

A

B

C

D

E

A

B

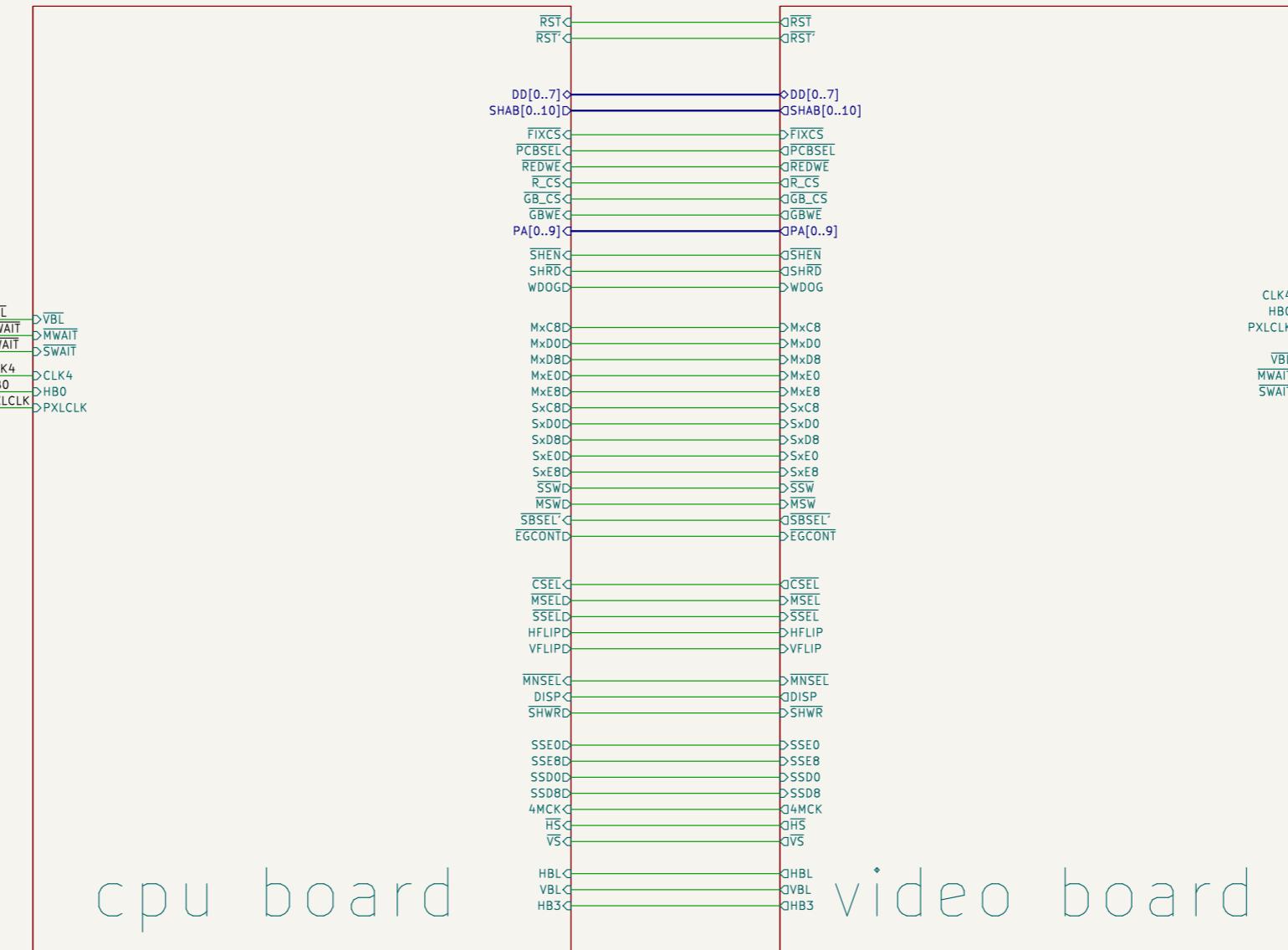
C

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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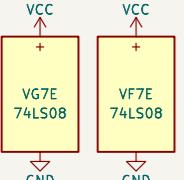
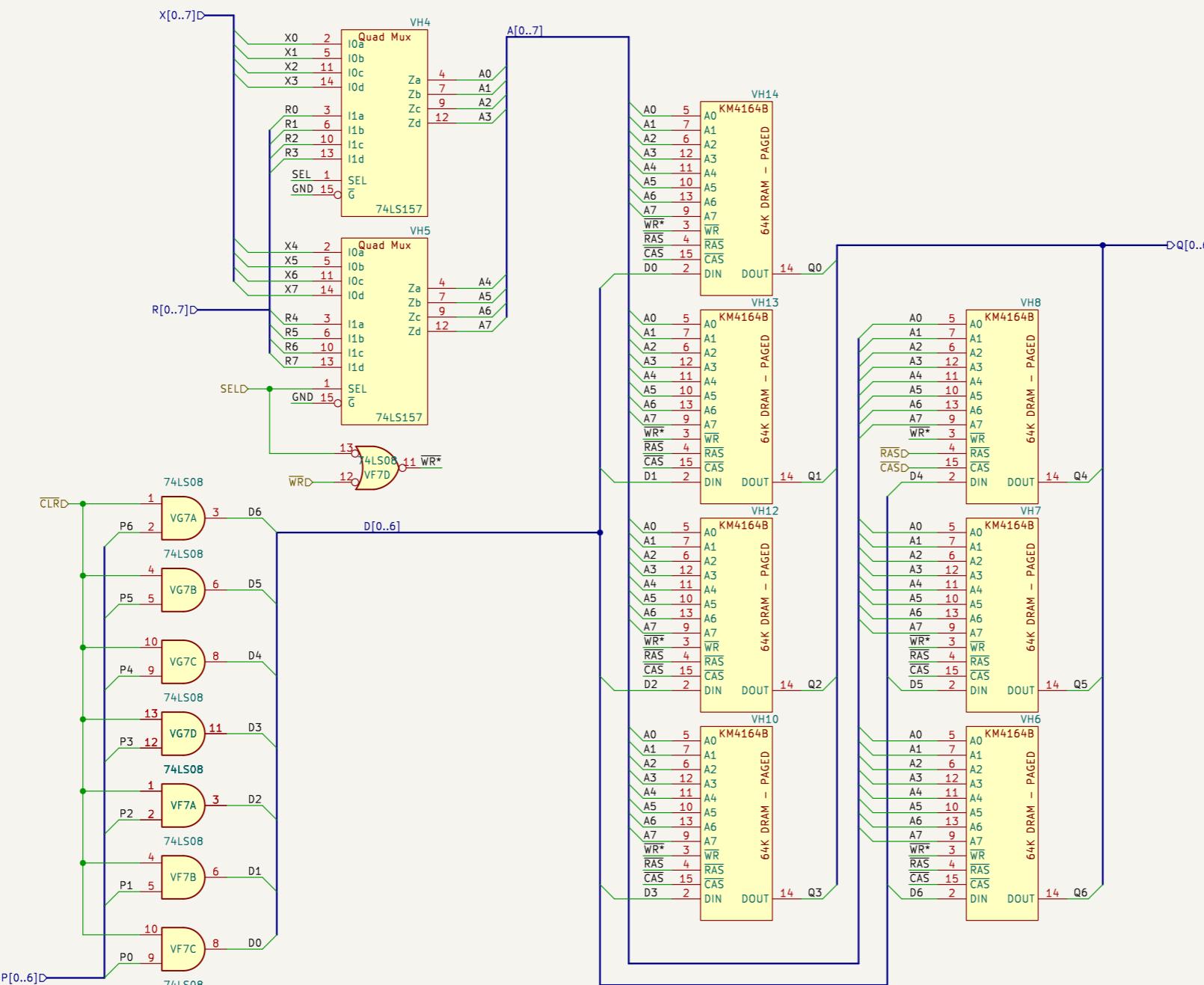
Sheet: /  
File: tehkanwch.kicad\_sch

**Title: TEHKAN WORLD CUP (tehkanwch bootleg)**

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



Rev:  
Id: 1/26



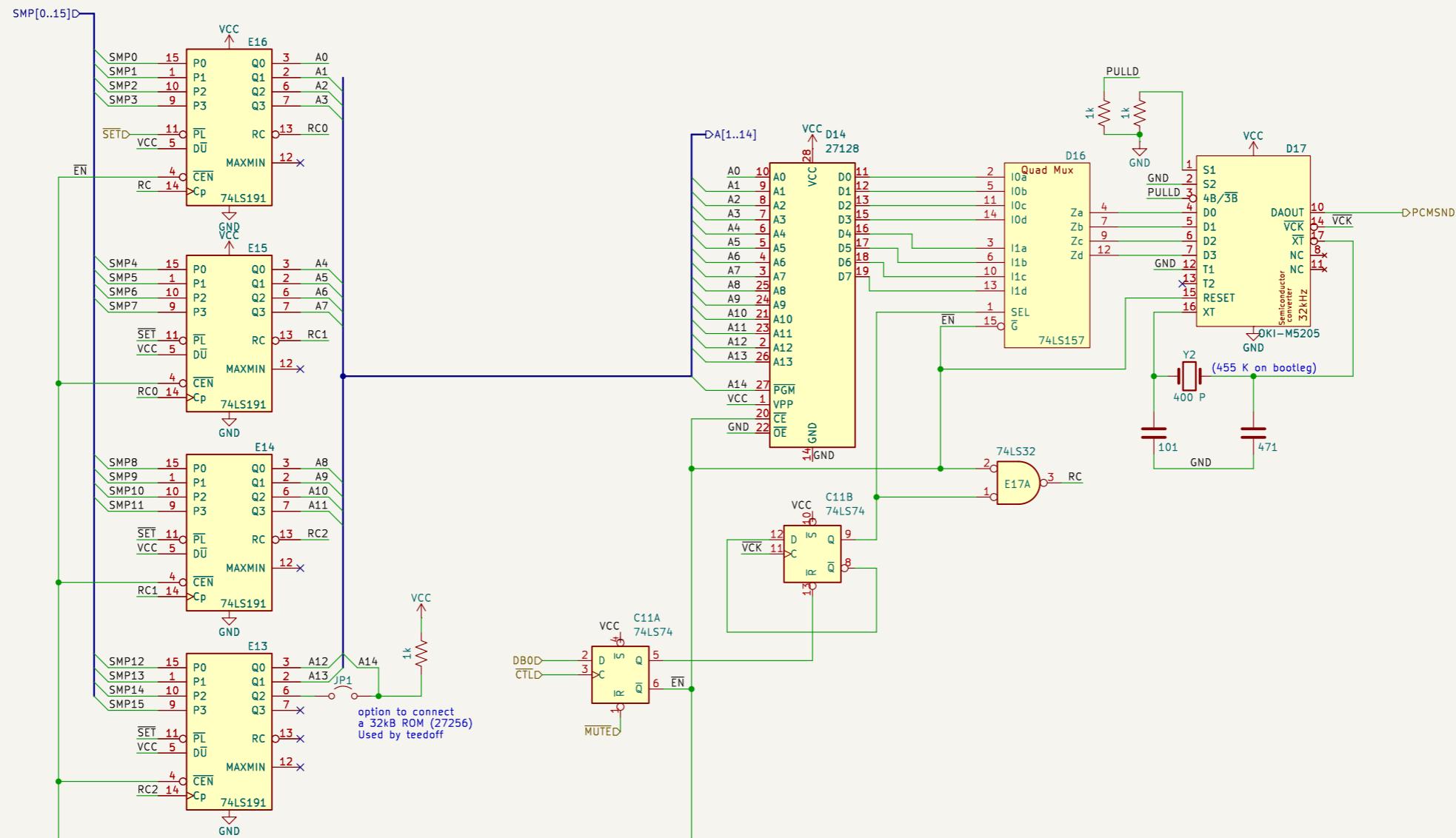
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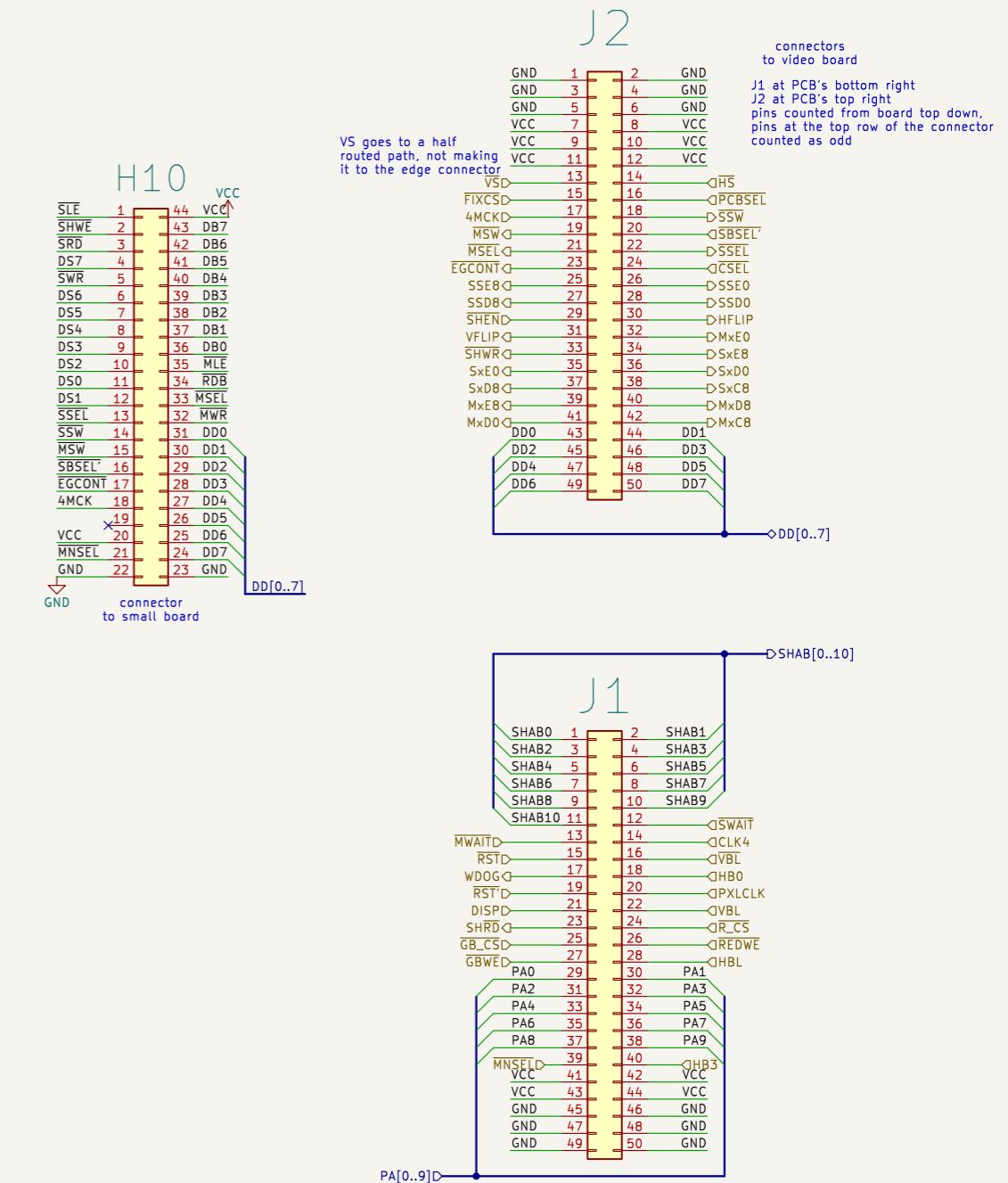
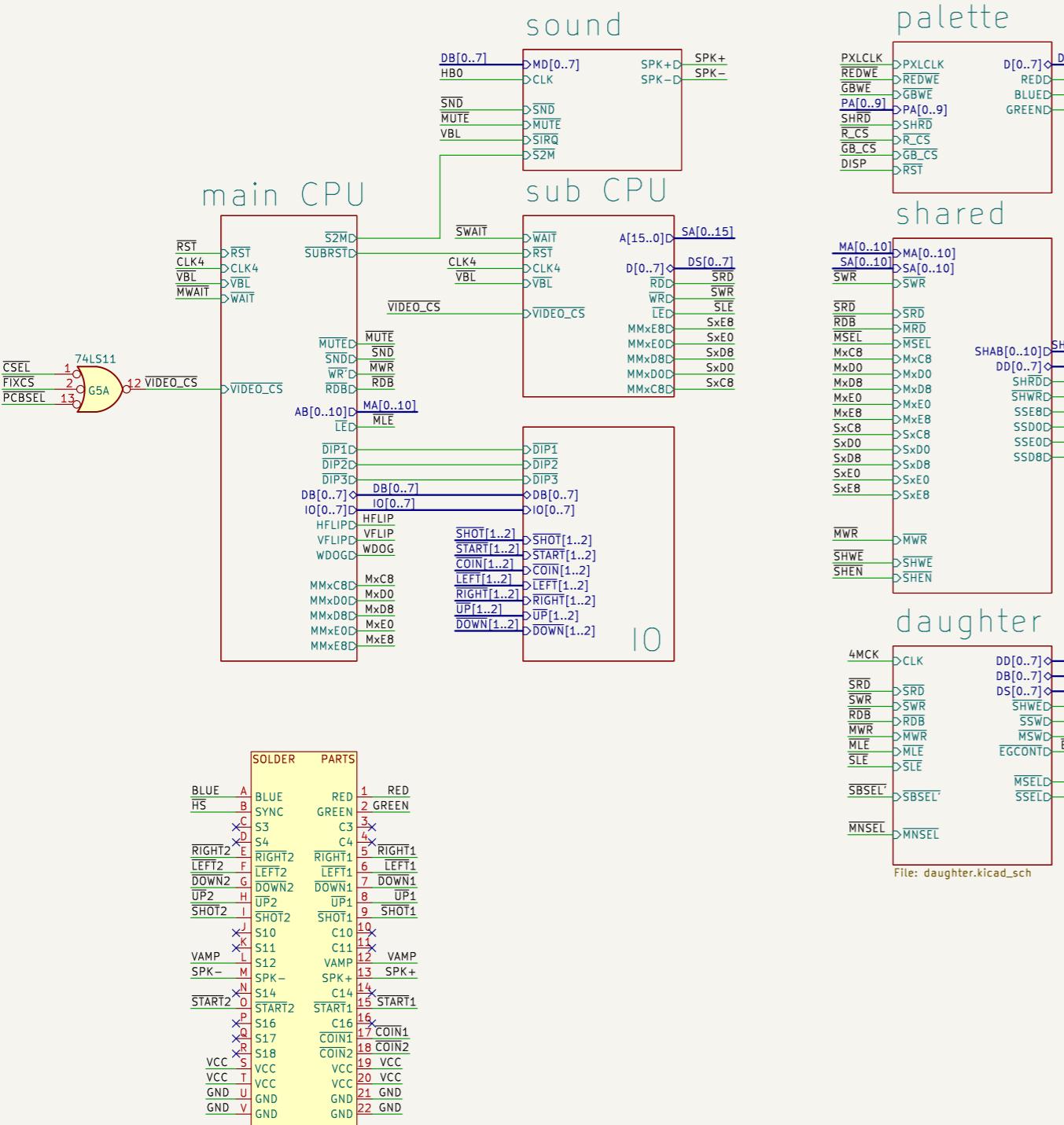
Sheet: /video board/object/frame buffer B/  
File: buffer.kicad\_sch

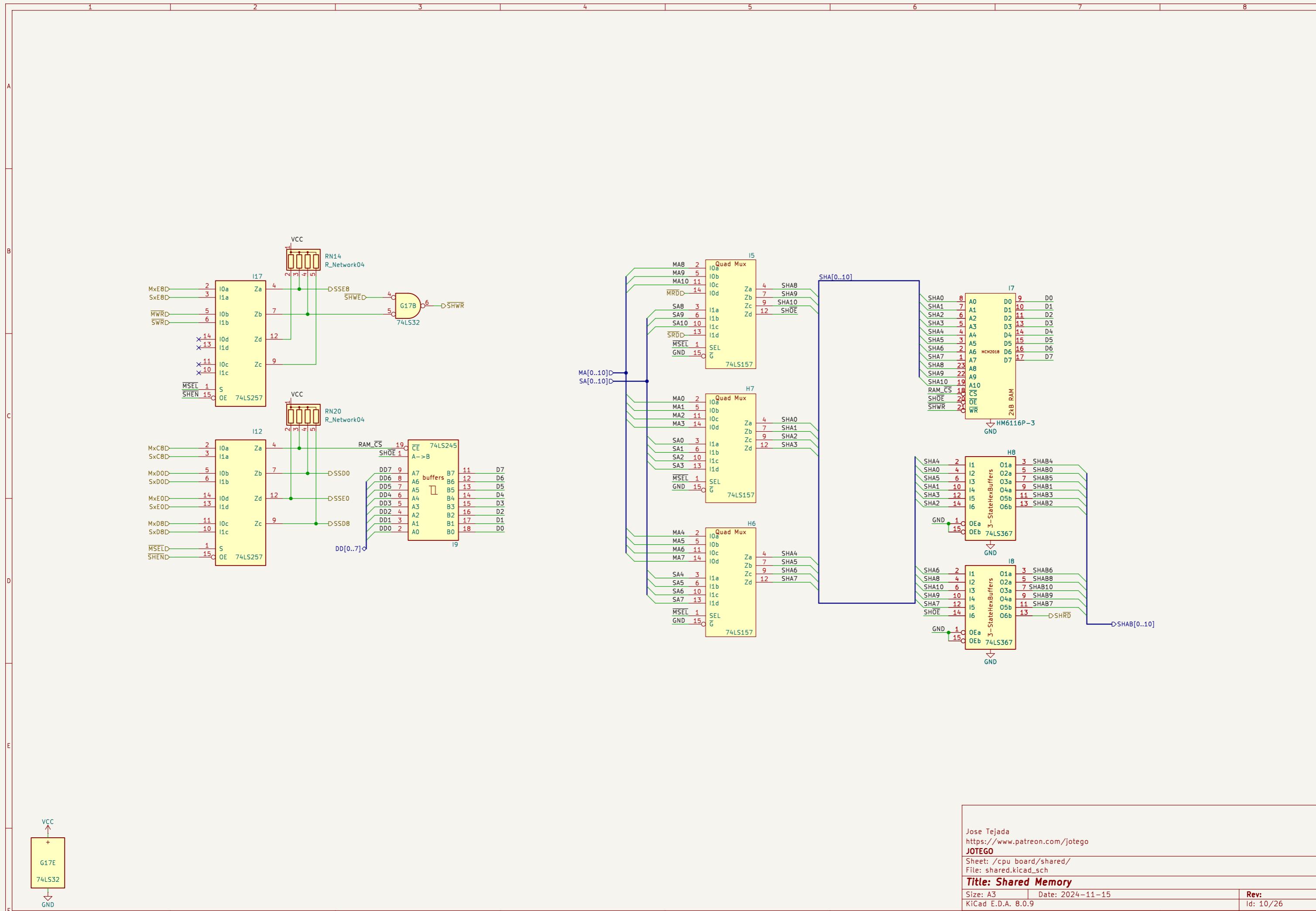
**Title: Line Buffer**

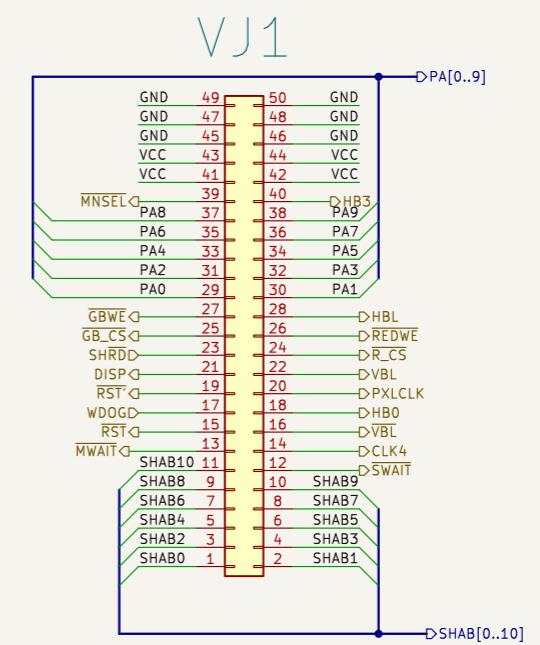
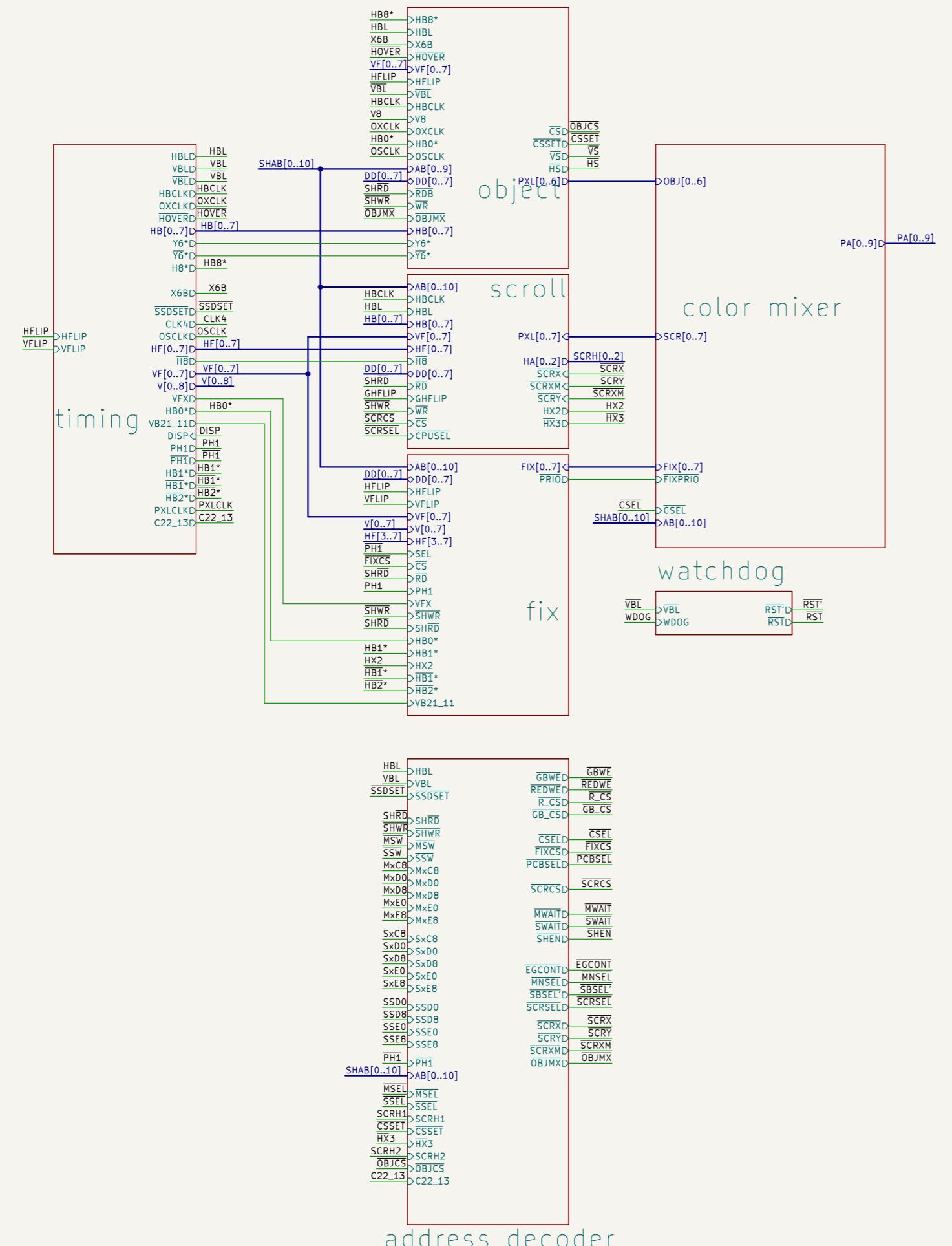
Size: A3 | Date: 2024-11-15  
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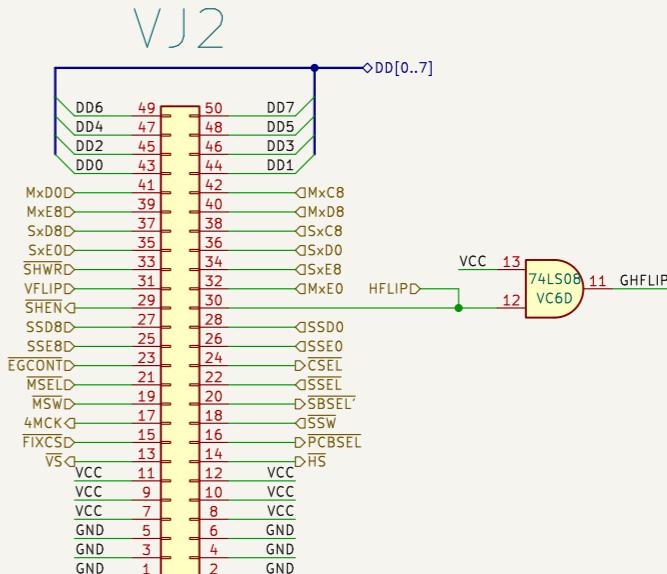






connectors  
to CPU board

/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)

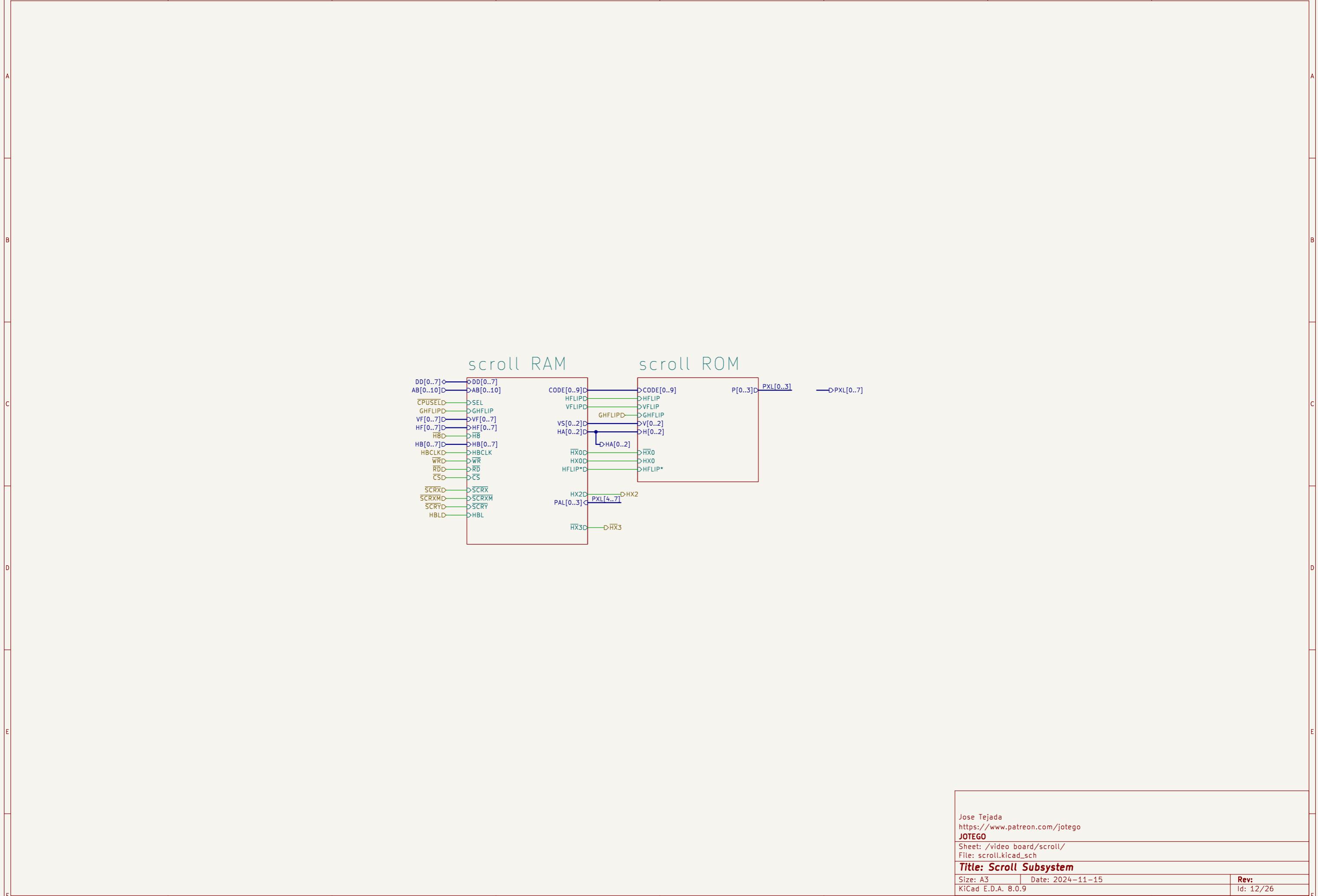
Size: A3 Date: 2024-11-15

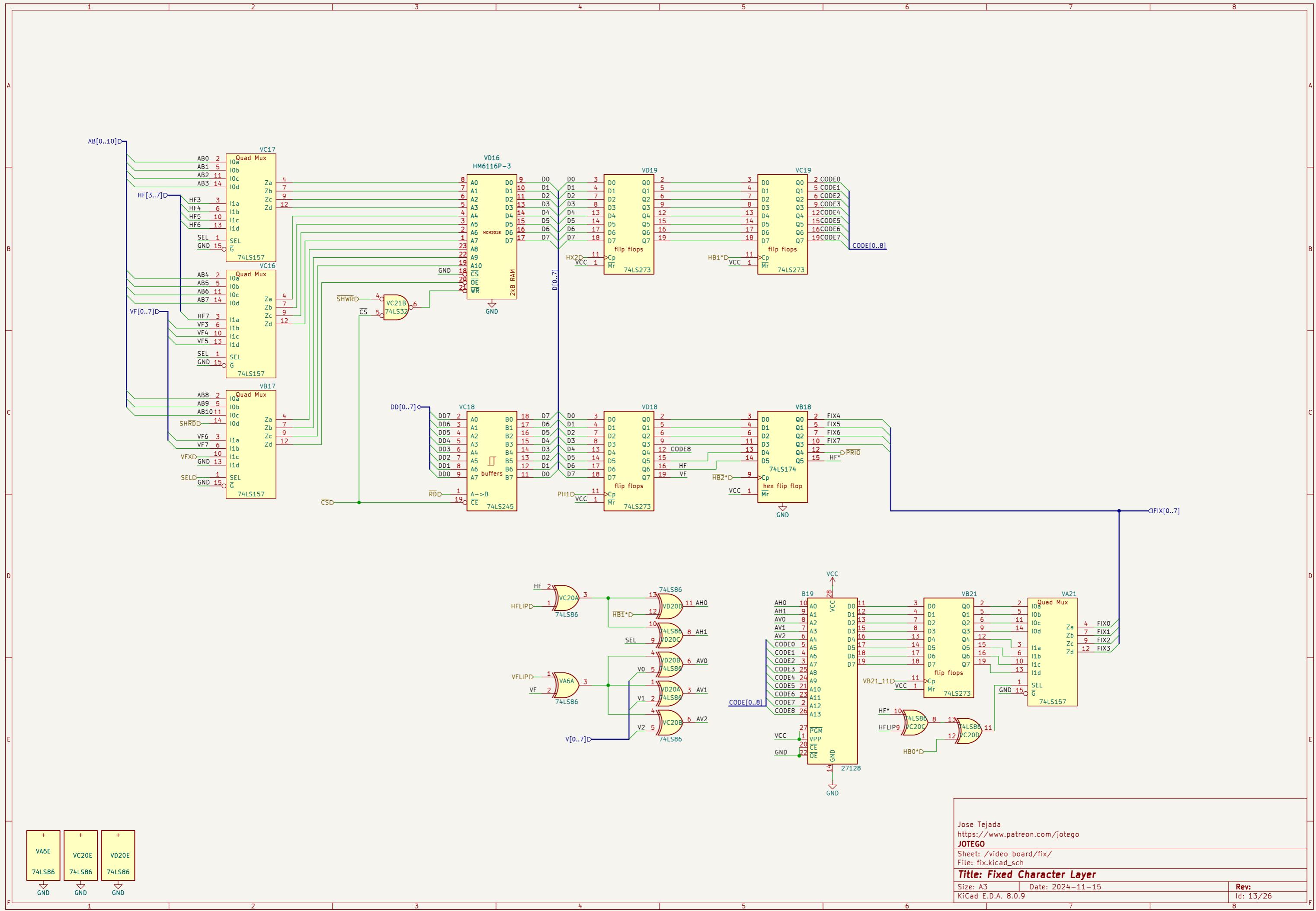
KiCad EDA 8.0.9

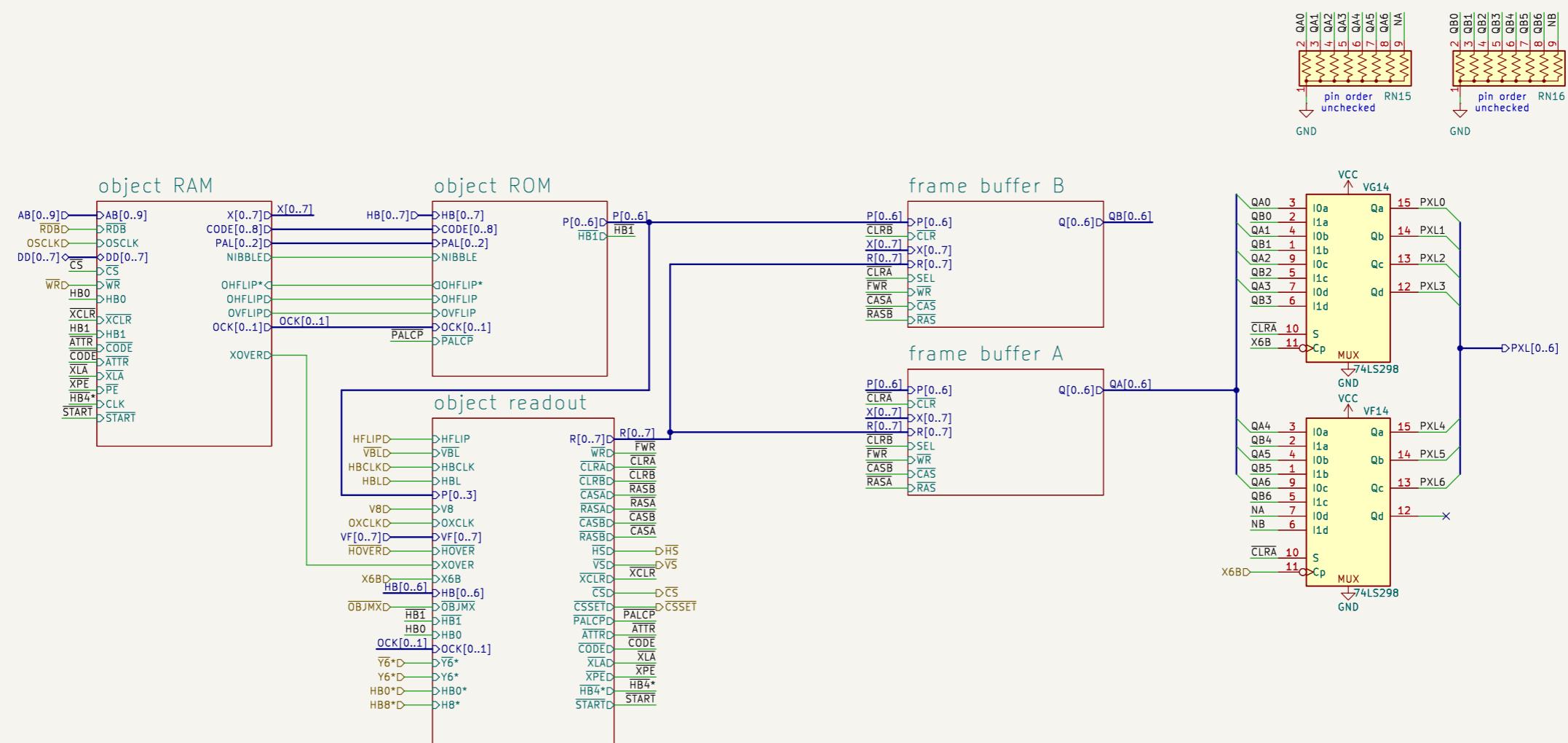
RICHARD E.D.A. 8.0.9

For more information about the study, please contact Dr. John Smith at (555) 123-4567 or via email at [john.smith@researchinstitute.org](mailto:john.smith@researchinstitute.org).

10. 11/20







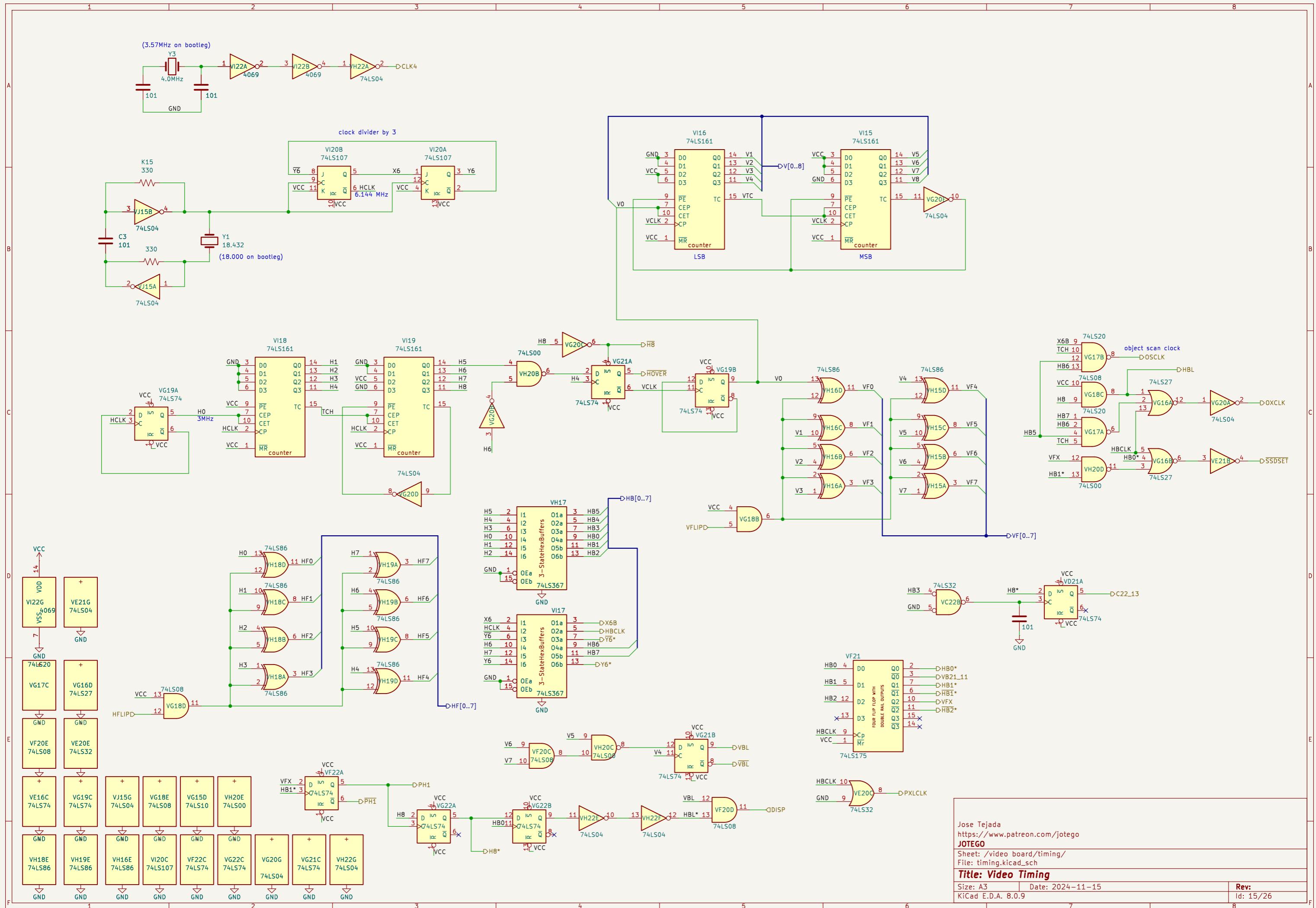
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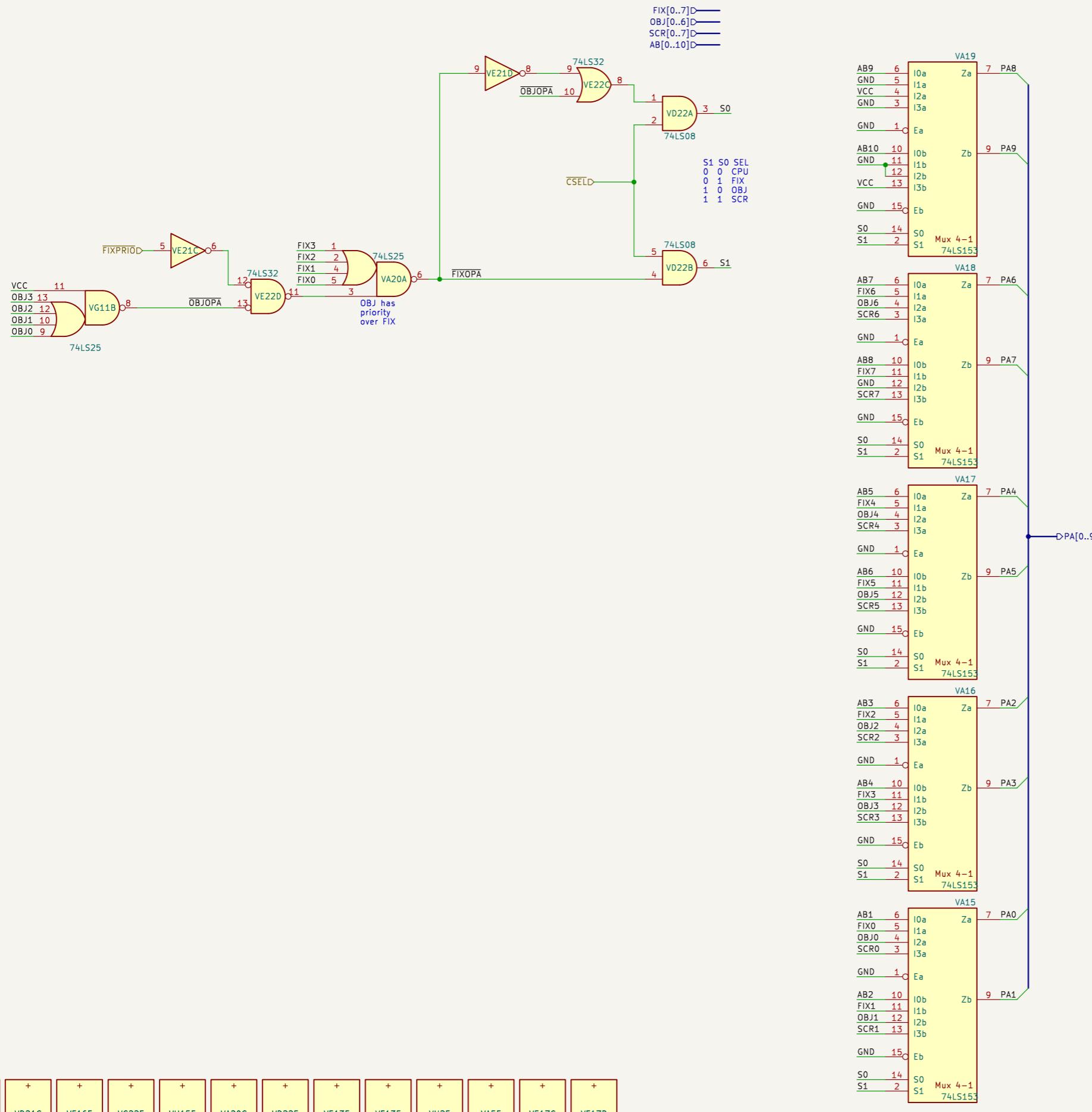
Sheet: /video board/object/  
File: object.kicad\_sch

**Title: Object Subsystem**

Size: A3 | Date: 2024-11-15  
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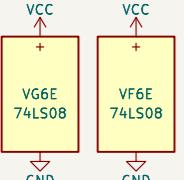
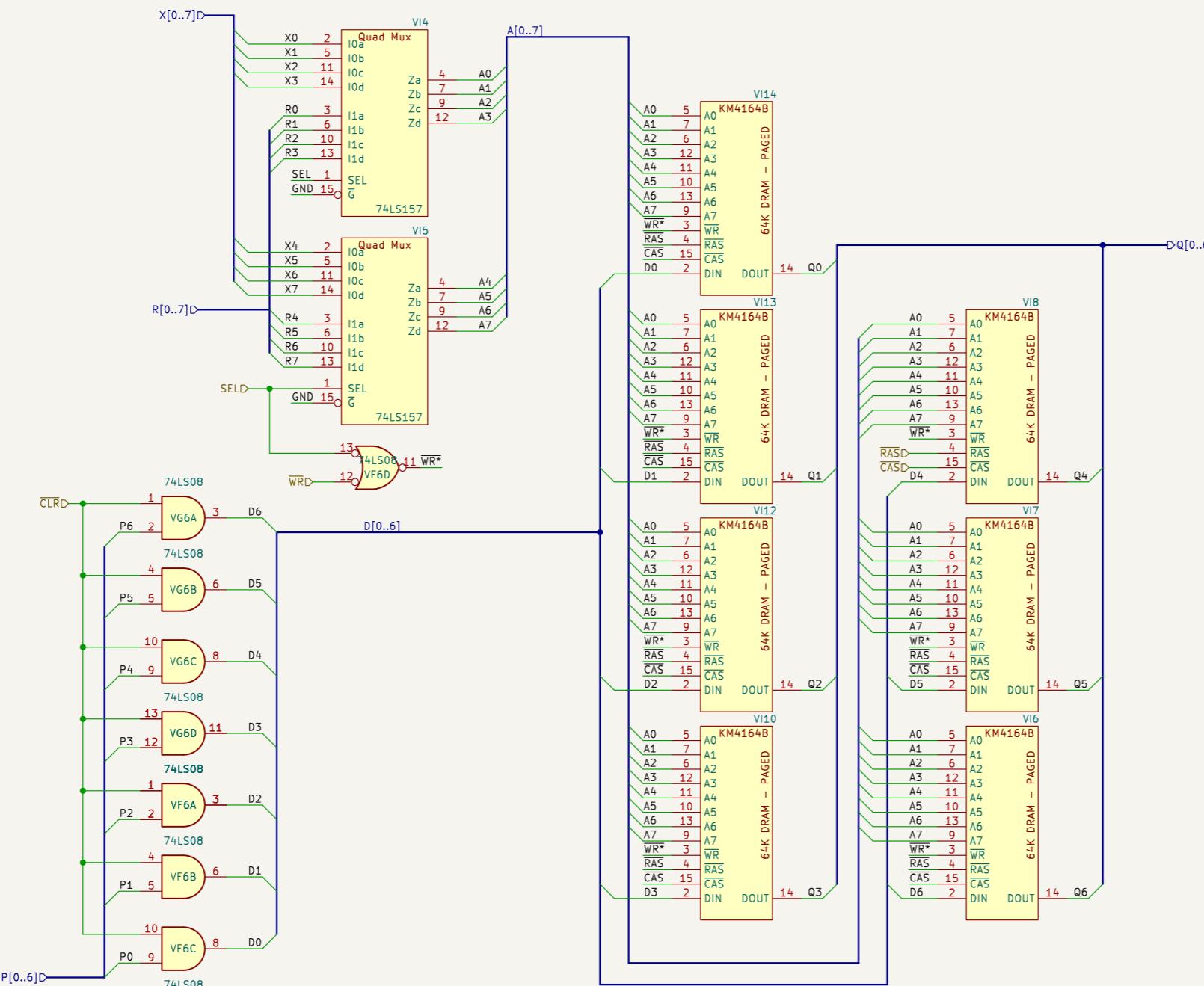
File: colmix.kicad\_sch

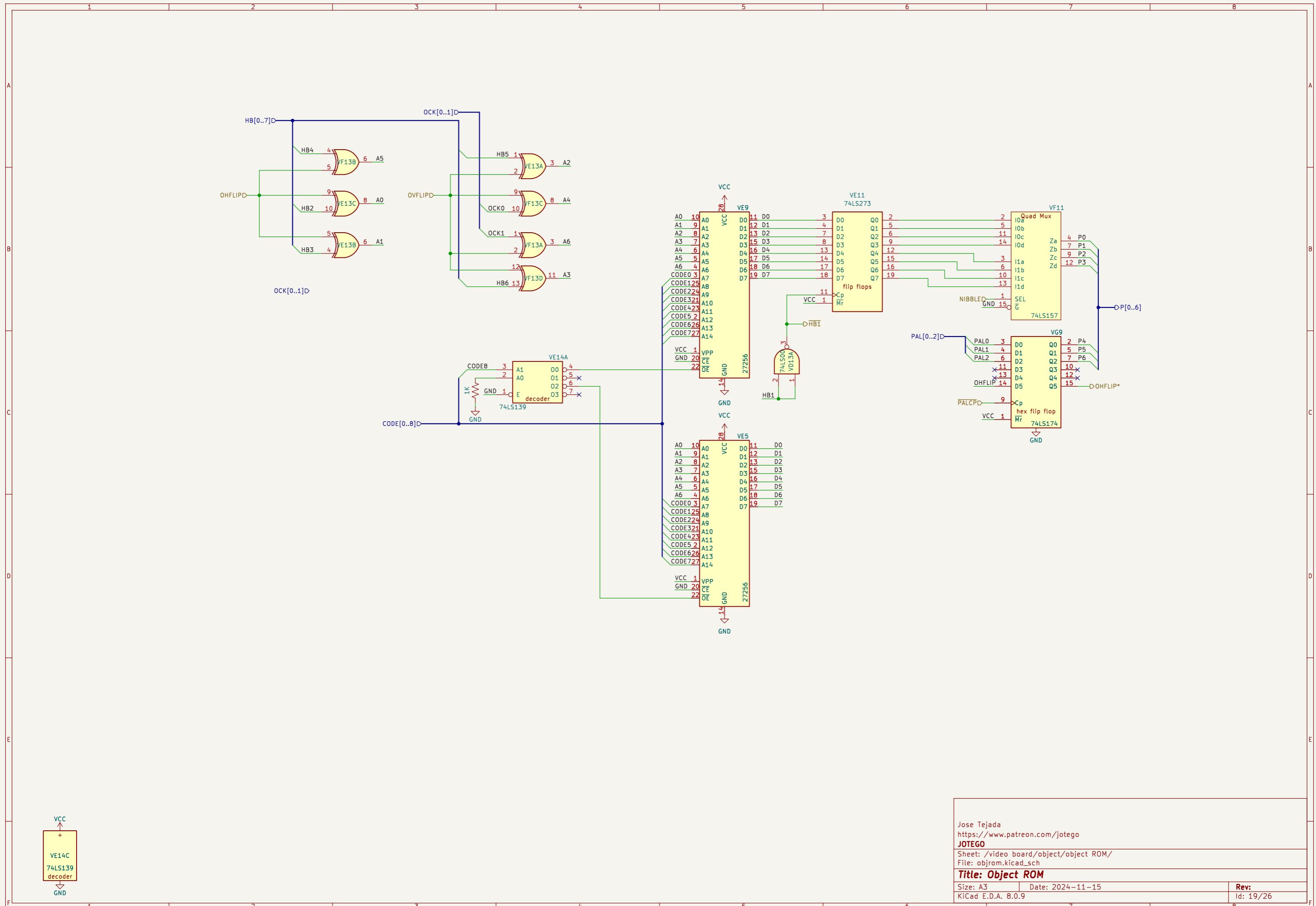
## **Title: Color mixer**

KiCad E.D.A. 8.0.9

KRISG E.D.W.G. 8.0.9

Digitized by srujanika@gmail.com





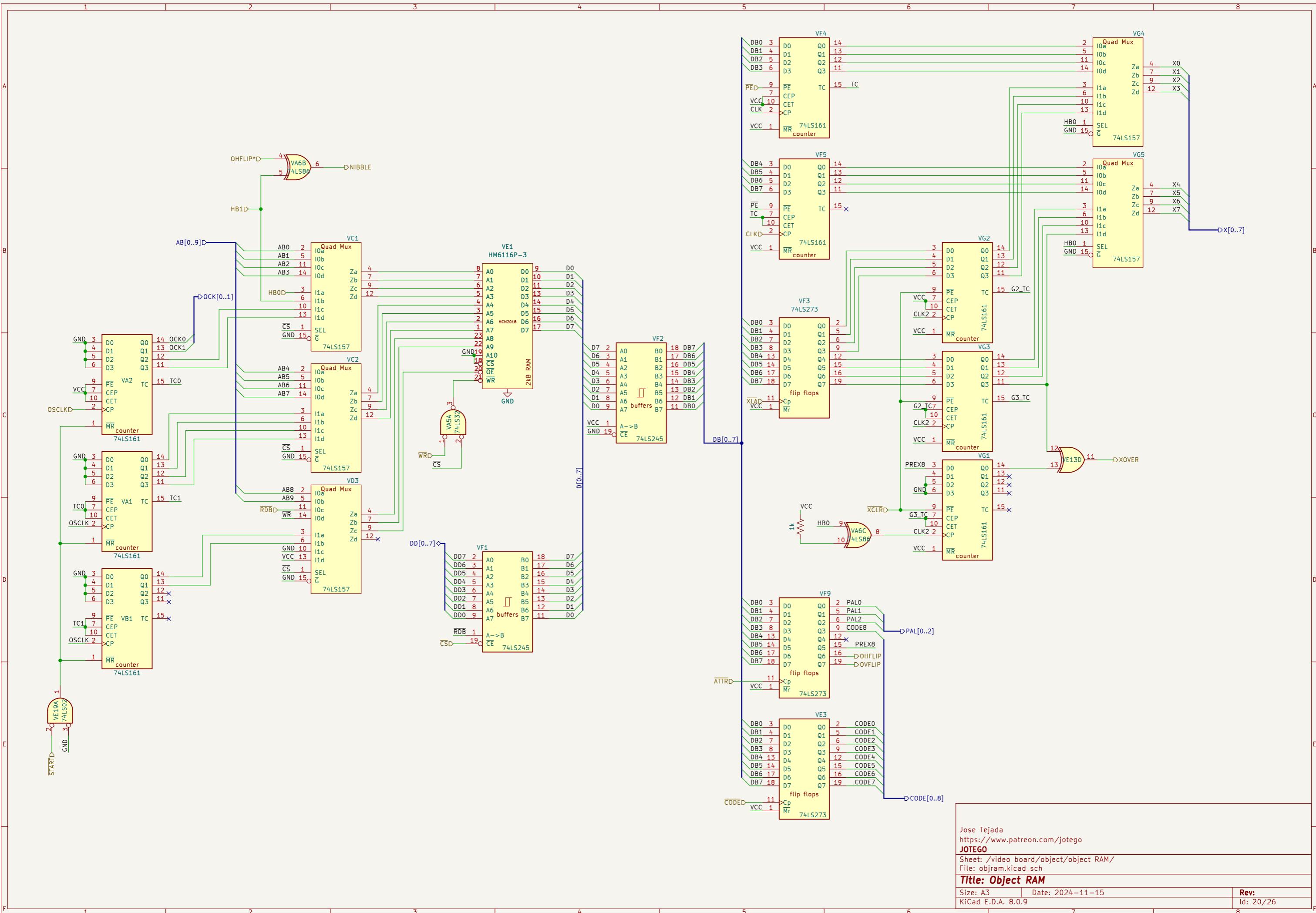
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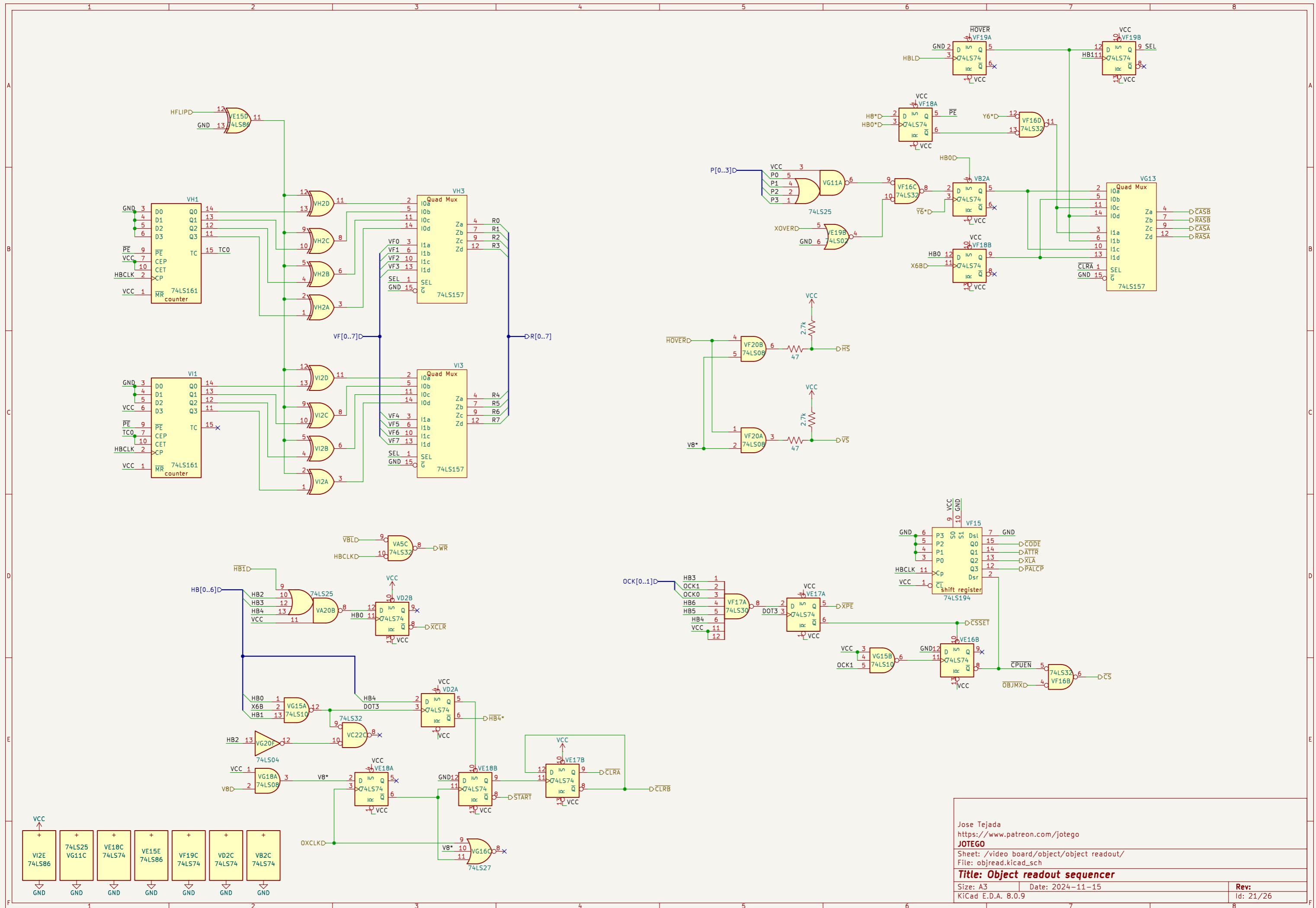
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File: objrom.kicad\_sch

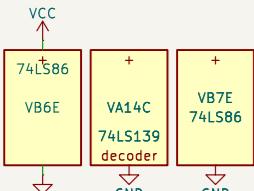
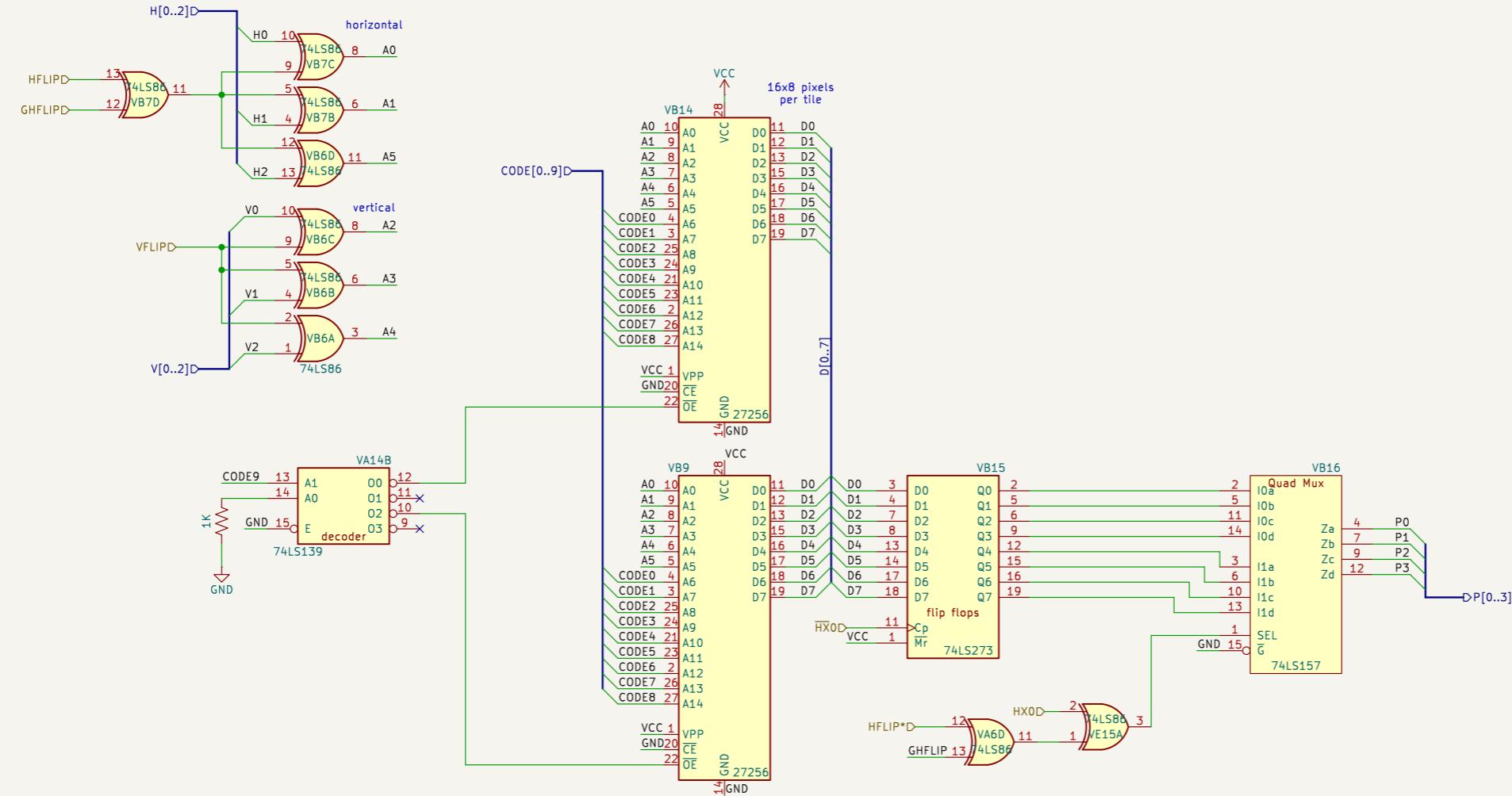
**Title: Object ROM**

Size: A3 | Date: 2024-11-15  
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Rev: Id: 19/26







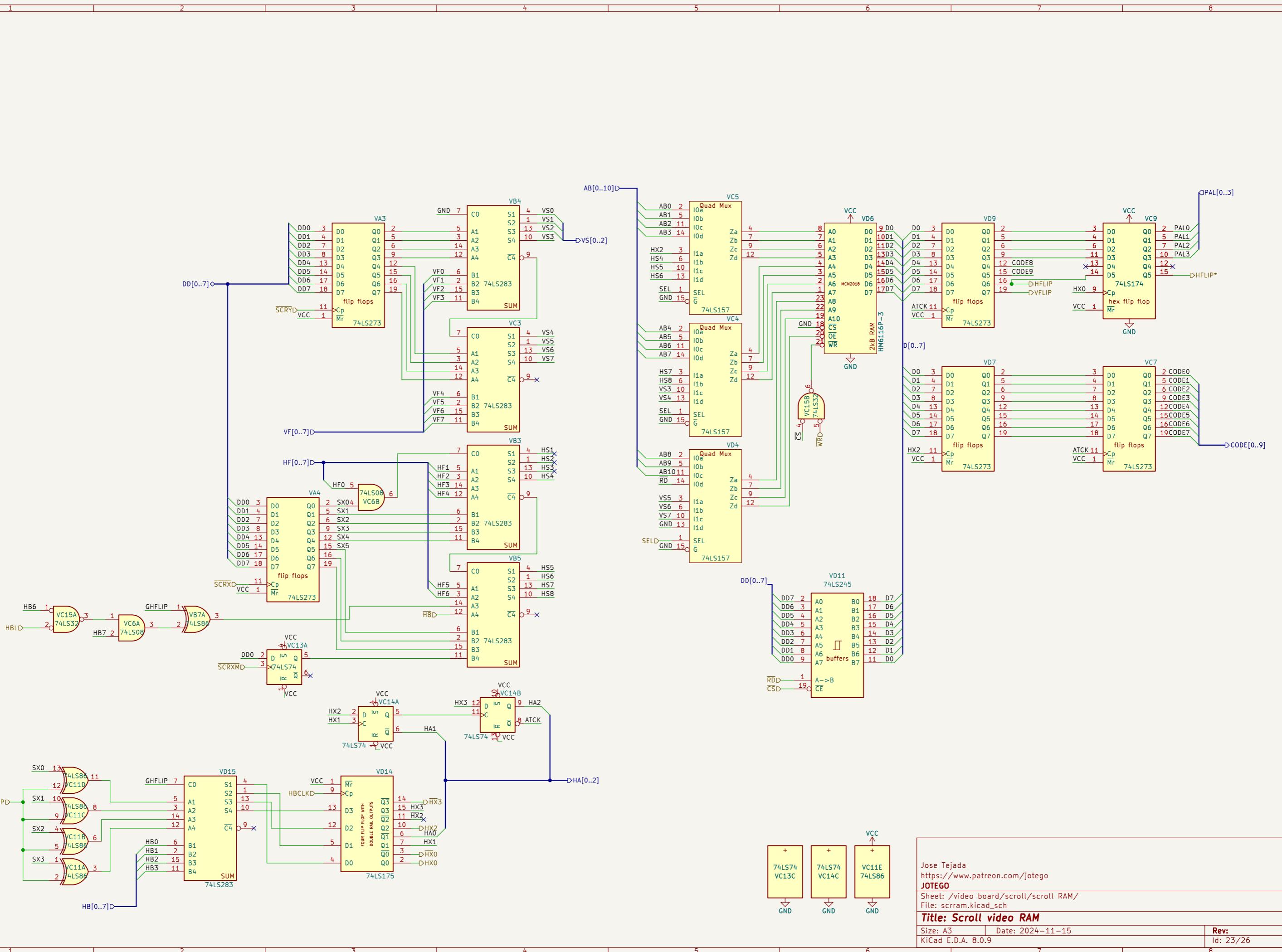
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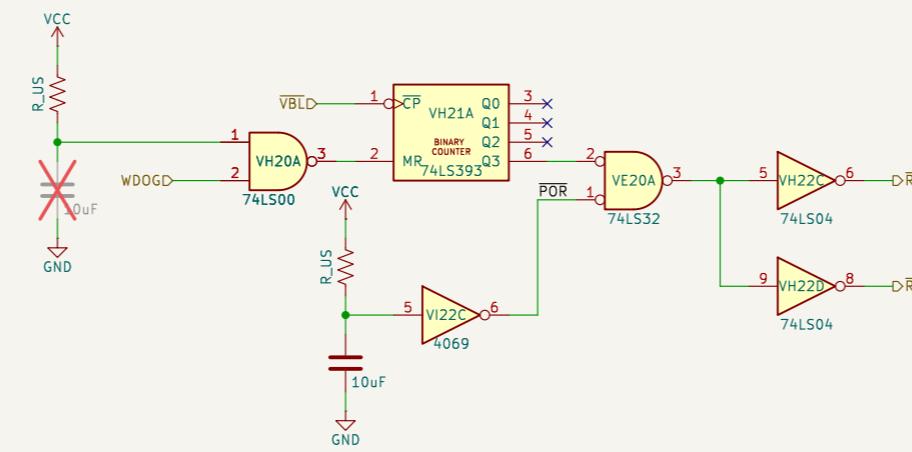
Sheet: /video board/scroll/scroll ROM/  
File: scrom.kicad\_sch

**Title: scroll ROM**

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

Rev:  
Id: 22/26





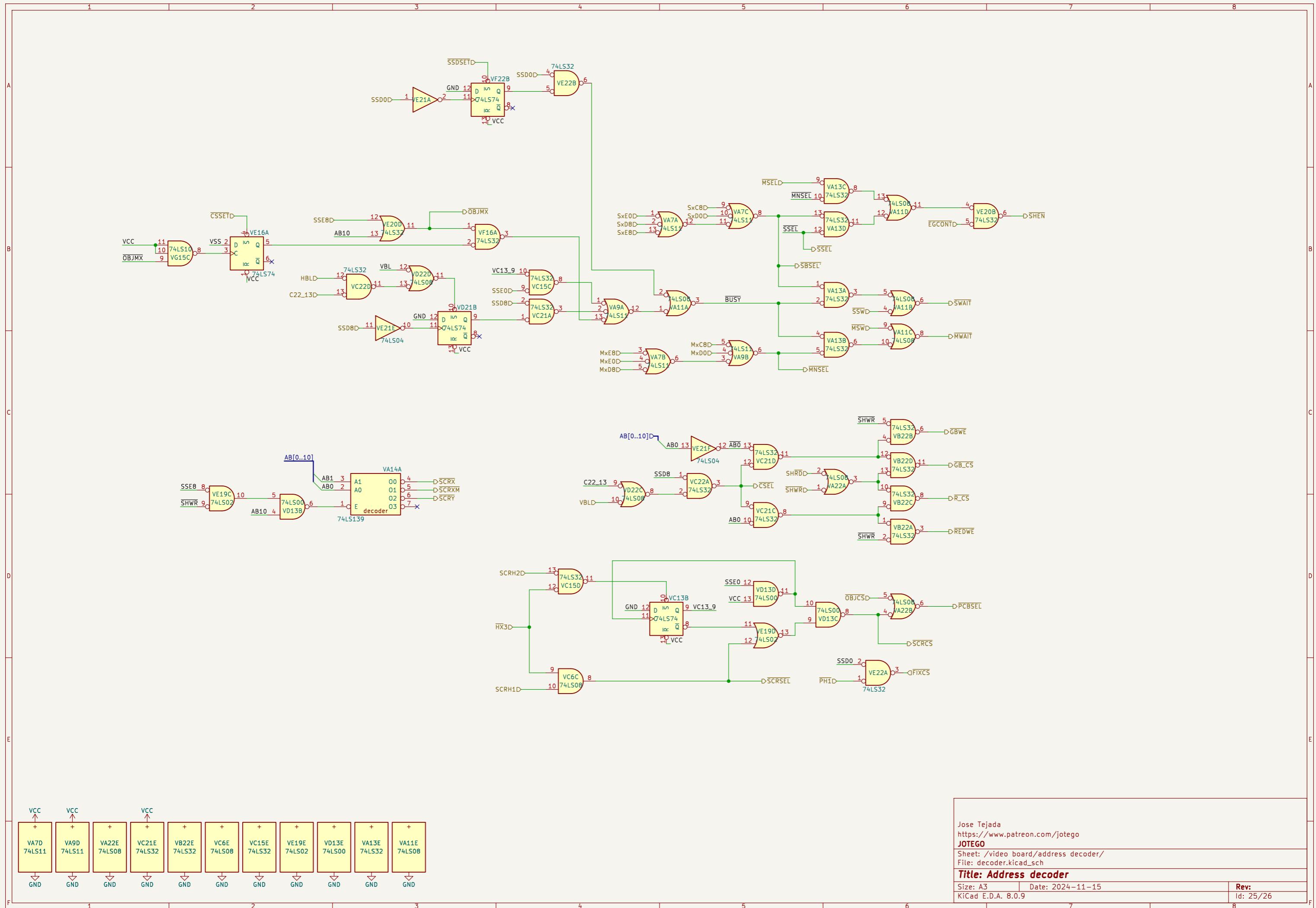
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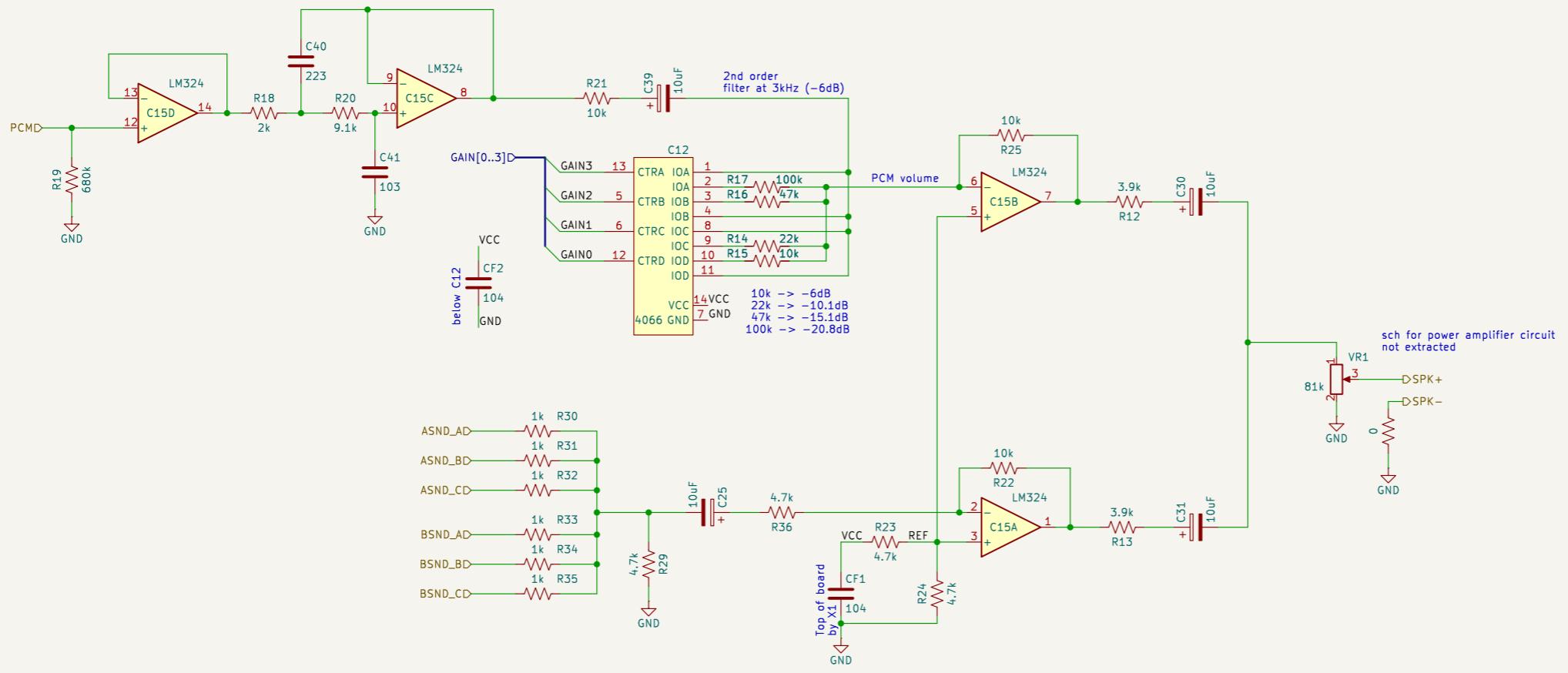
Sheet: /video\_board/watchdog/  
File: watchdog.kicad\_sch

## Title: Watchdog Circuit

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

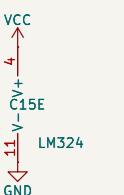
Rev: Id: 24/26





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.



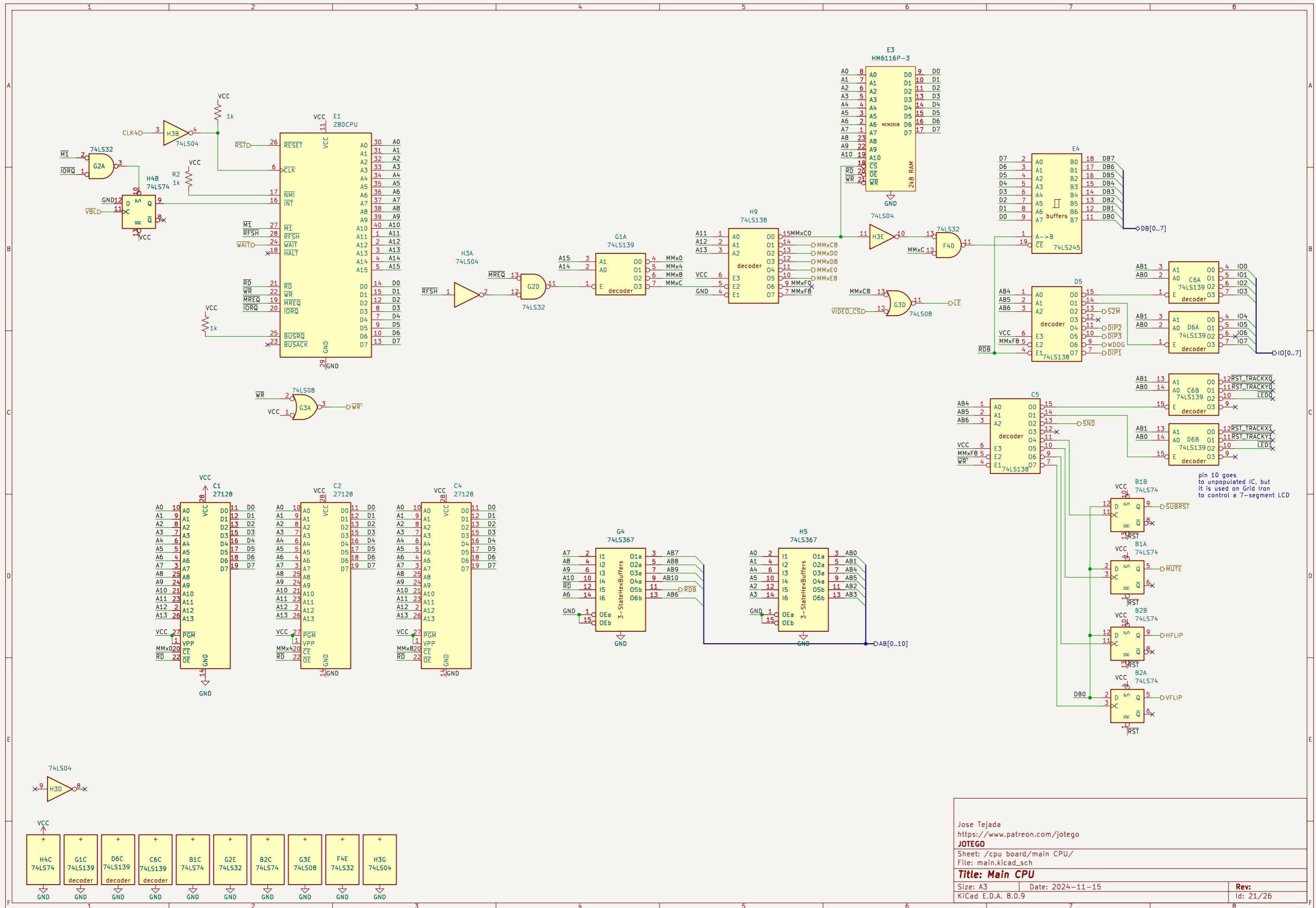
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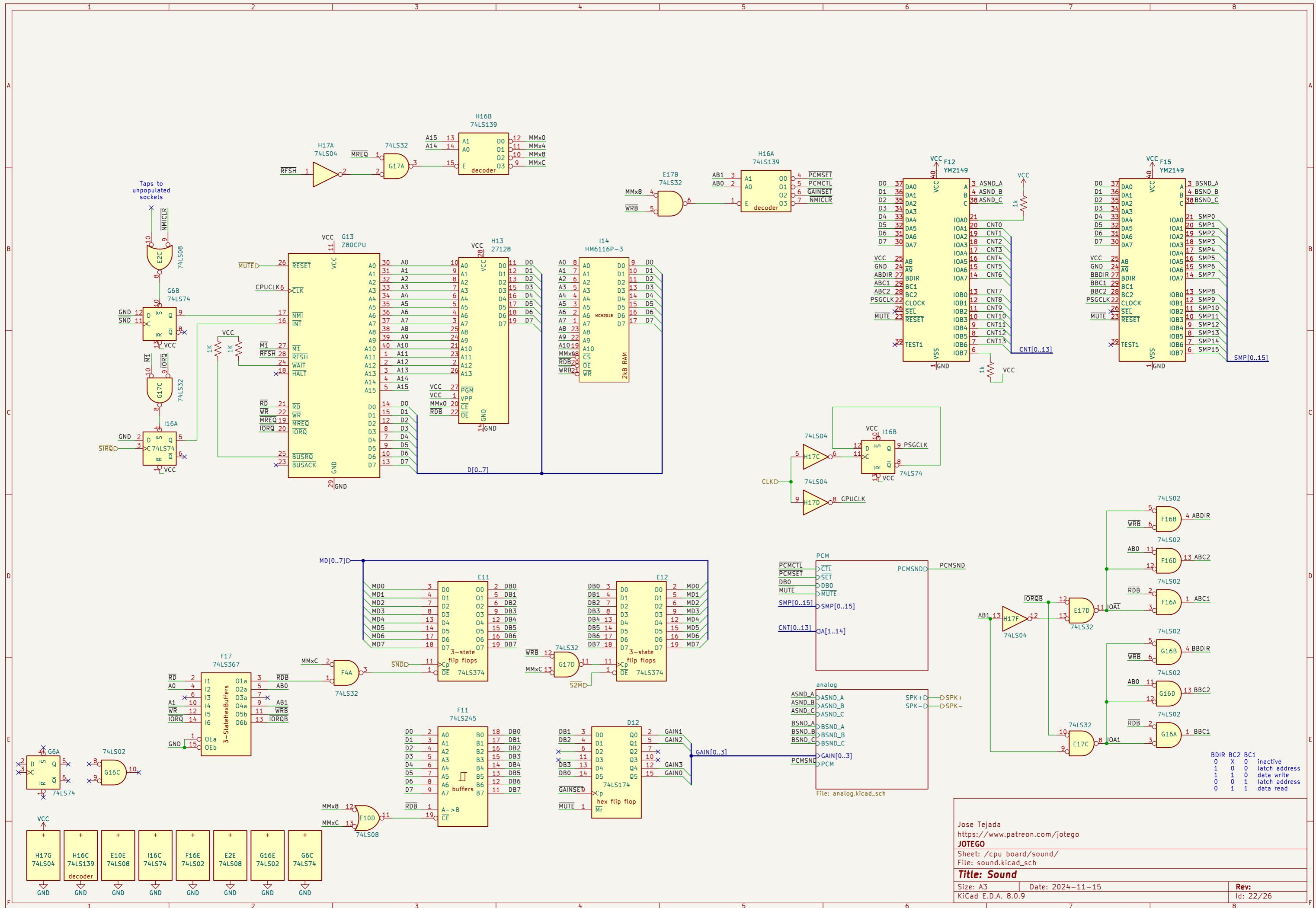
Sheet: /cpu board/sound/analog/  
File: analog.kicad\_sch

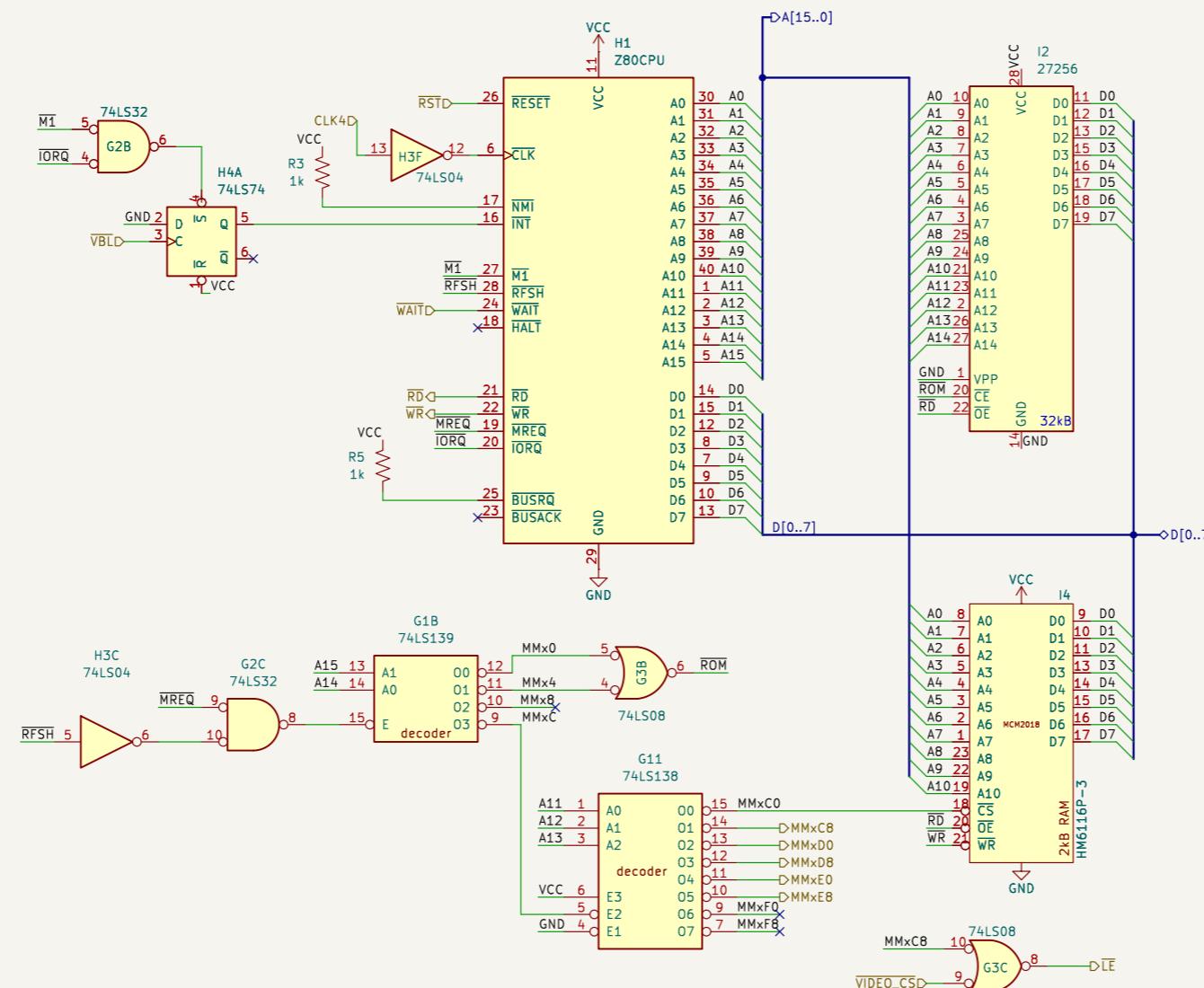
**Title: Sound amplifiers**

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

Rev: | Id: 26/26







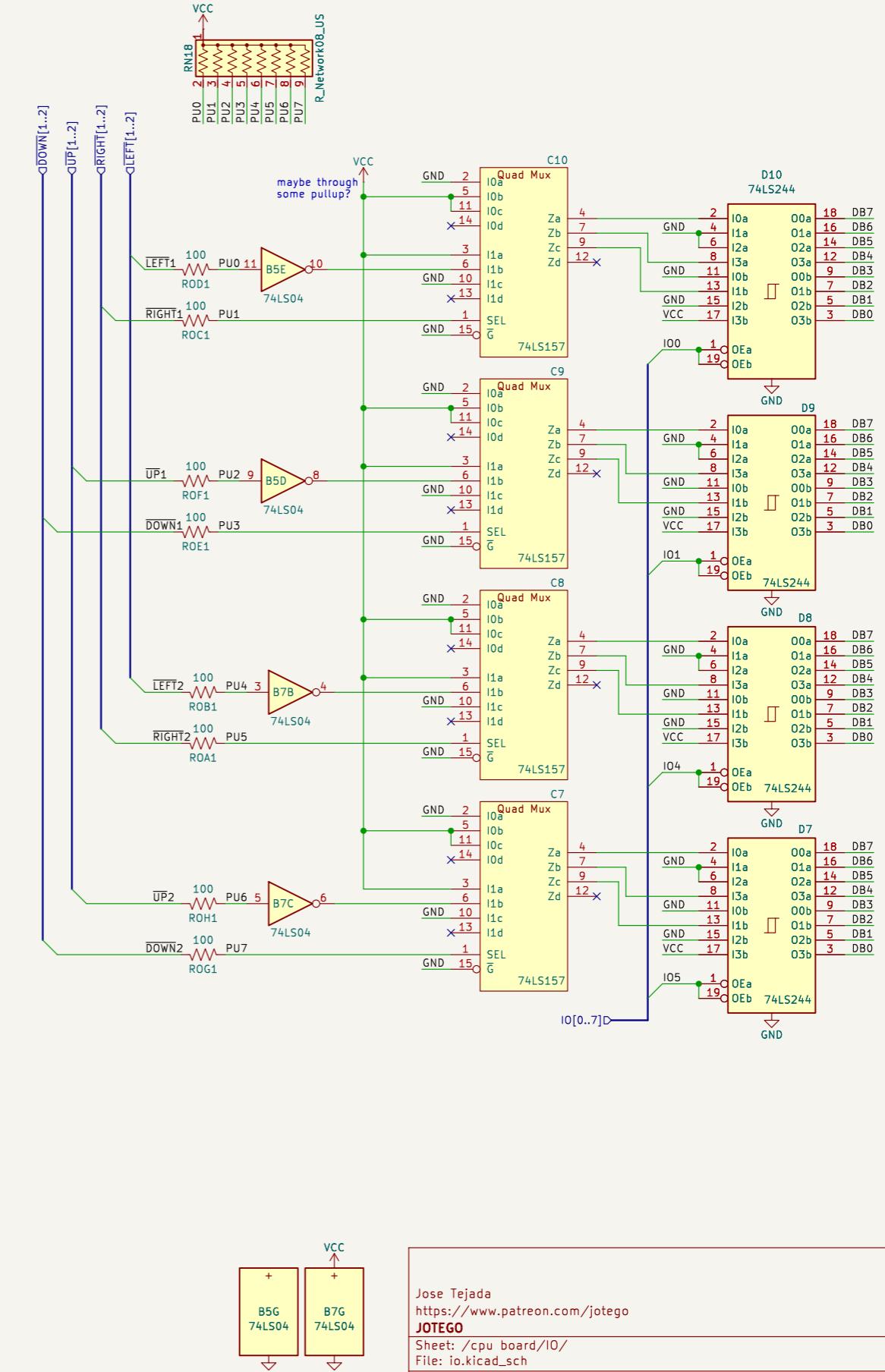
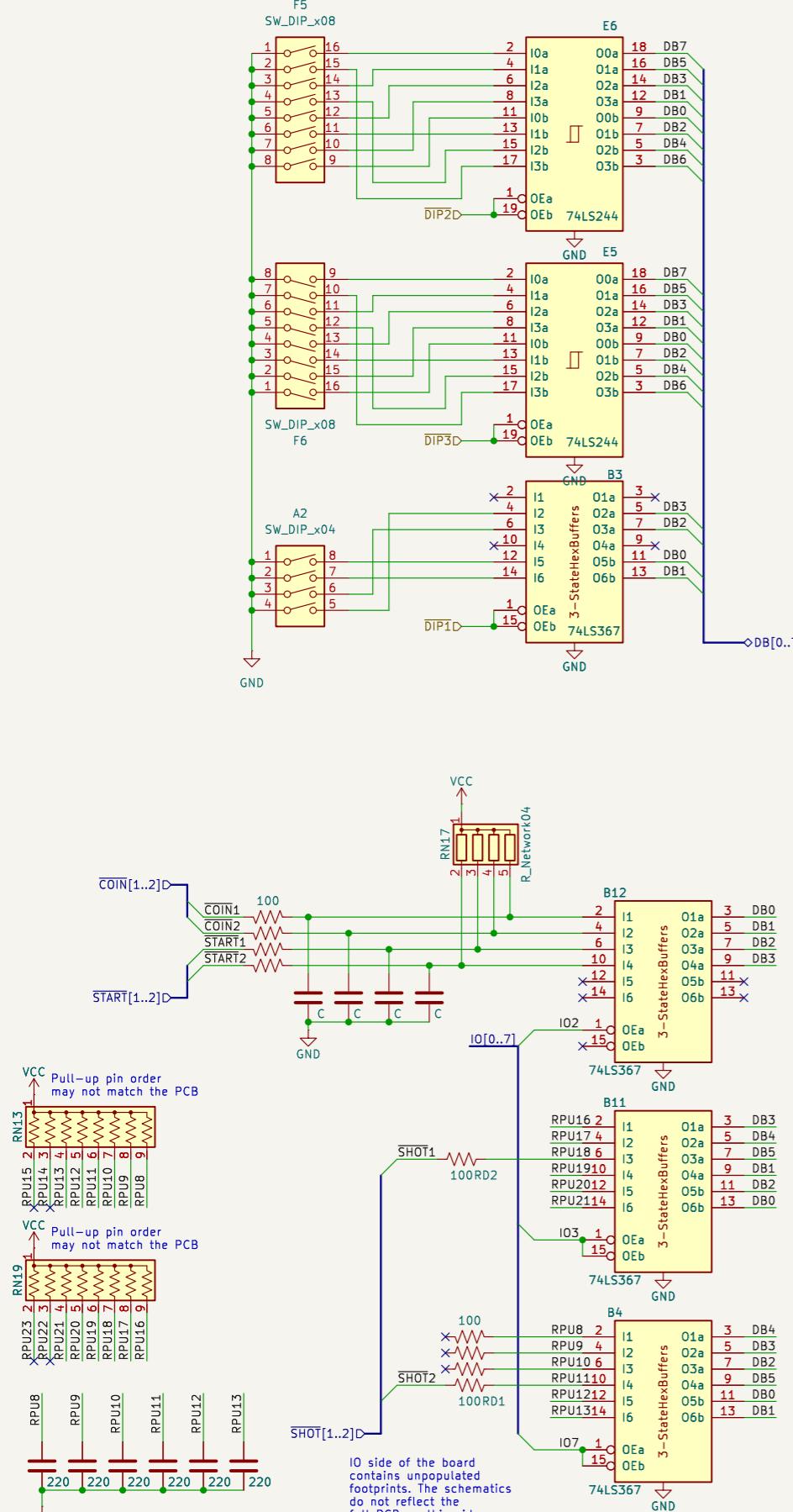
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Sheet: /cpu board/sub CPU/  
File: subcpu.kicad\_sch

**Title: Subordinate CPU**

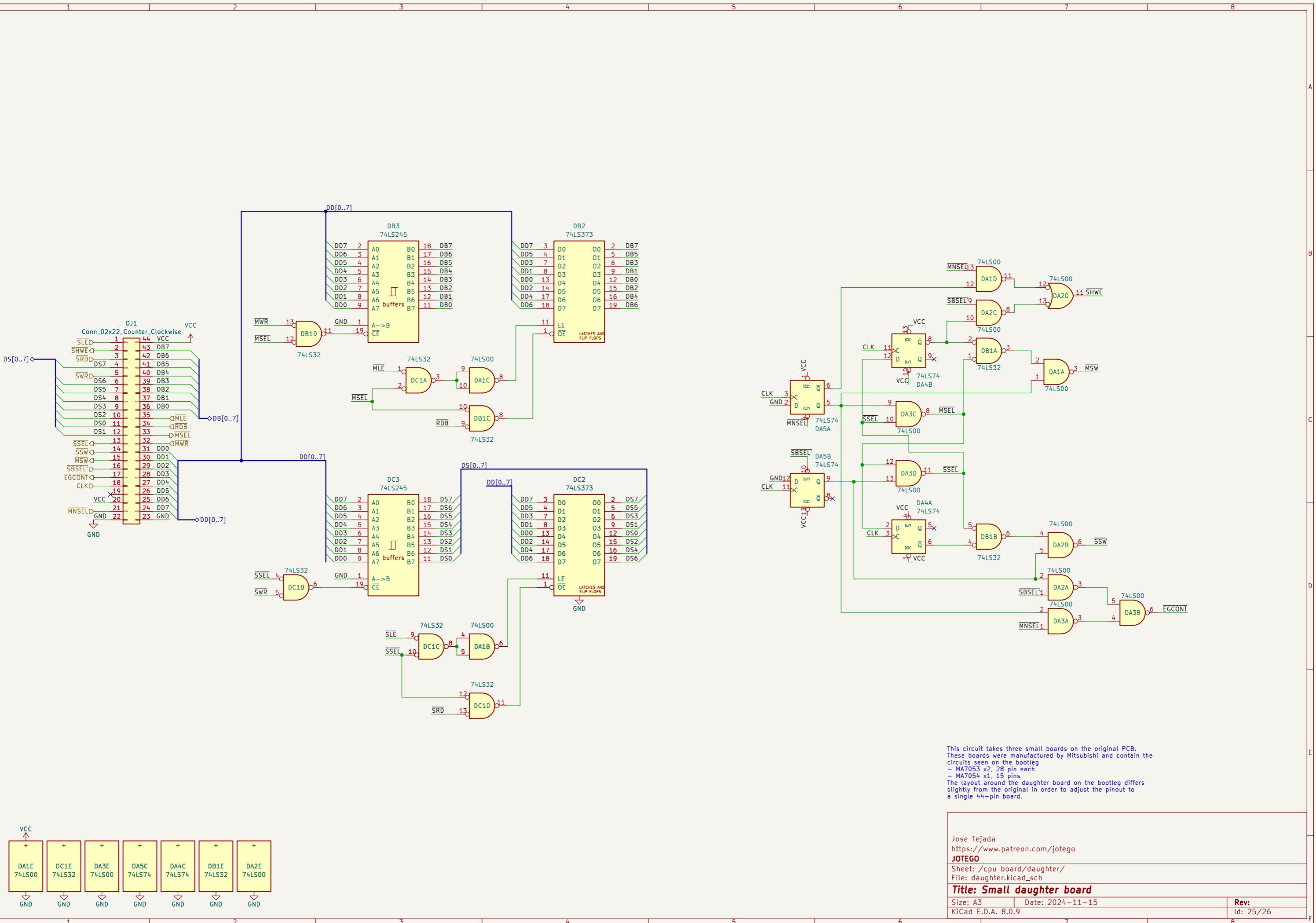
Size: A3 | Date: 2024-11-15  
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Rev:  
Id: 23/26



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Sheet: /cpu\_board/10/  
File: io.kicad\_sch



This circuit takes three small boards on the original PCB.  
 These boards were manufactured by Mitsubishi and contain the circuits seen on the bootleg  
 - MA7054 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.

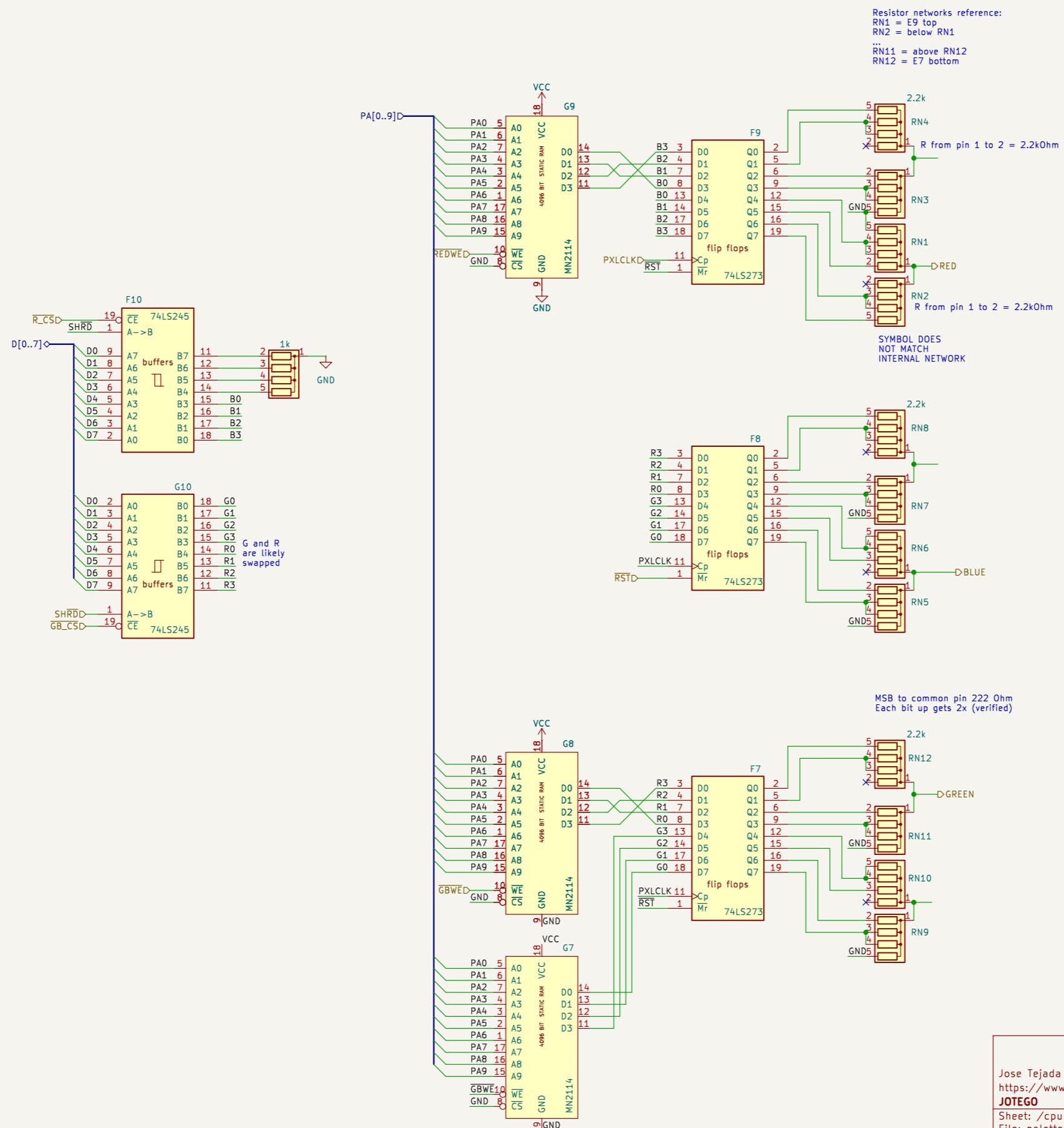
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Sheet: /cpu\_board/daughter/  
 File: daughter.kicad\_sch

**Title: Small daughter board**

Size: A3 | Date: 2024-11-15  
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Rev: 25/26



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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: #/26