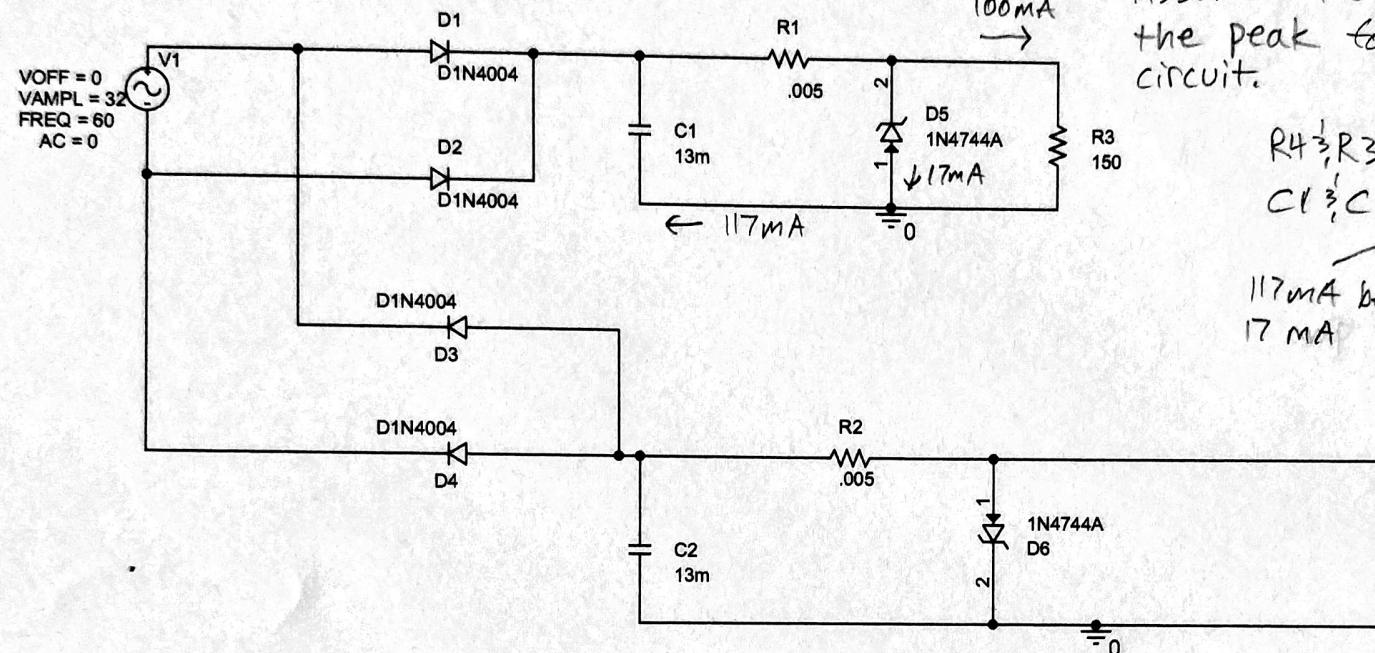


Circuit



Assumed 100mA because that was the peak for our microphone/speaker circuit.

$$R_4 \parallel R_3 = \frac{15}{100\text{mA}} = 150\Omega$$

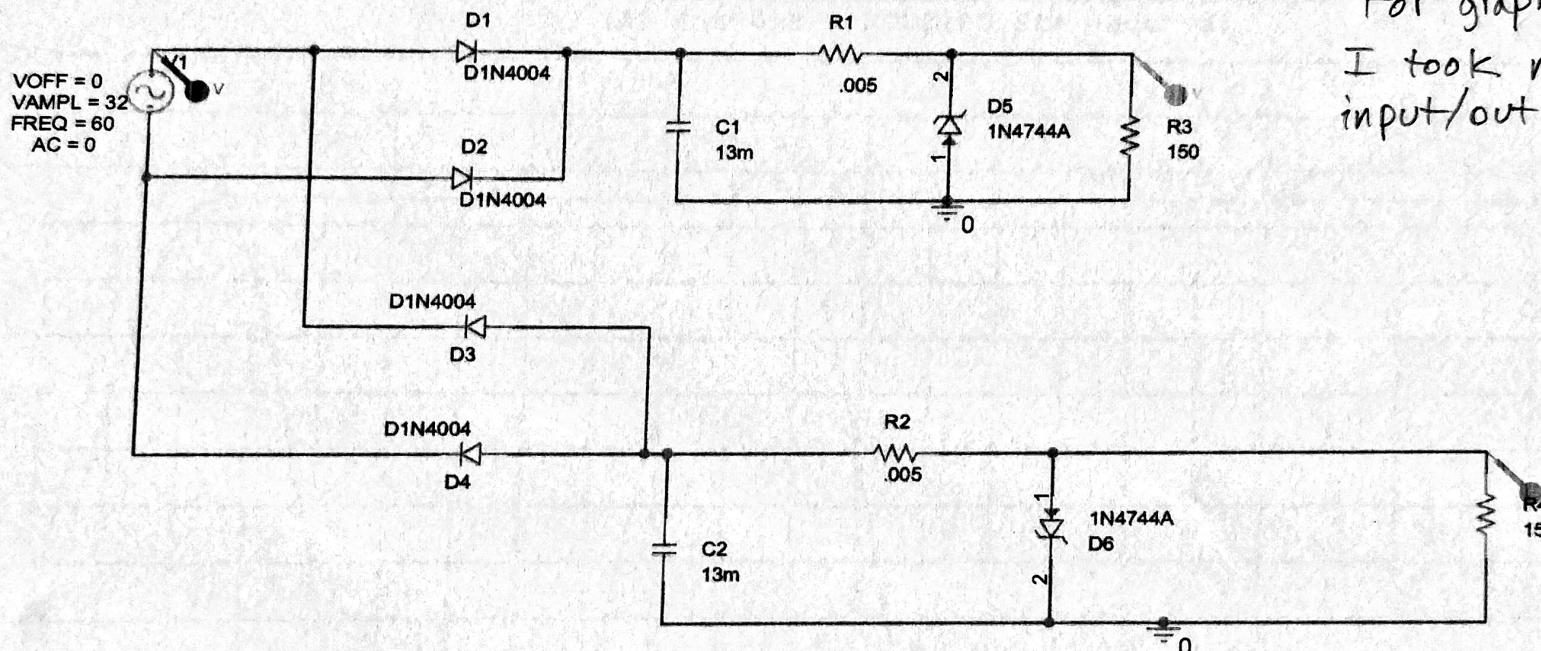
$$C_1 \parallel C_2 = \frac{117\text{mA}}{0.15(60)} = 13\text{mF}$$

117mA because zener gives out 17 mA

For R_1 and R_2 , I messed around with resistor values till I got 15v. Also messed around with R_4 and R_3 capacitor values and noticed the lower the capacitance the bigger the ripple.

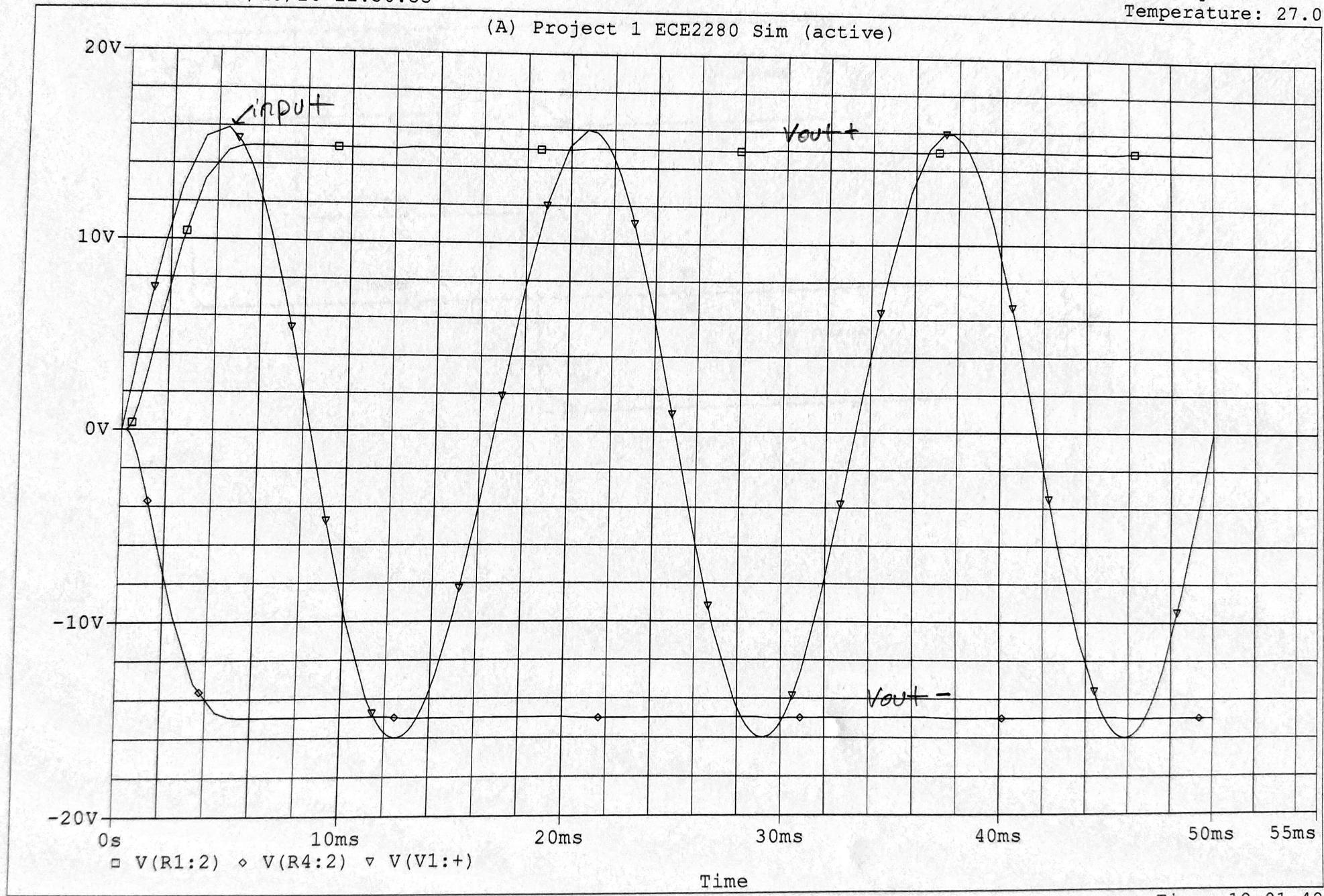
ALSO decided to go with 32 Vamp.

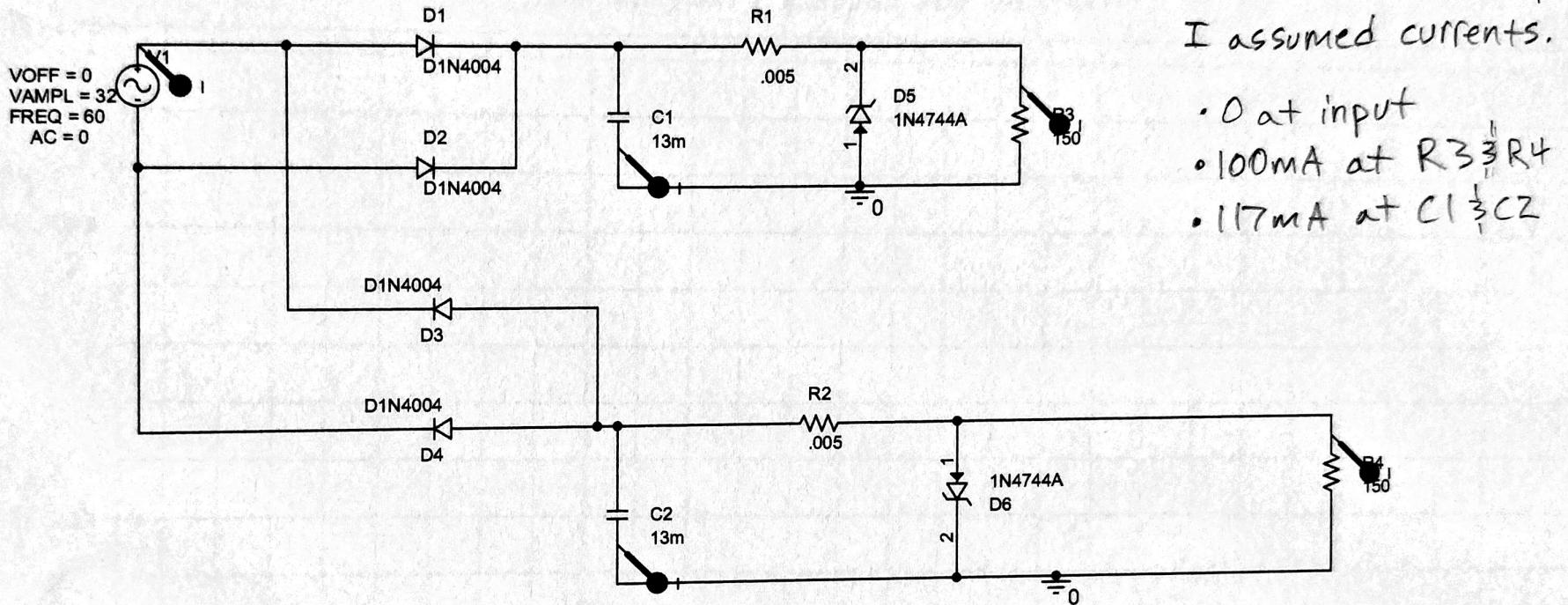
Nathan Donaldson
Project 1 Simulation
ECE 2280



For graph on next page,
I took measurements of
input/output voltages.

** Profile: "SCHEMATIC1-Project 1 ECE2280 Sim" [C:\ORCAD\ORCAD_16.6_LITE\Project 1 ECE2280-PSpiceFil...
Date/Time run: 02/15/16 11:50:33 Temperature: 27.0

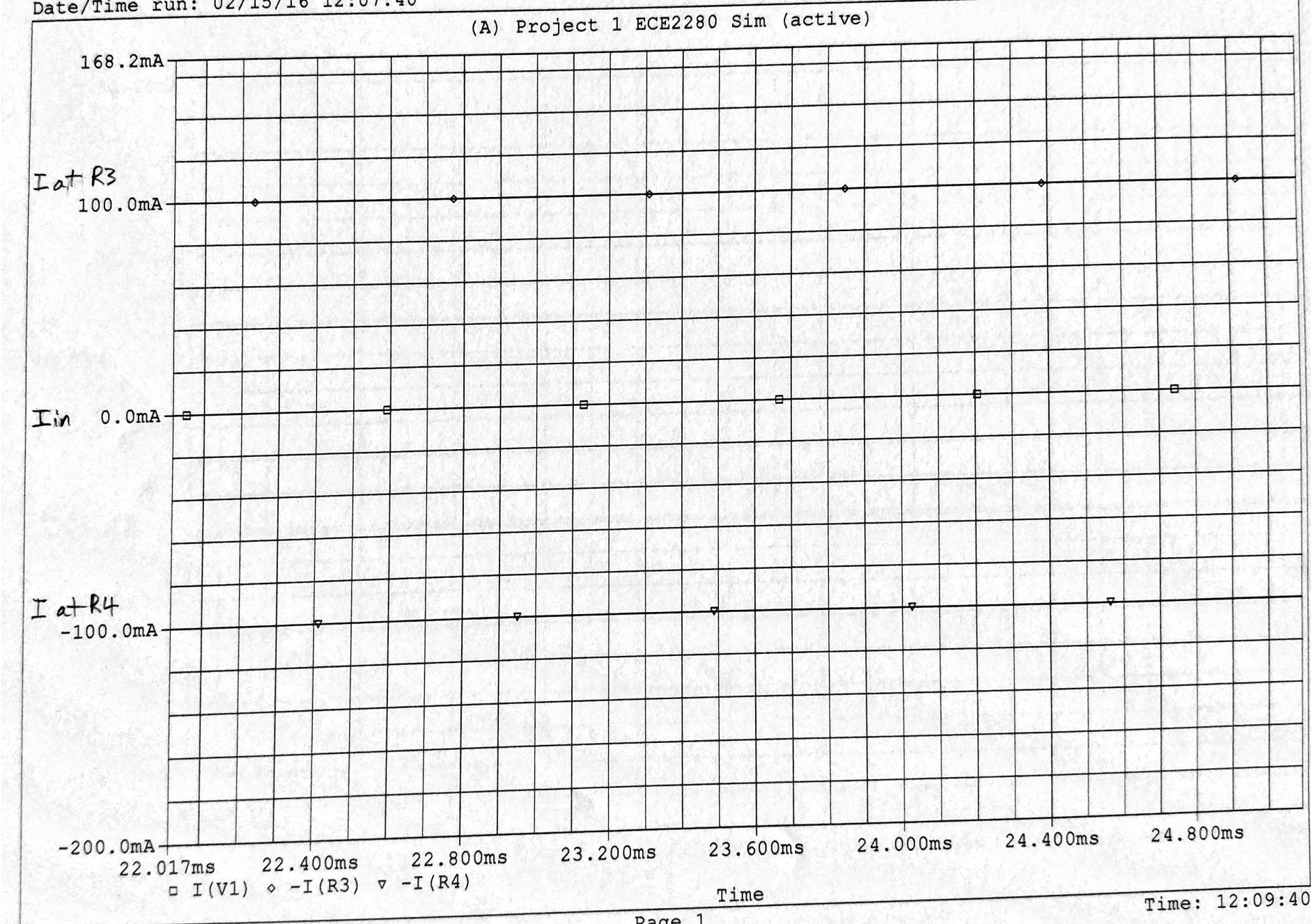




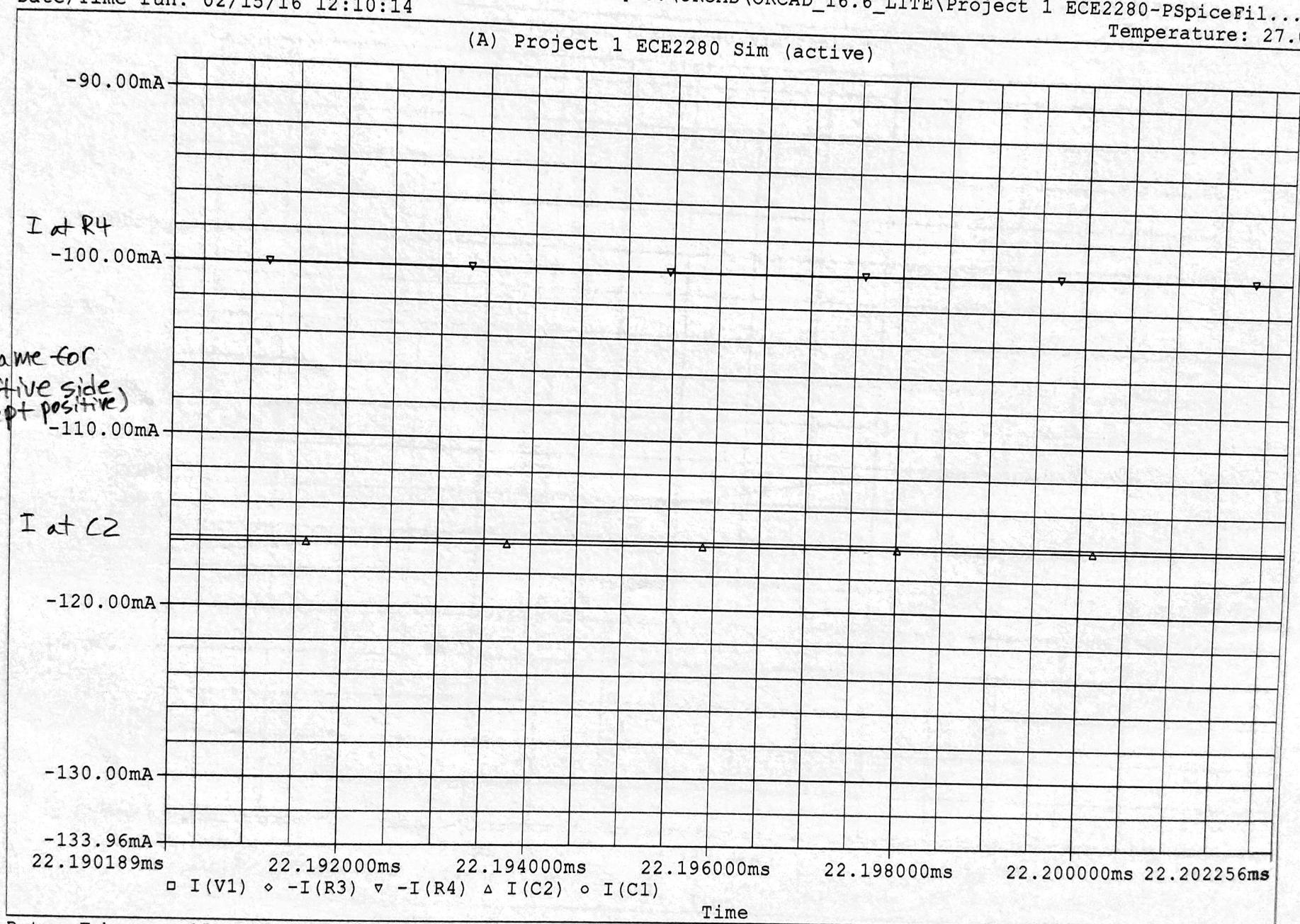
Took currents at places where I assumed currents.

- 0 at input
- 100mA at $R_3 \frac{1}{2} R_4$
- 117mA at $C_1 \frac{1}{2} C_2$

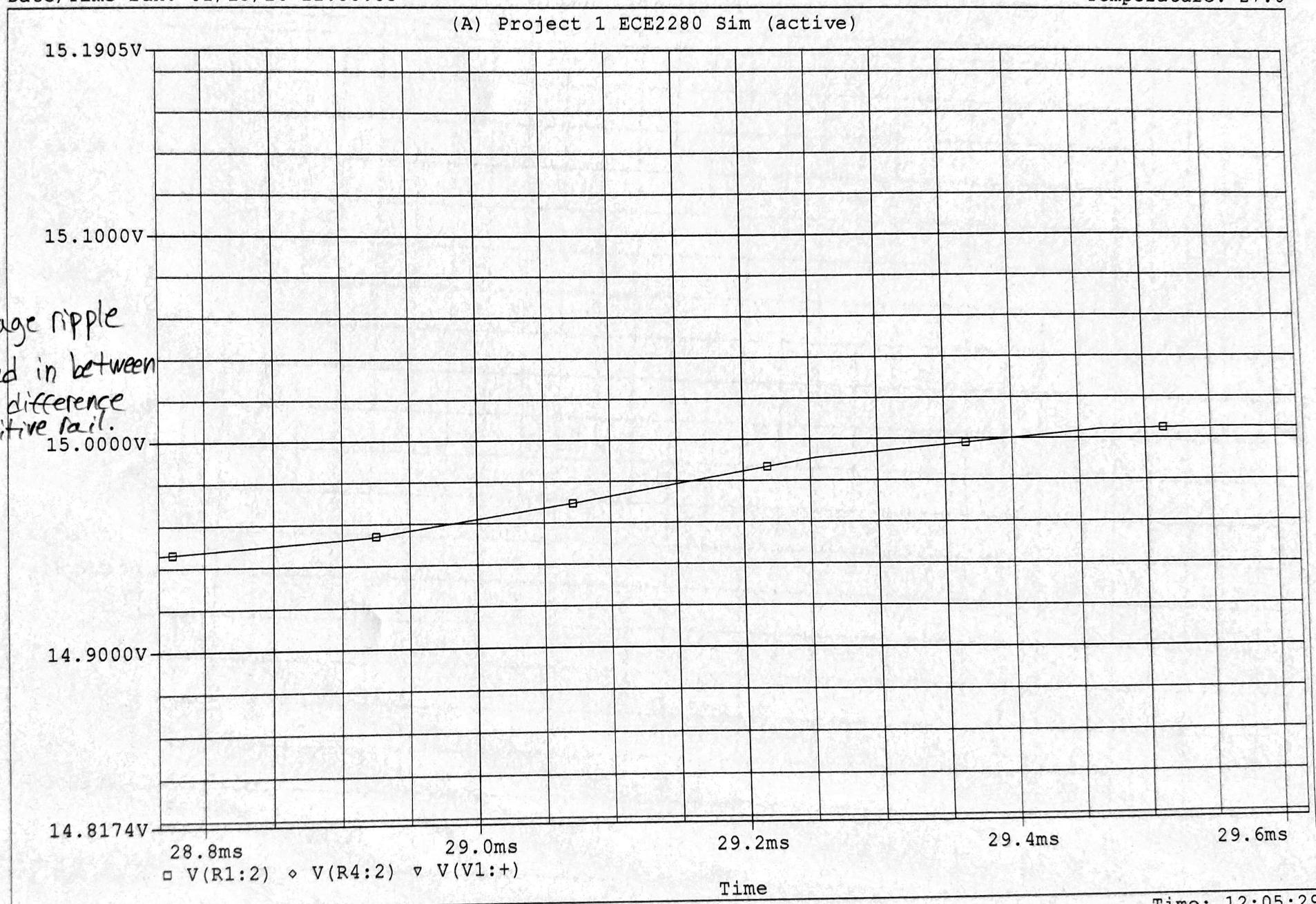
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Date/Time run: 02/15/16 12:07:40



** Profile: "SCHEMATIC1-Project 1 ECE2280 Sim" [C:\ORCAD\ORCAD_16.6_LITE\Project 1 ECE2280-PSpiceFil...
Date/Time run: 02/15/16 12:10:14 Temperature: 27.0

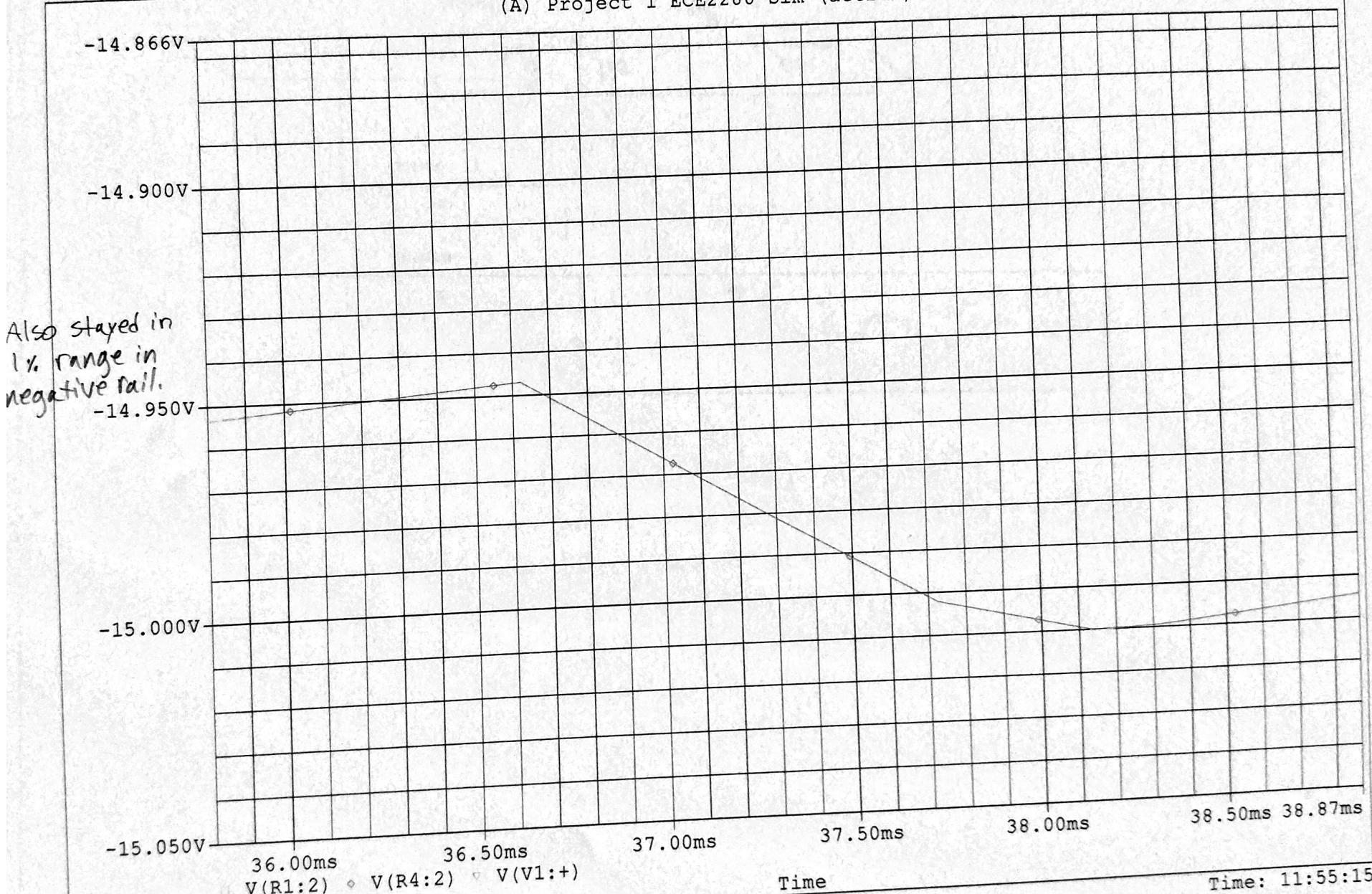


** Profile: "SCHEMATIC1-Project 1 ECE2280 Sim" [C:\ORCAD\ORCAD_16.6_LITE\Project 1 ECE2280-PSpiceFil...
Date/Time run: 02/15/16 11:50:33 Temperature: 27.0

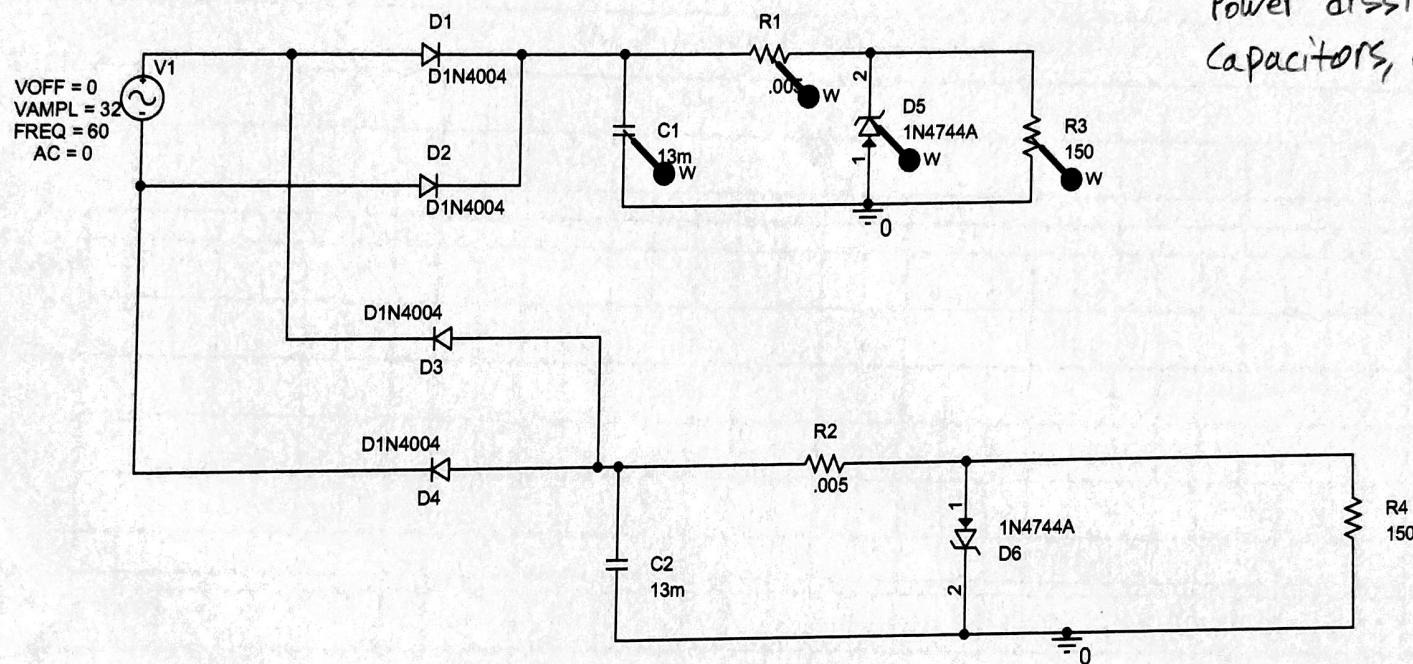


5 4
** Profile: "SCHEMATIC1-Project 1 ECE2280 Sim" [C:\ORCAD\ORCAD_16.6_LITE\Project 1 ECE2280-PSpiceFil...
Temperature: 27.0
Date/Time run: 02/15/16 11:50:33

(A) Project 1 ECE2280 Sim (active)



5 4 3 2 1



Power dissipation in resistors,
capacitors, and zener.

D

C

B

A

** Profile: "SCHEMATIC1-Project 1 ECE2280 Sim" [C:\ORCAD\ORCAD_16.6_LITE\Project 1 ECE2280-PSpiceFil...
Date/Time run: 02/15/16 12:59:33 Temperature: 27.0

