

A

B

C

D

E

A

B

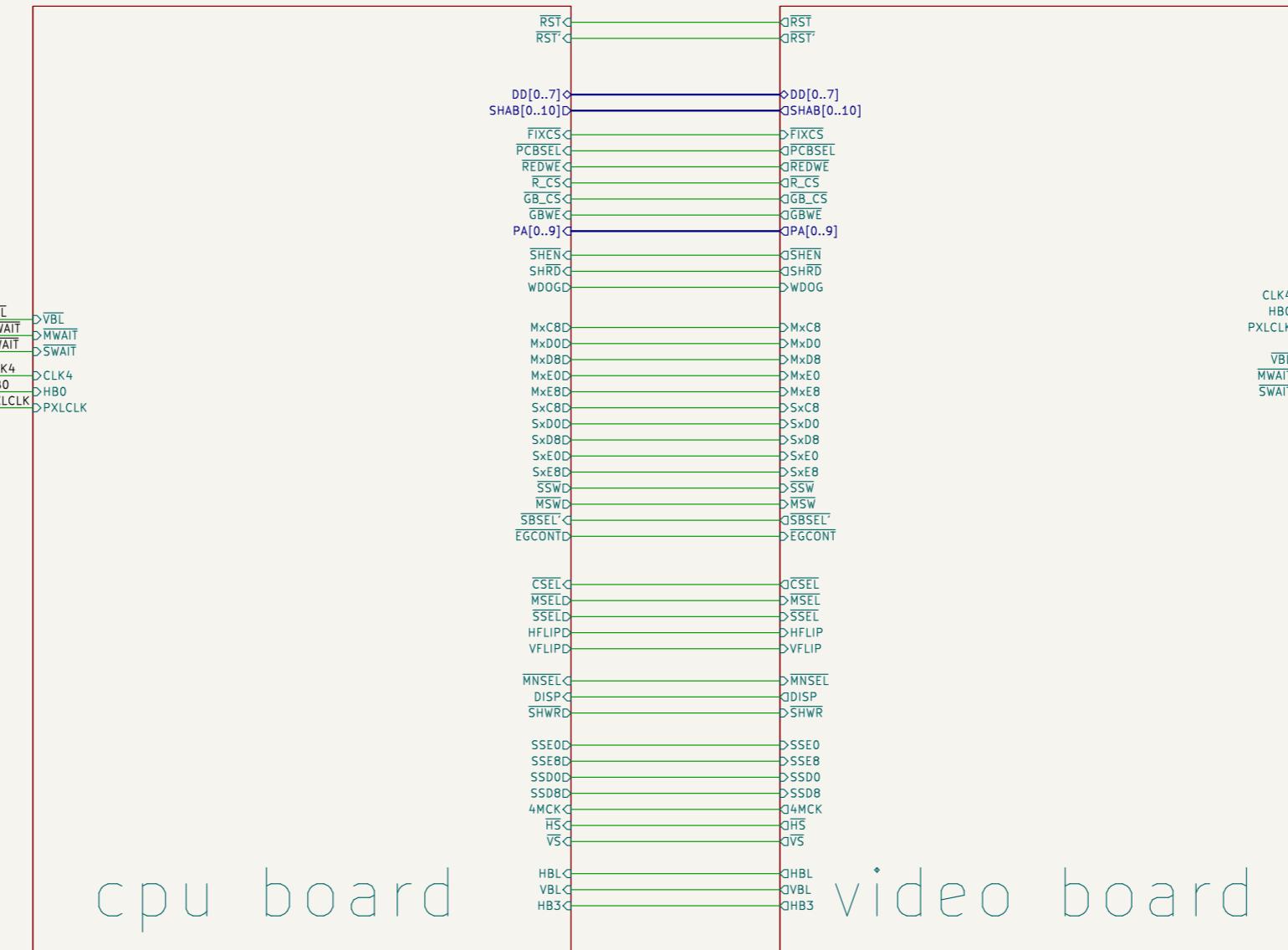
C

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



Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

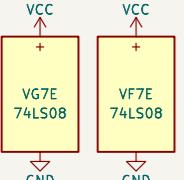
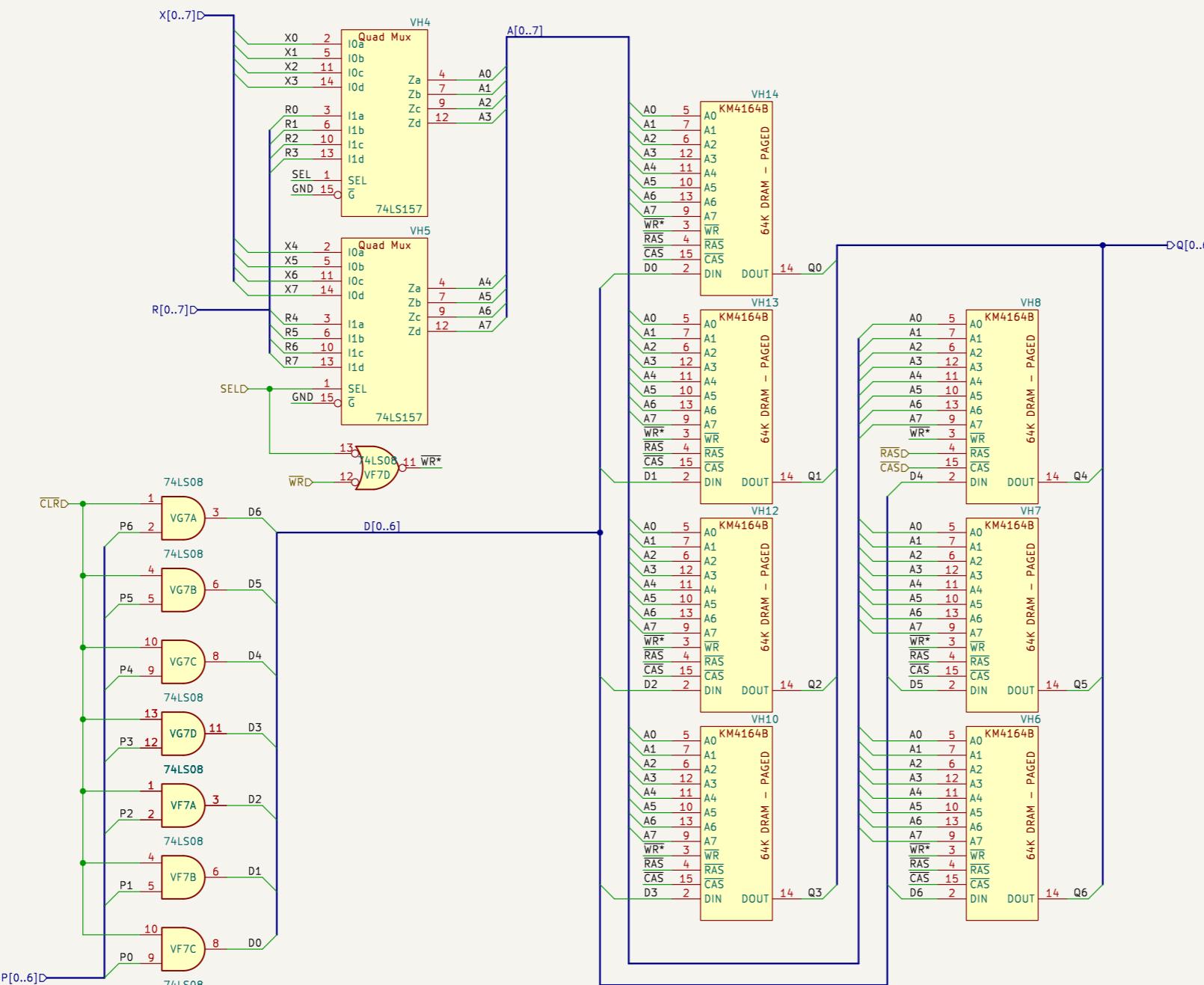
Sheet: /  
File: tehkanwch.kicad\_sch

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

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



Rev:  
Id: 1/26



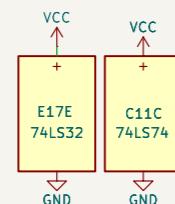
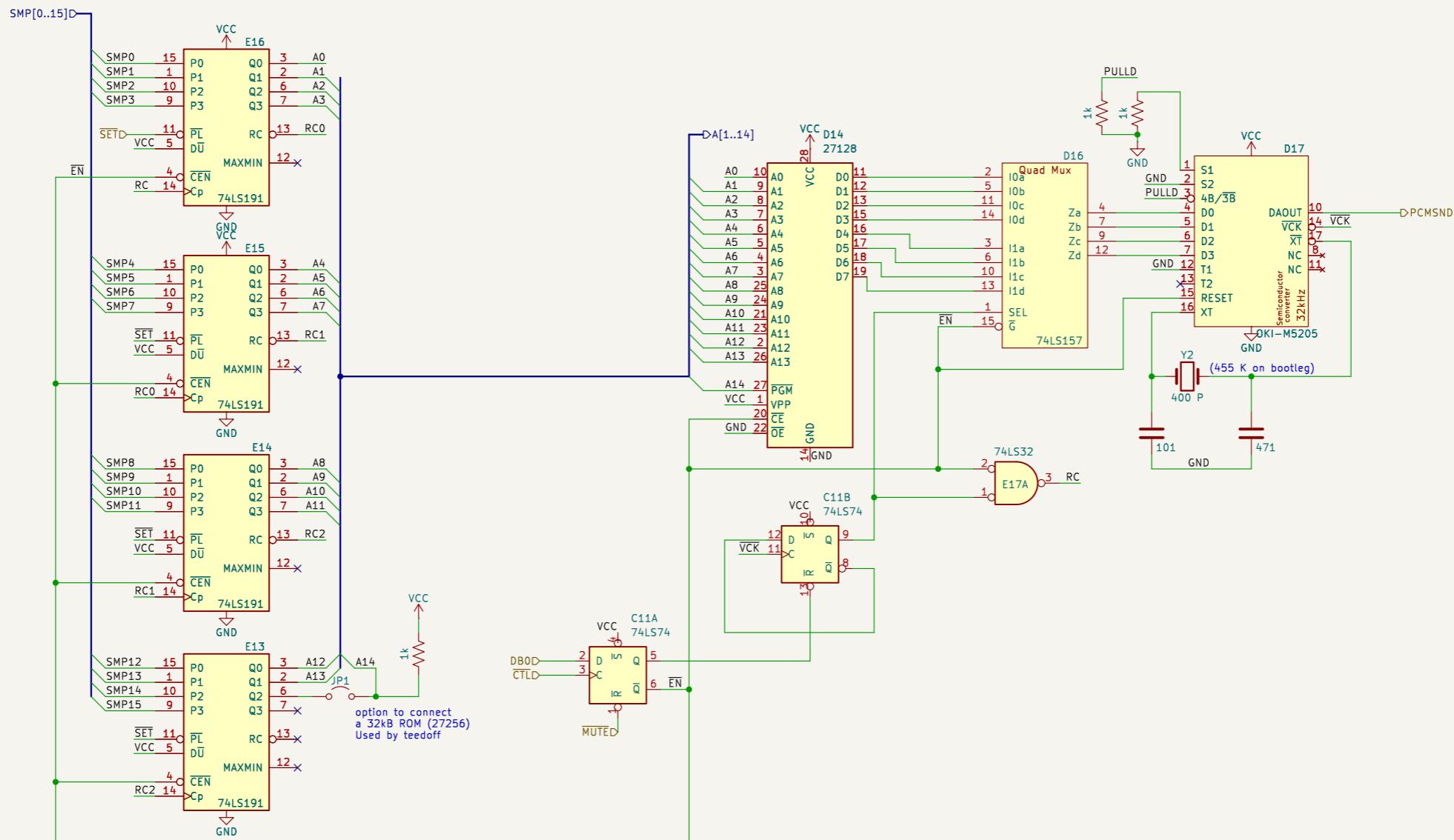
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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

Rev: 2/26



Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

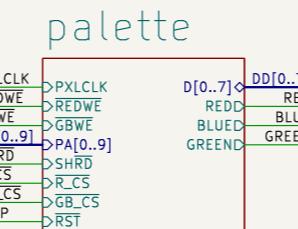
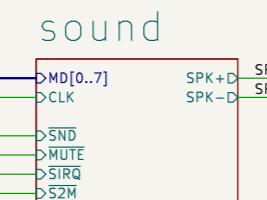
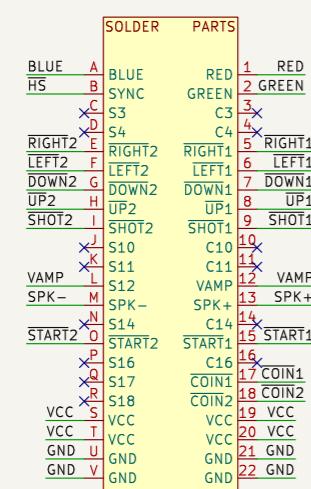
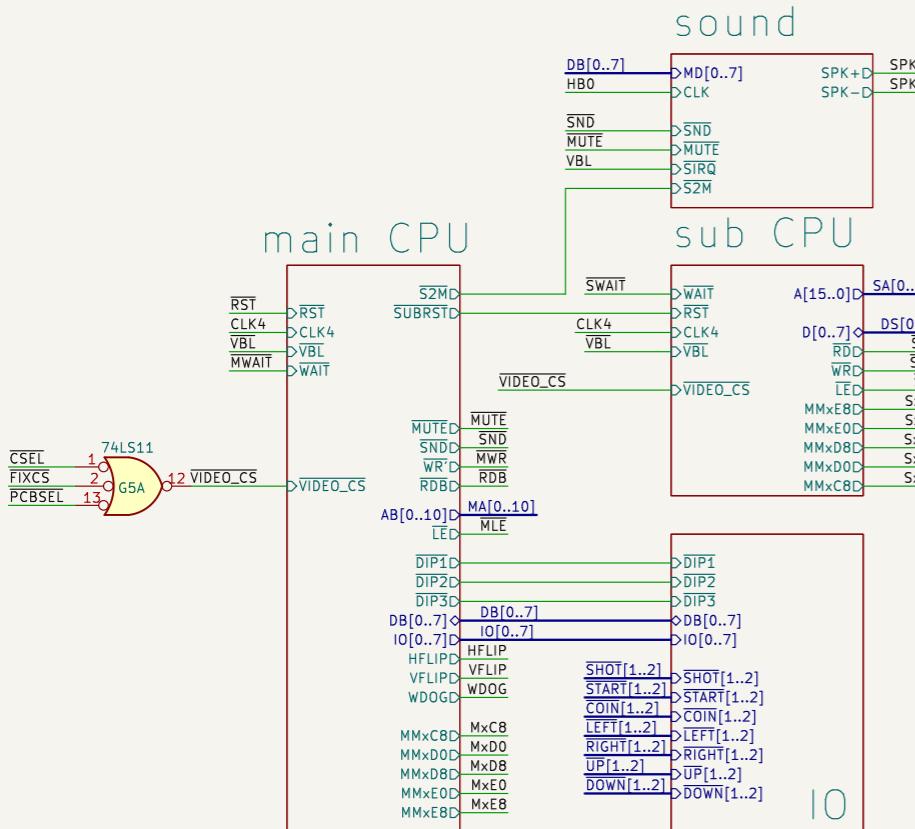
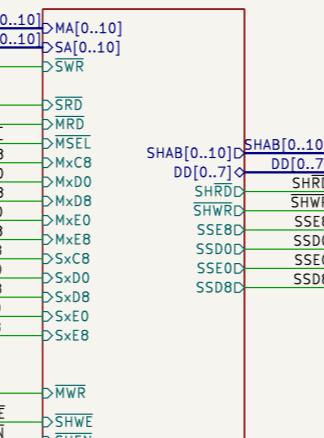
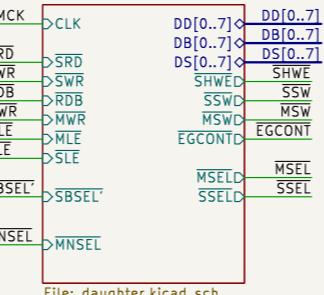
Sheet: /cpu\_board/sound/PCM/  
File: pcm.kicad\_sch

**Title: PCM**

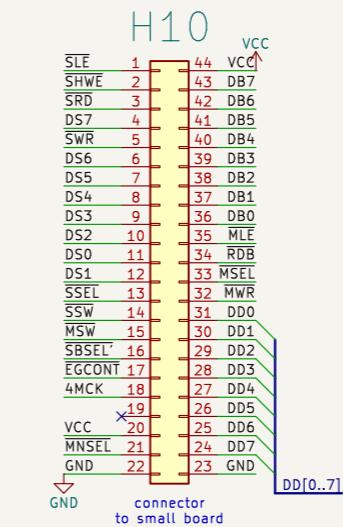
Size: A3 Date: 2024-11-15  
KiCad E.D.A. 8.0.9

Rev: Id: 5/26

A

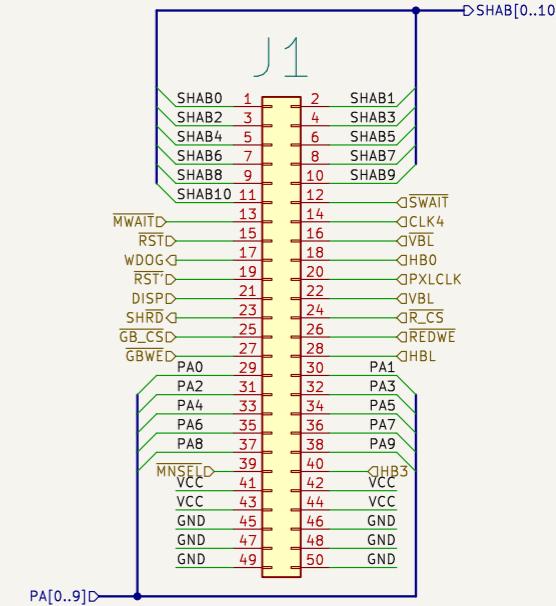
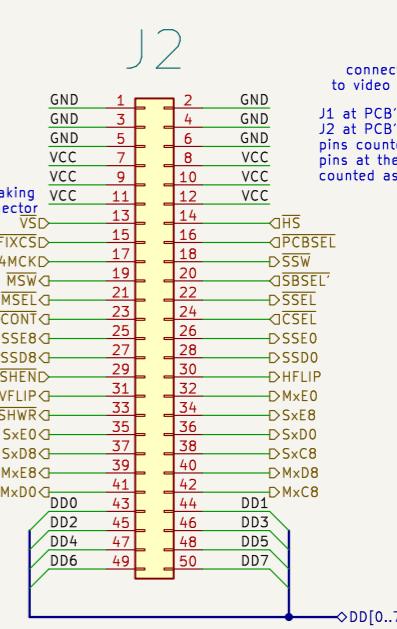
**shared****daughter**

File: daughter.kicad\_sch



GND connector to small board

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



Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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

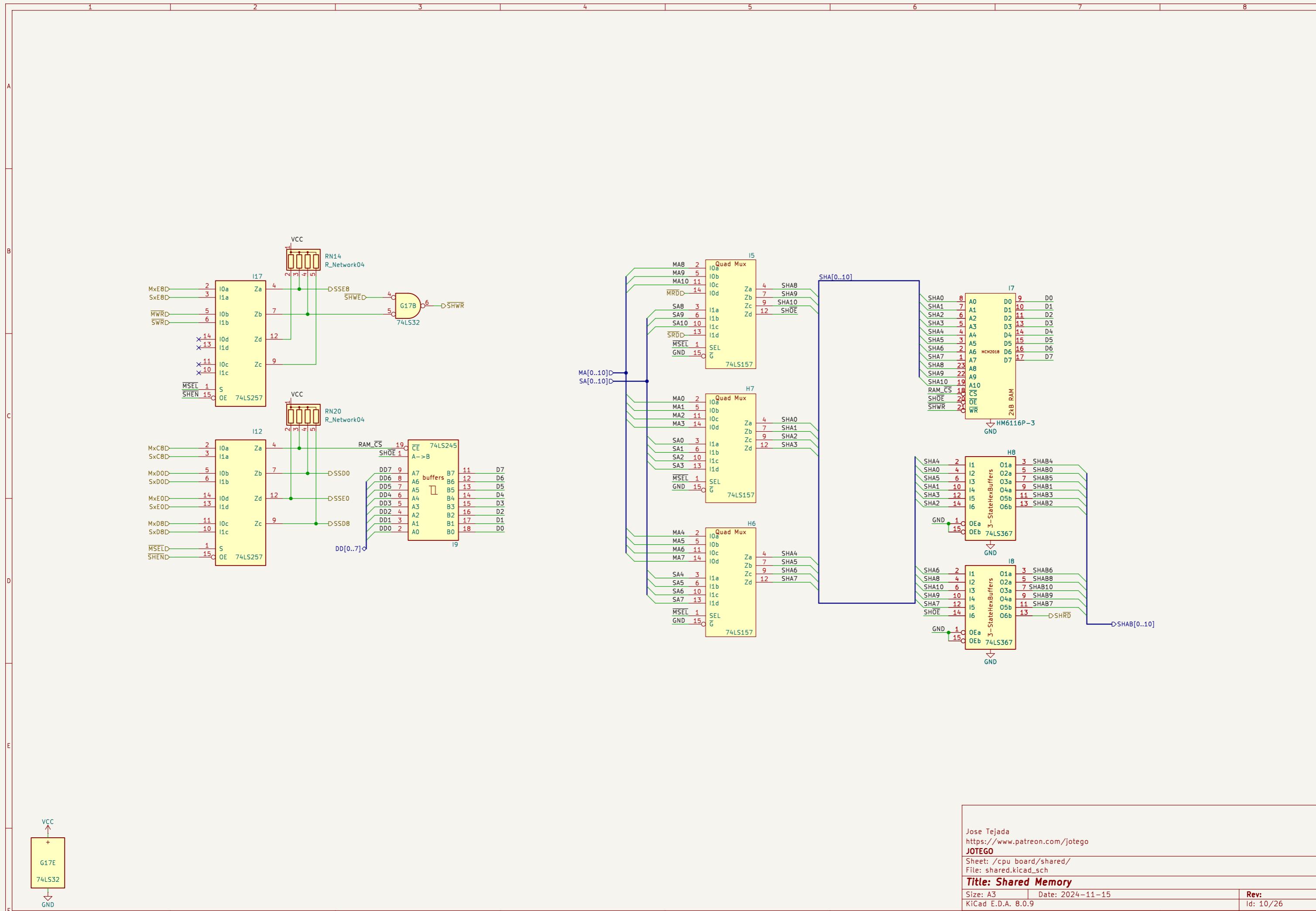
**Title: CPU board (top board)**

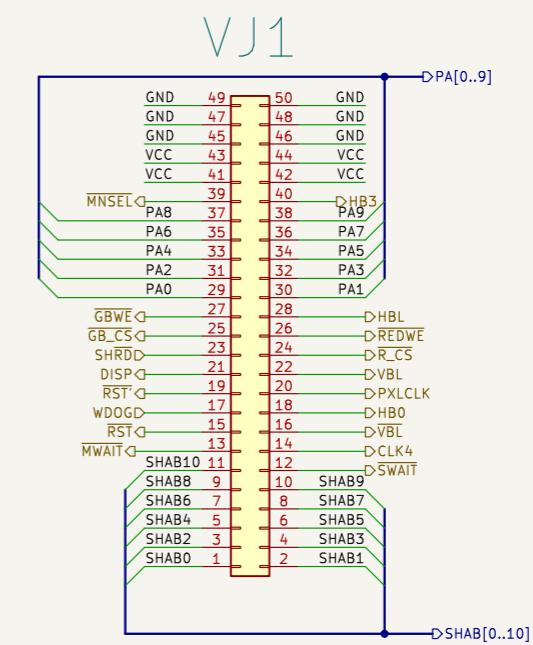
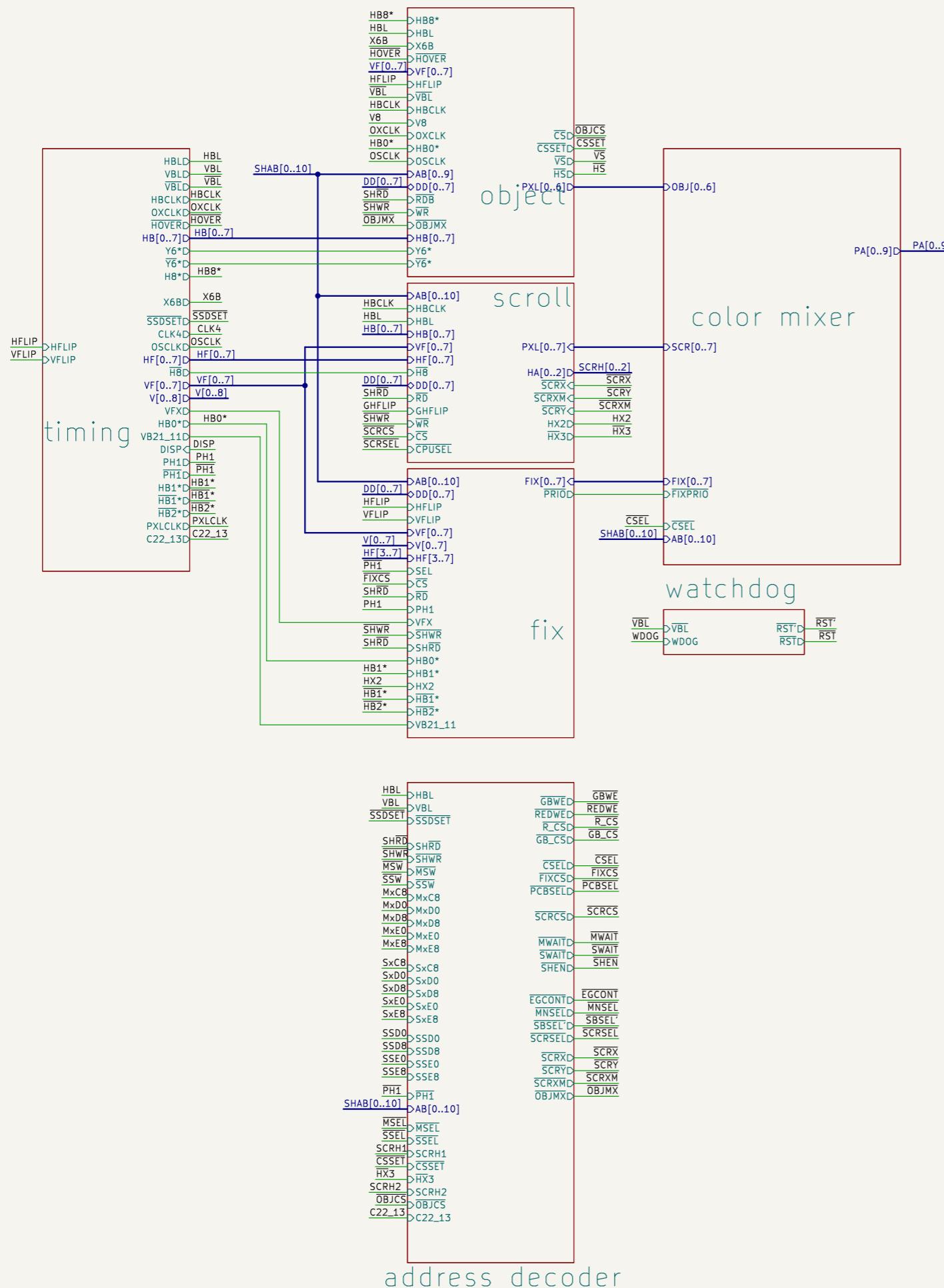
Size: A3 Date: 2024-11-15

KiCad E.D.A. 8.0.9

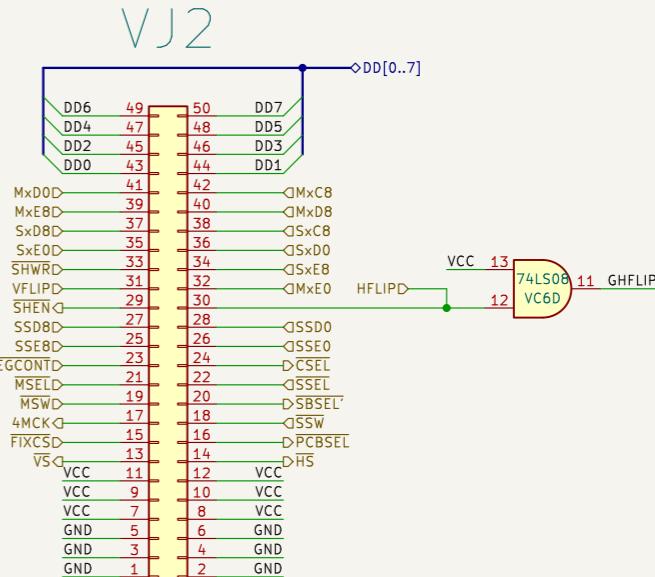
Rev:

Id: 9/26





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



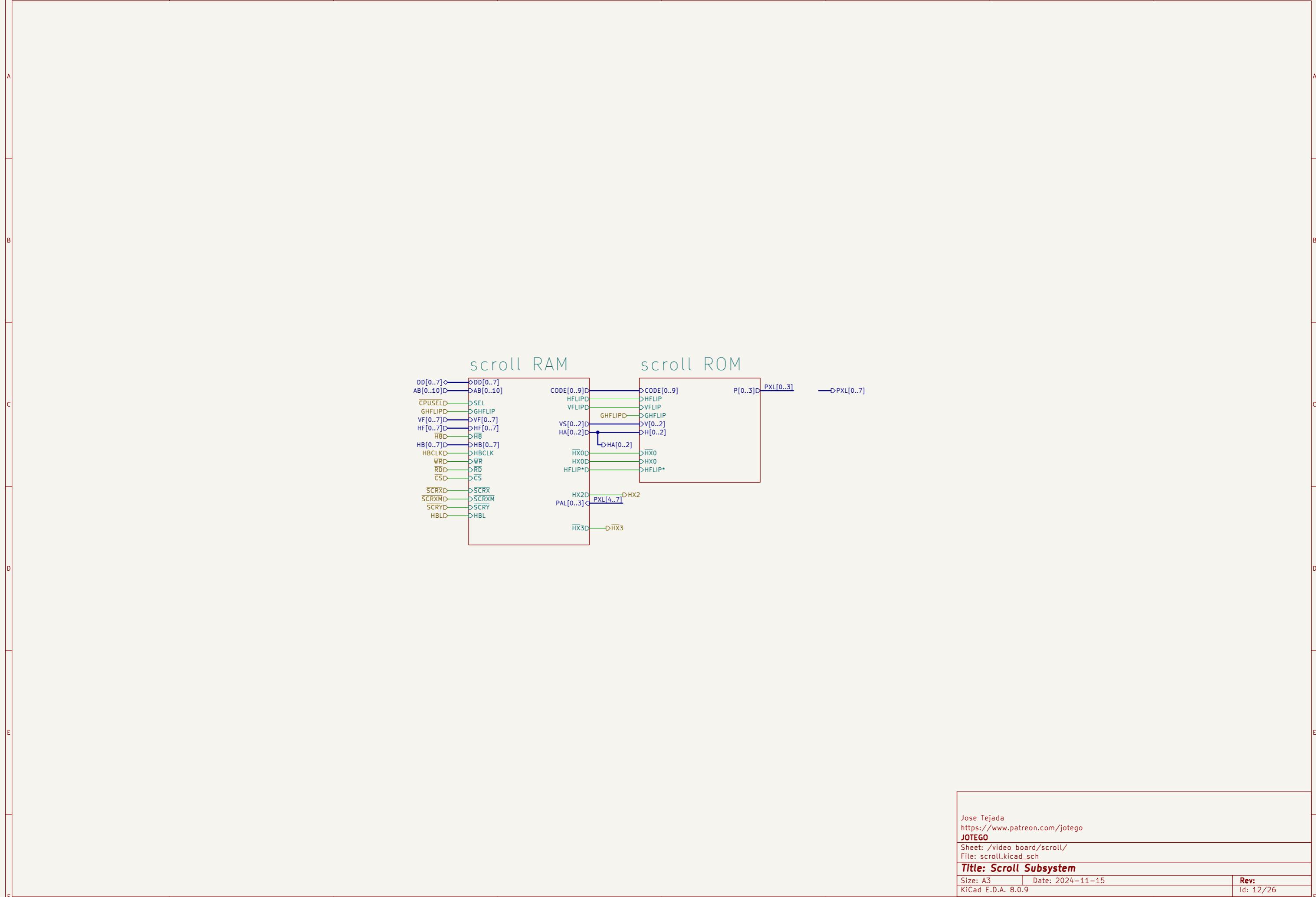
Jose Tejada  
<https://www.patreon.com/jotego>  
JOTEGO

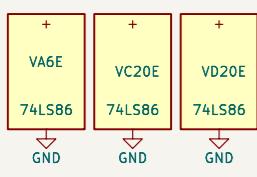
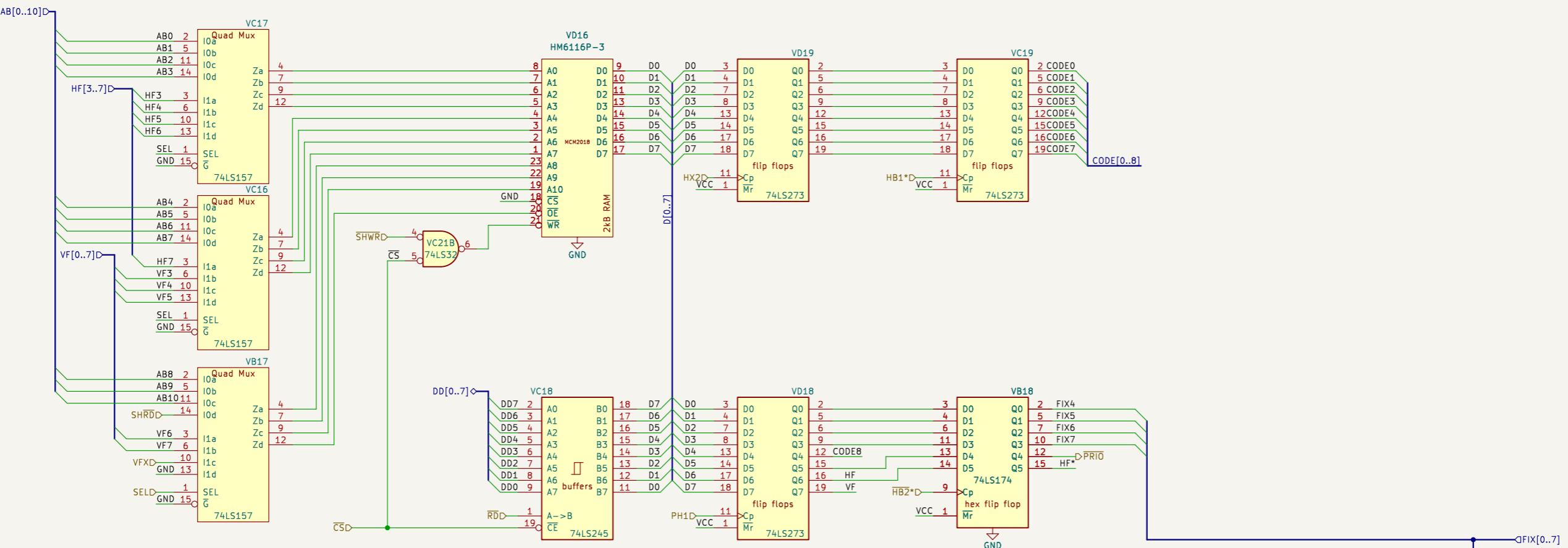
Sheet: /video board/  
File: video.kicad\_sch

Title: Video board (bottom board)

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

Rev: Id: 11/26



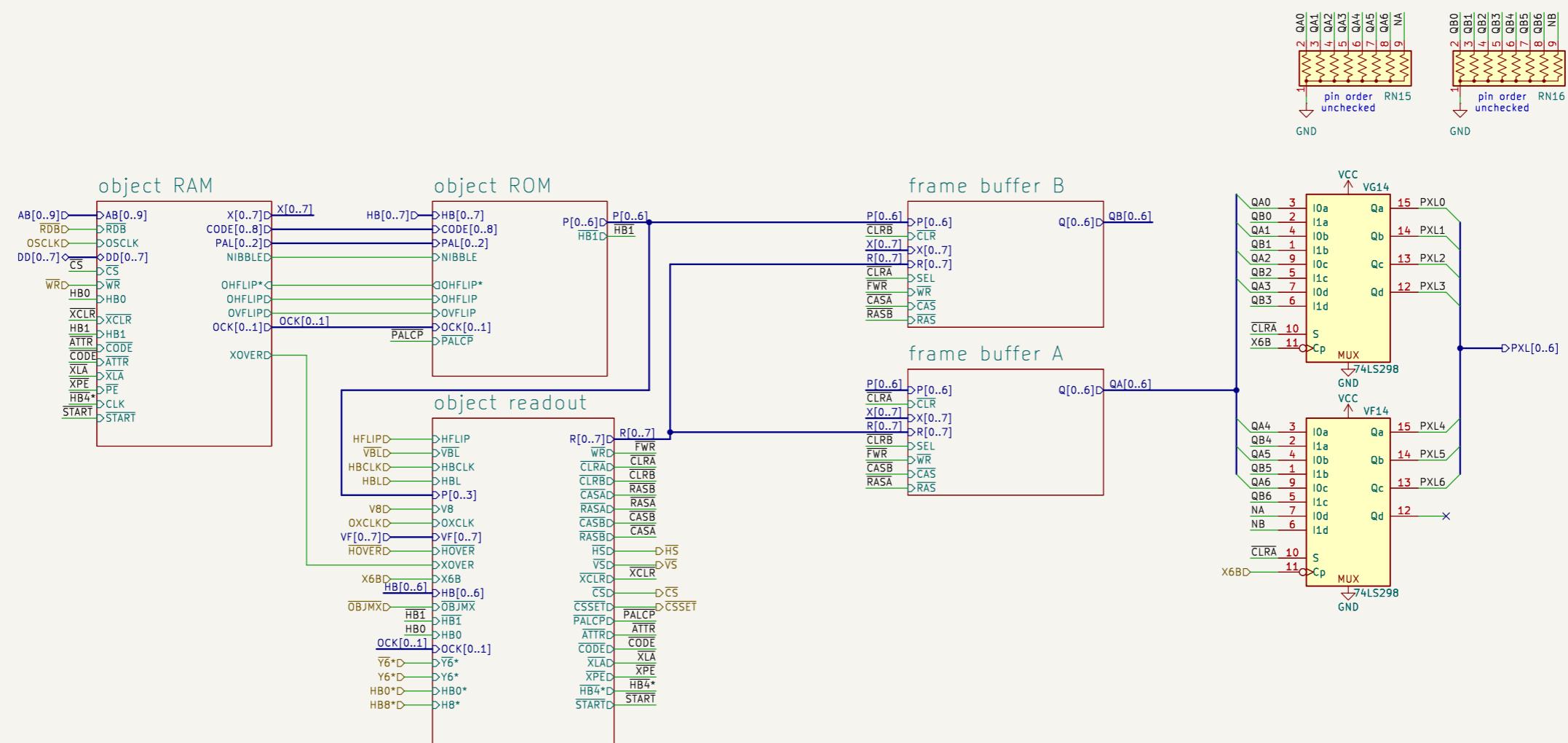


Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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

## Title: Fixed Character Layer

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



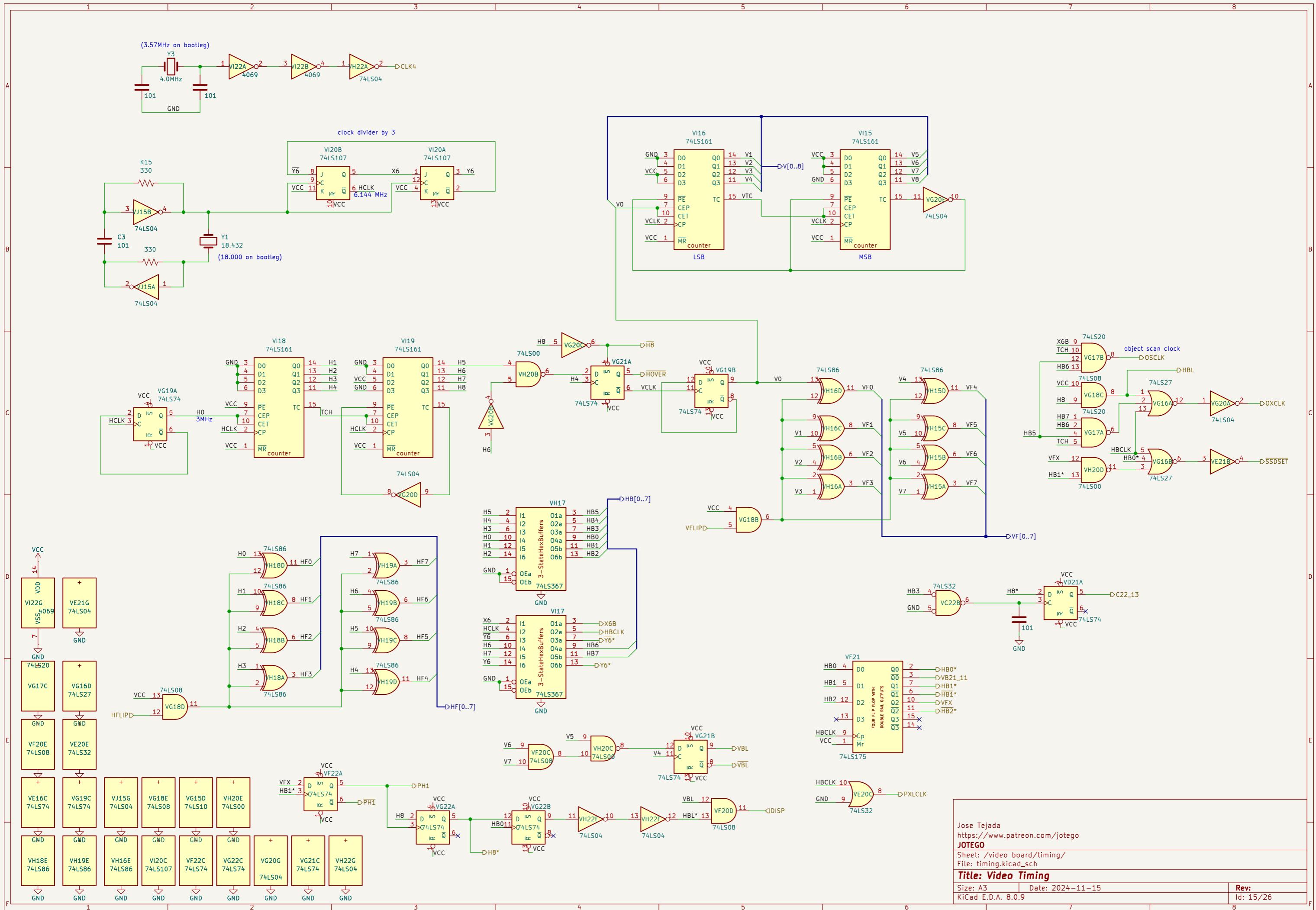
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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



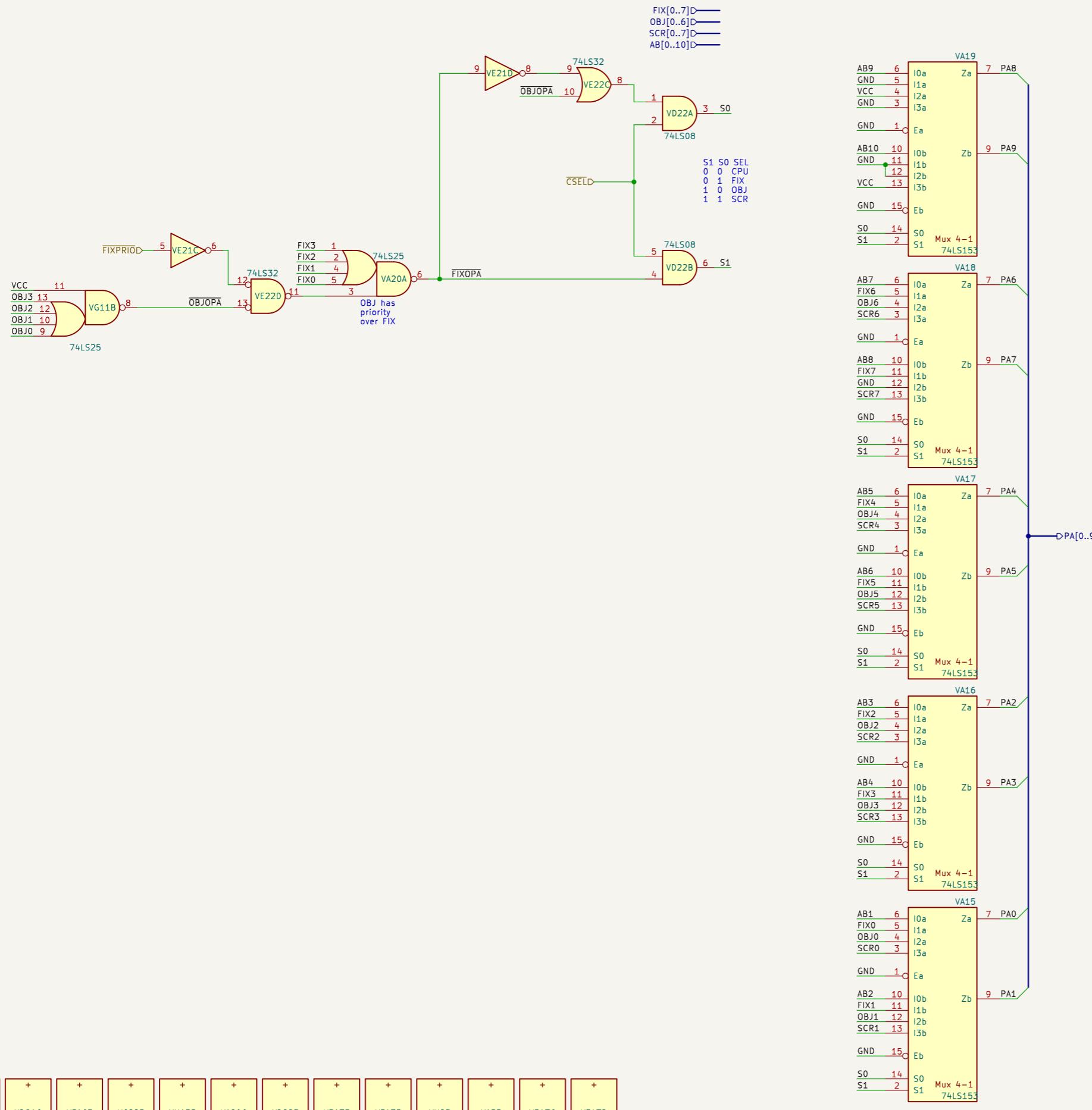
Jose Tejada  
<https://www.patreon.com/jotego>

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

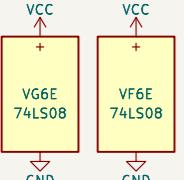
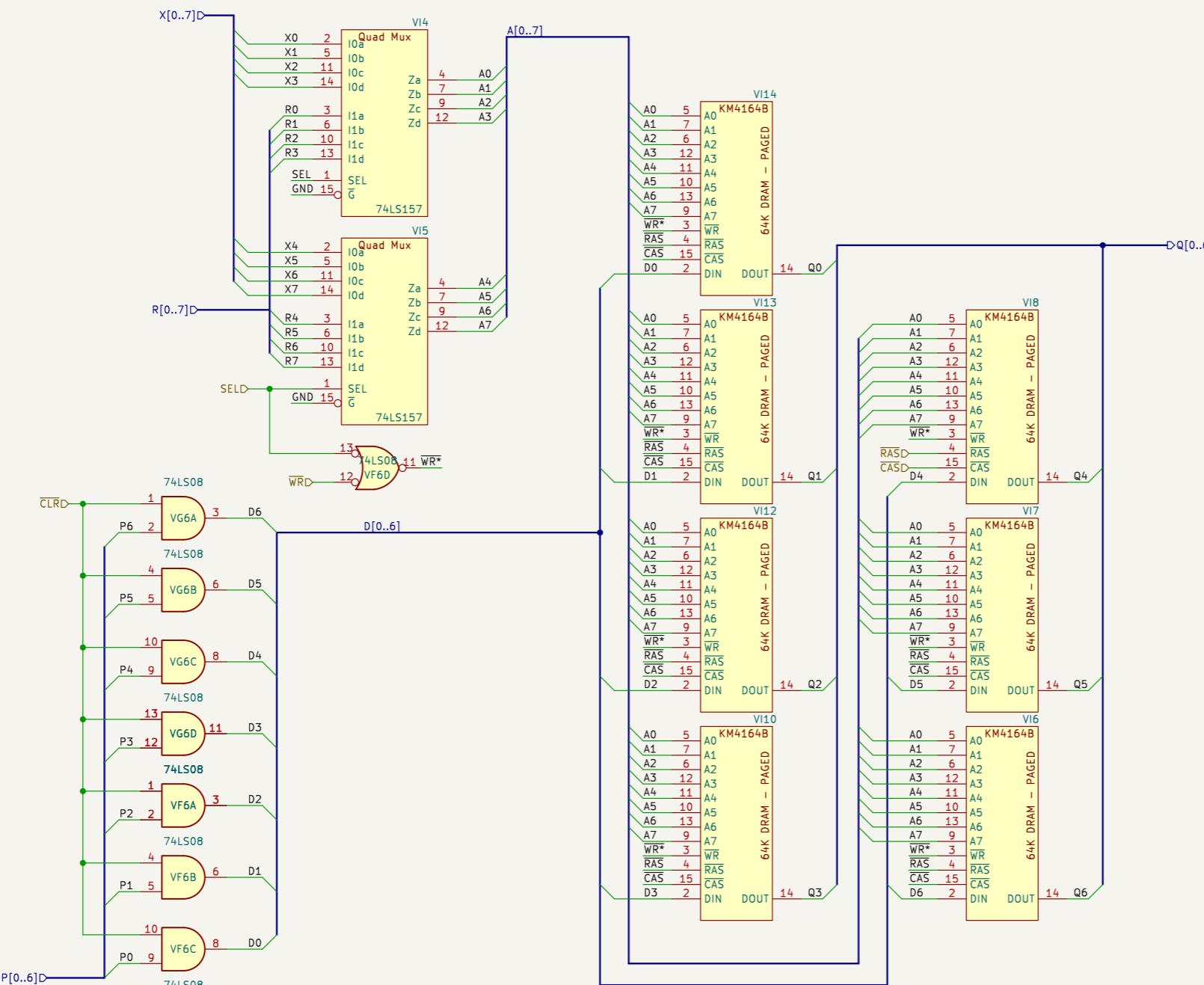


Jose Tejada  
<https://www.patreon.com/jotego>

JOTEGO

File: colmix.kicad\_sch

Size: A3 Date: 2024-11-1  
KiCad EDA 8.0.9



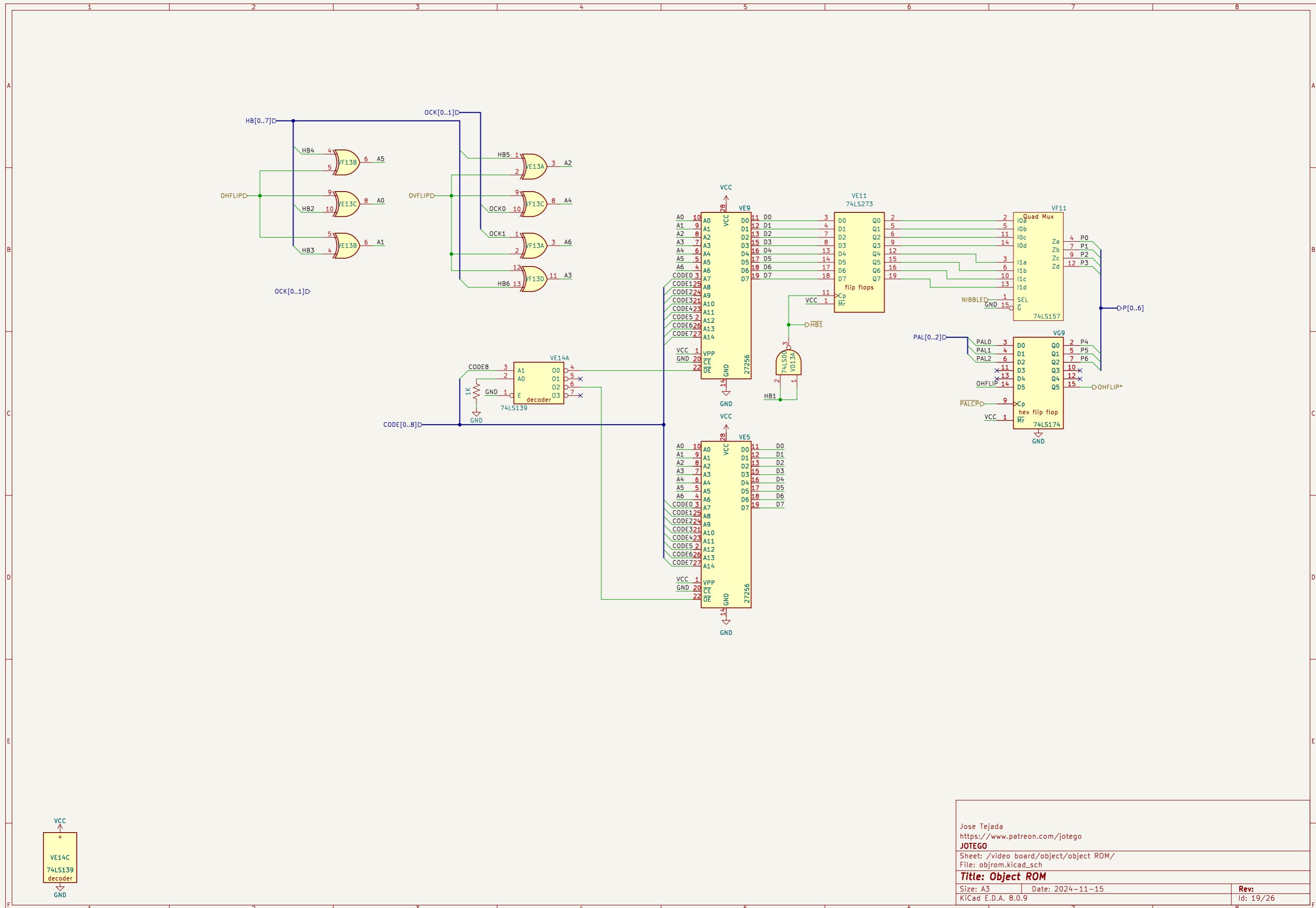
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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: 17/26



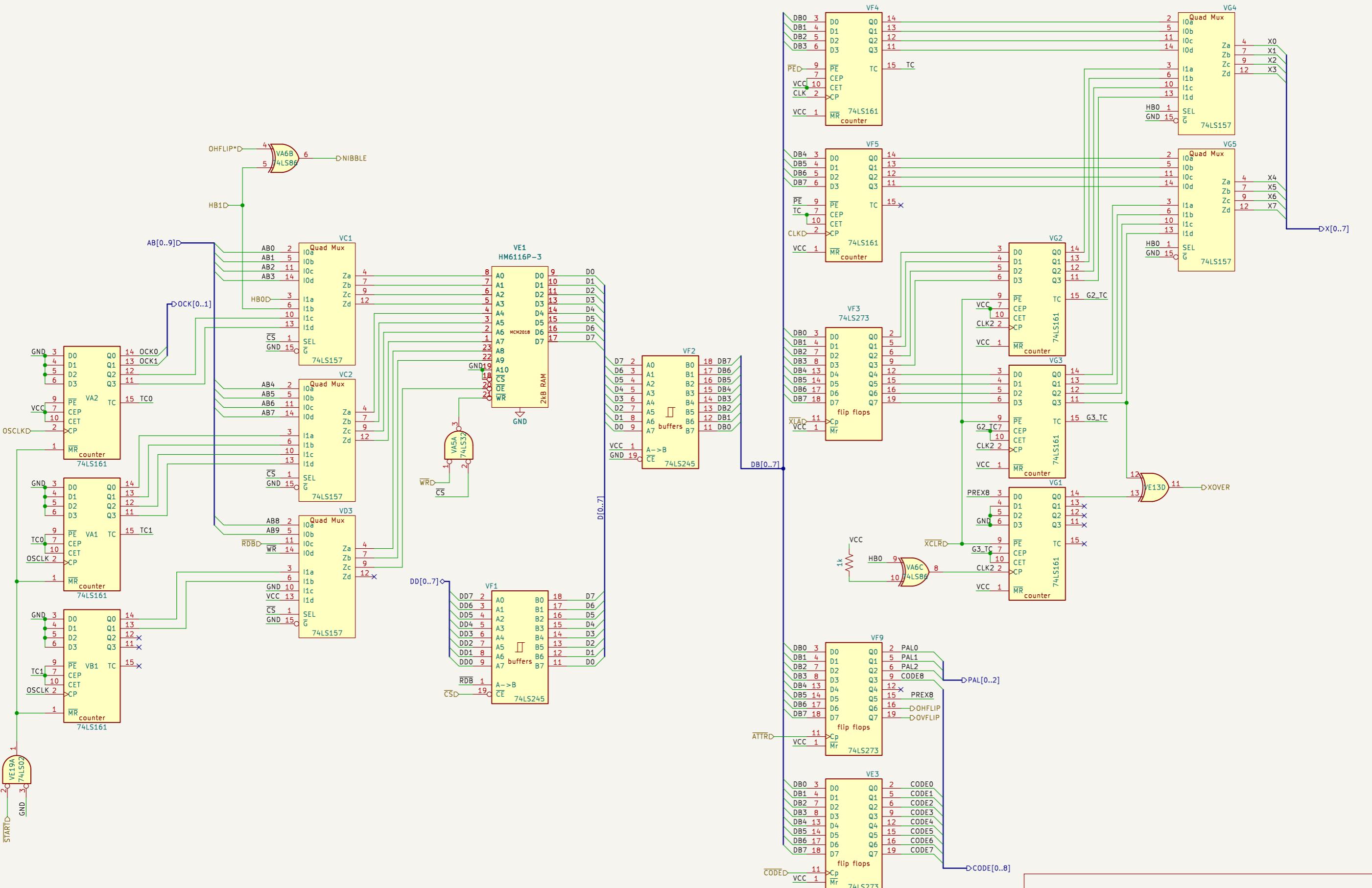
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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

**Title: Object ROM**

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

Rev: 19/26



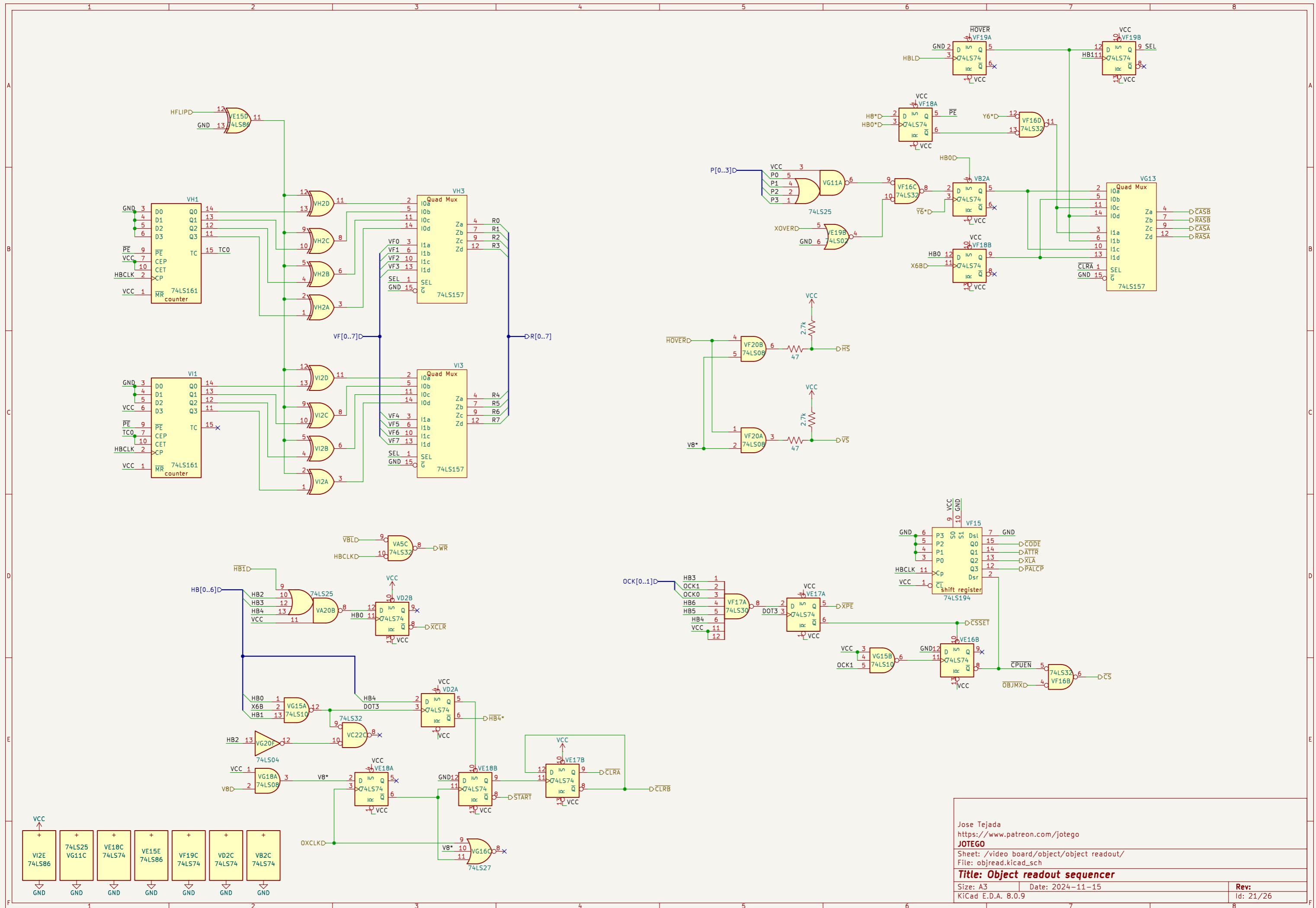
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

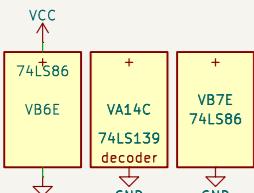
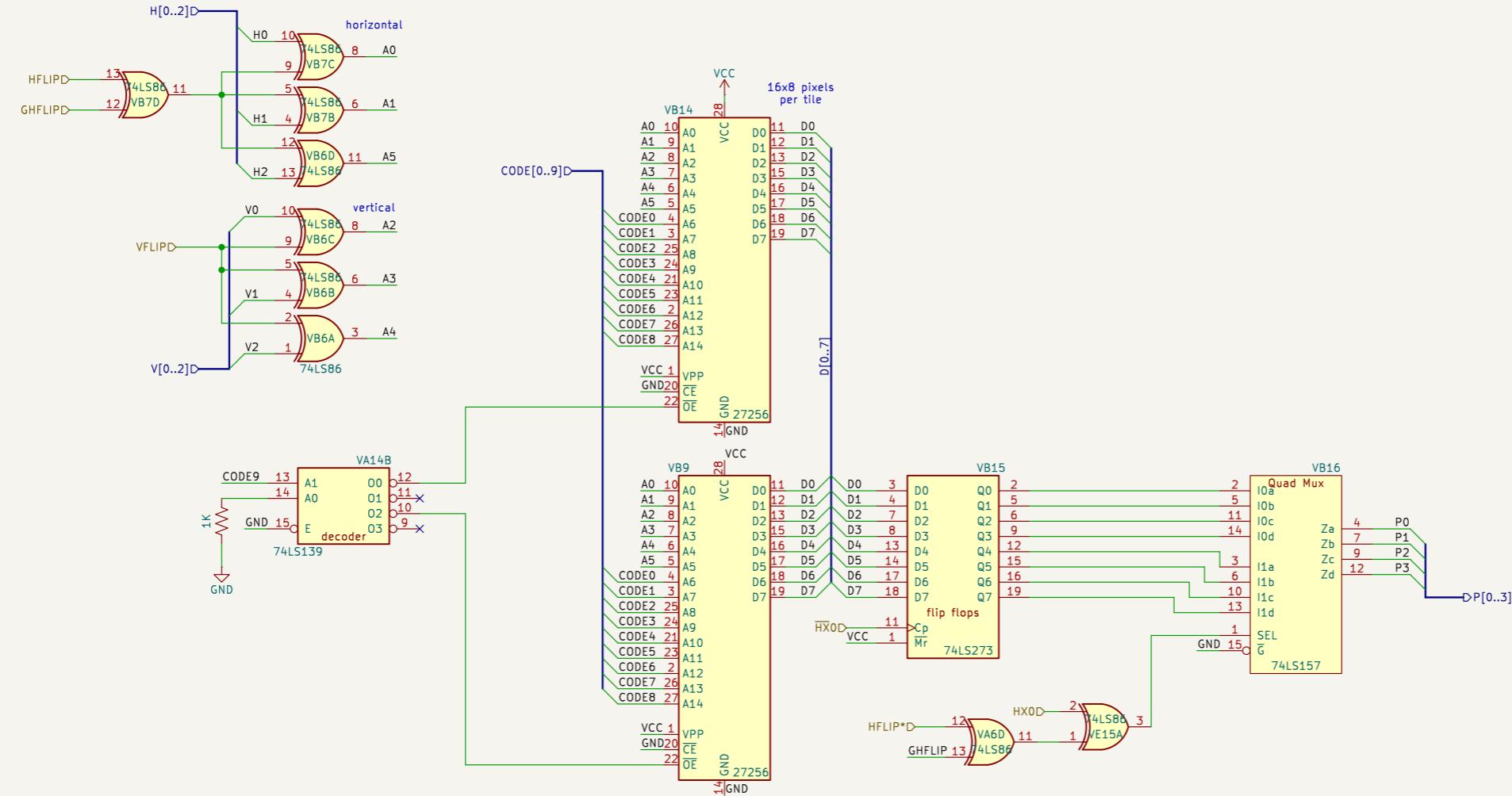
Sheet: /video board/object/object RAM/  
File: objram.kicad\_sch

**Title: Object RAM**

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

Rev: | Id: 20/26





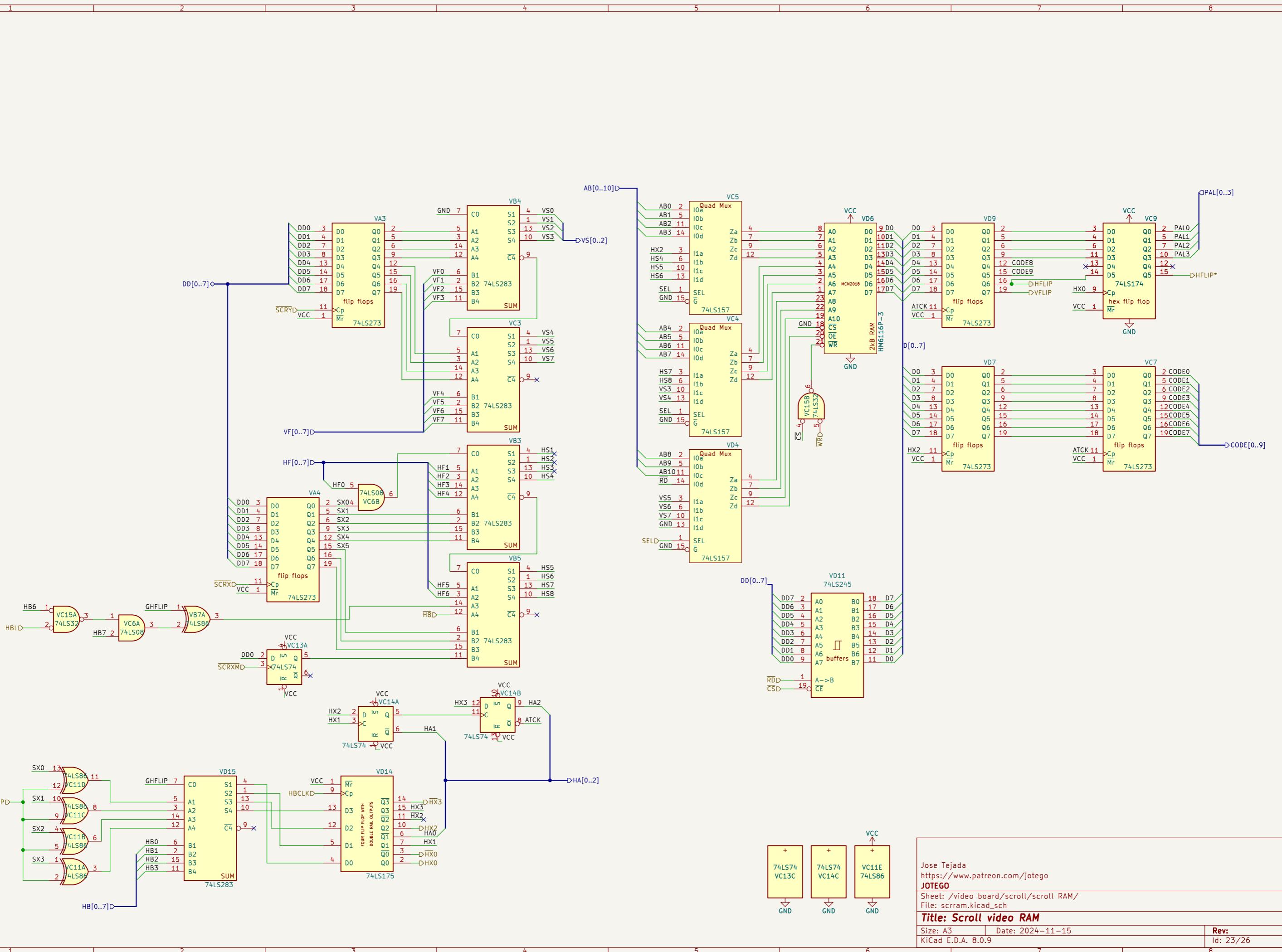
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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: 22/26



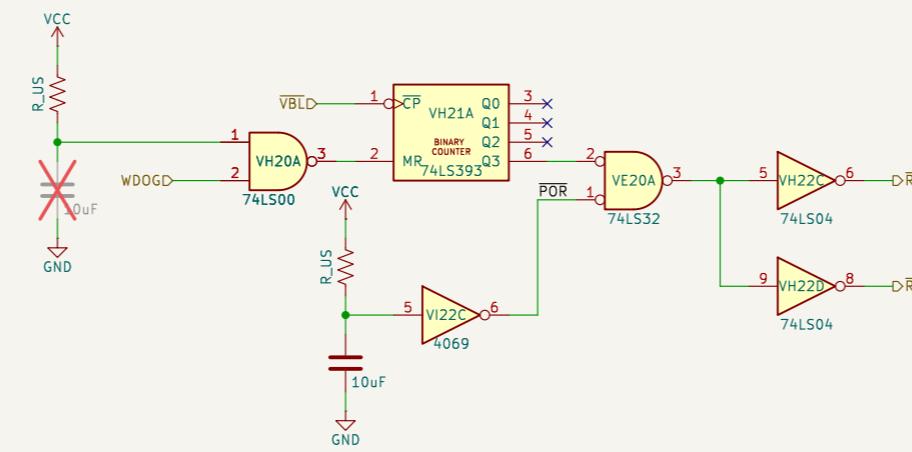
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

Sheet: /video board/scroll/scroll RAM/  
File: scroll.kicad\_sch

**Title: Scroll video RAM**

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

Rev: Id: 23/26



Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

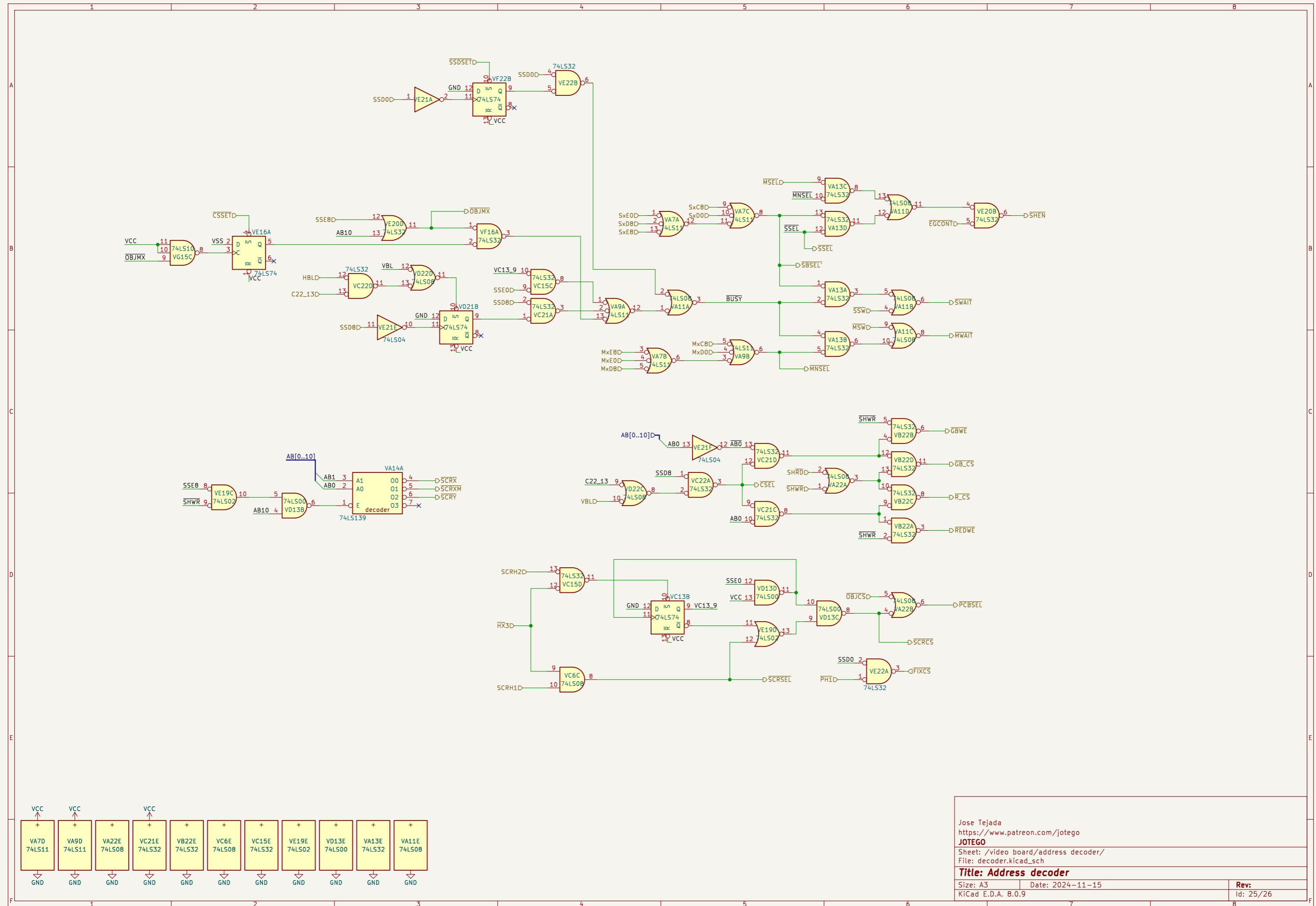
Sheet: /video board/watchdog/  
File: watchdog.kicad\_sch

## Title: Watchdog Circuit

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

7

Rev:  
Id: 24/26



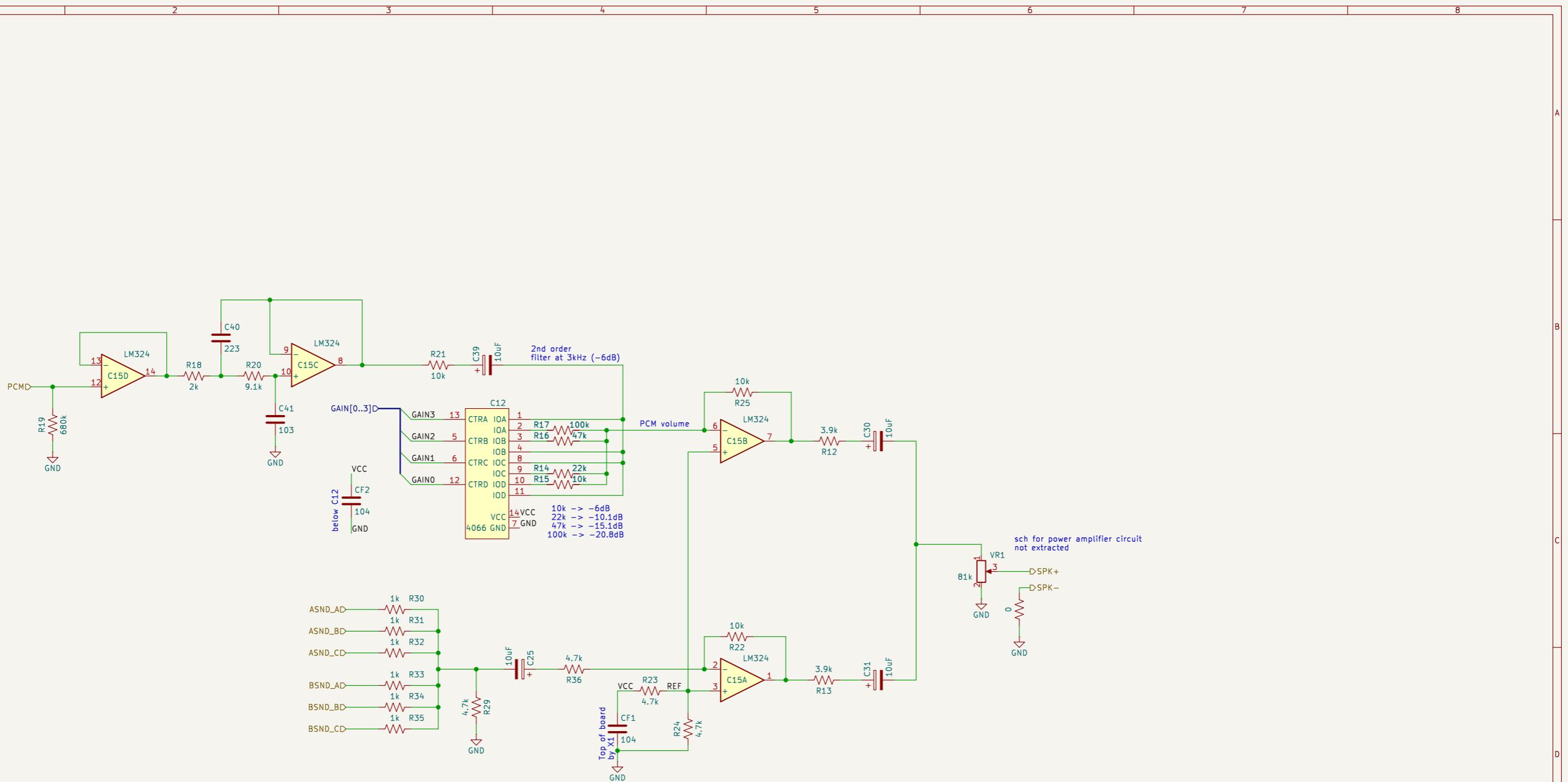
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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: 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.



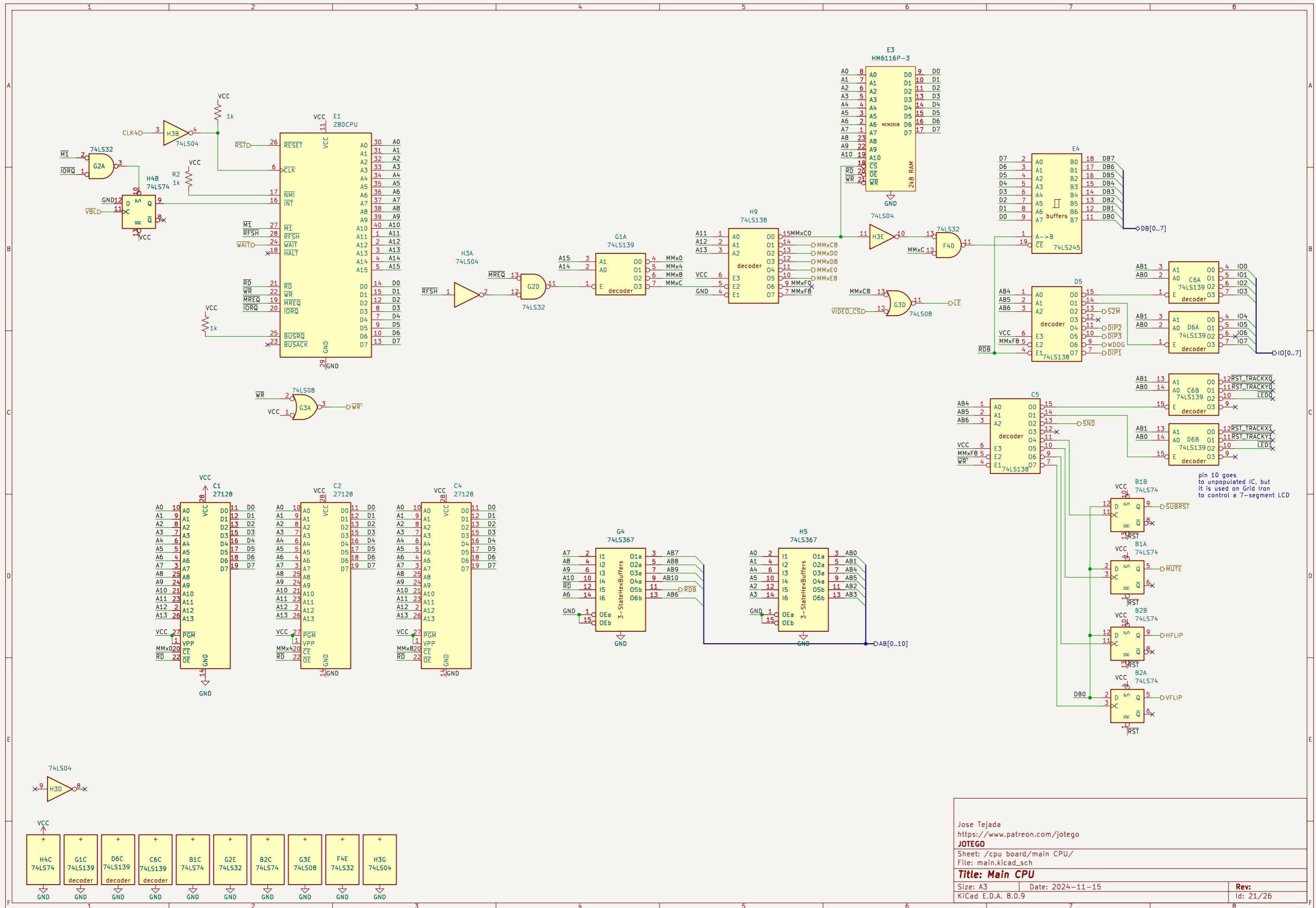
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

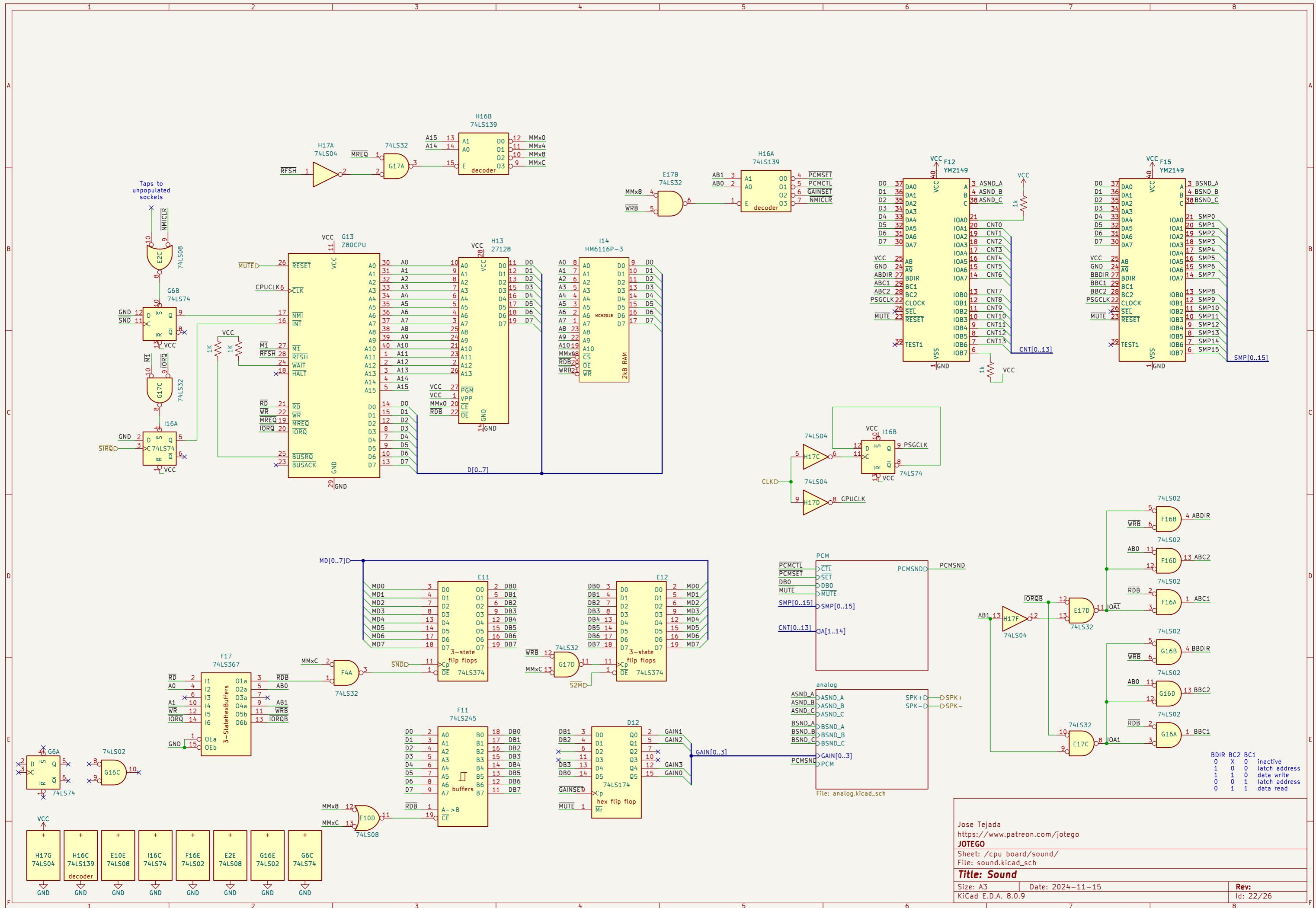
Sheet: /cpu board/sound/analog/  
File: analog.kicad\_sch

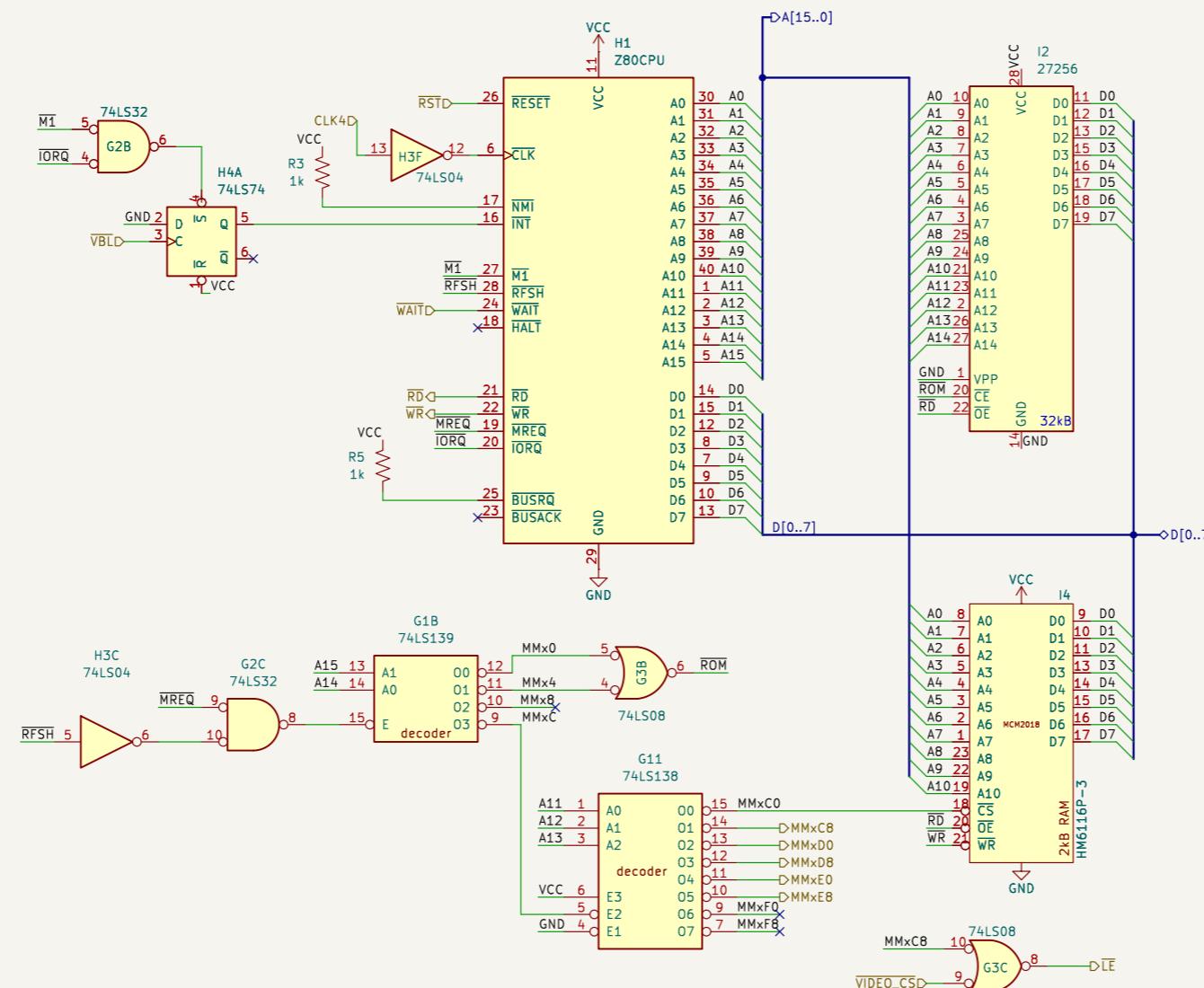
**Title: Sound amplifiers**

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

Rev: | Id: 26/26







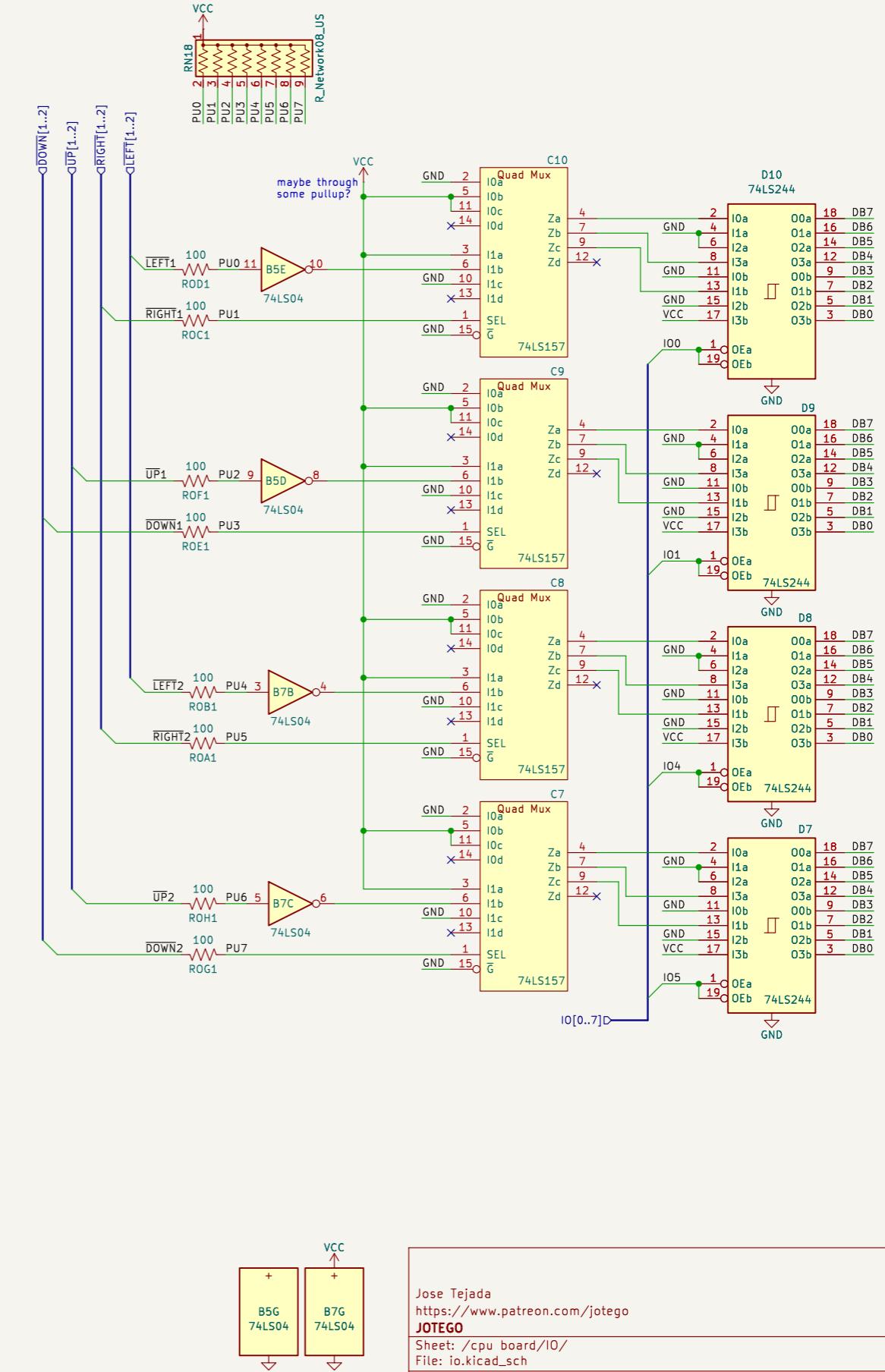
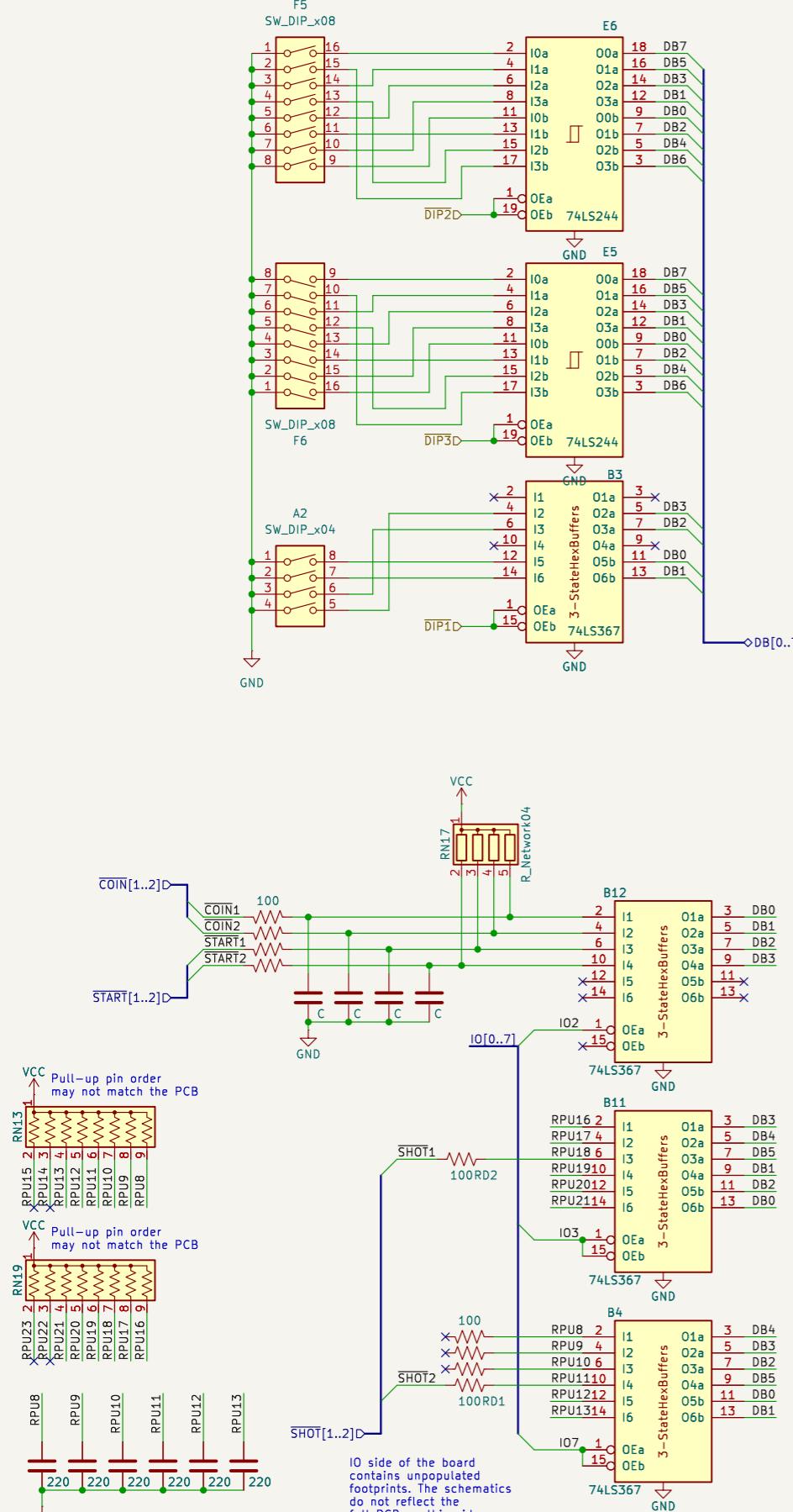
Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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

**Title: Subordinate CPU**

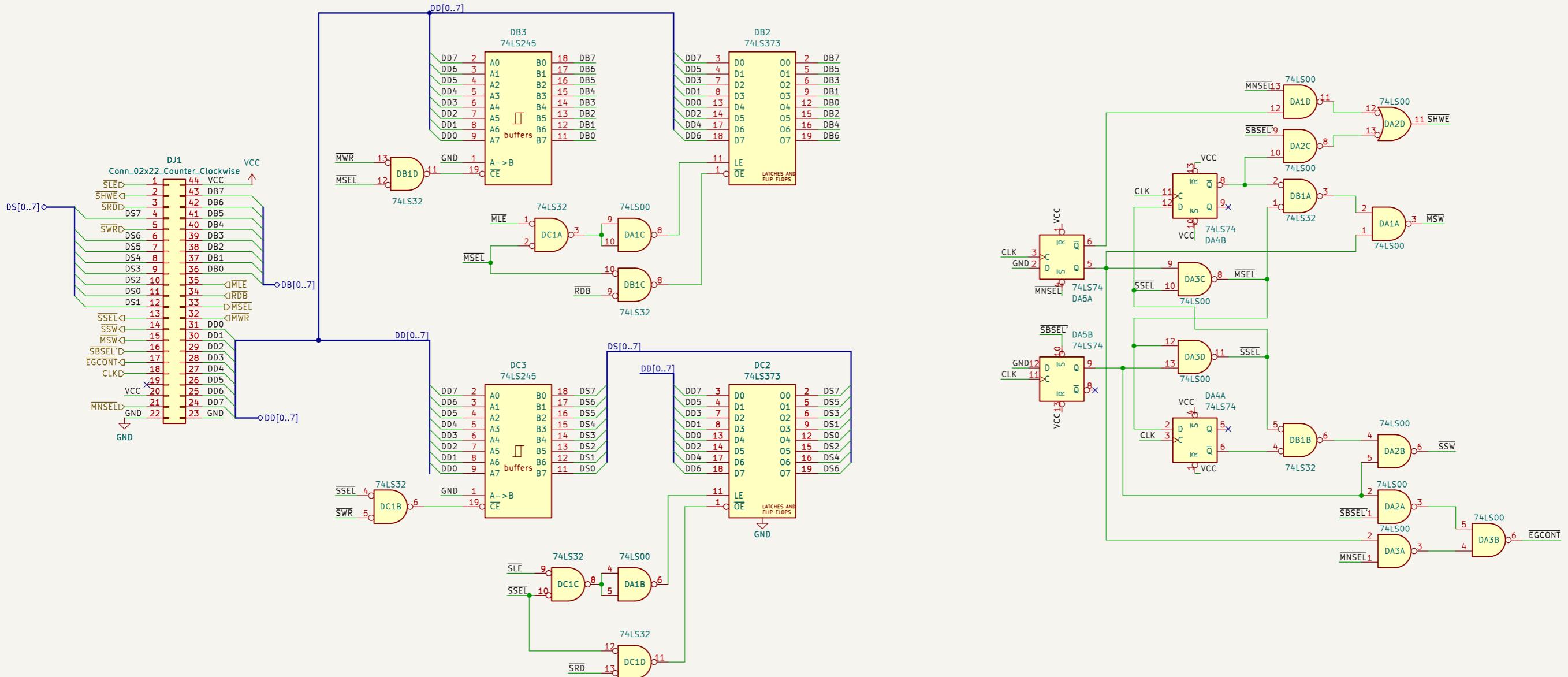
Size: A3 | Date: 2024-11-15  
KiCad E.D.A. 8.0.9

Rev:  
Id: 23/26



[ose Tejada  
https://www.patreon.com/jotego  
\*\*JOTEGO\*\*](https://www.patreon.com/jotego)

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

- 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.

Jose Tejada  
<https://www.patreon.com/jotego>

JOTEGO  
Sheet: /cpu board/daughter/  
File: daughter.lisad.sch

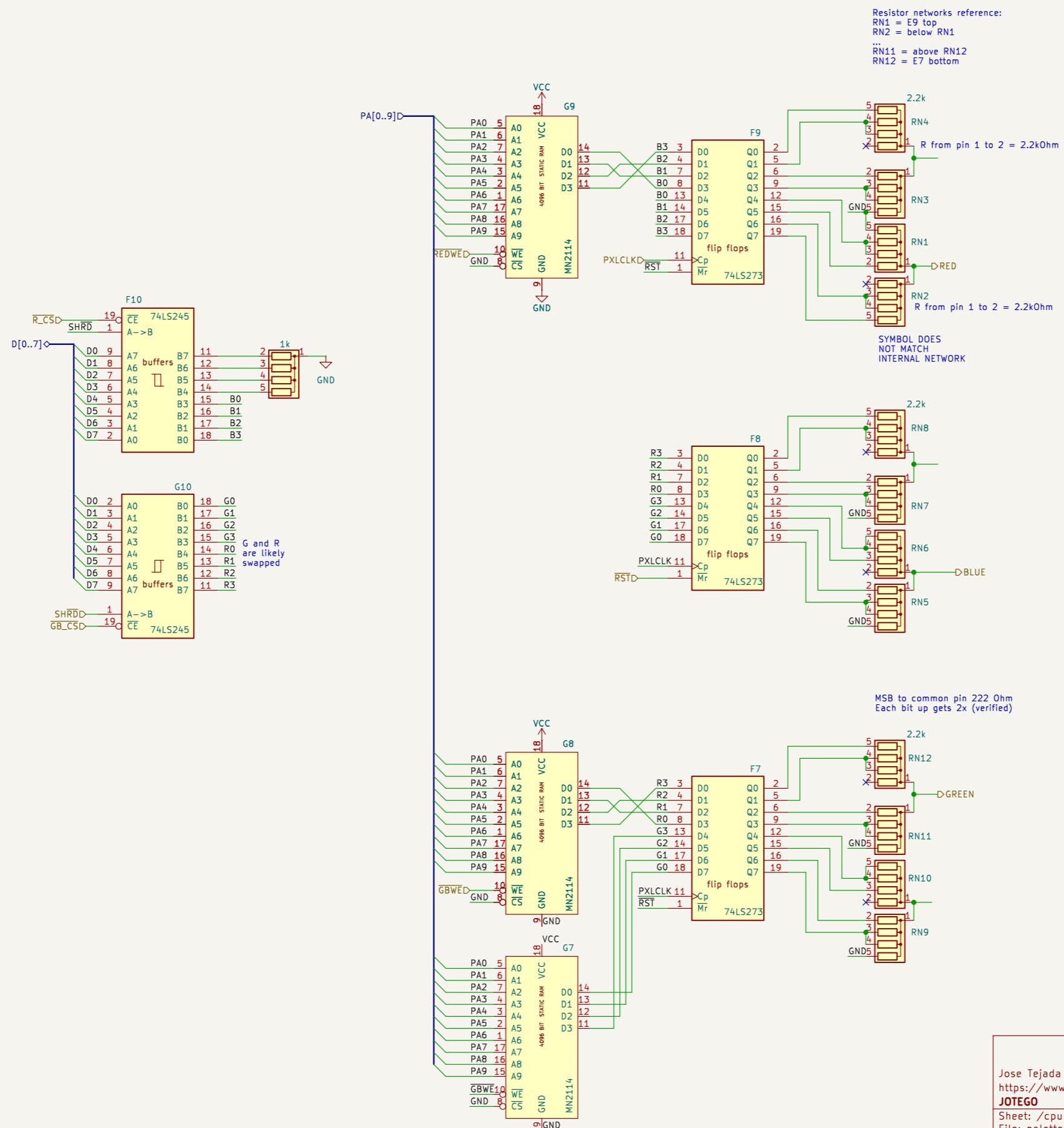
Title: Small daughter board

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

RICARDO E.D.A. 8.0.9

---

Digitized by srujanika@gmail.com



Jose Tejada  
<https://www.patreon.com/jotego>  
**JOTEGO**

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