

EECT/CE 6325 VLSI Design

Fall 2020

Project 4

Cell Library

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1. INV

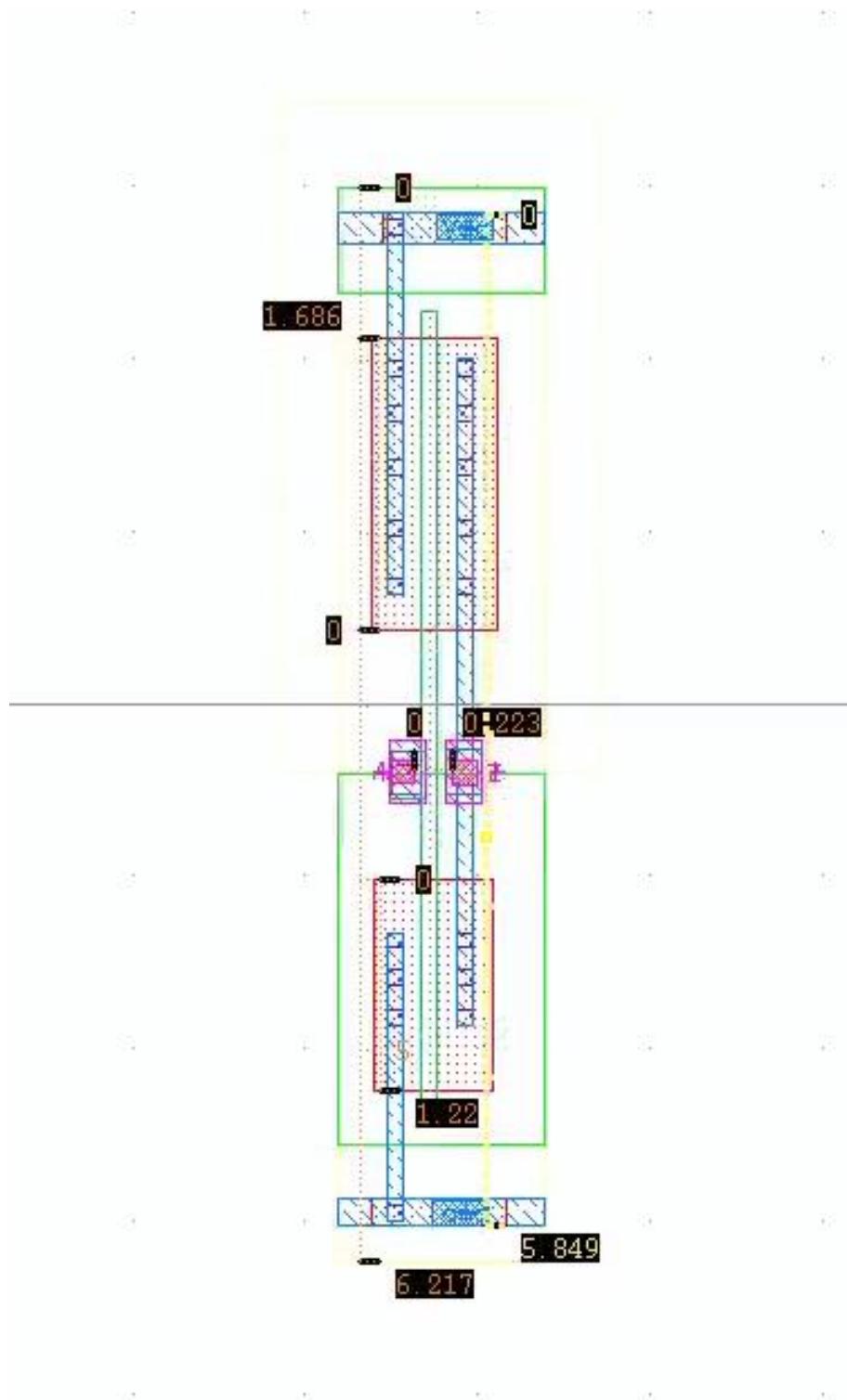


Figure 1 Inverter full view

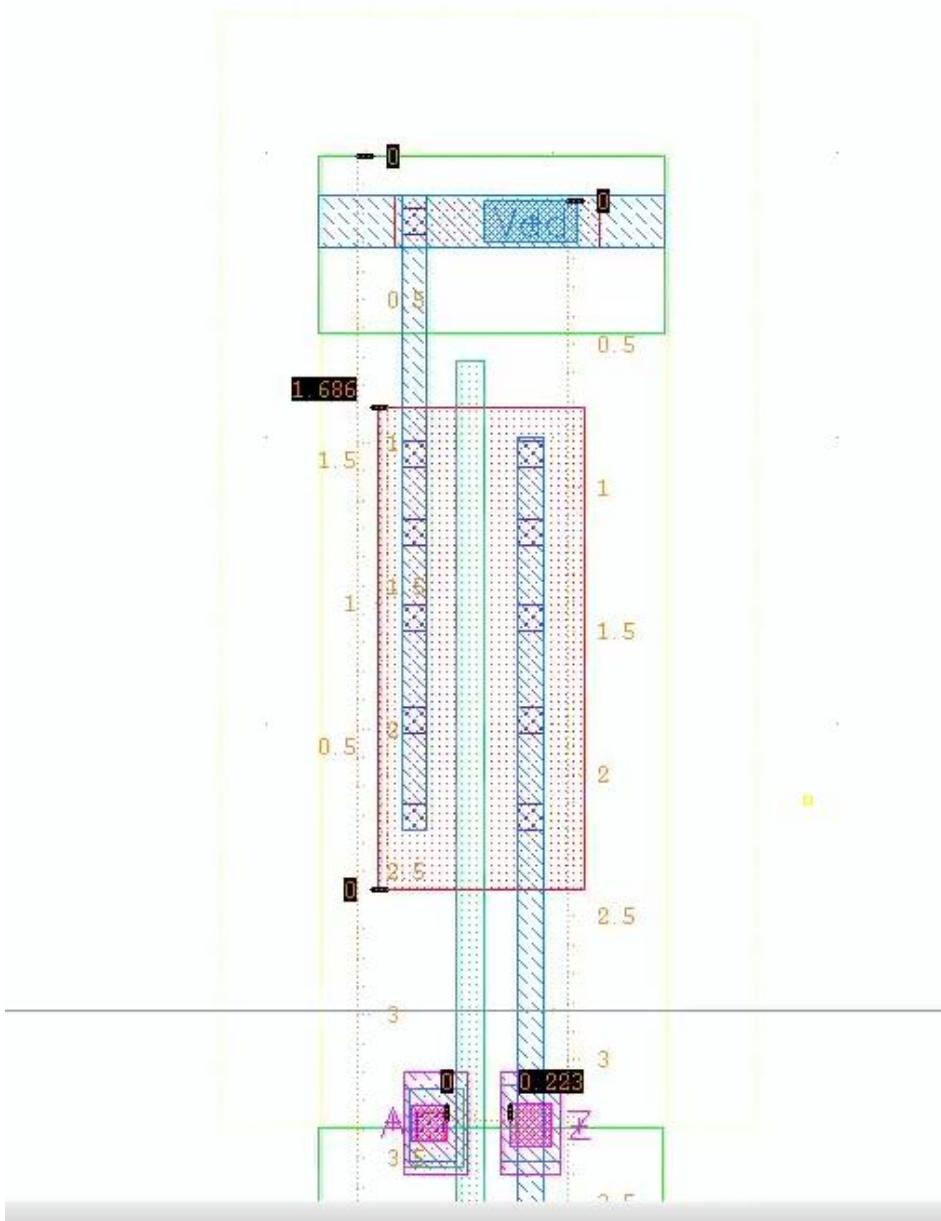


Figure 2 Inverter top

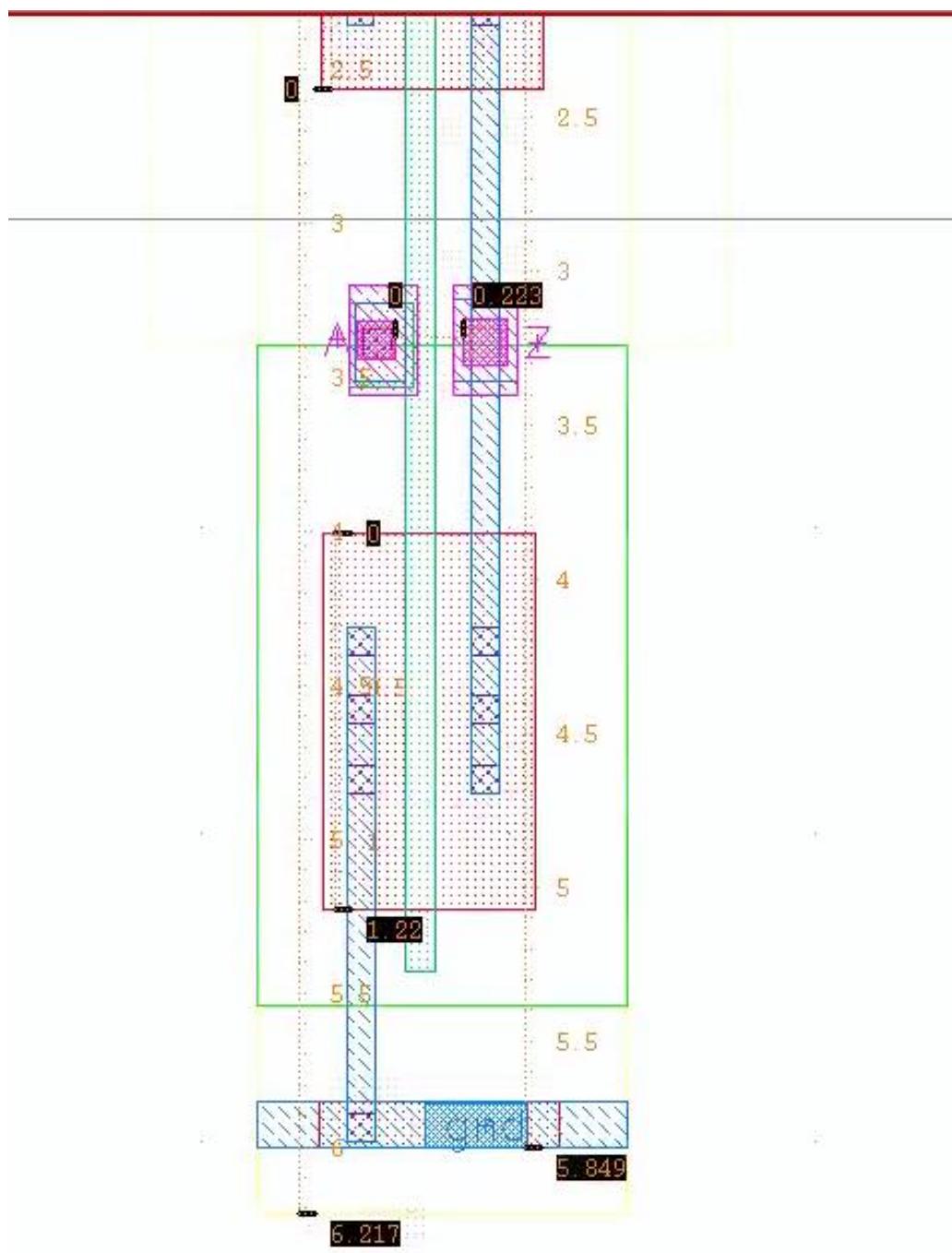


Figure 3 Inverter bottom

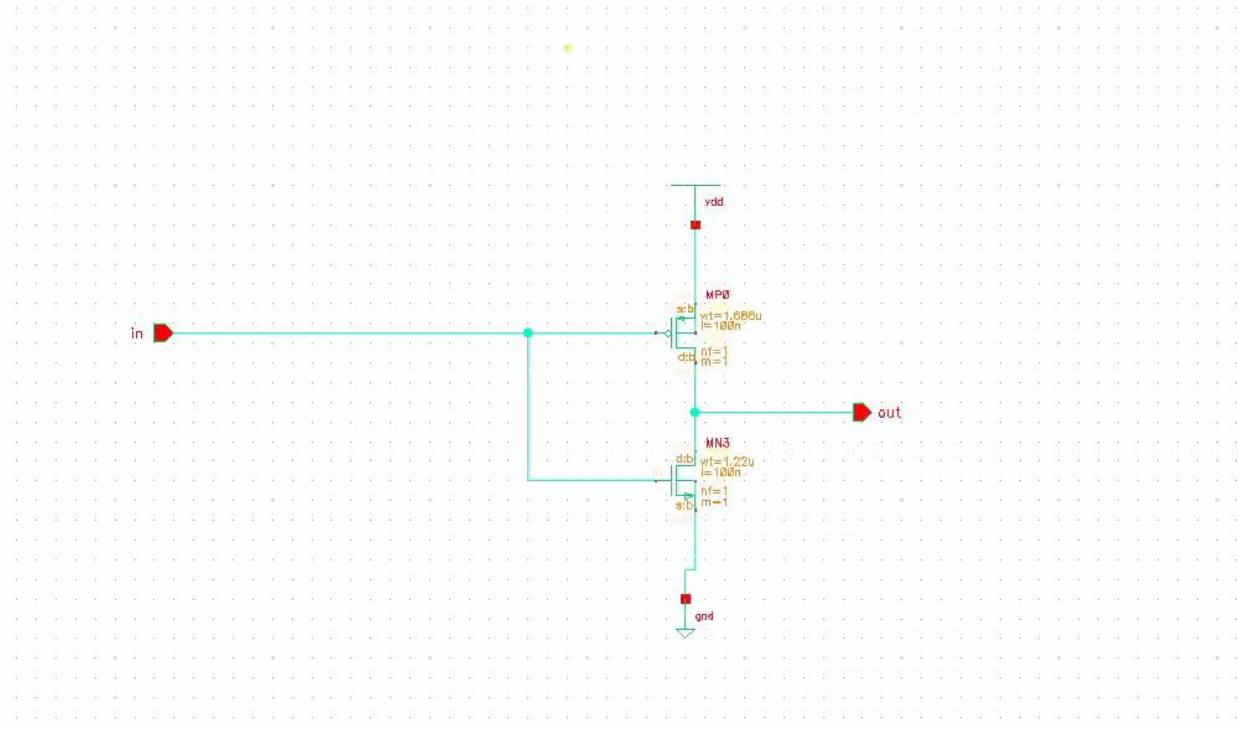


Figure 4 Inverter schematic

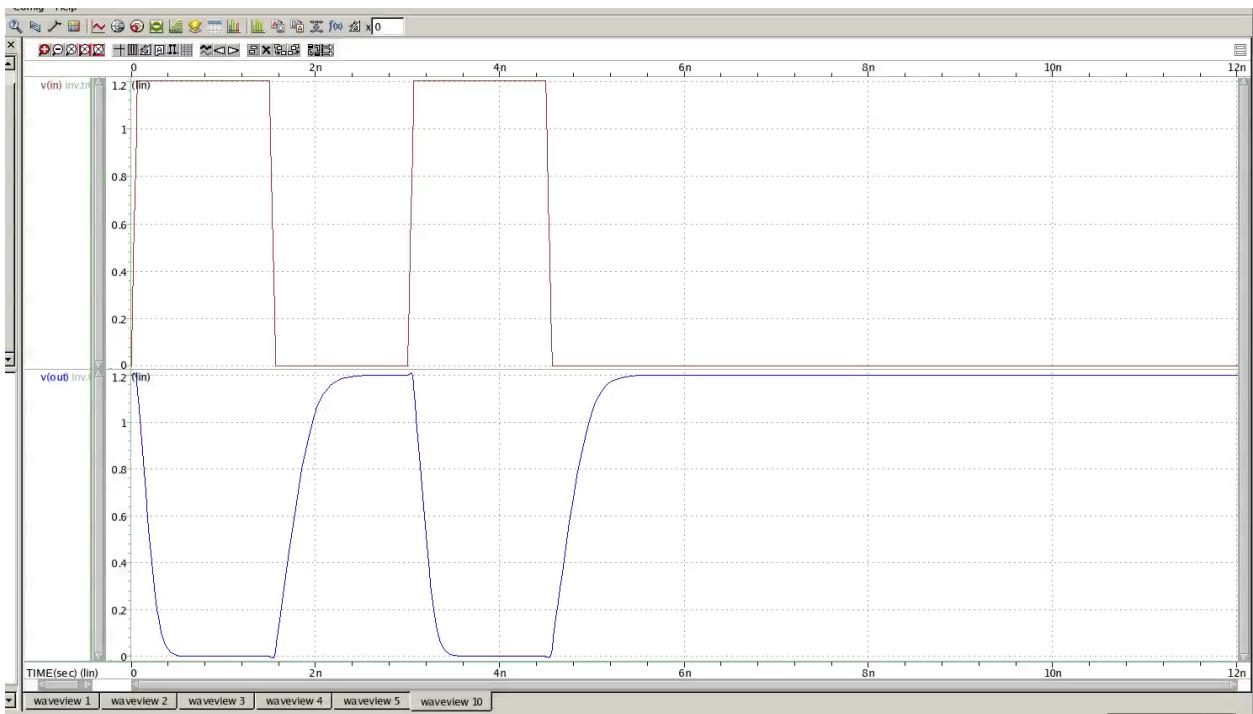


Figure 5 Inverter simulation waveform

2. NAND2

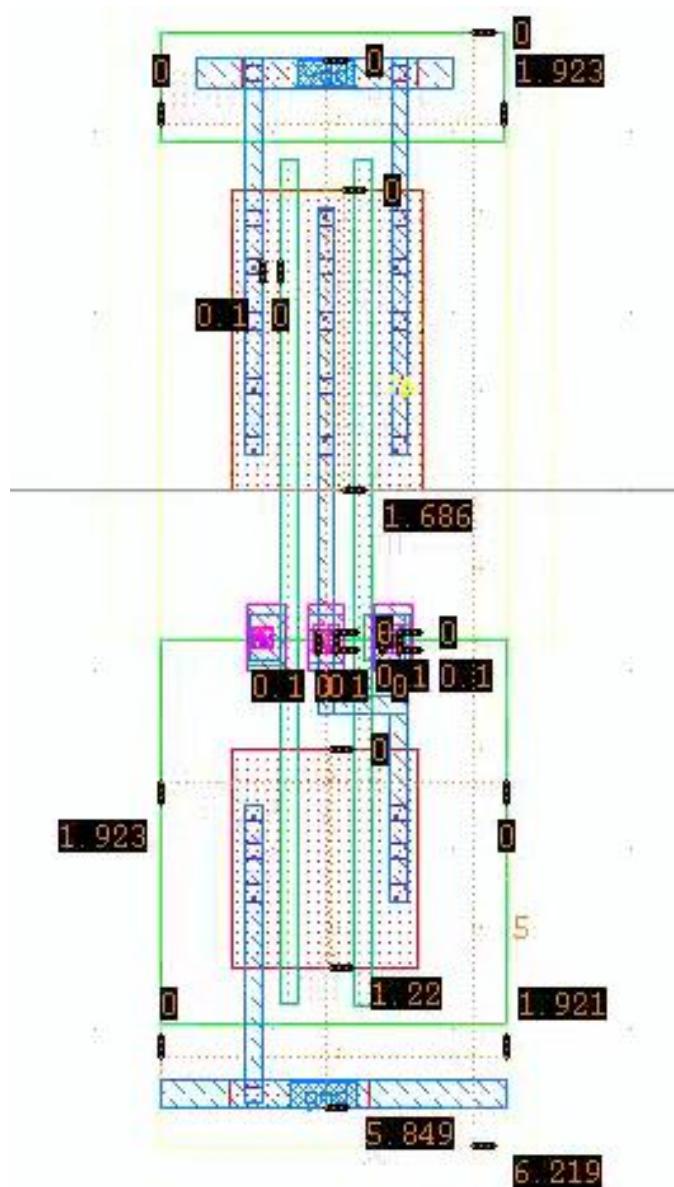


Figure 6 NAND2 full view

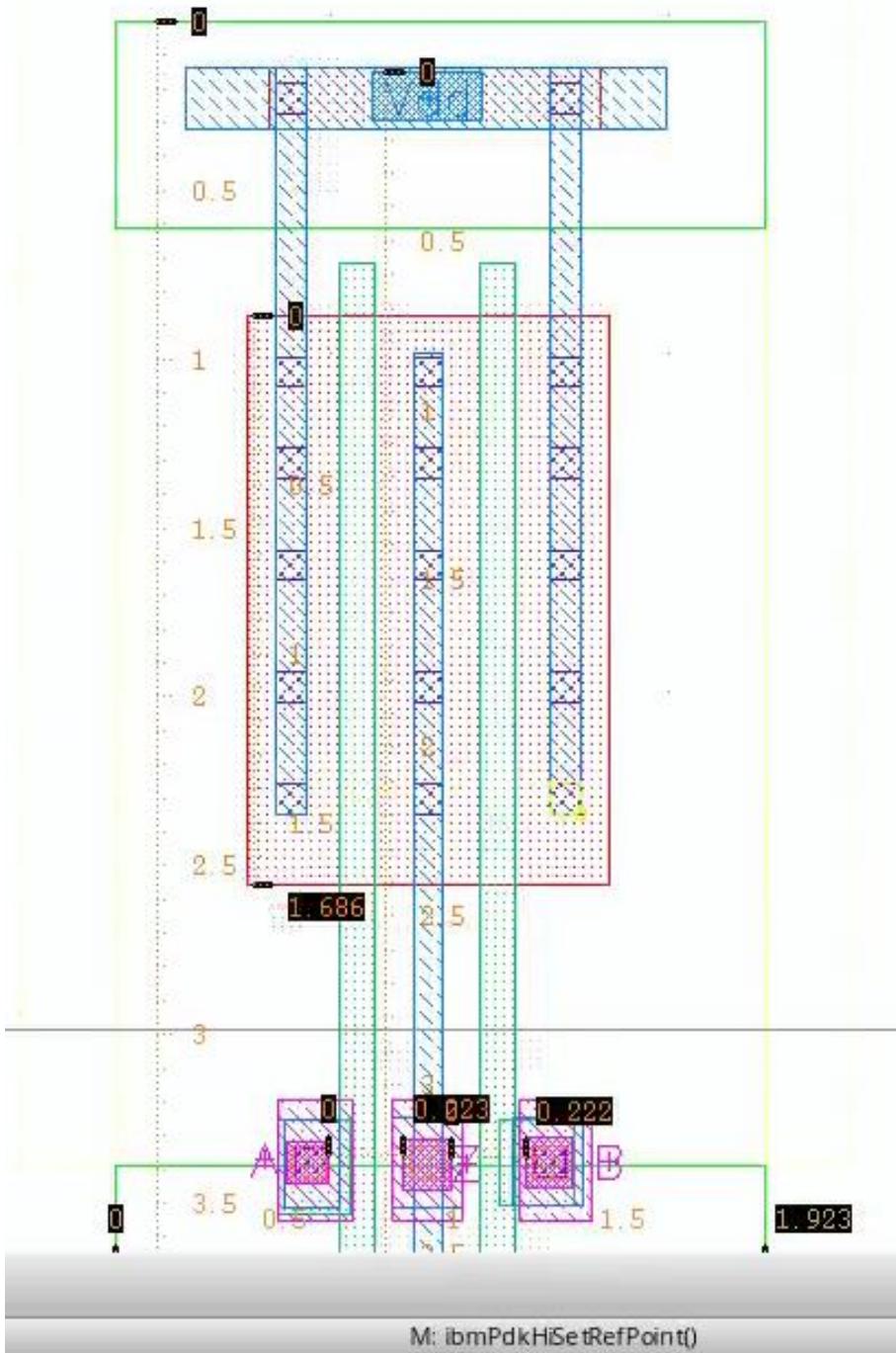


Figure 7 NAND2 top

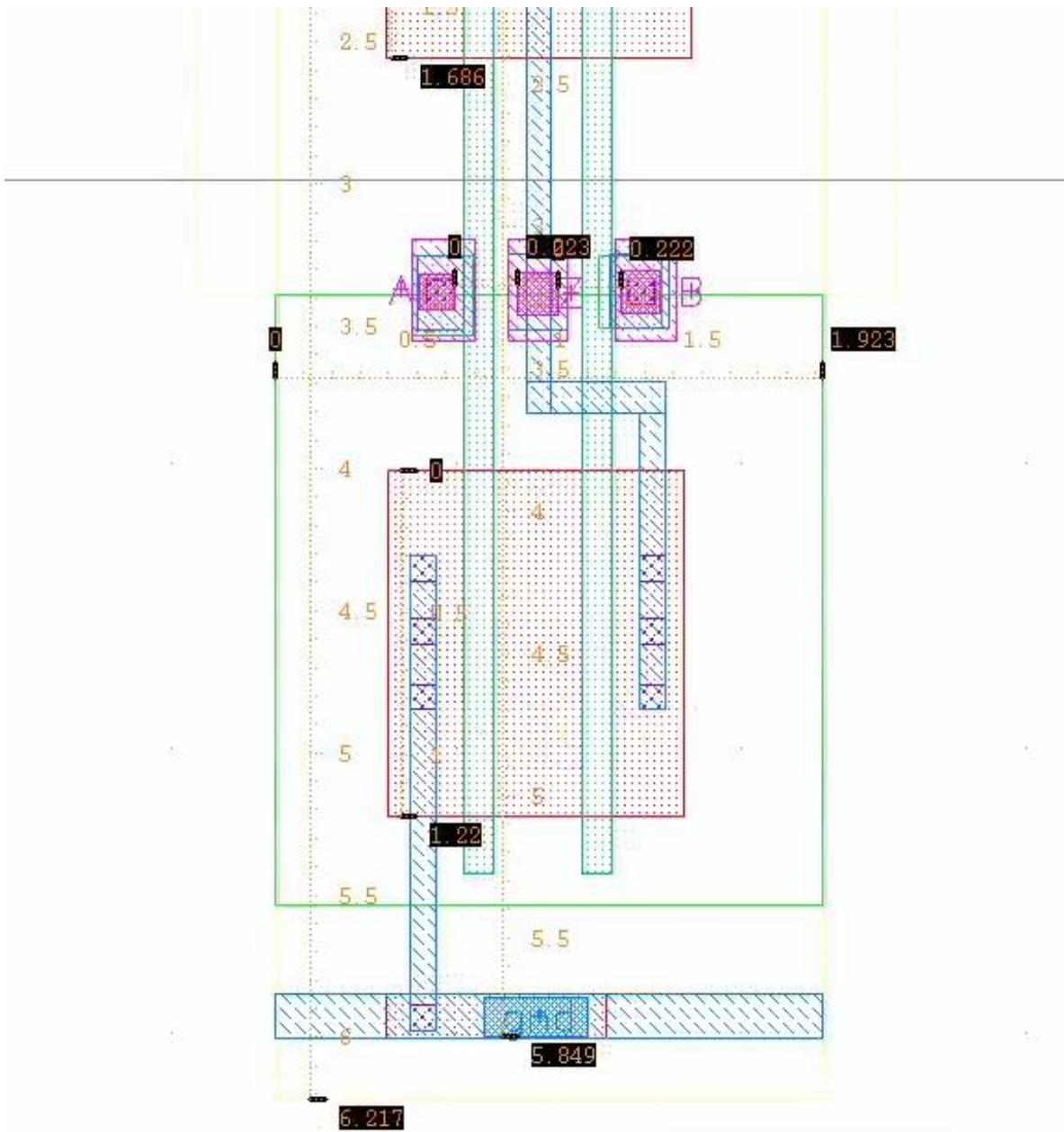


Figure 8 NAND2 bottom

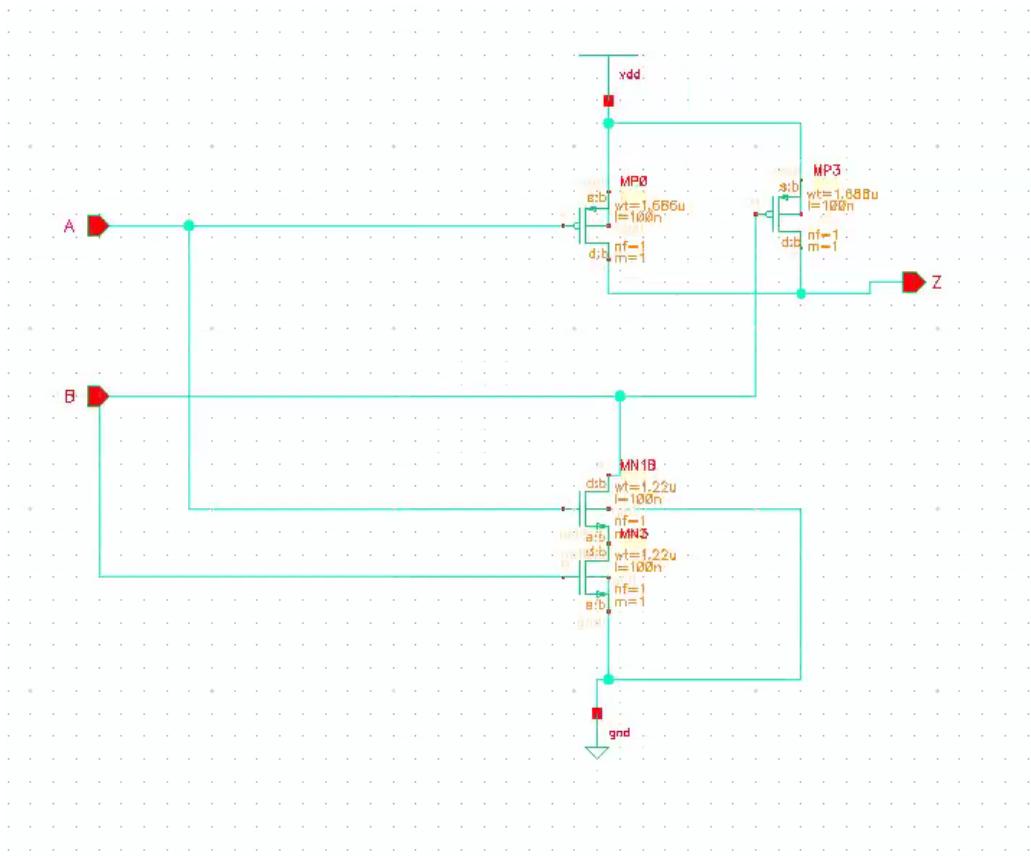


Figure 9 NAND2 schematic

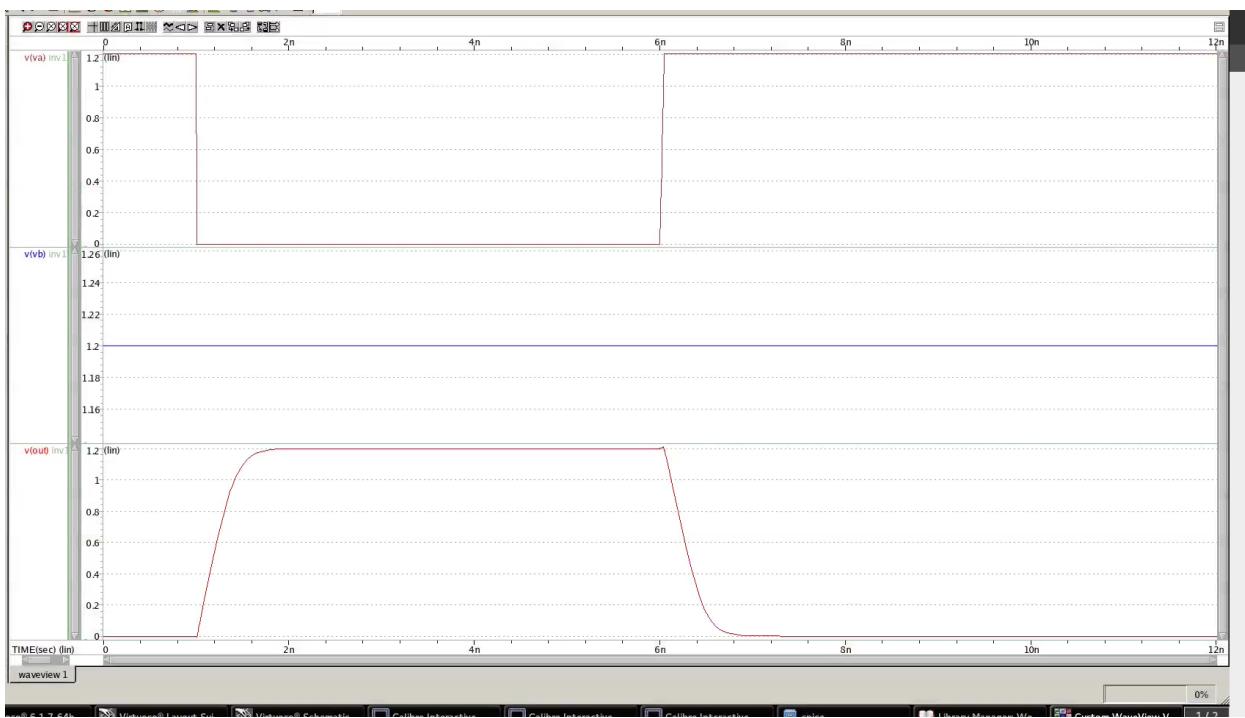


Figure 10 NAND2 simulation waveform

3. NOR2

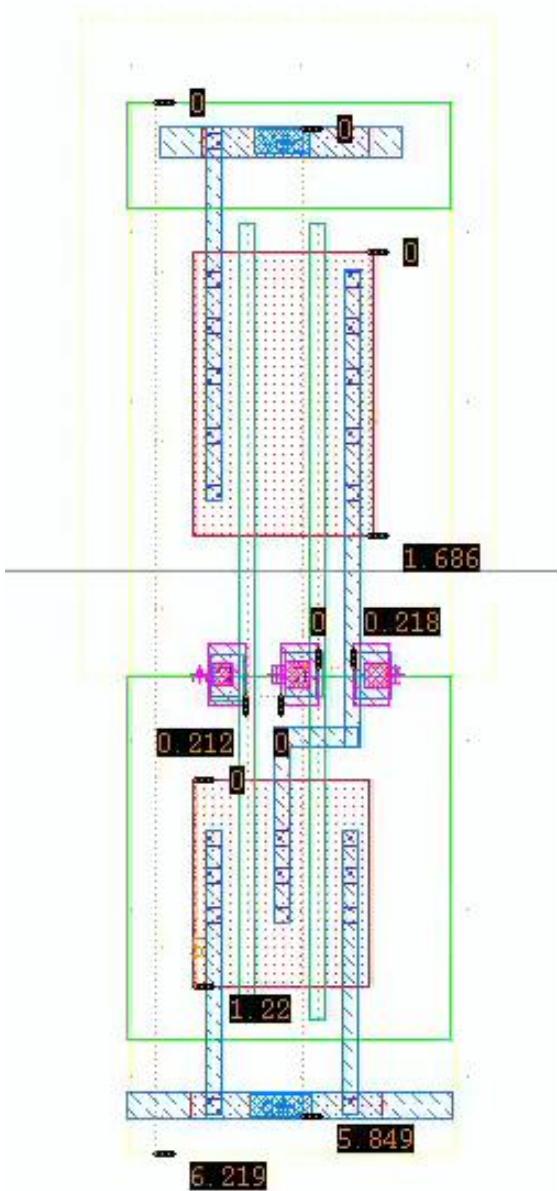


Figure 11 NOR2 full view

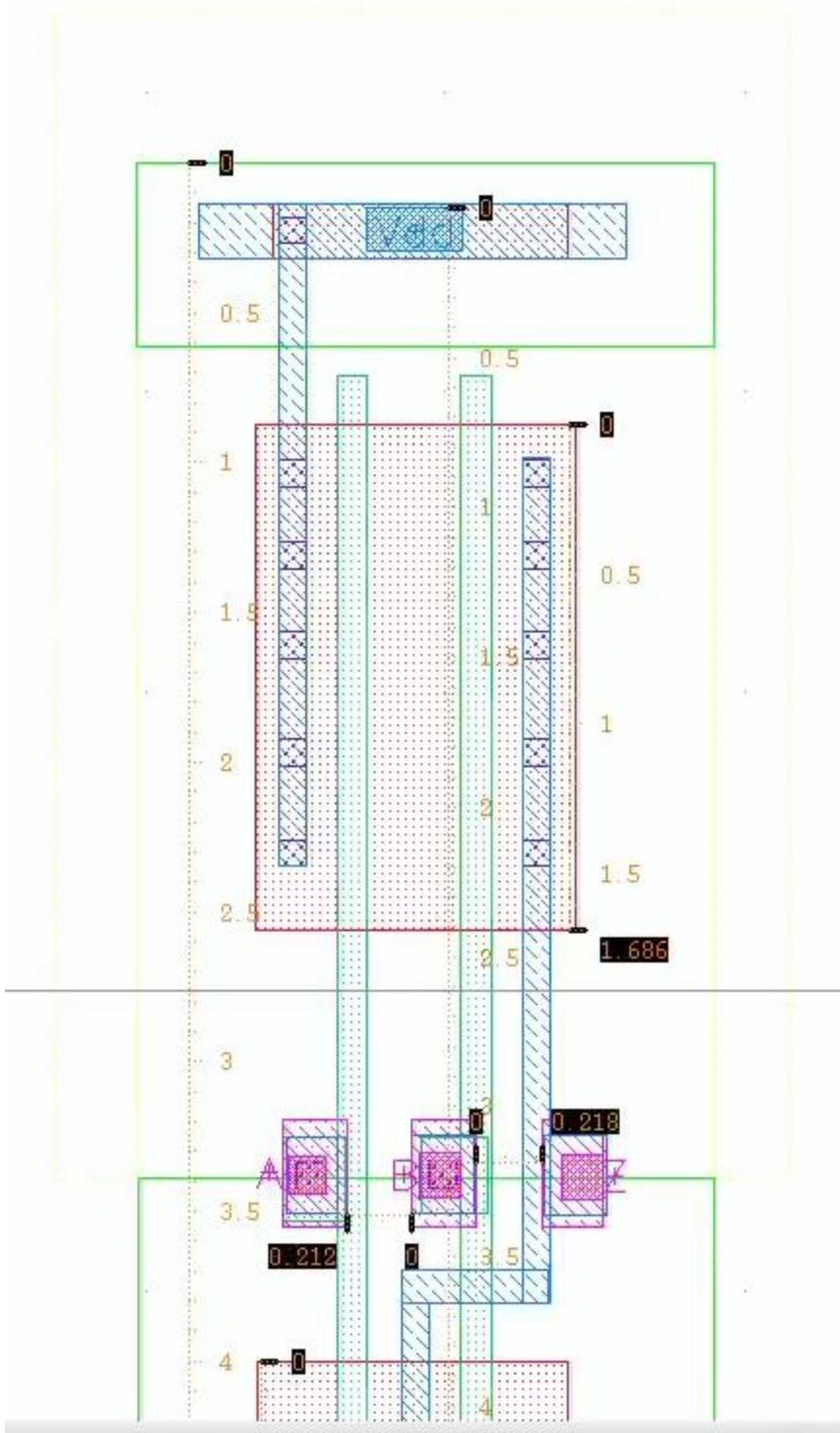


Figure 12 NOR2 top

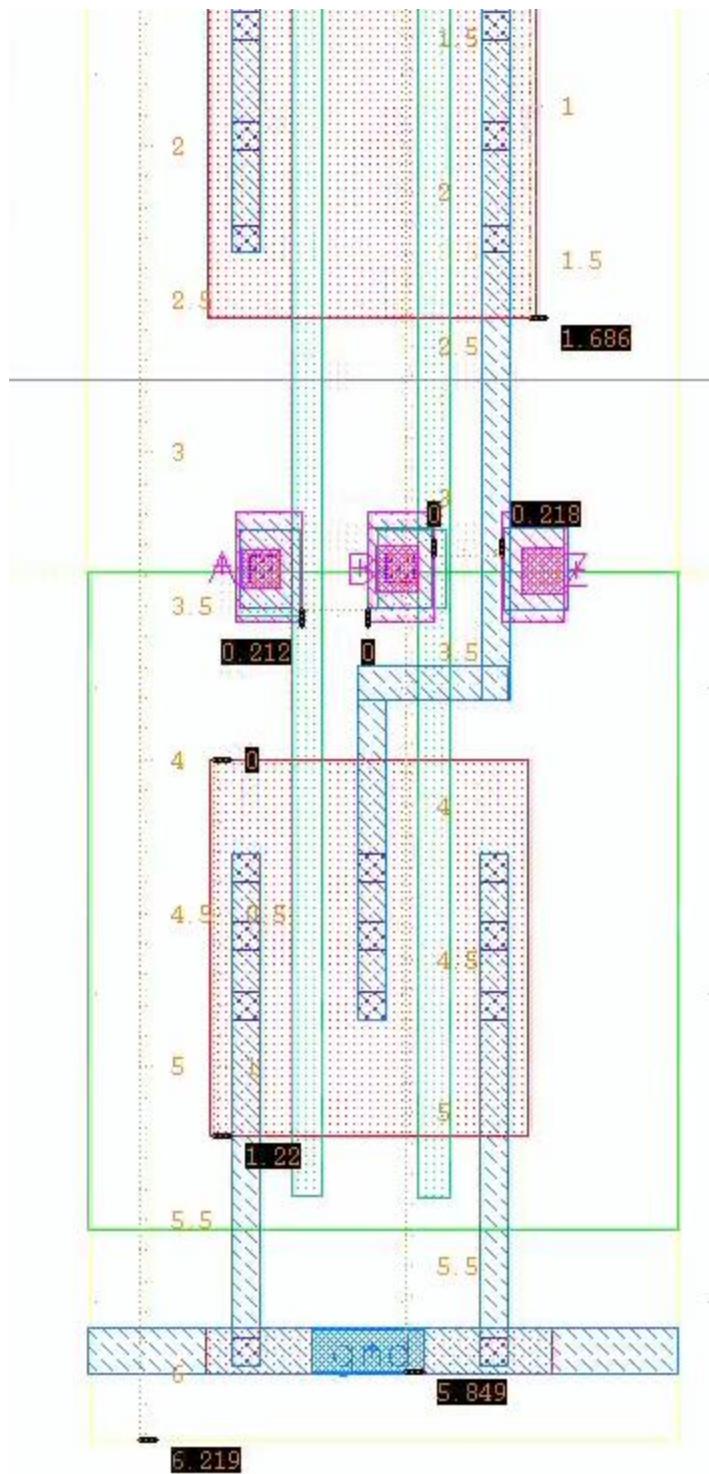


Figure 13 NOR2 bottom

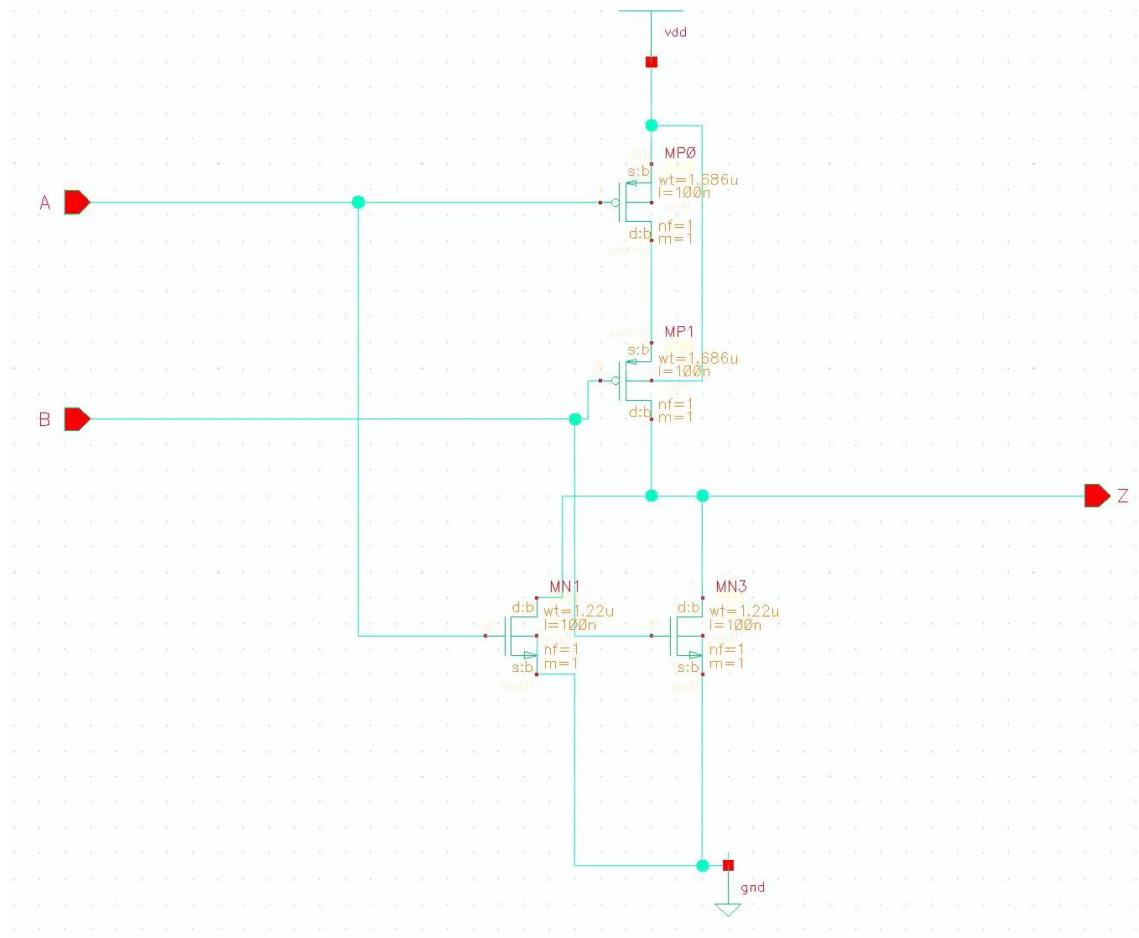


Figure 14 NOR2 schematic

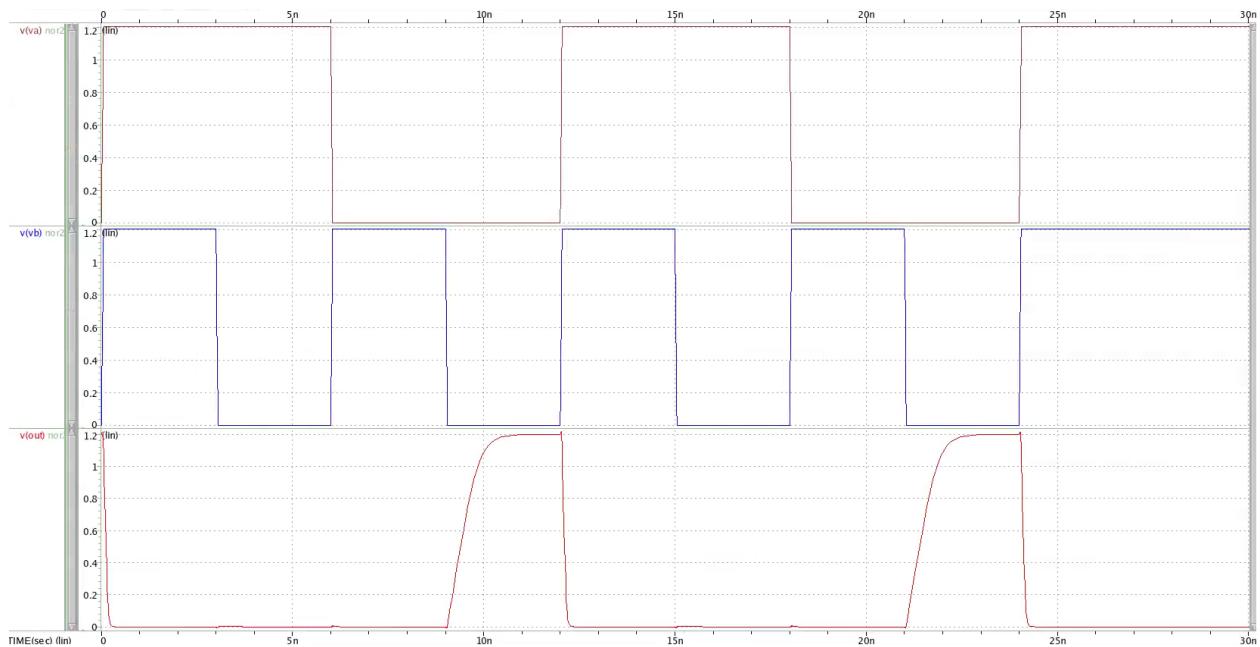


Figure 15 NOR2 simulation waveform

4. XOR2

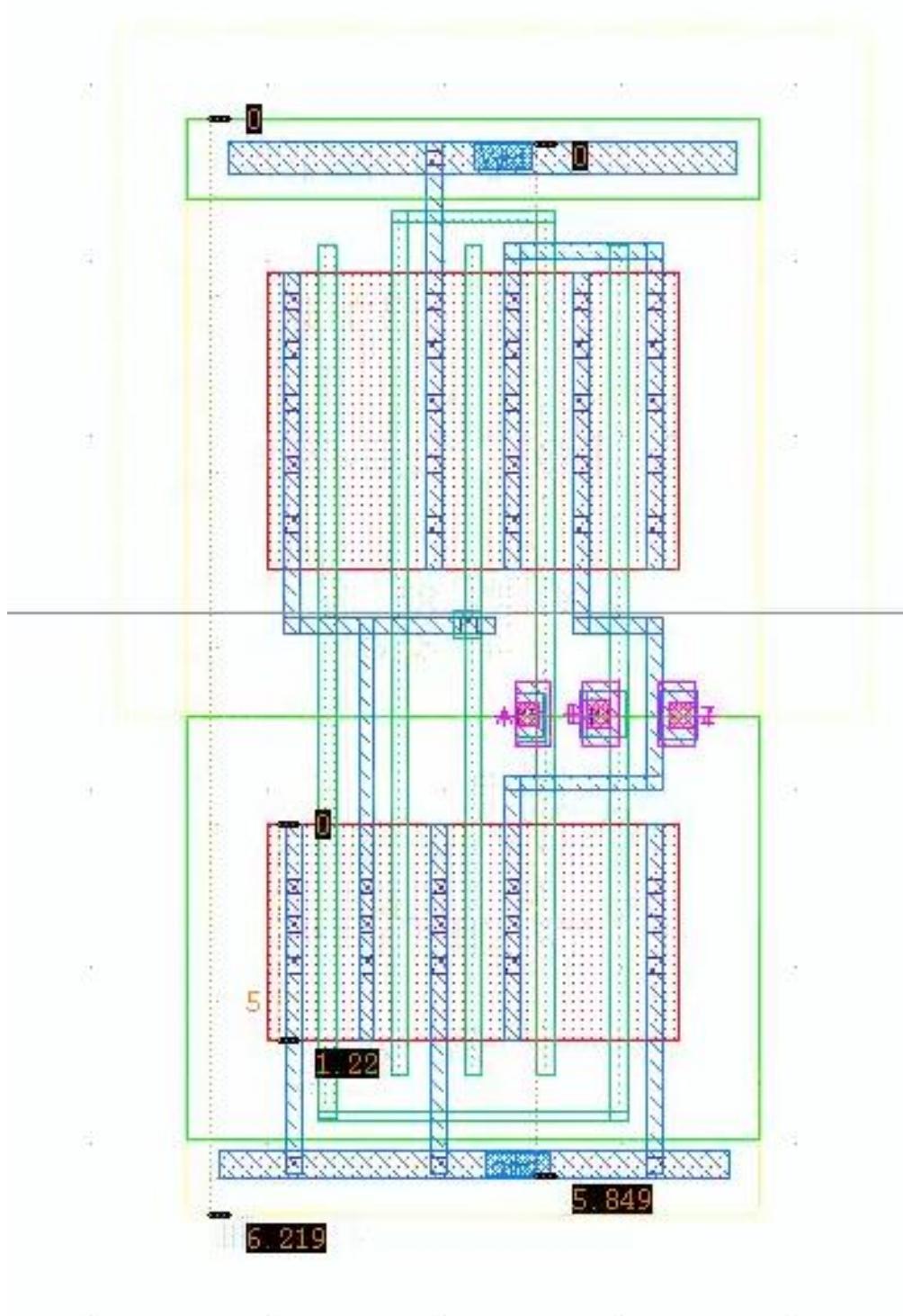


Figure 16 XOR2 full view

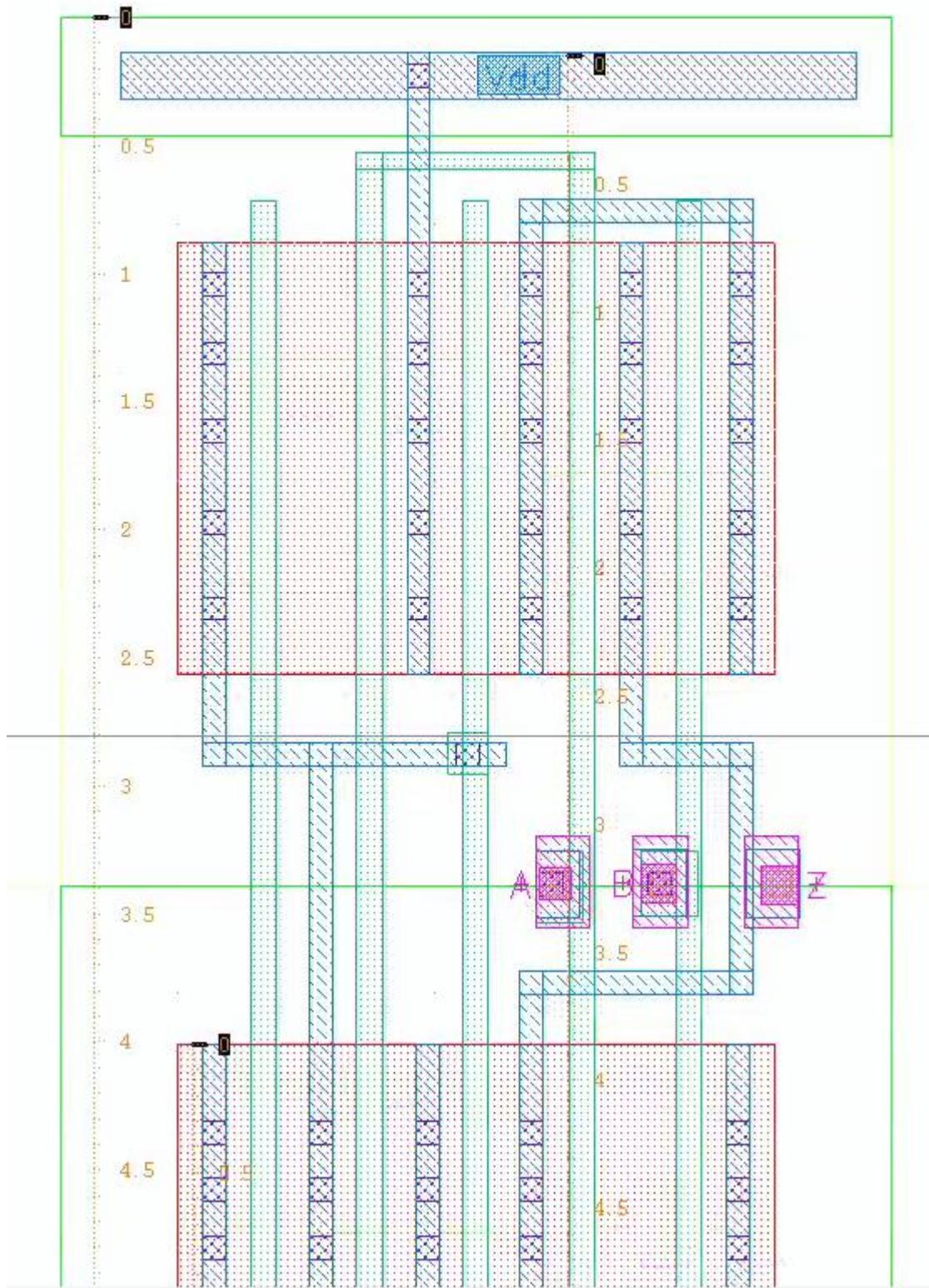


Figure 17 XOR2 top

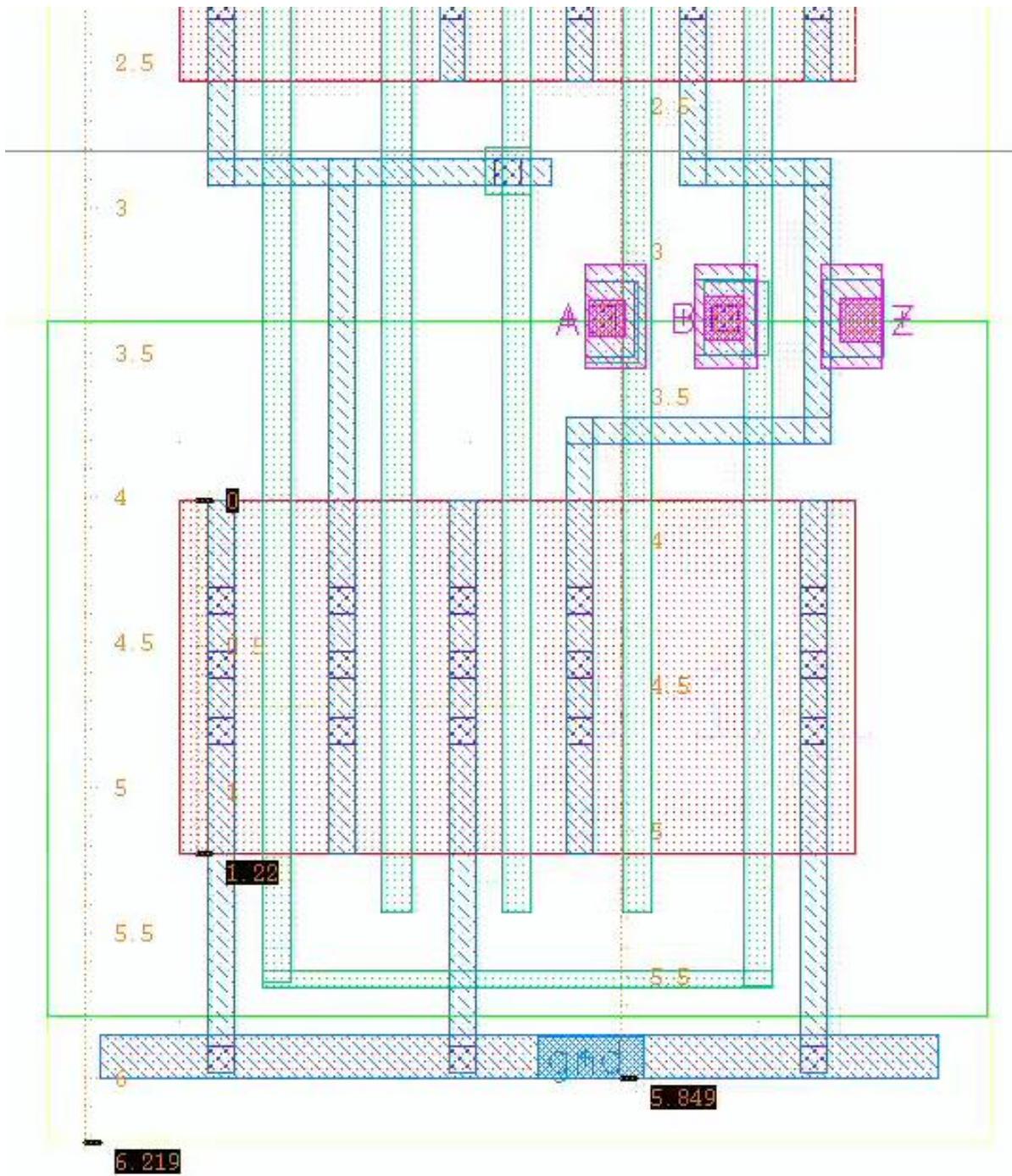


Figure 18 XOR2 bottom

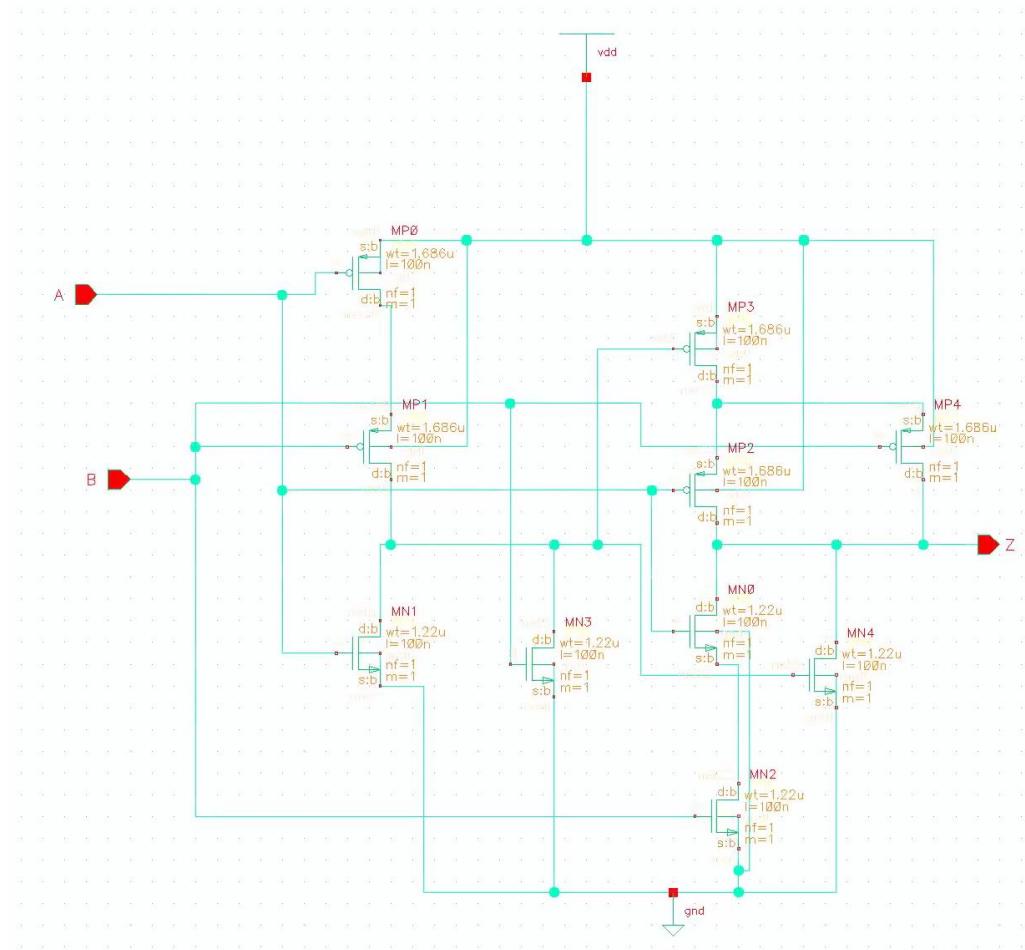


Figure 19 XOR2 schematic

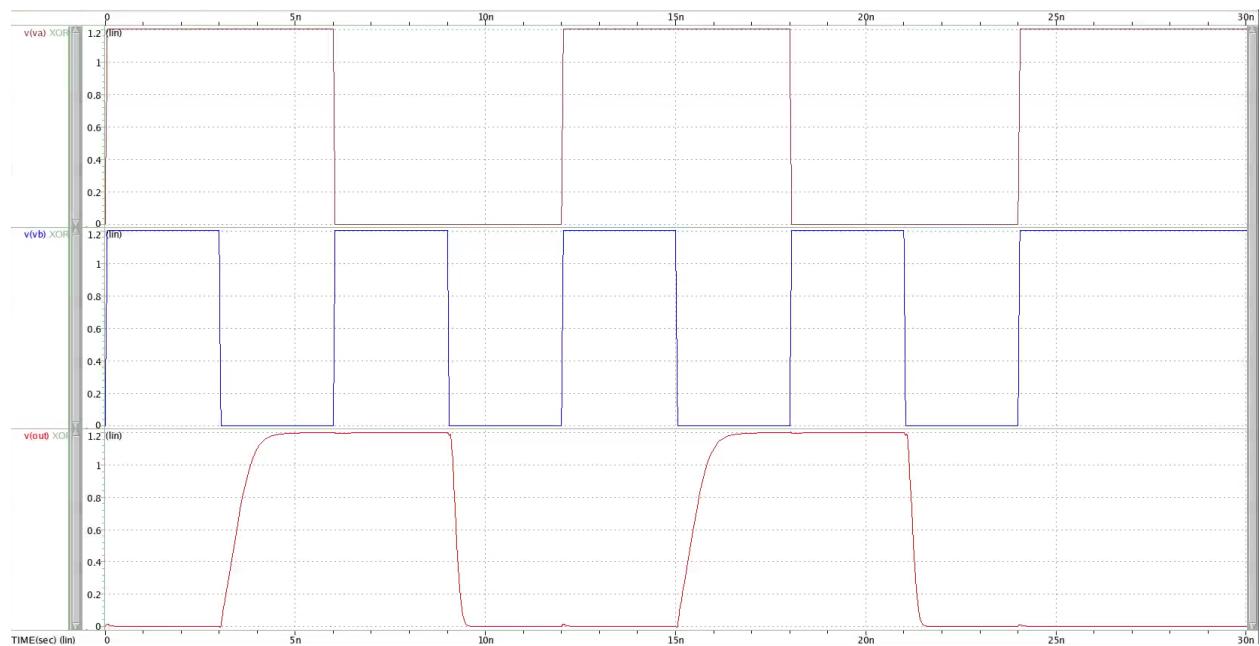


Figure 20 XOR2 simulation waveform

5.MUX2:1

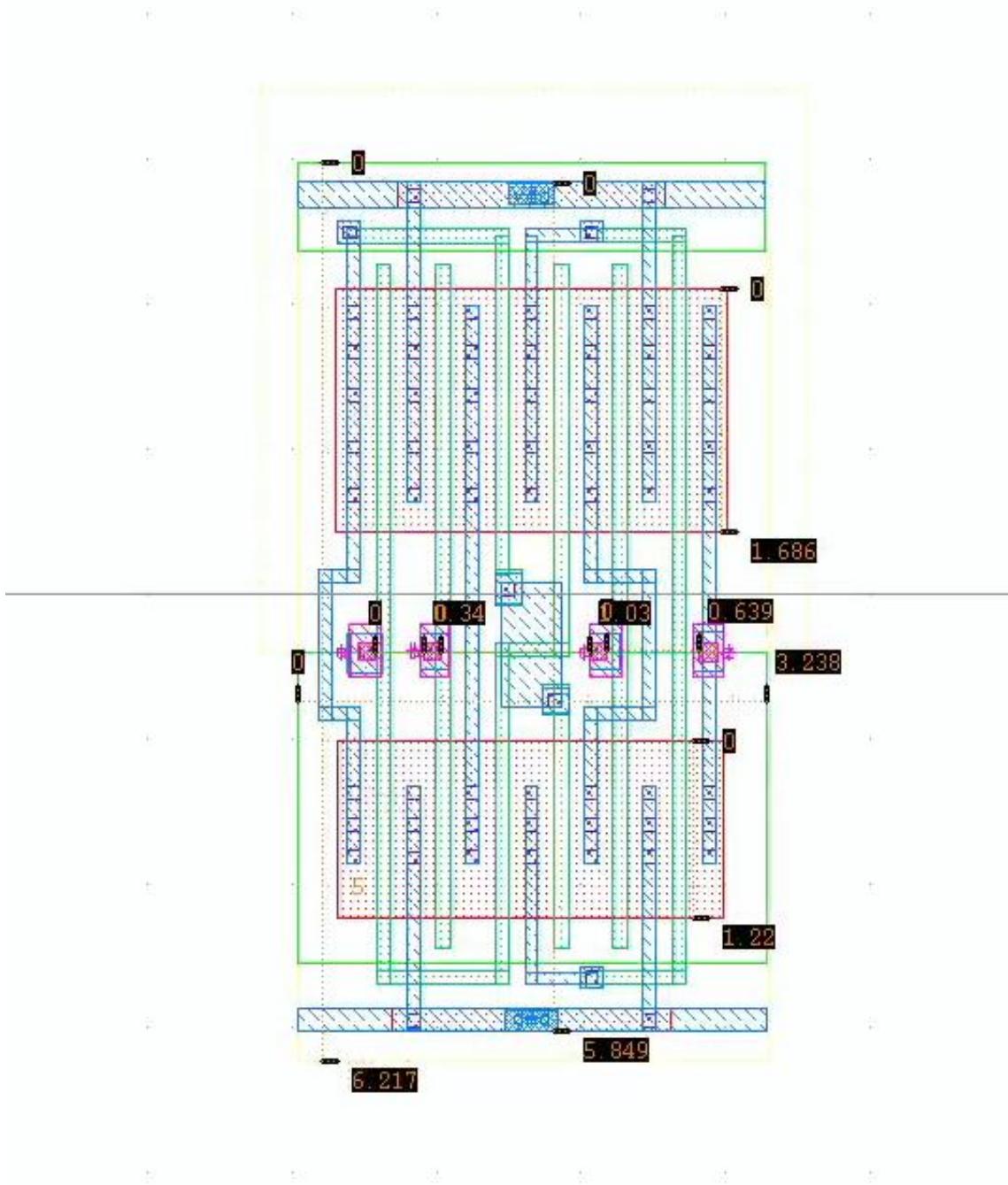


Figure 21 MUX2:1 full view

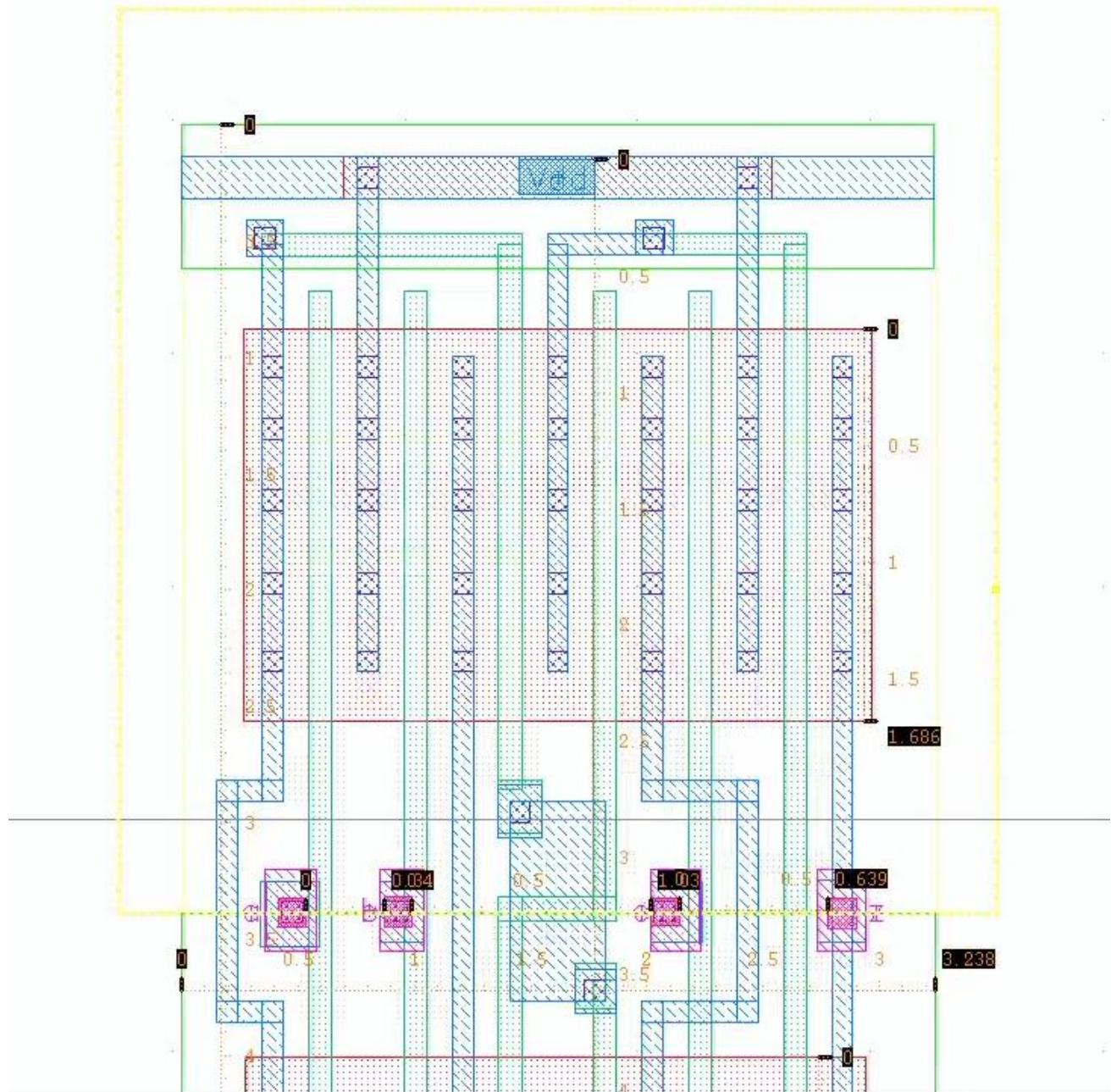


Figure 22 MUX2:1 top

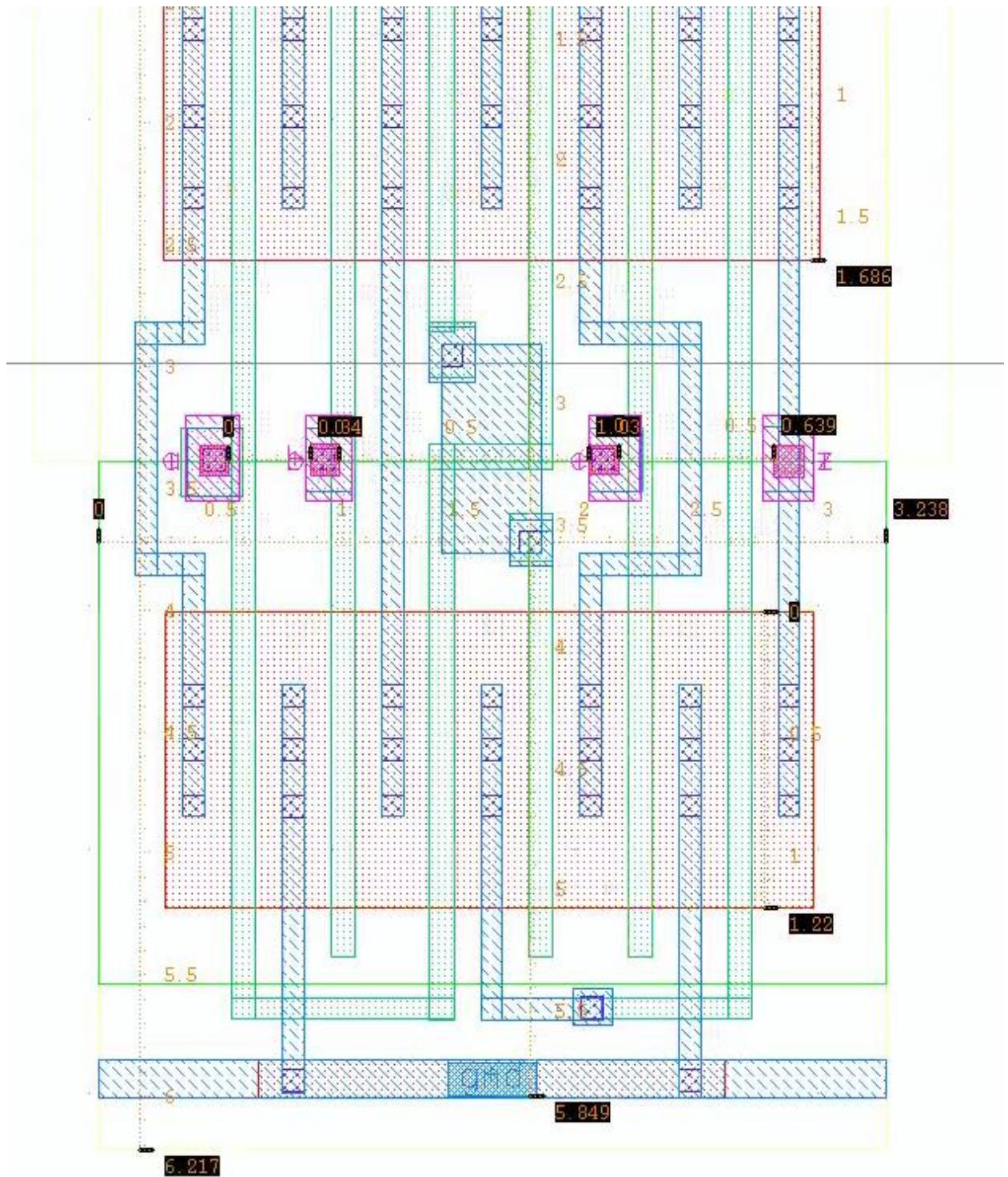


Figure 23 MUX2:1 bottom

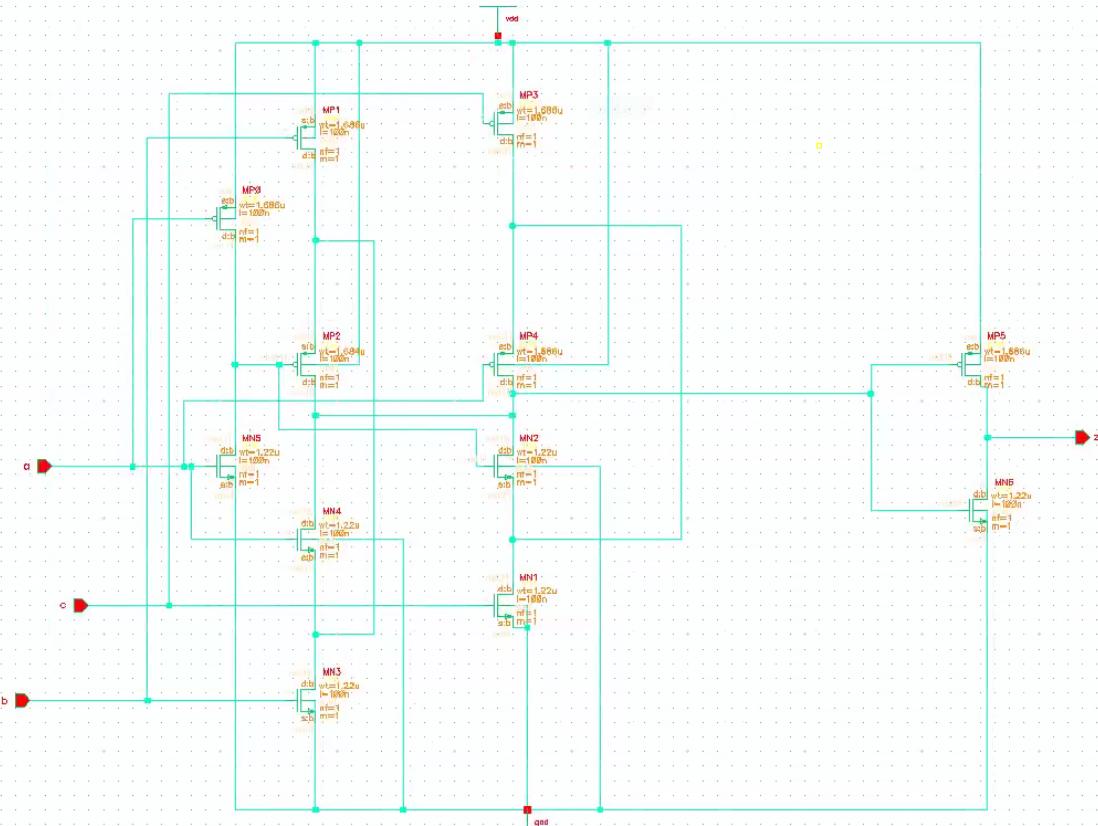


Figure 24 MUX2:1 schematic

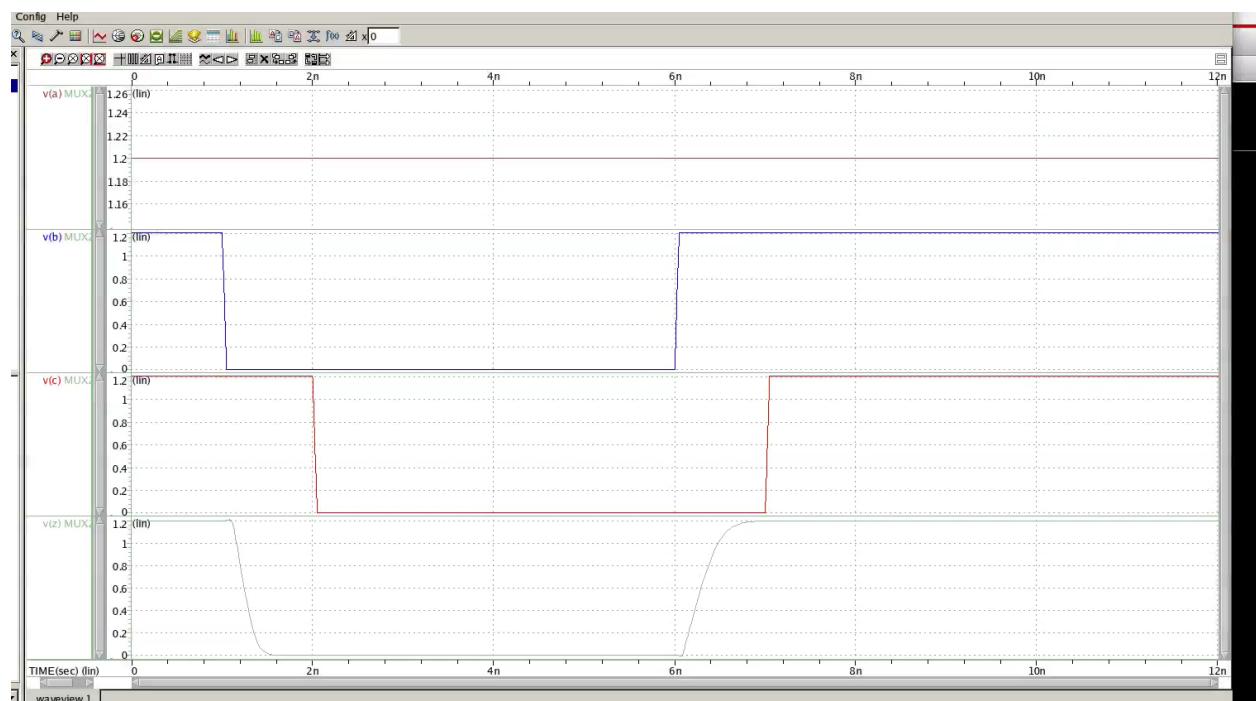


Figure 25 MUX2:1 simulation waveform

6. AOI211

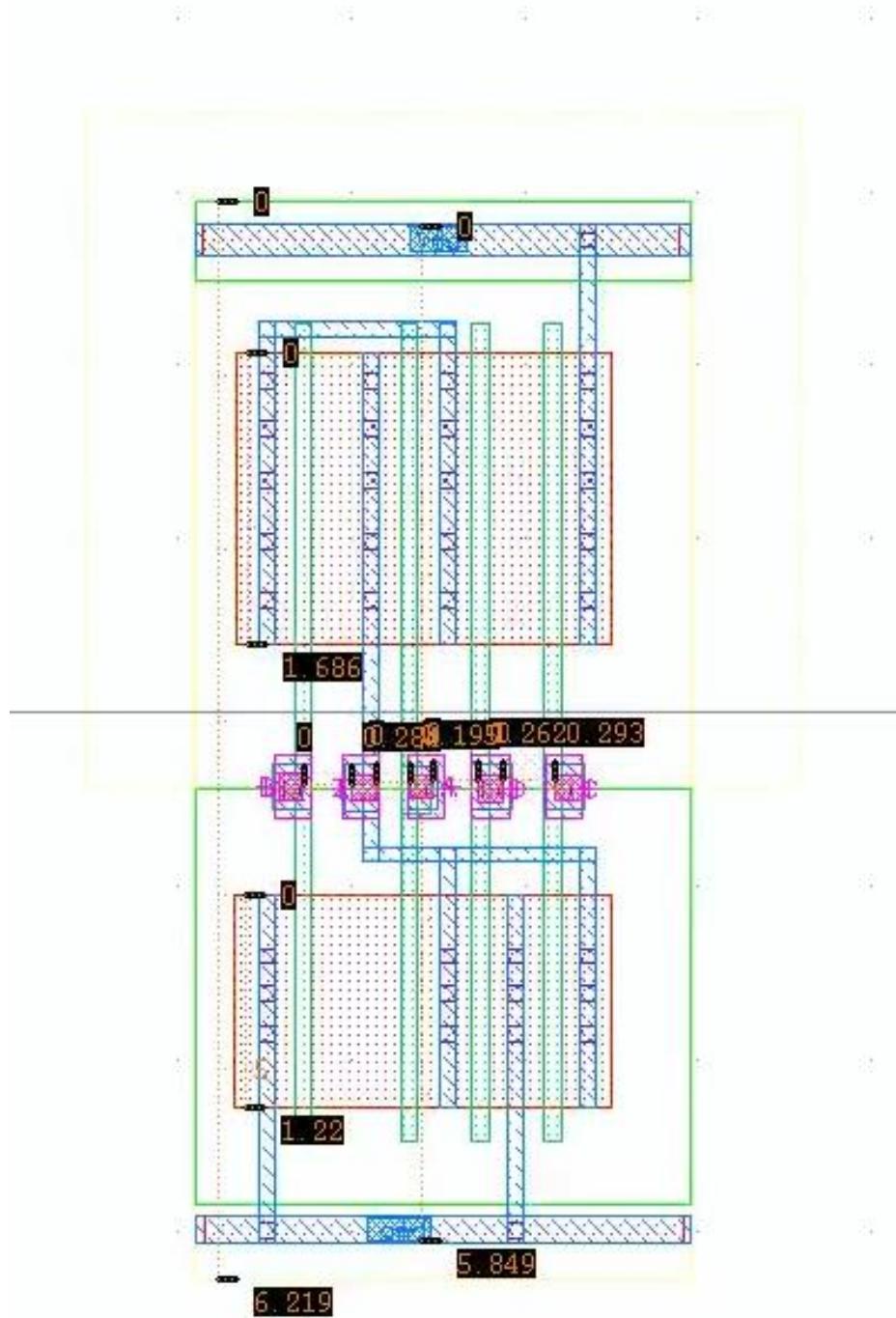


Figure 26 AOI211 full view

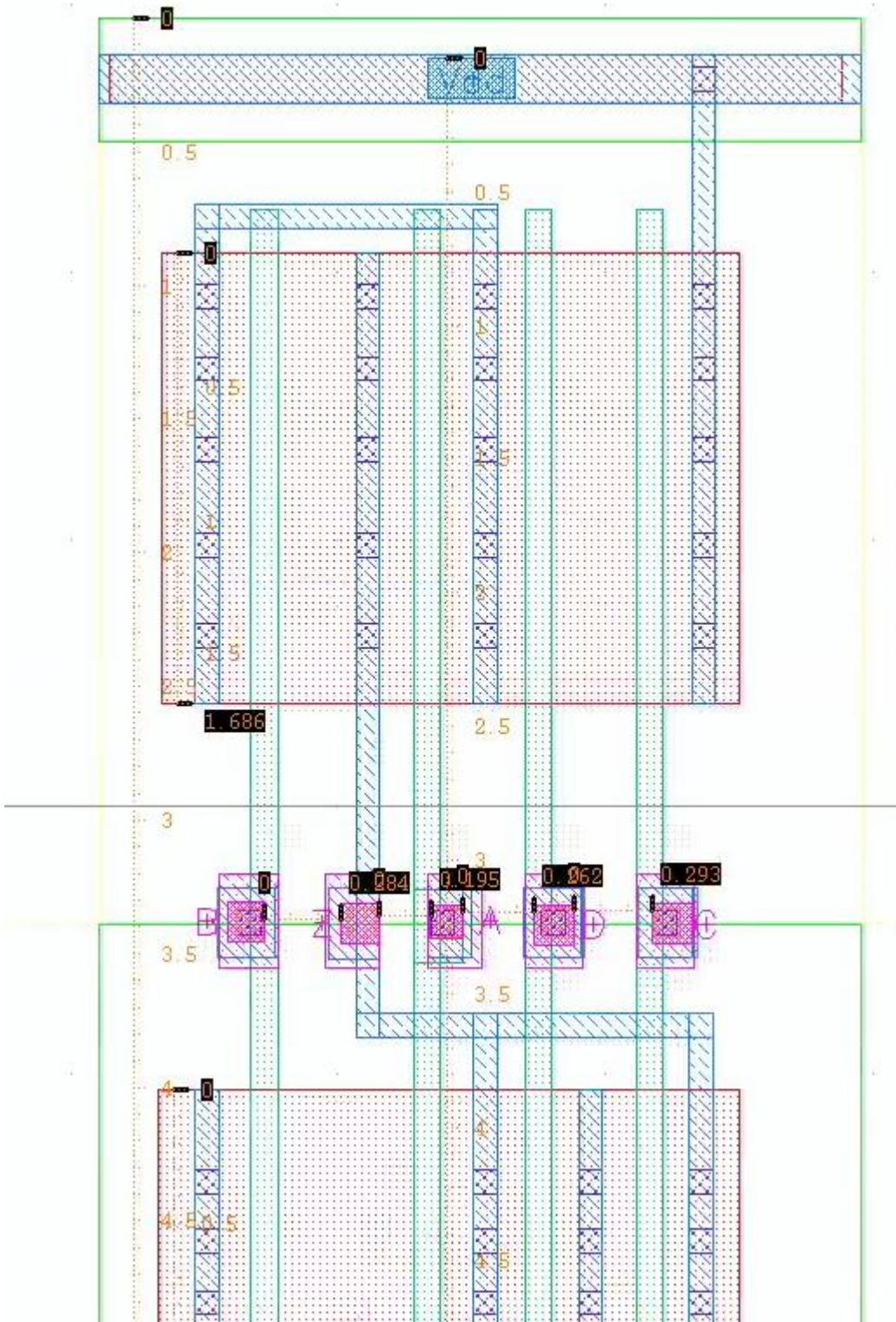


Figure 27 AOI211 top

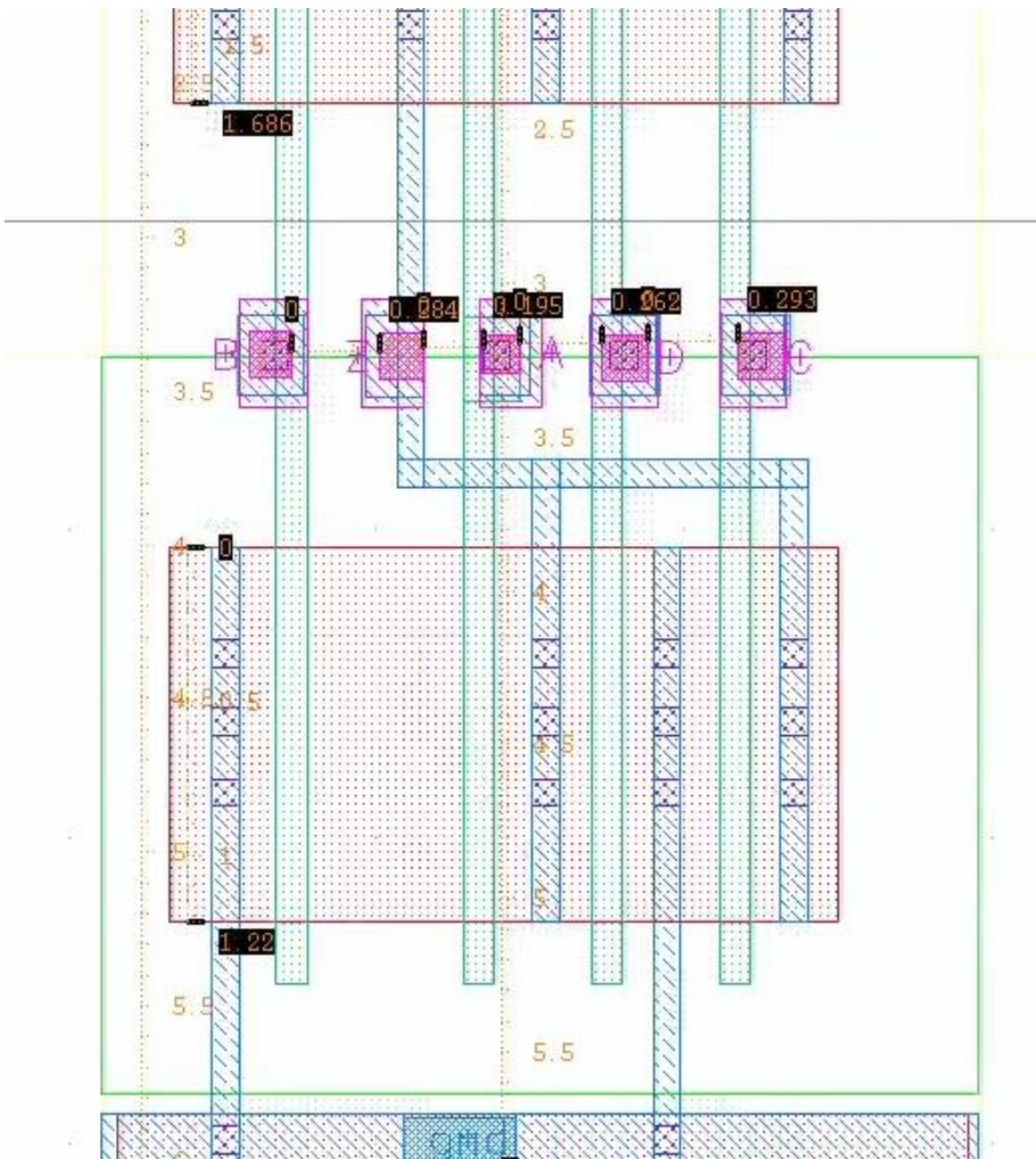


Figure 28 AOI211 bottom

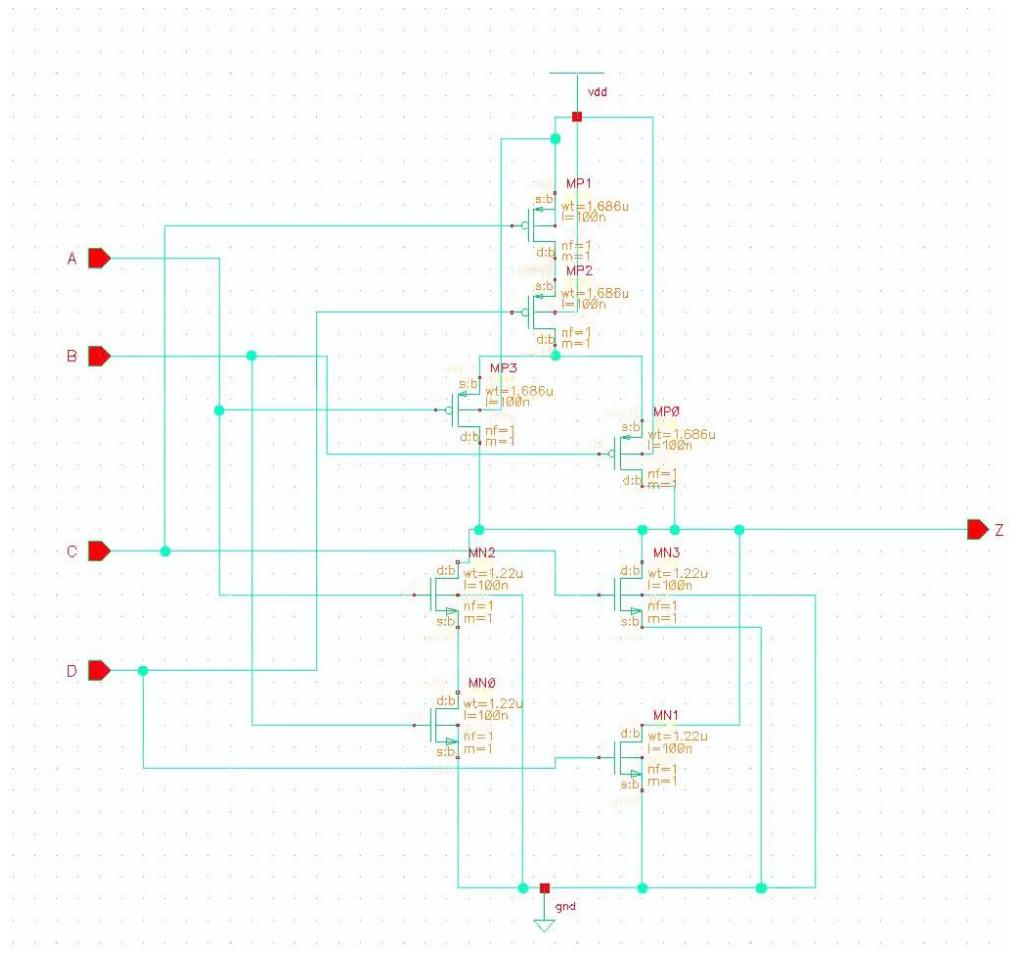


Figure 29 AOI211 schematic

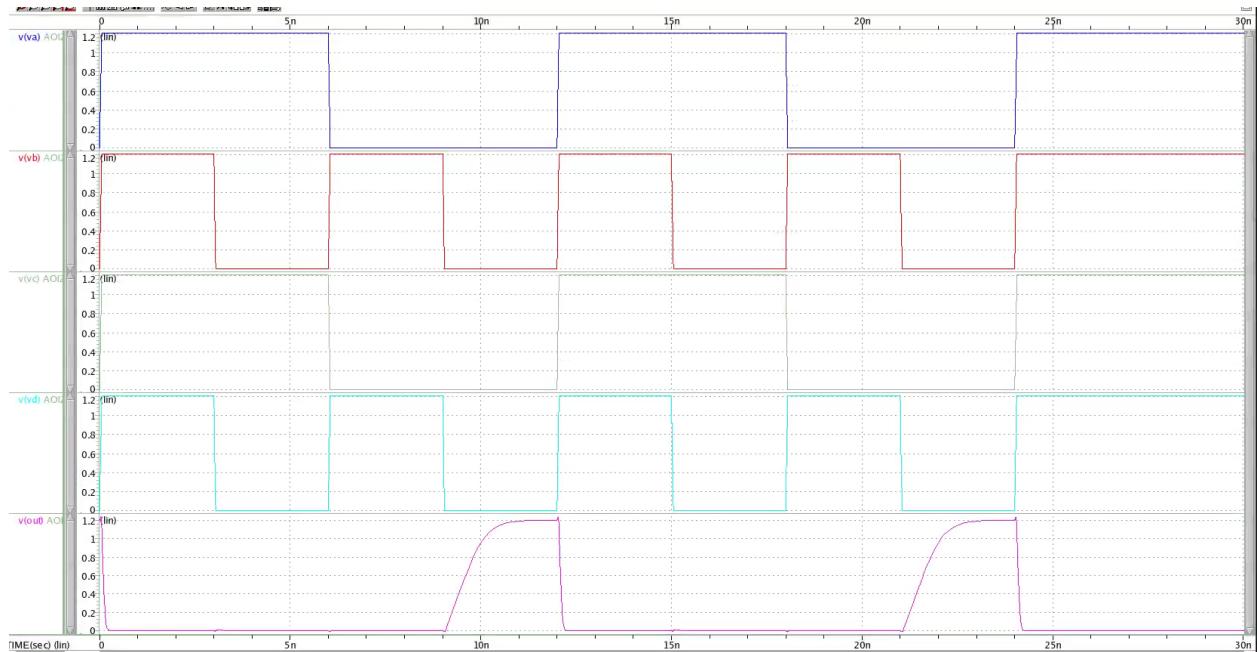


Figure 30 AOI211 simulation waveform

7. OAI21

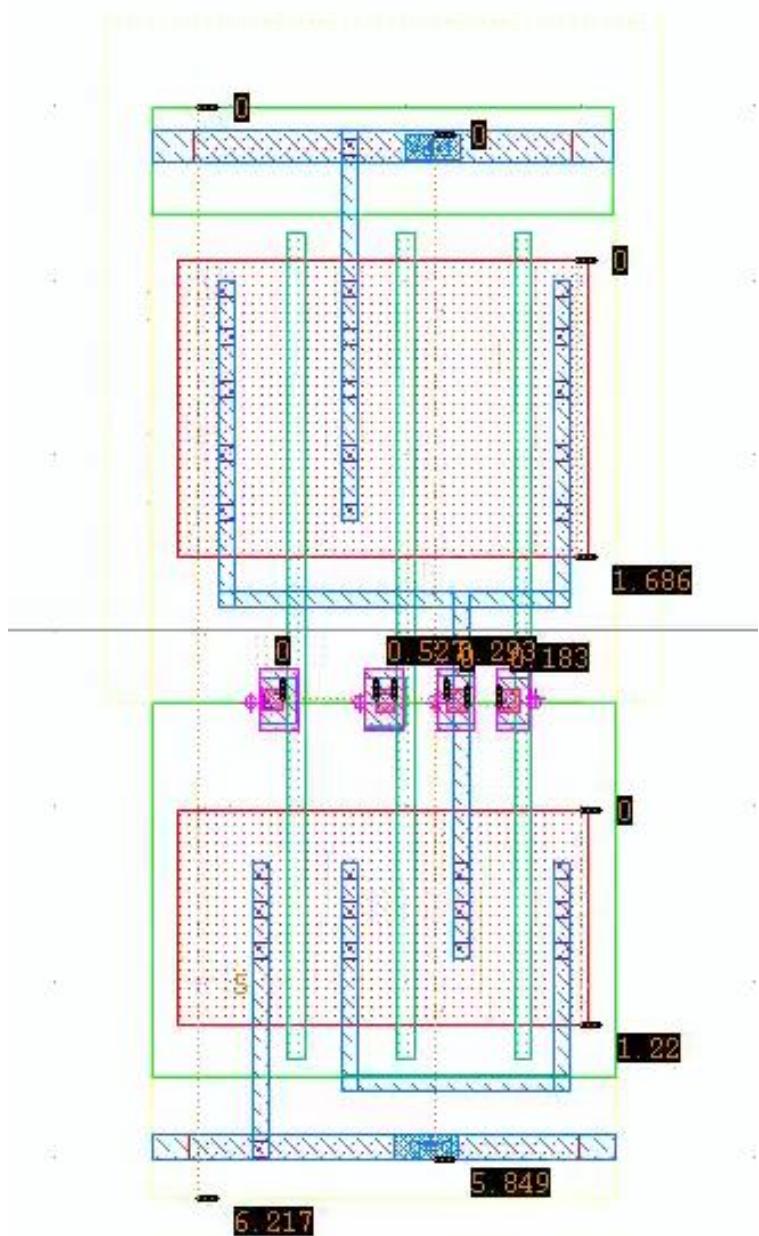


Figure 31 OAI21 full view

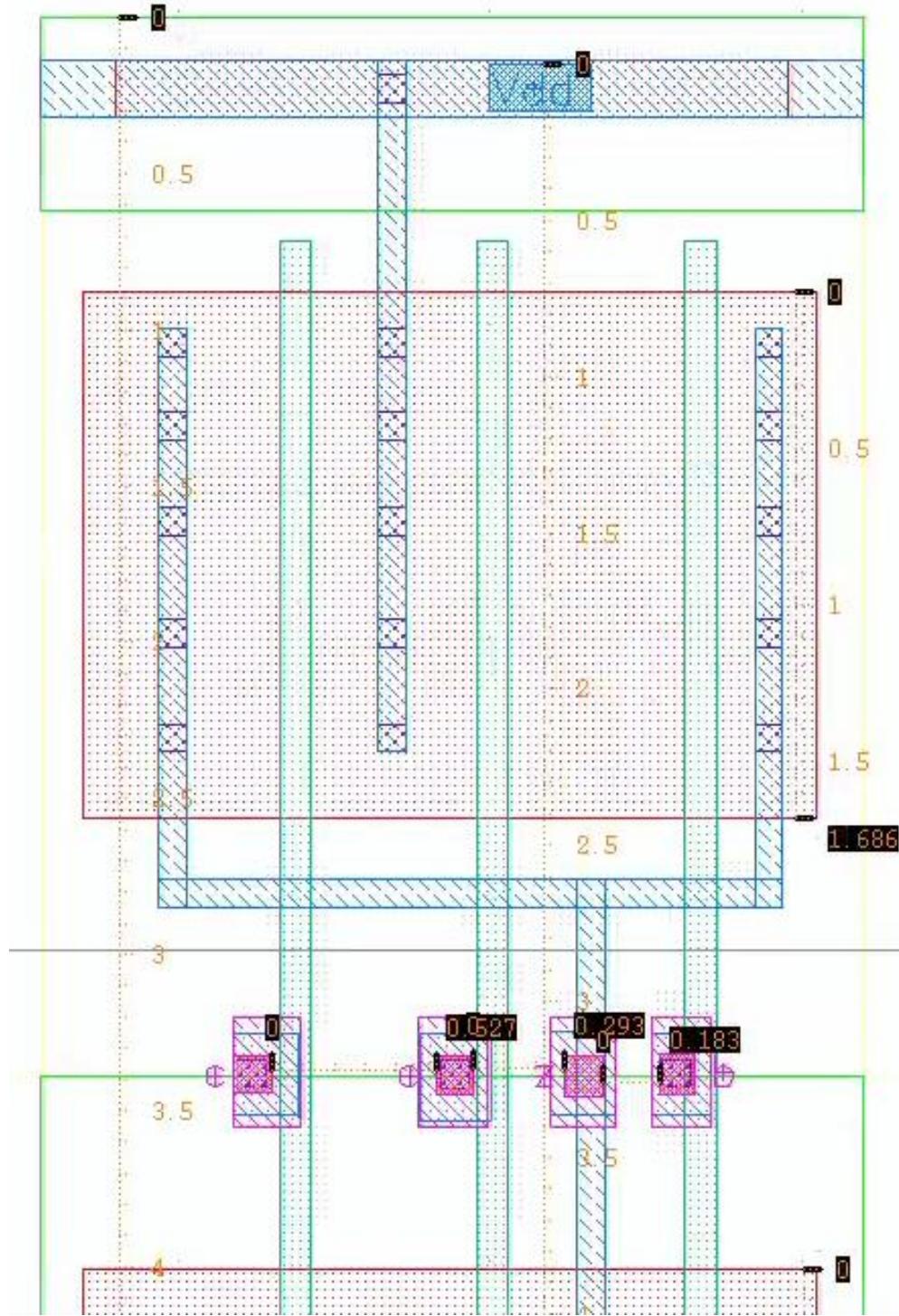


Figure 32 OAI21 top

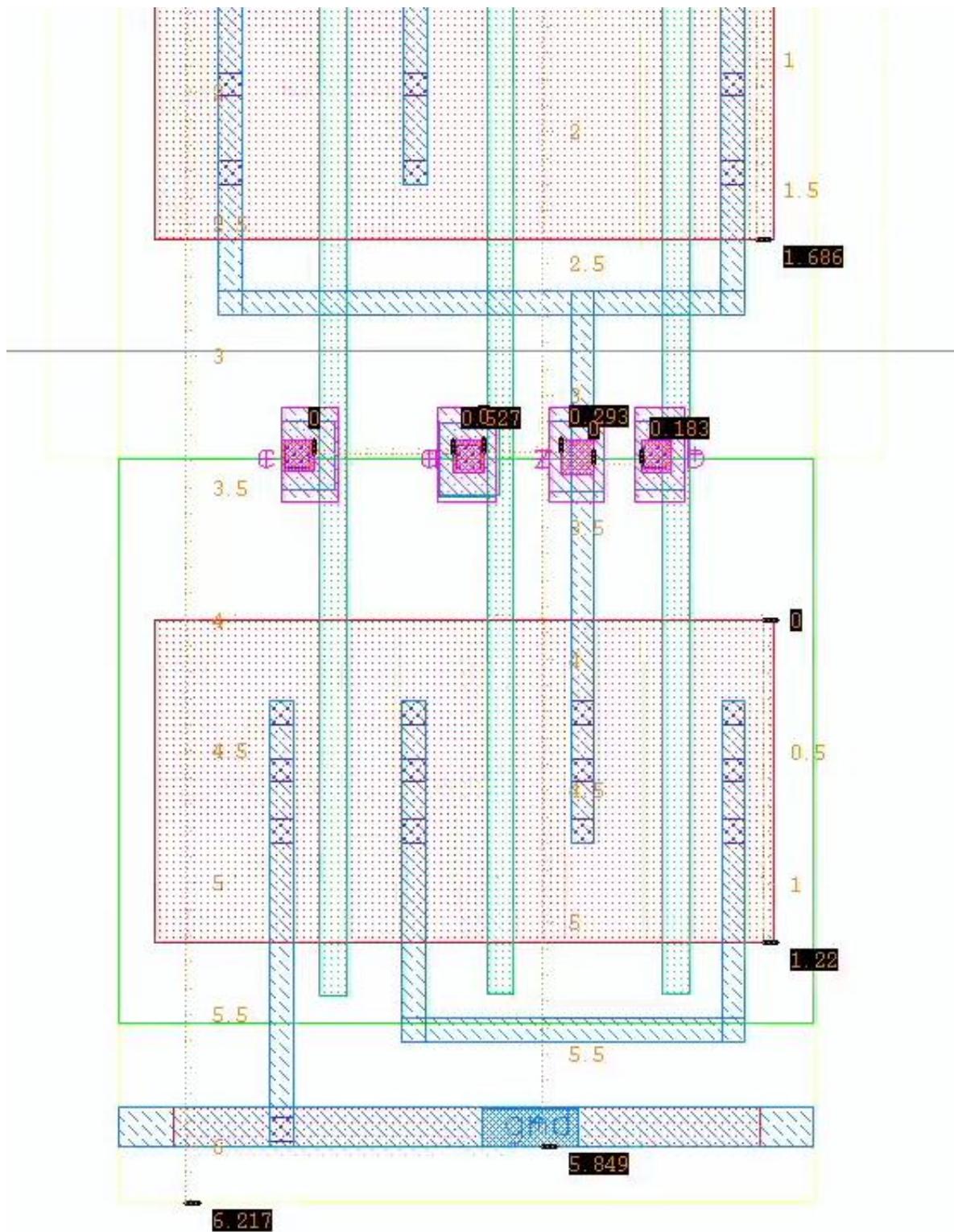


Figure 33 OAI21 bottom

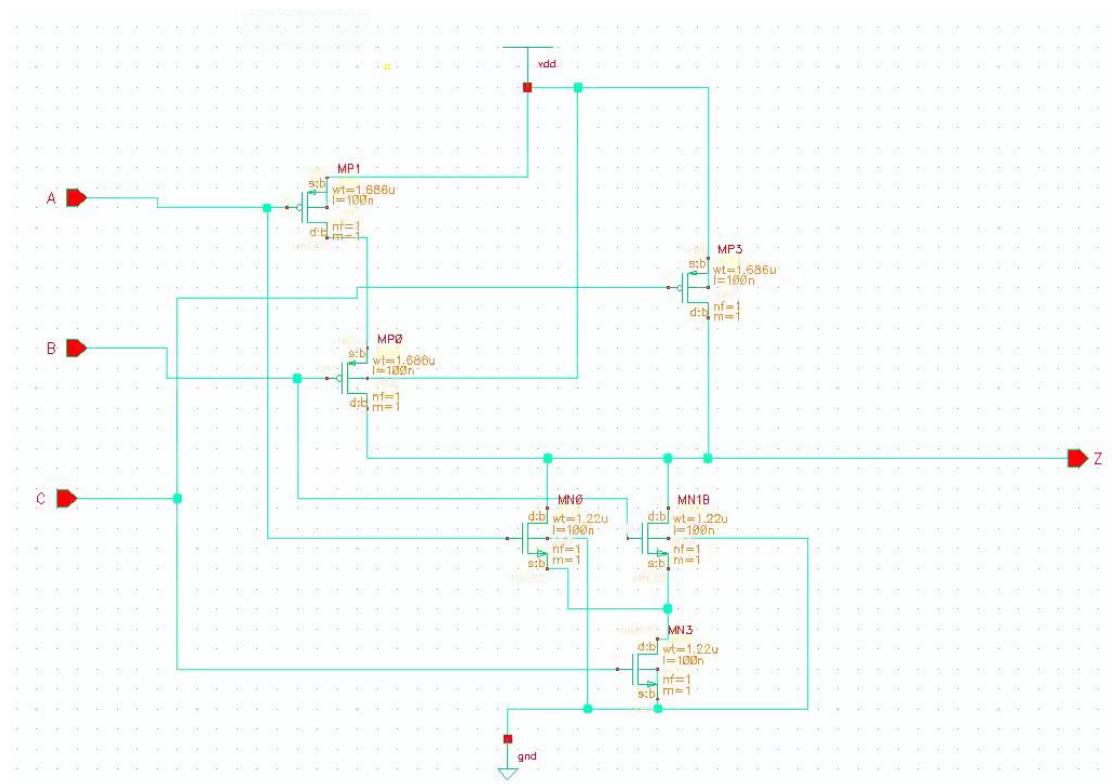


Figure 34 OAI211 schematic

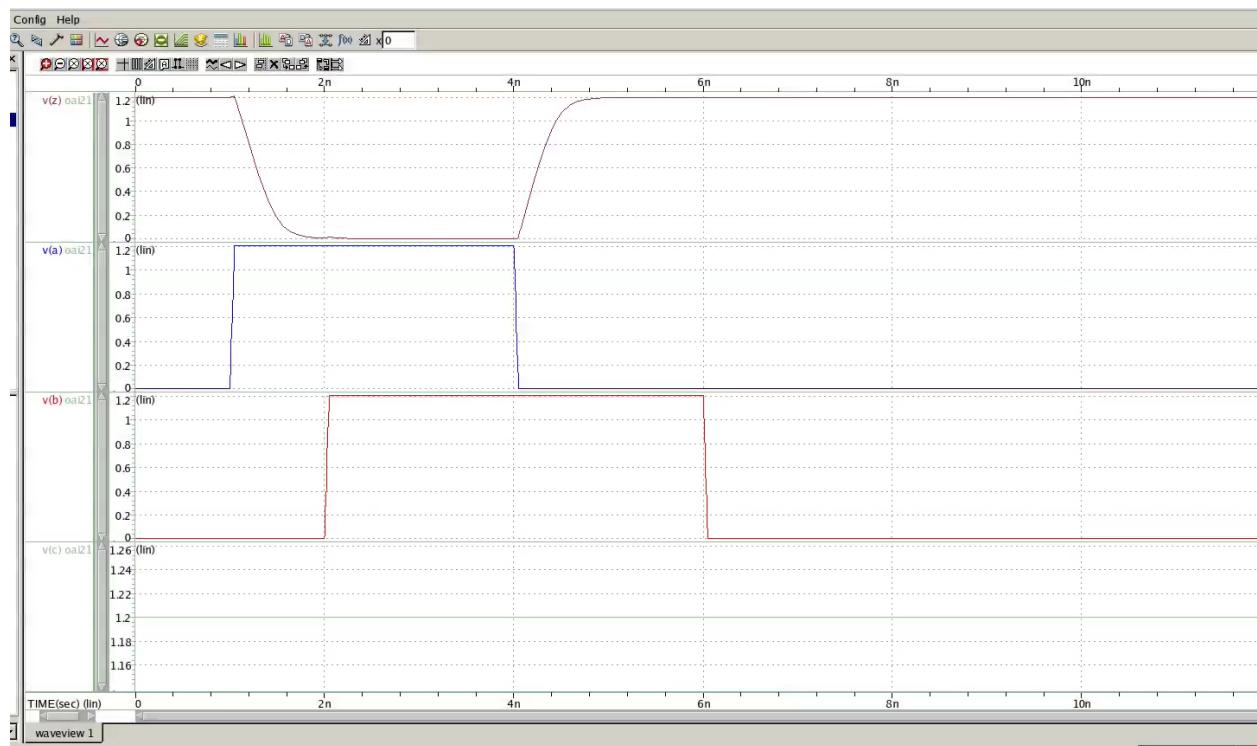


Figure 35 OAI21 simulation waveform

8. AOI22

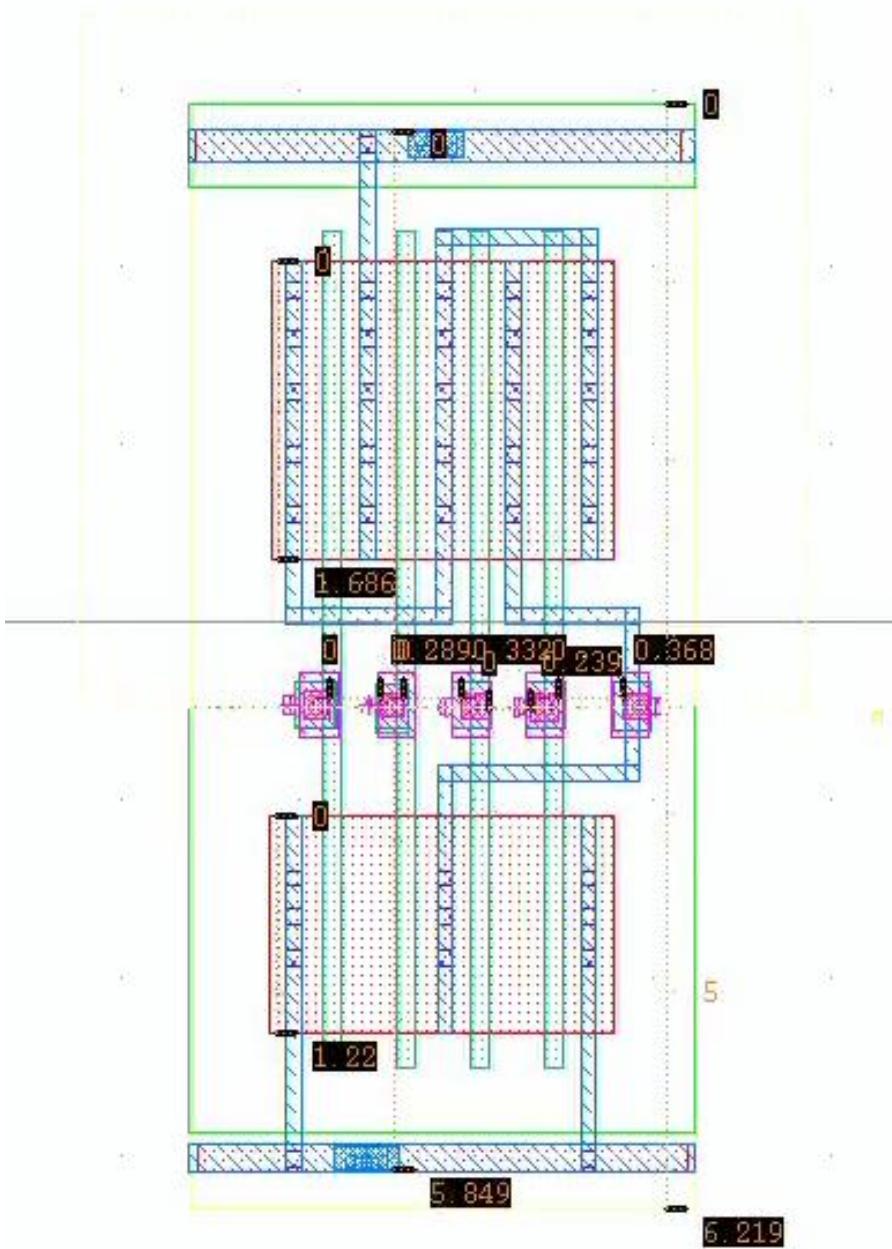


Figure 36 AOI22 full view

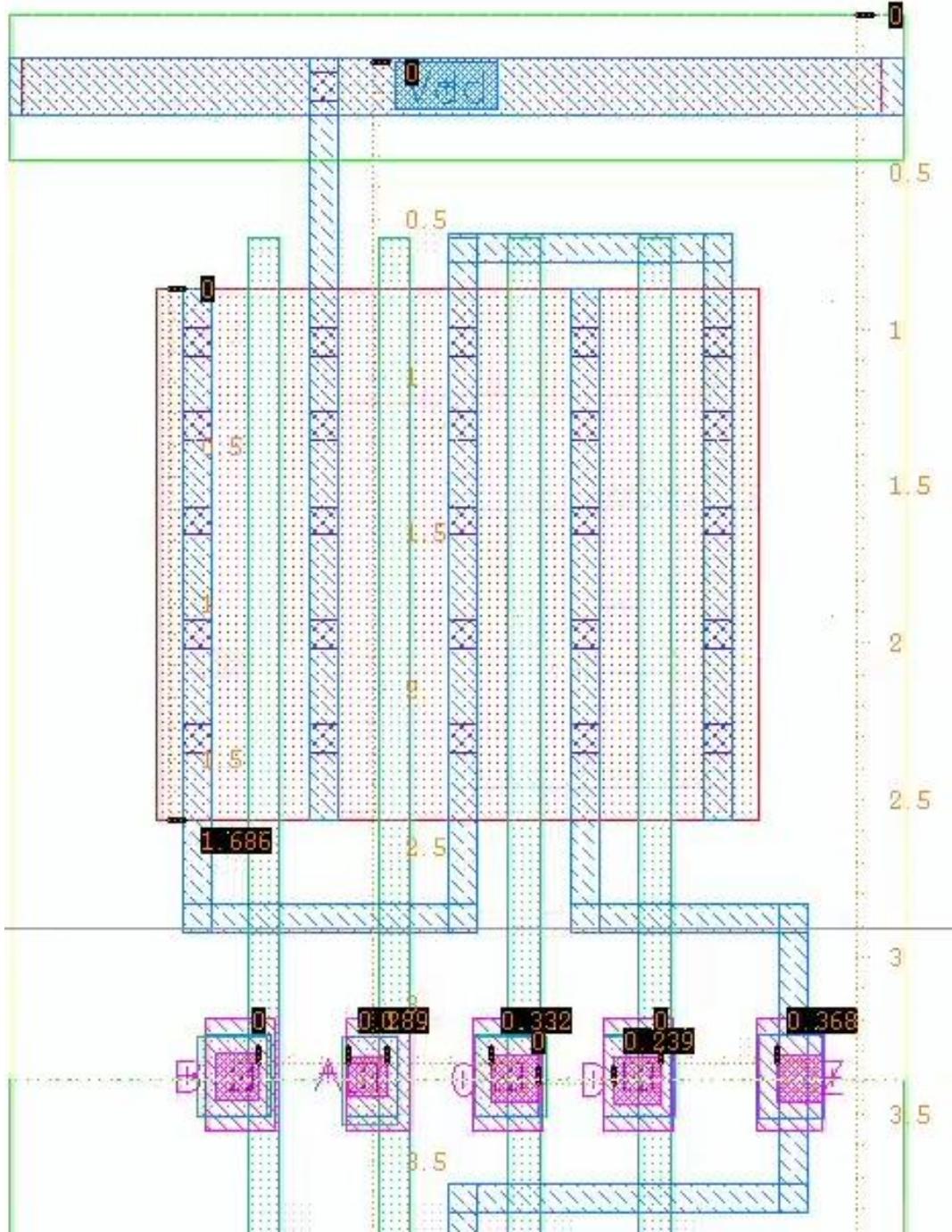


Figure 37 AOI22 top

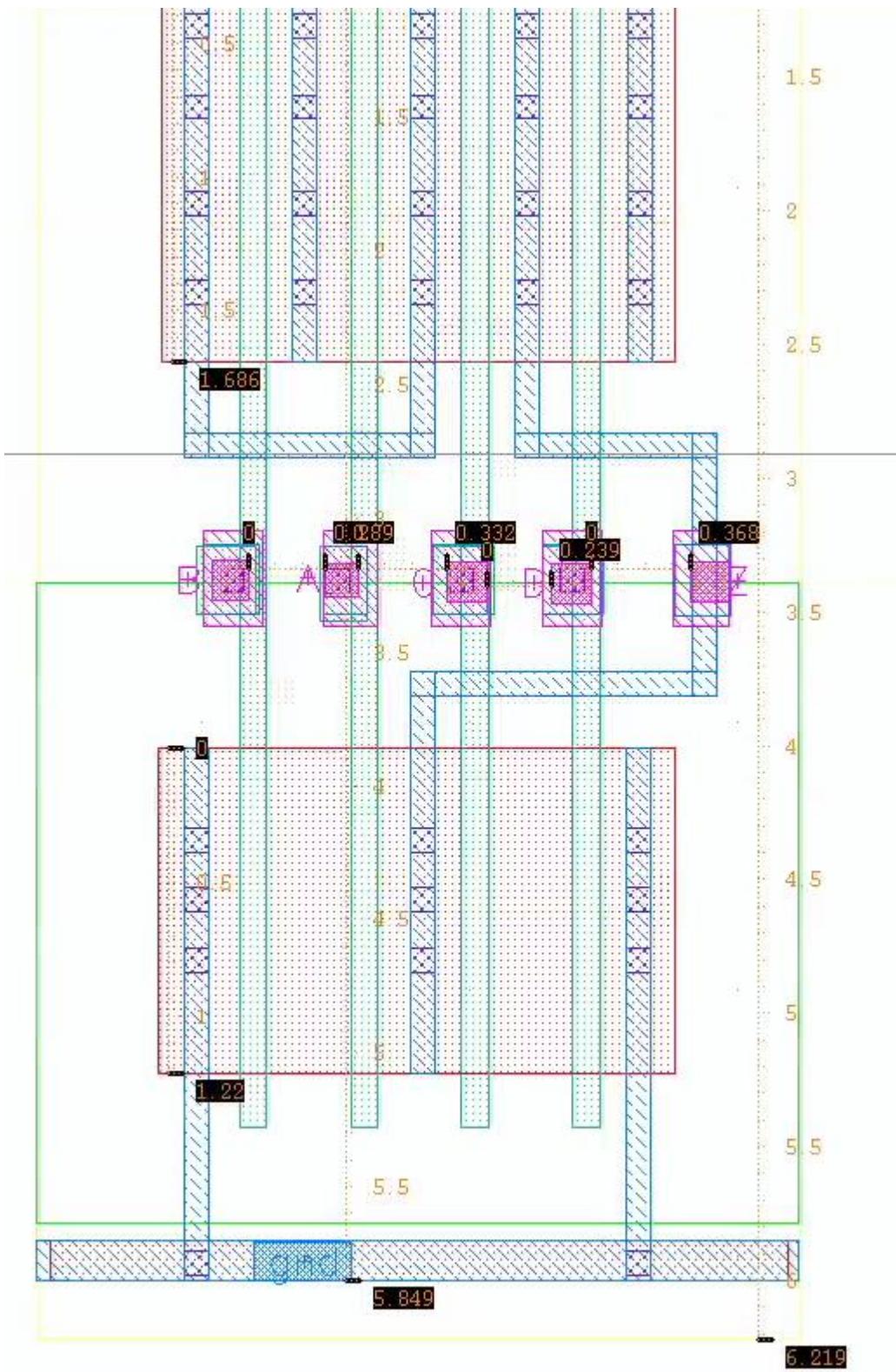


Figure 38 AOI22 bottom

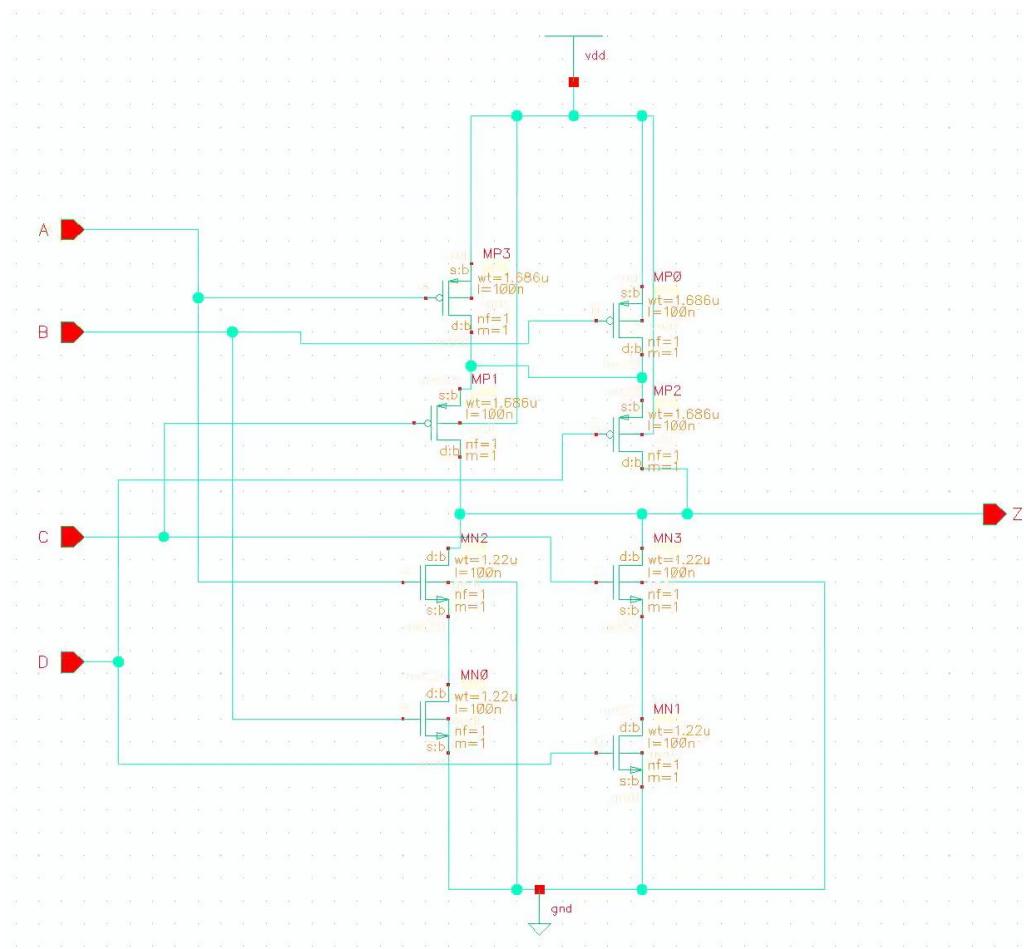


Figure 39 AOI22 schematic

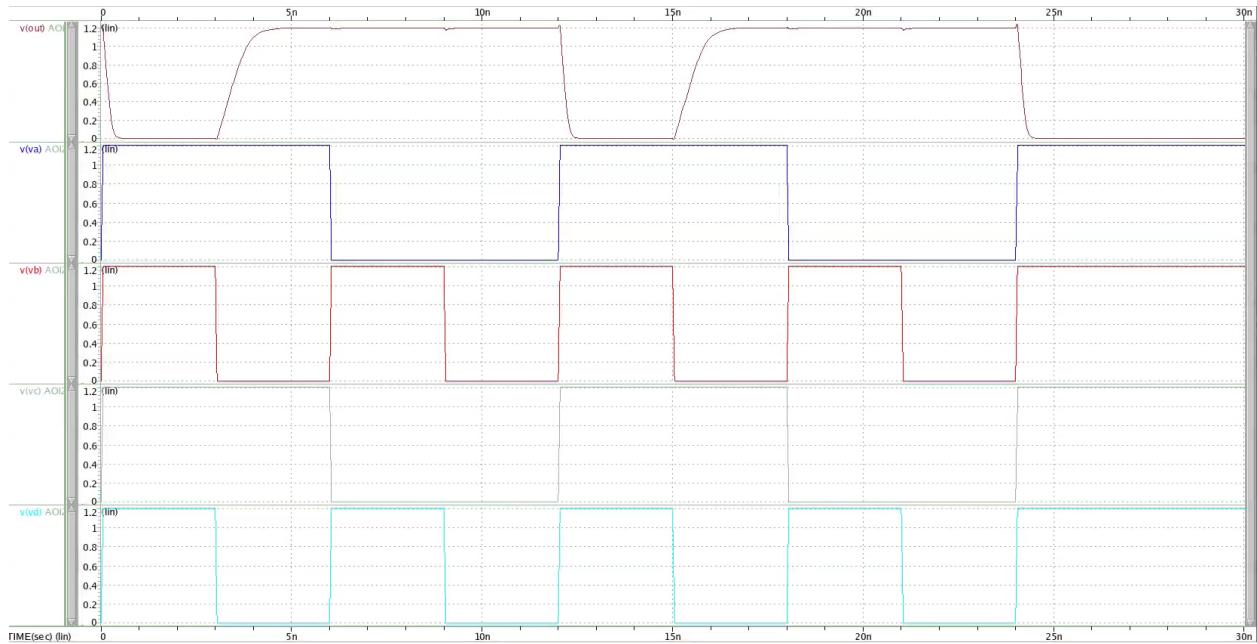


Figure 40 AOI22 simulation waveform

9. Combination side by side

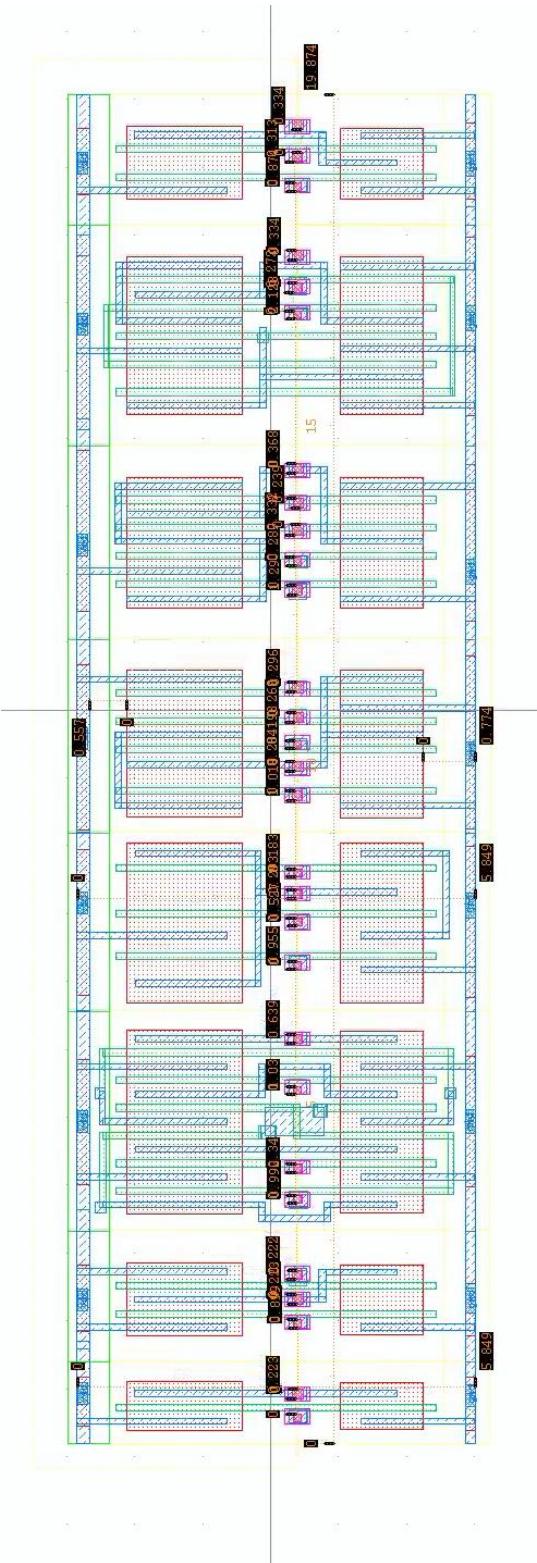


Figure 41 Combination all cells together

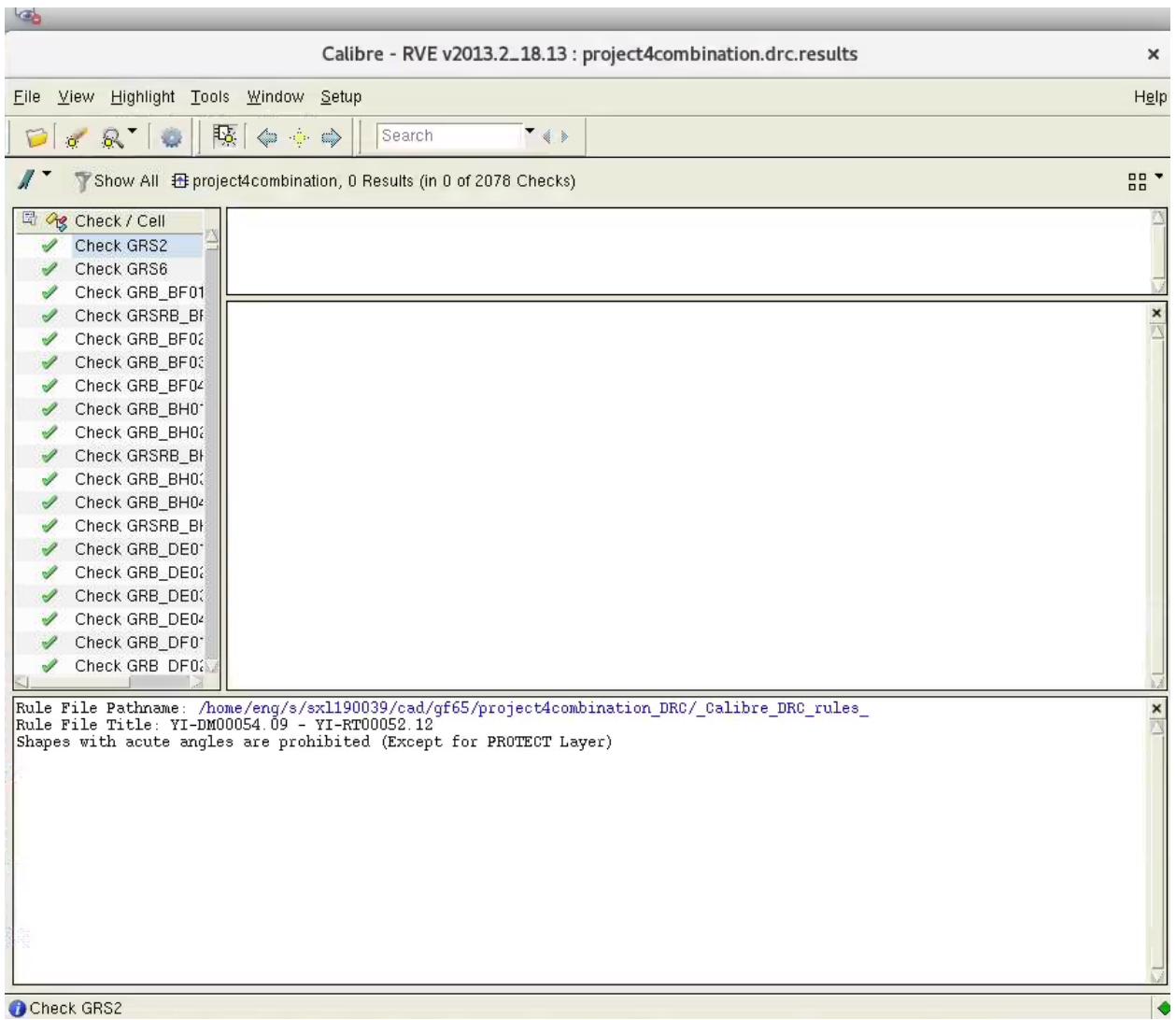


Figure 42 Combination DRC correct