

EE 403W

Section 3

Spring 2009

Vacuum Tube Amplifier

CDR

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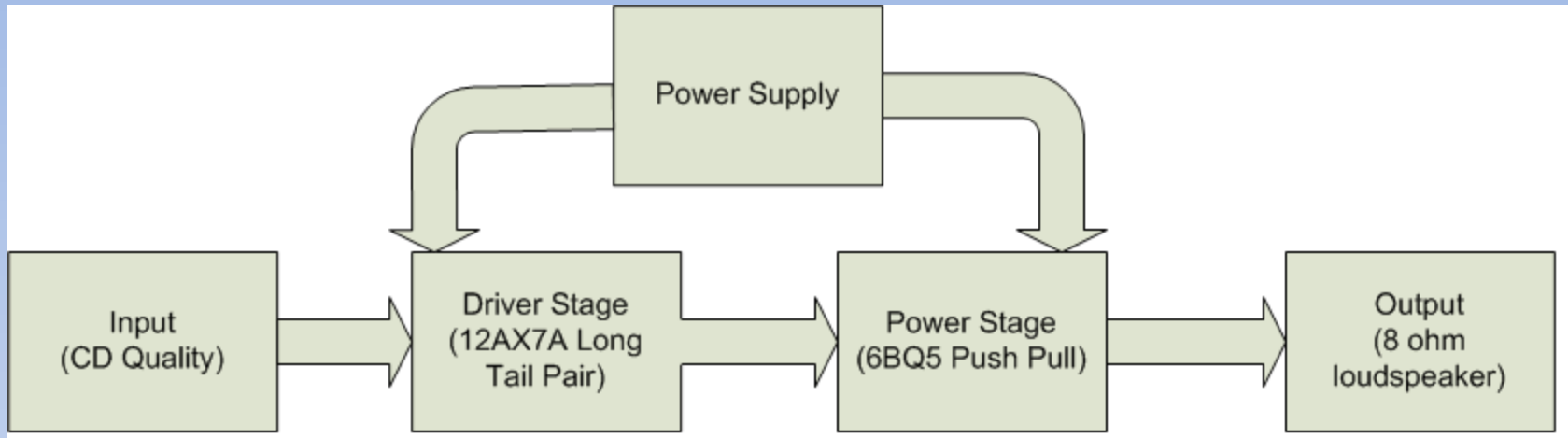
Chien-Wei Lo

Objectives and Description

- Design, construct and test a high-fidelity vacuum tube amplifier
 - Comparable sound quality
 - Appeal to audiophiles an inexpensive and simple to build amplifier

High sound quality for audiophile	Maintain output faithful to the original audio input
Inexpensive	\$200.00
RCA Input	
Volume Control	
Simple circuit design for amateur	

Technical Details

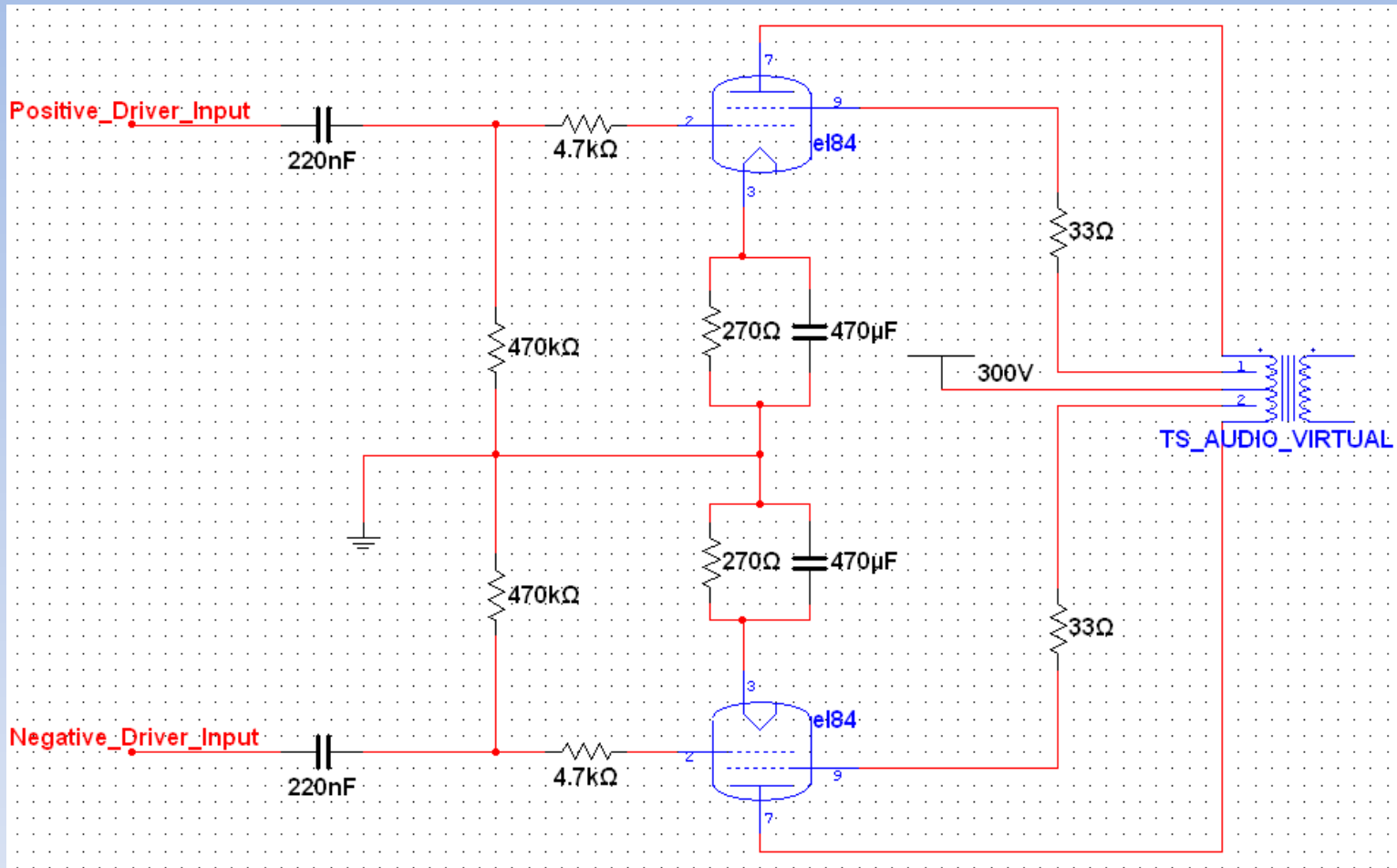


- Power Supply – Heater, High Voltage, LED, Current Biasing
- Driver Stage – Differential Triode Amp
- Power Stage – Push Pull, Ultra Linear Connection
- Power Transformer – Hammond 270FX
- Output Transformer – Hammond 1608A
- Construction will be on Pine board.

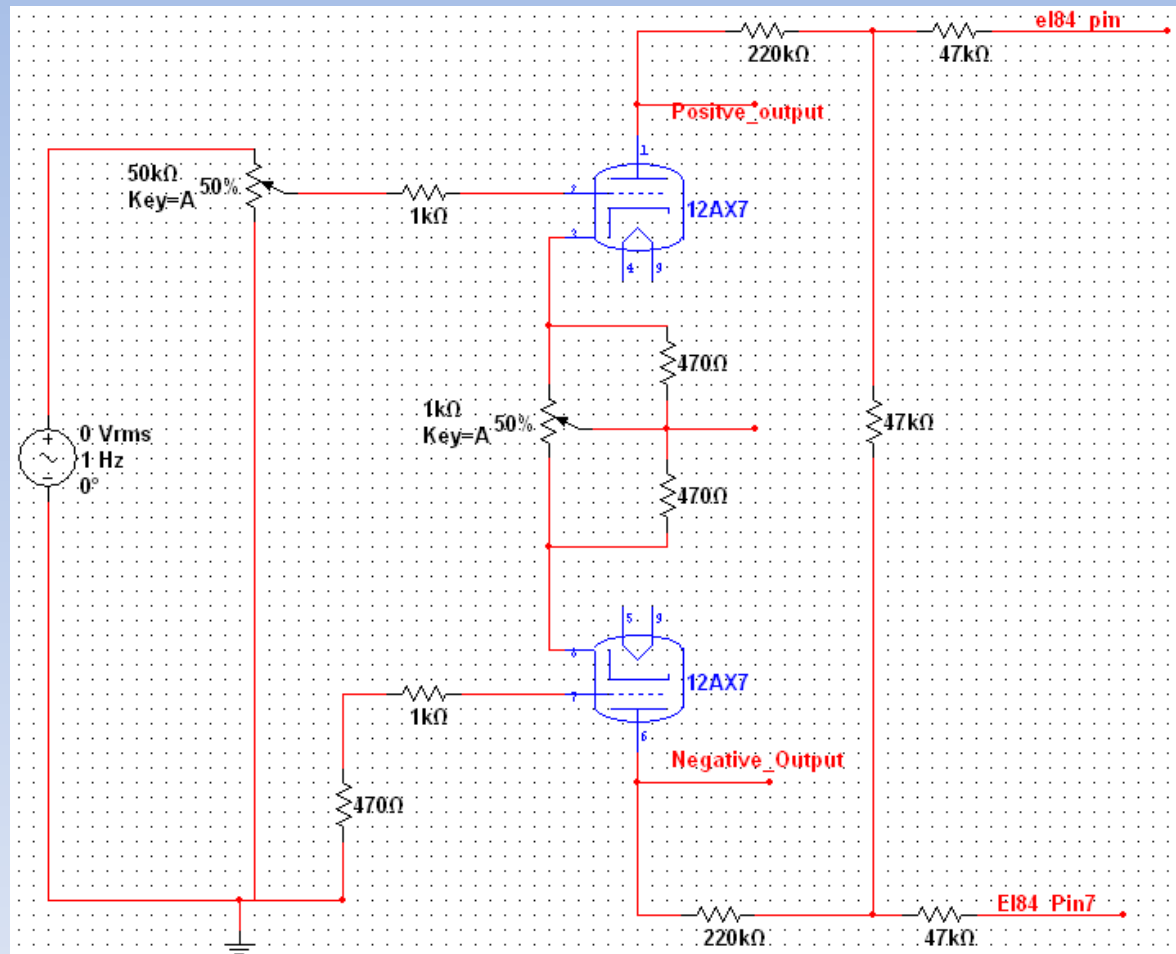
Specifications

	Minimum	Optimum
Frequency Response	30 – 16000Hz	20 – 20000Hz
Total Harmonic Distortion (THD)	Less than 8%	Less than 1%
Output Load	8 Ohm	8 Ohm
Output Power	Greater than 5W	10W
Signal-to-Ratio (SNR)	80dB	90dB
Cost (\$168)!!	Less than \$300	Less than \$200

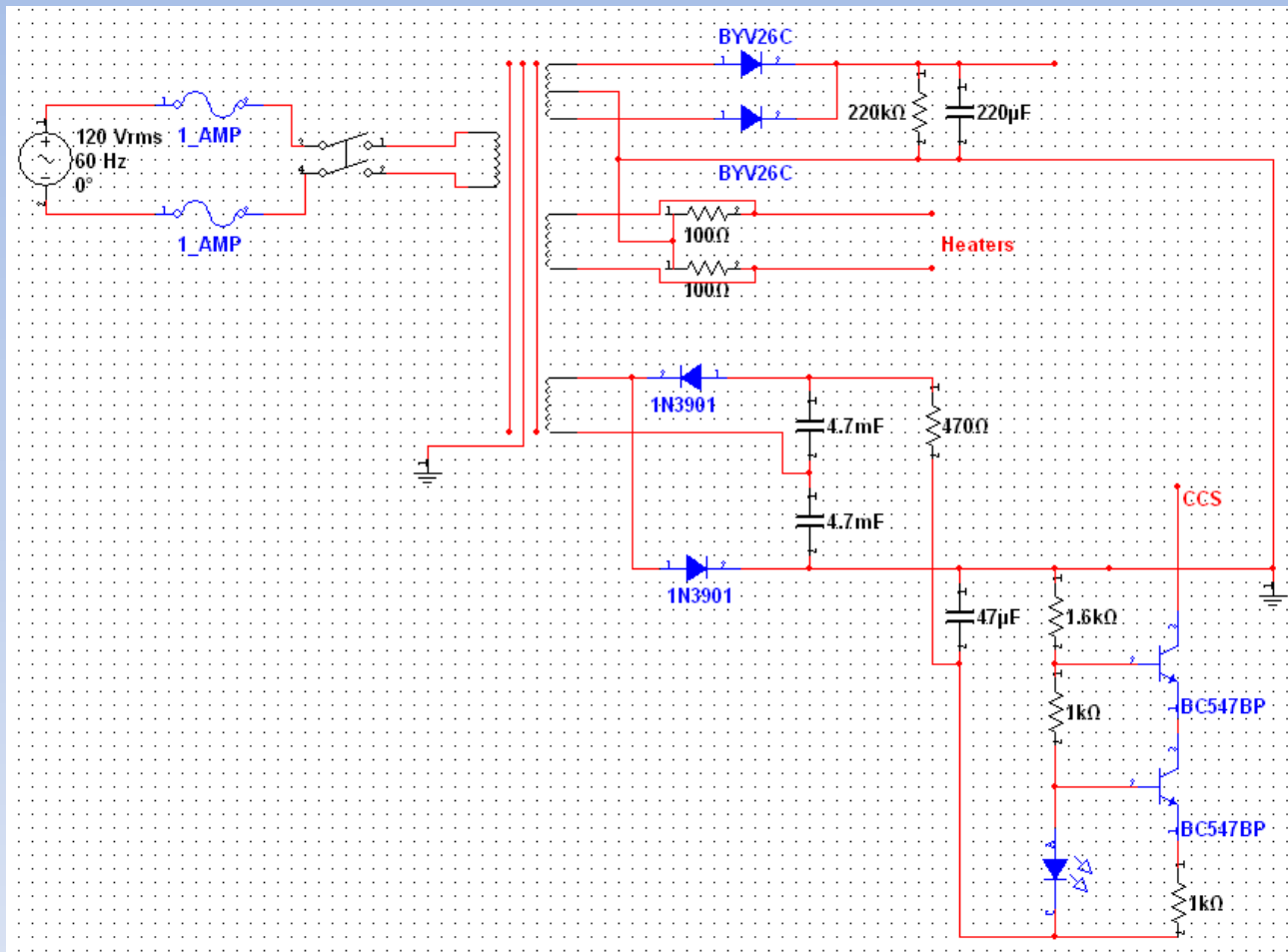
Output Stage Schematic



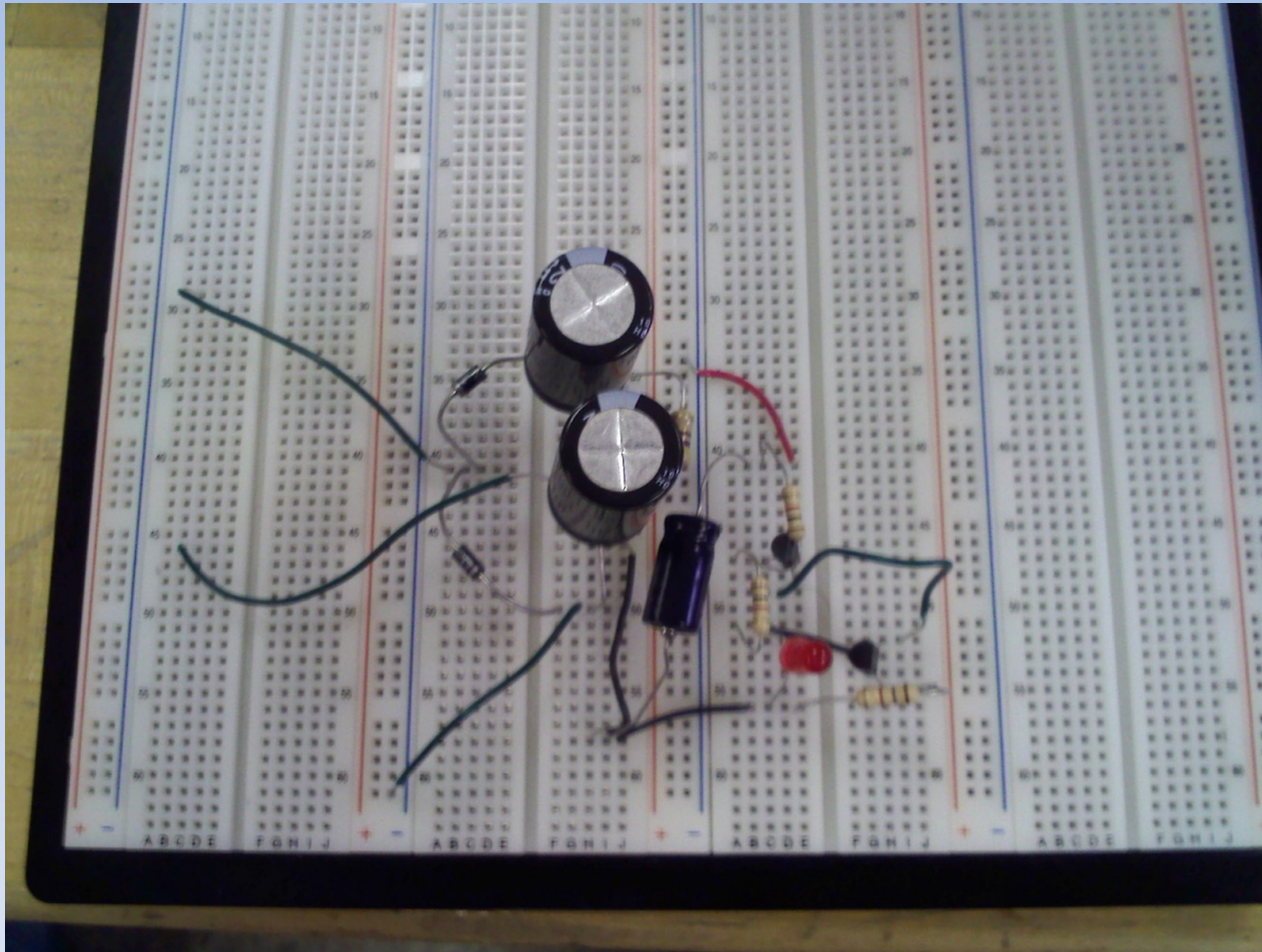
Input Stage Schematic



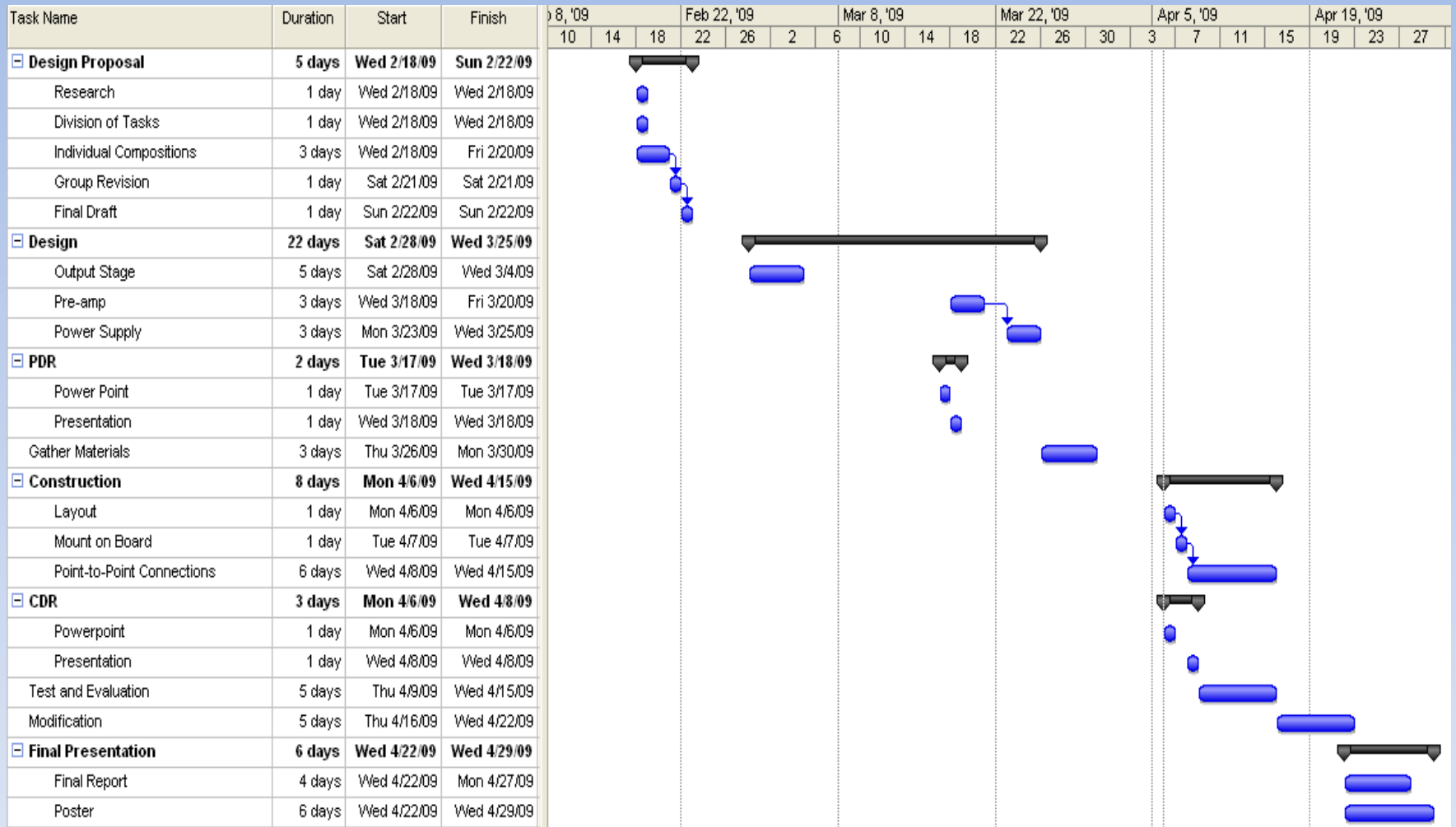
Power Supply Schematic



Constant Current Source



POA & M



S u m m a r y

- V a c u u m T u b e A m p l i f i e r
- S i m p l e c i r c u i t a p p r o a c h
- D e s i g n f u l l y c o m p l e t e d
- B o a r d l a y o u t c o m p l e t e d
- R e a d y f o r p o i n t - t o - p o i n t c o n n e c t i o n s

Q u e s t i o n s ?