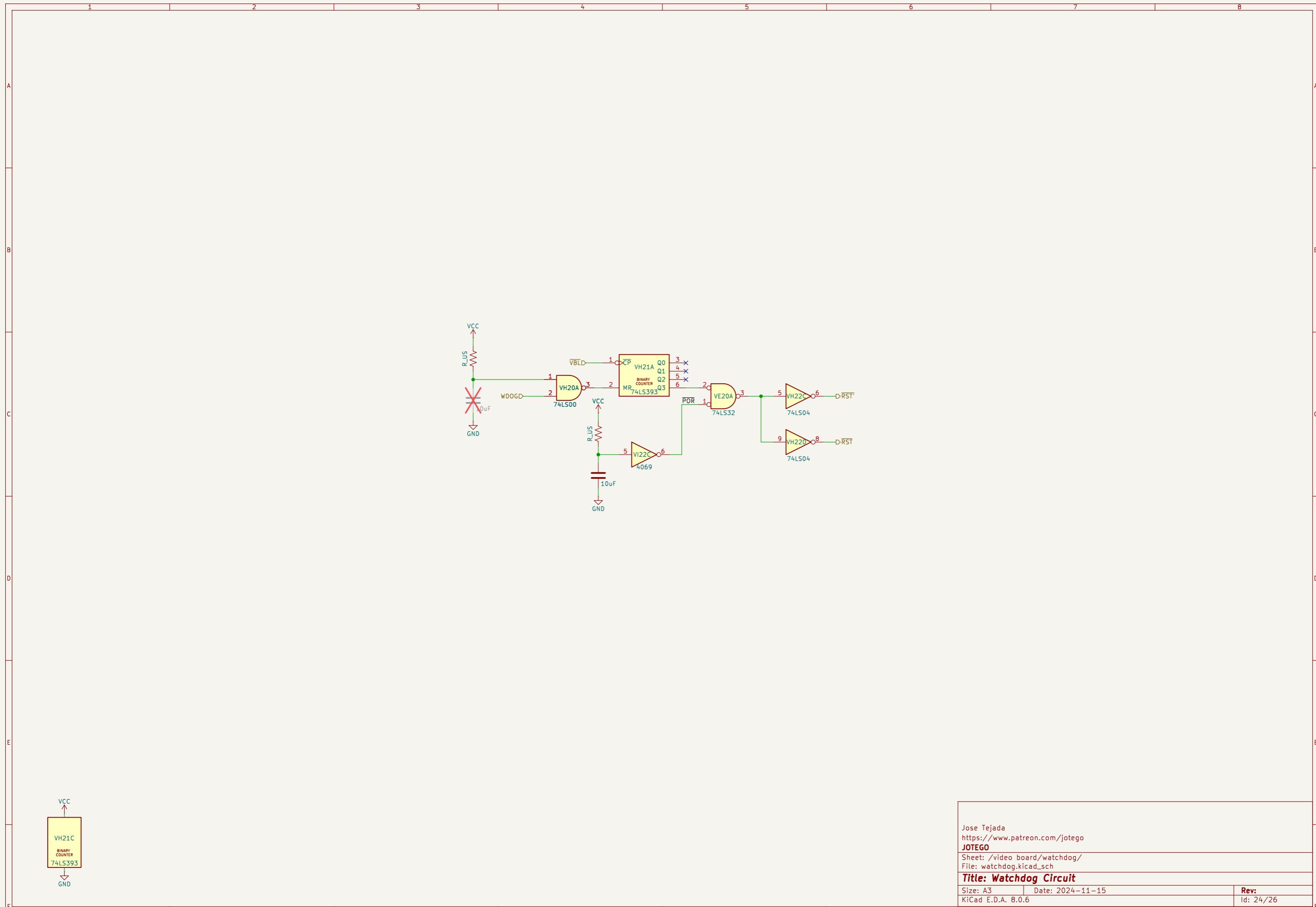
Sheet: /video board/scroll/scroll ROM/
File: scrom.kicad_sch

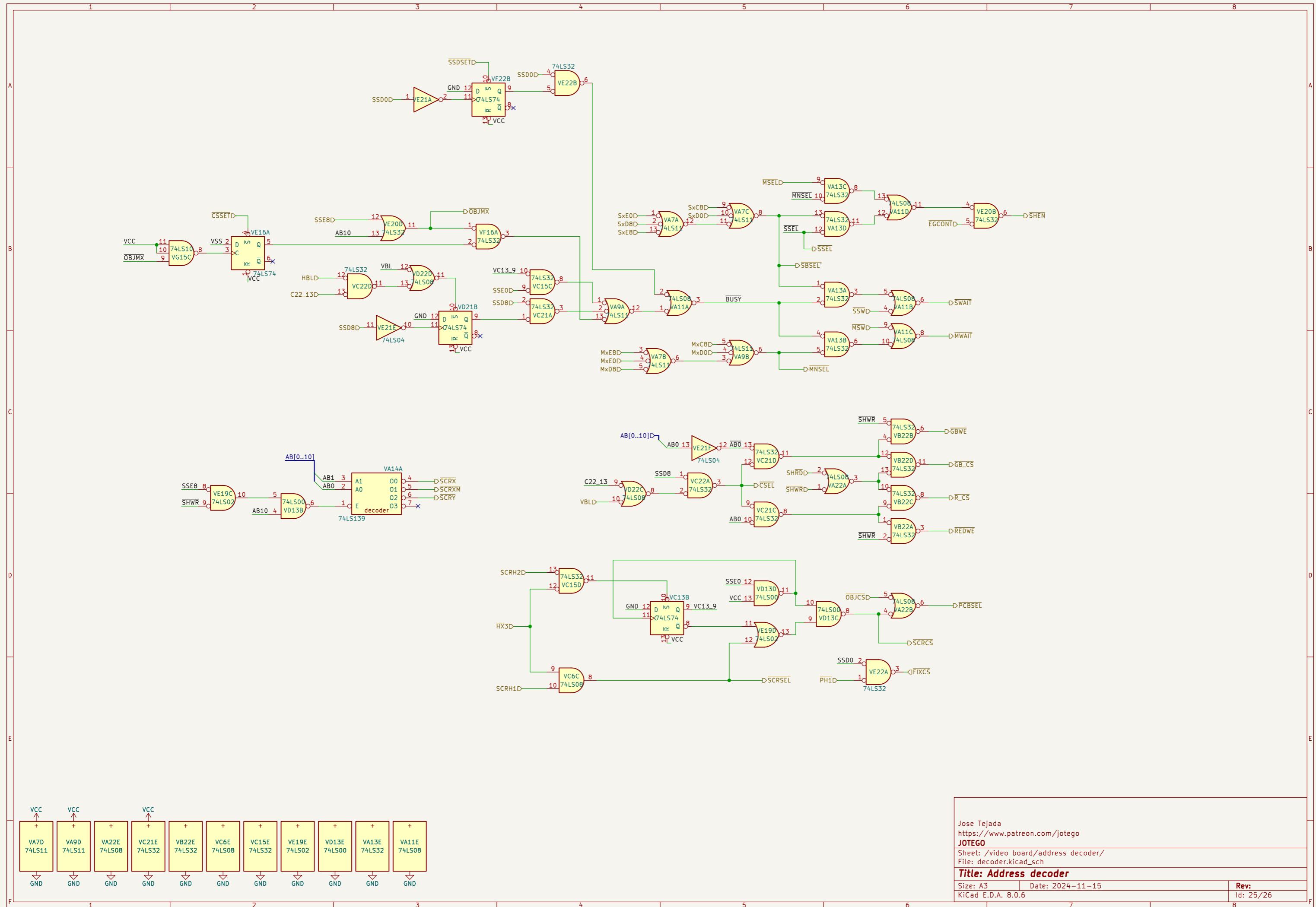
Title: scroll ROM

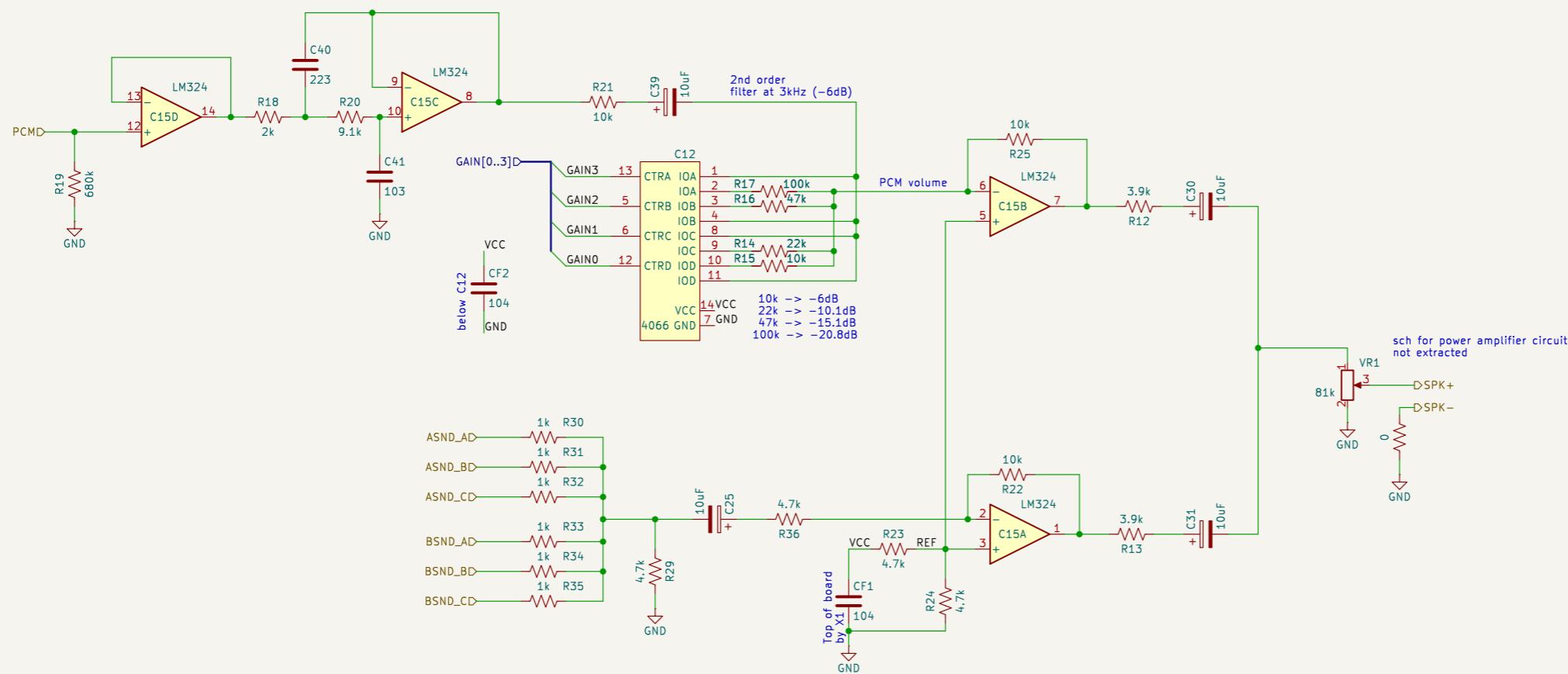
Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 22/26









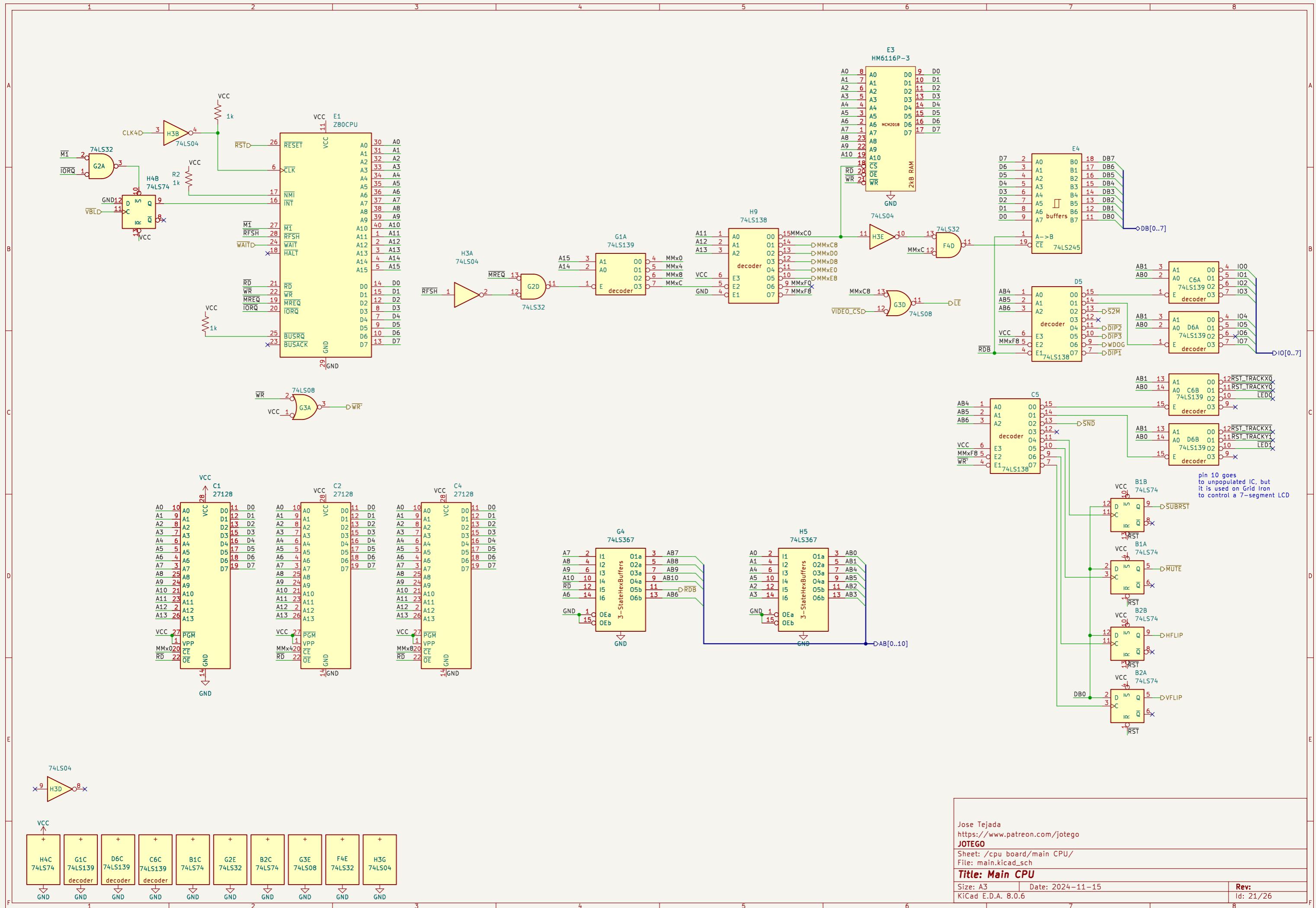
Passive component references when shown, come from original PCB. The bootleg did not have references for passives.

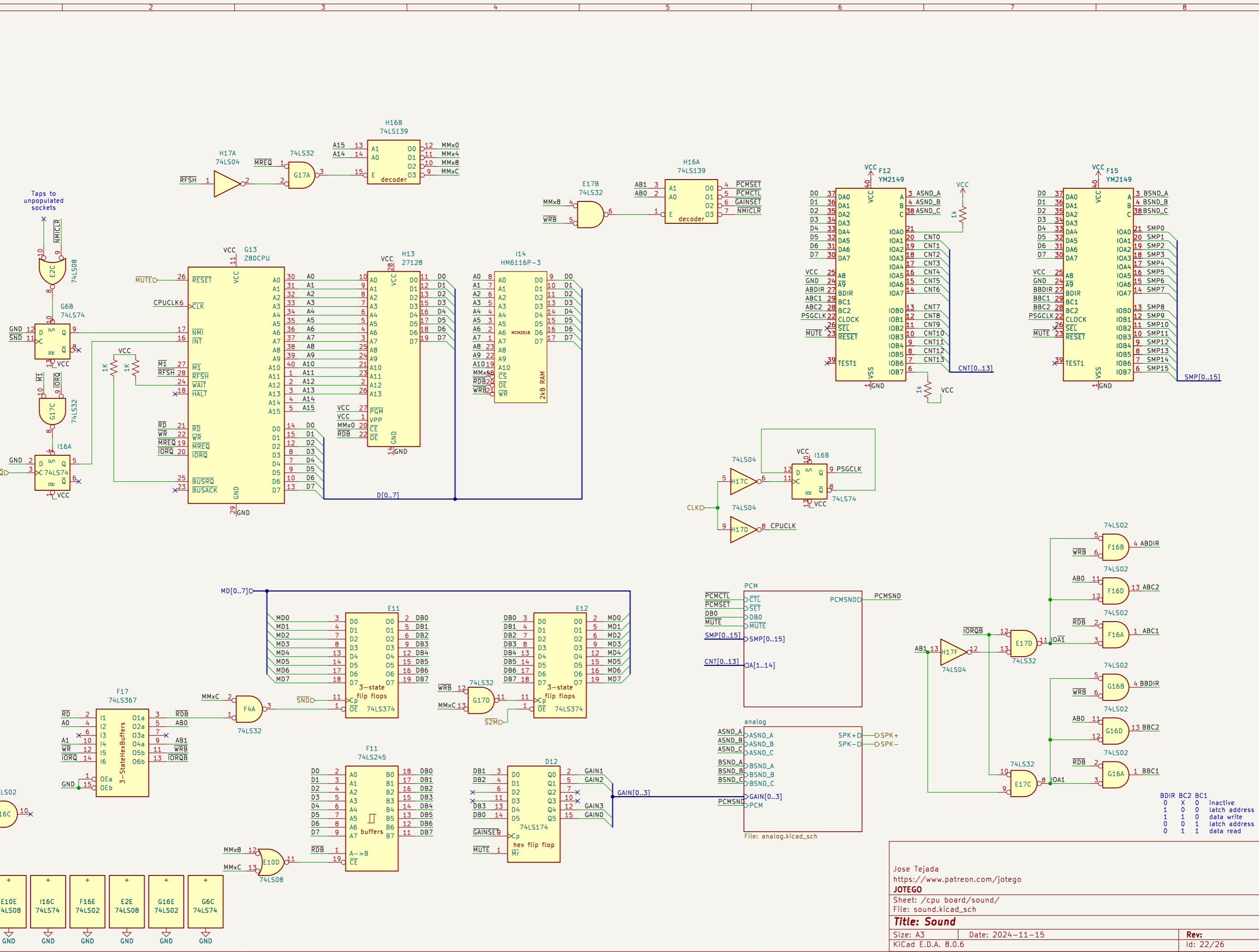
Device components follow bootleg references.
The bootleg counts letters from left to right and numbers from bottom to top
The original counts numbers left to right and letters bottom to top.

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Title: Sound amplifiers





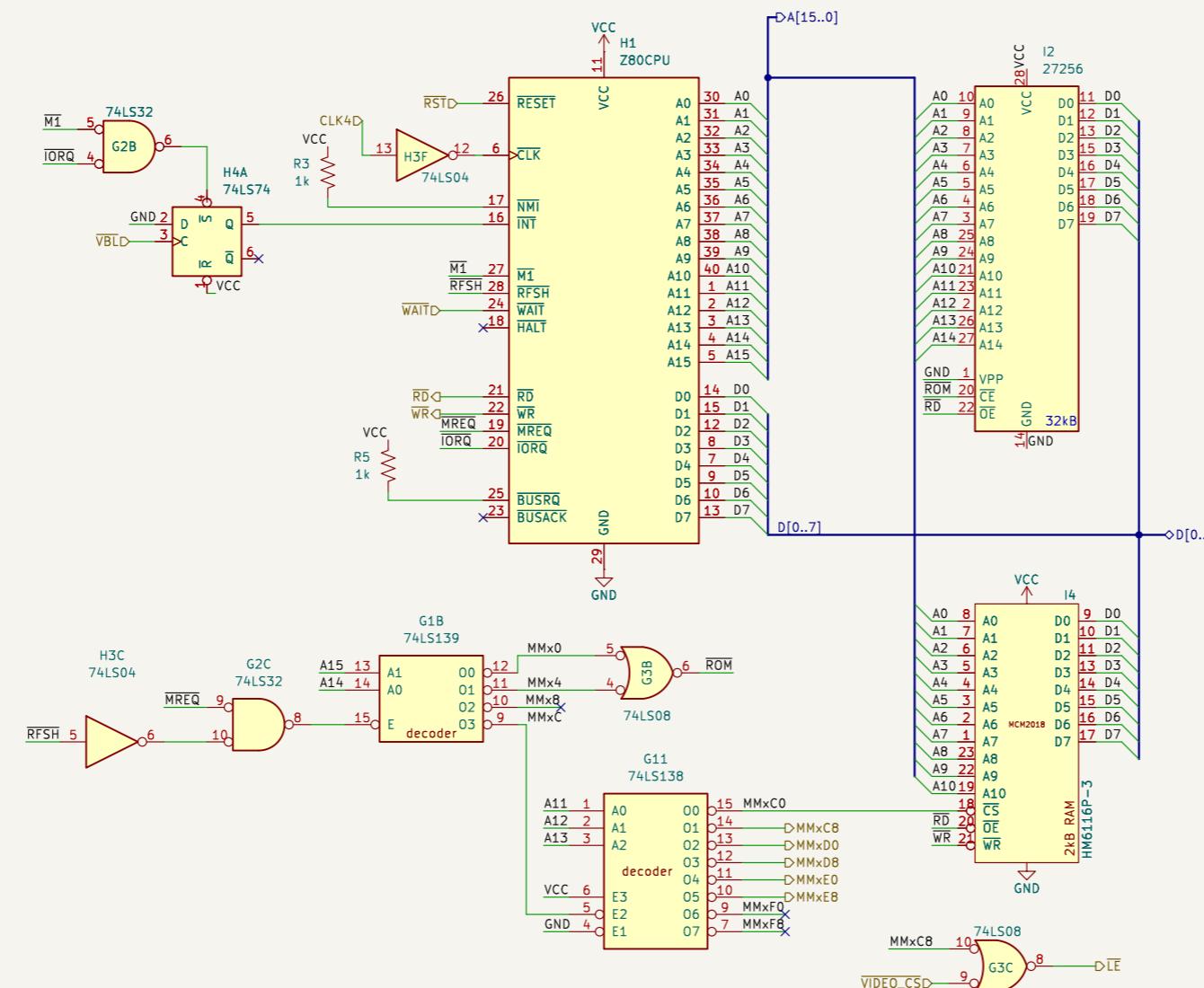
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Sheet: /cpu_board/sound/
File: sound.kicad_sch

Title: Sound

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 22/26



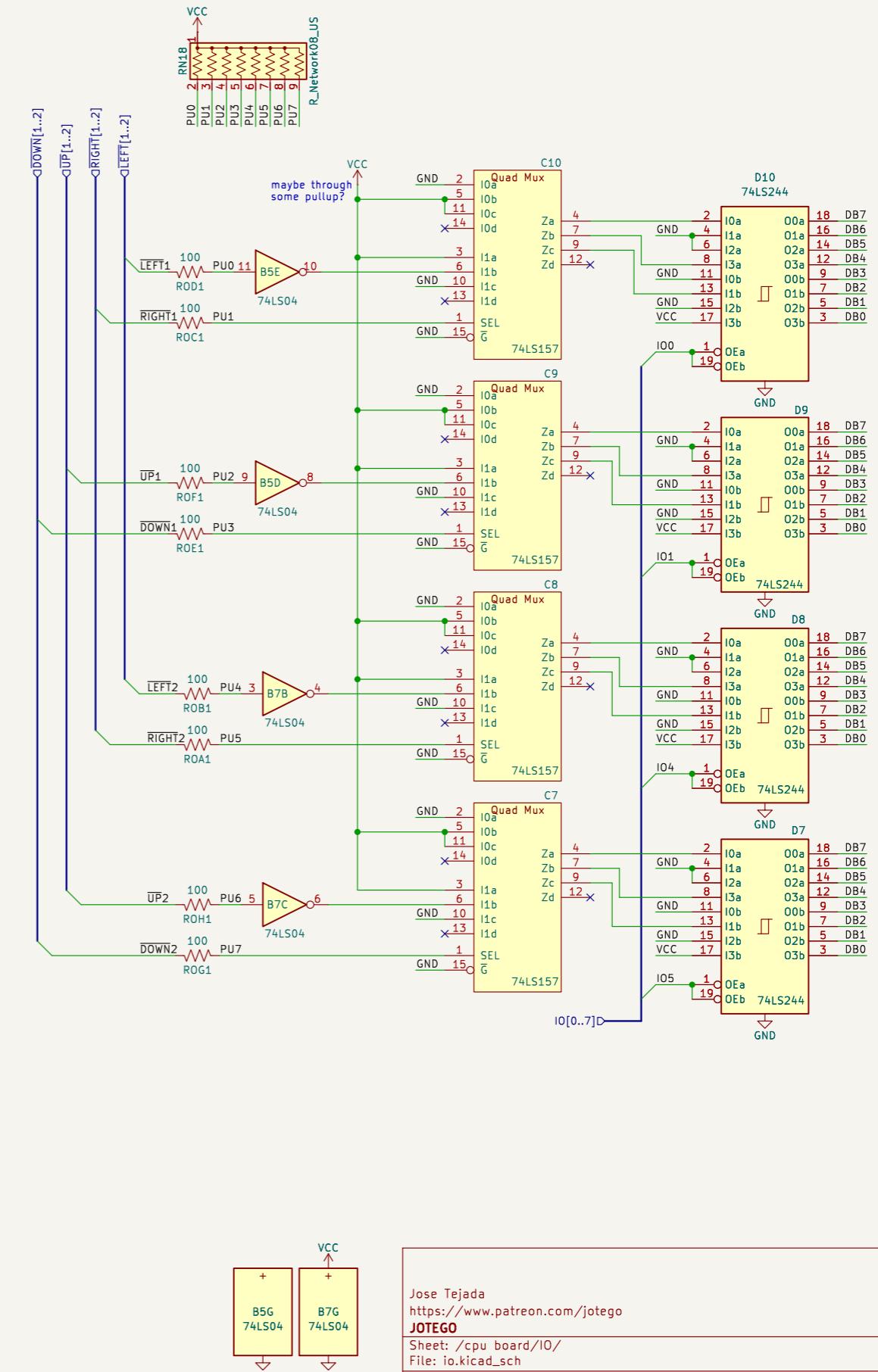
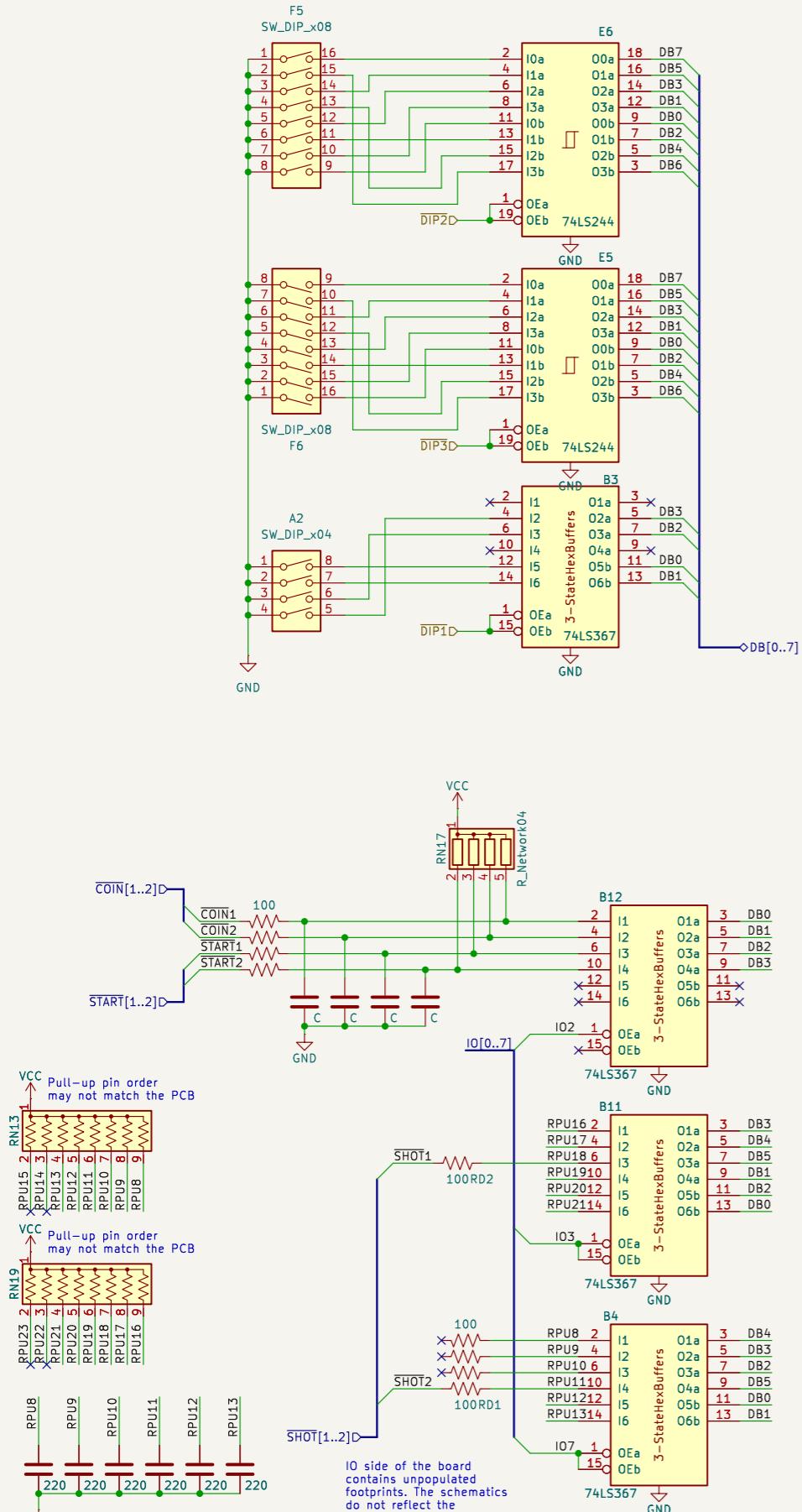
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Sheet: /cpu board/sub CPU/
File: subcpu.kicad_sch

Title: Subordinate CPU

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

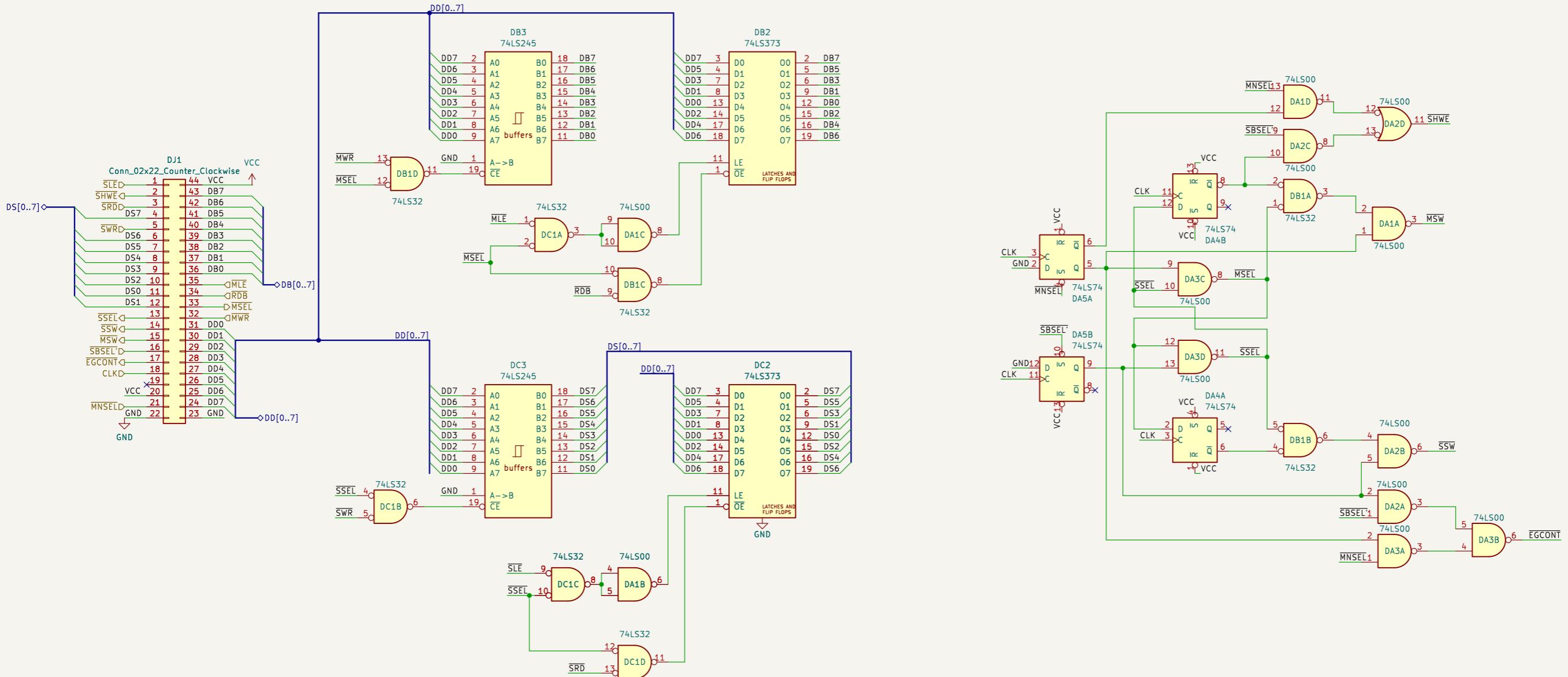
Rev:
Id: 23/26



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Sheet: /cpu board/IO/
File: io.kicad_sch
Title: Cabinet Input/Output
Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.6

Rev:
Id: 24/26



This circuit takes three small boards on the original PCB. These boards were manufactured by Mitsubishi and contain the circuits seen on the bootleg
- MA7053 x2, 28 pin each
- MA7054 x1, 15 pins
The layout around the daughter board on the bootleg differs slightly from the original in order to adjust the pinout to a single 44-pin board.

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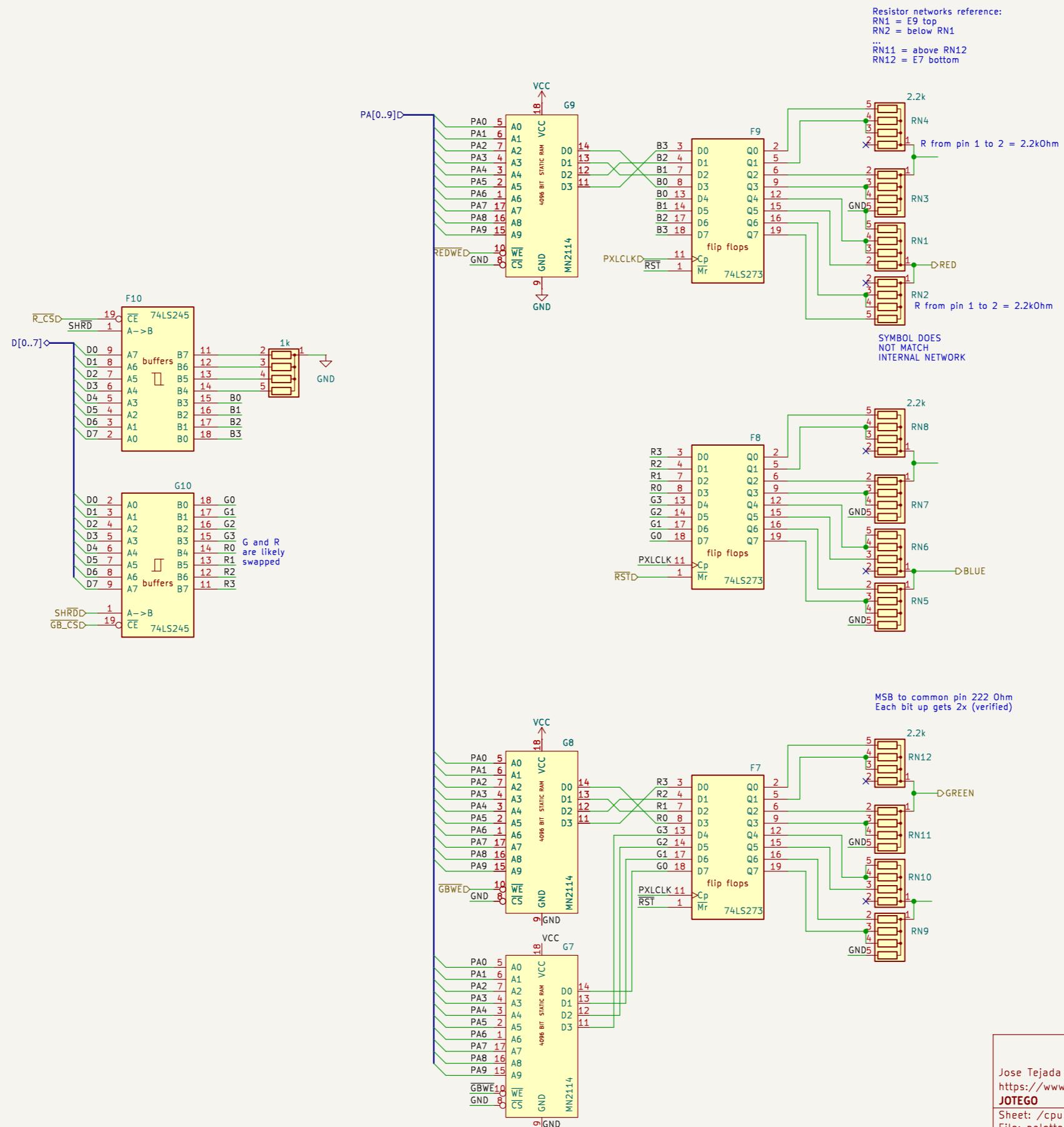
Sheet: /cpu board/daughter/
File: daughter.kicad_sch

Title: Small daughter board

Size: A3 Date: 2024-11-15
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7

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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. 8.0.6

Rev: #/26