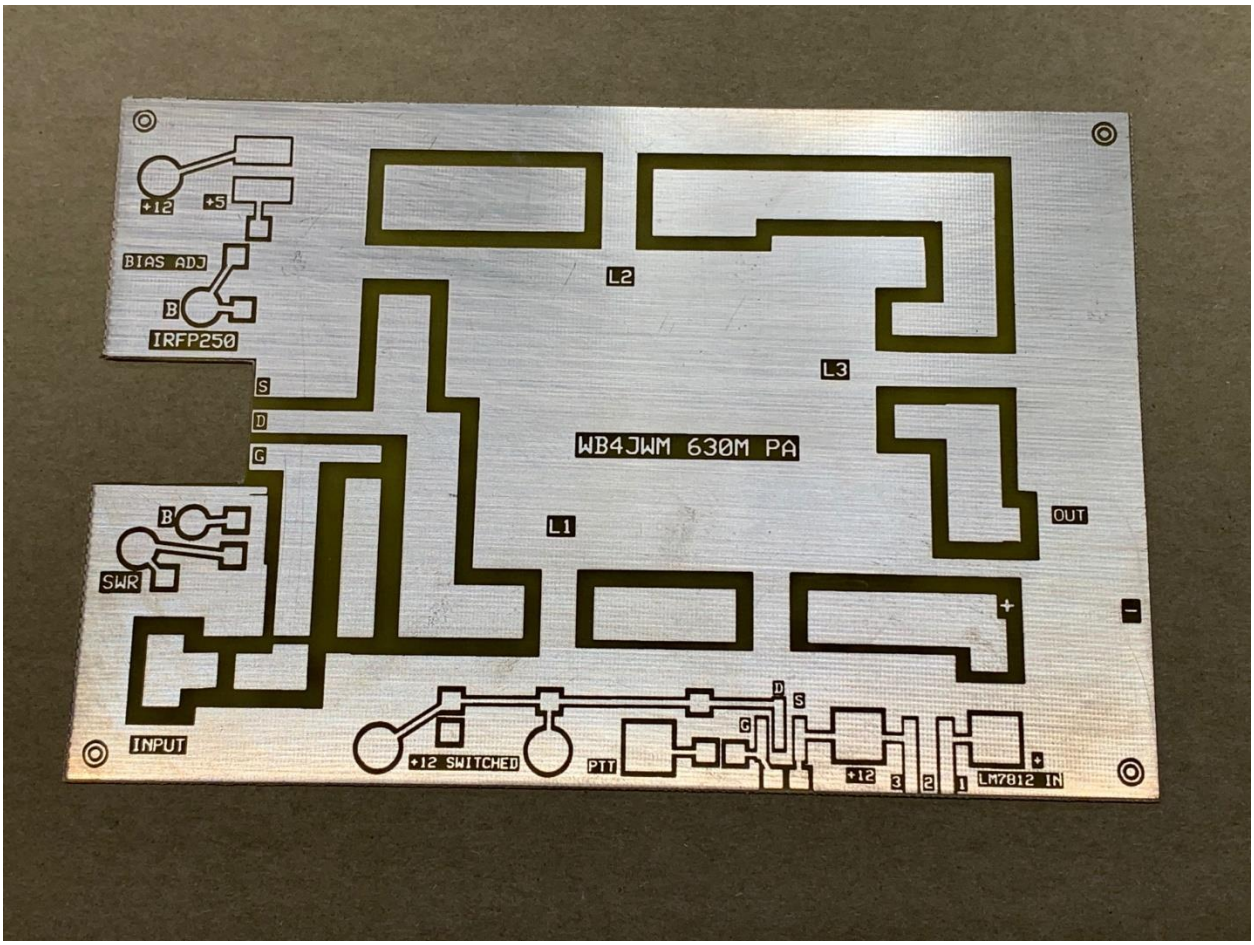
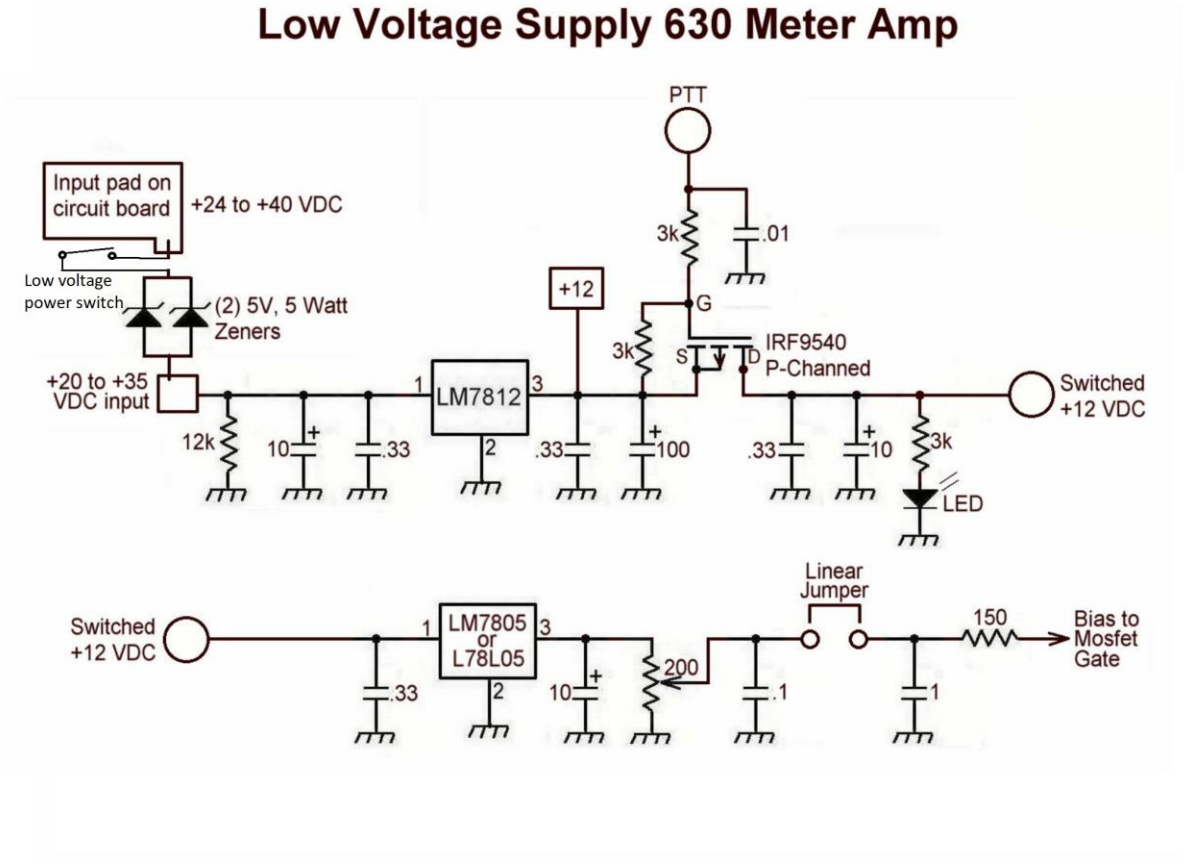
CIRCUIT BOARD FOR 630M AMPS

As of 12/21/2024

My boards are no longer available (out of stock), and I don't plan on reordering. There is a better board now available at https://www.multus-sdr.com/ Check out there 630m 200 watt Kit, and a PCB stand along board is available. The amplifier and PCB was built using my circuit so it will work with my designs on this page, and my other amplifiers on my web site. https://wb4jwm.com .

I have designed a circuit board that works for my amplifier designs, and many others using a single MOSFET switch. All components will mount on the foil side as surface mount. The pads are designed to utilize both SMD, conventional or a combination of both. The board is 4" X 6" with a cutout for the MOSFET. The board is designed to lay flat on the chassis or heatsink. I have them available for $40.00 shipped to USA. These boards are FR 4 glass epoxy, 1/16 1 oz. copper, tin plated, and sent with a ceramic insulator for the MOSFET. Ceramic is the best for heat transfer. The boards are produced by a USA PCB company, and I'm only recovering my cost for the boards (shipping included). USA only, no international shipping. If interested email me at my QRZ.com address.

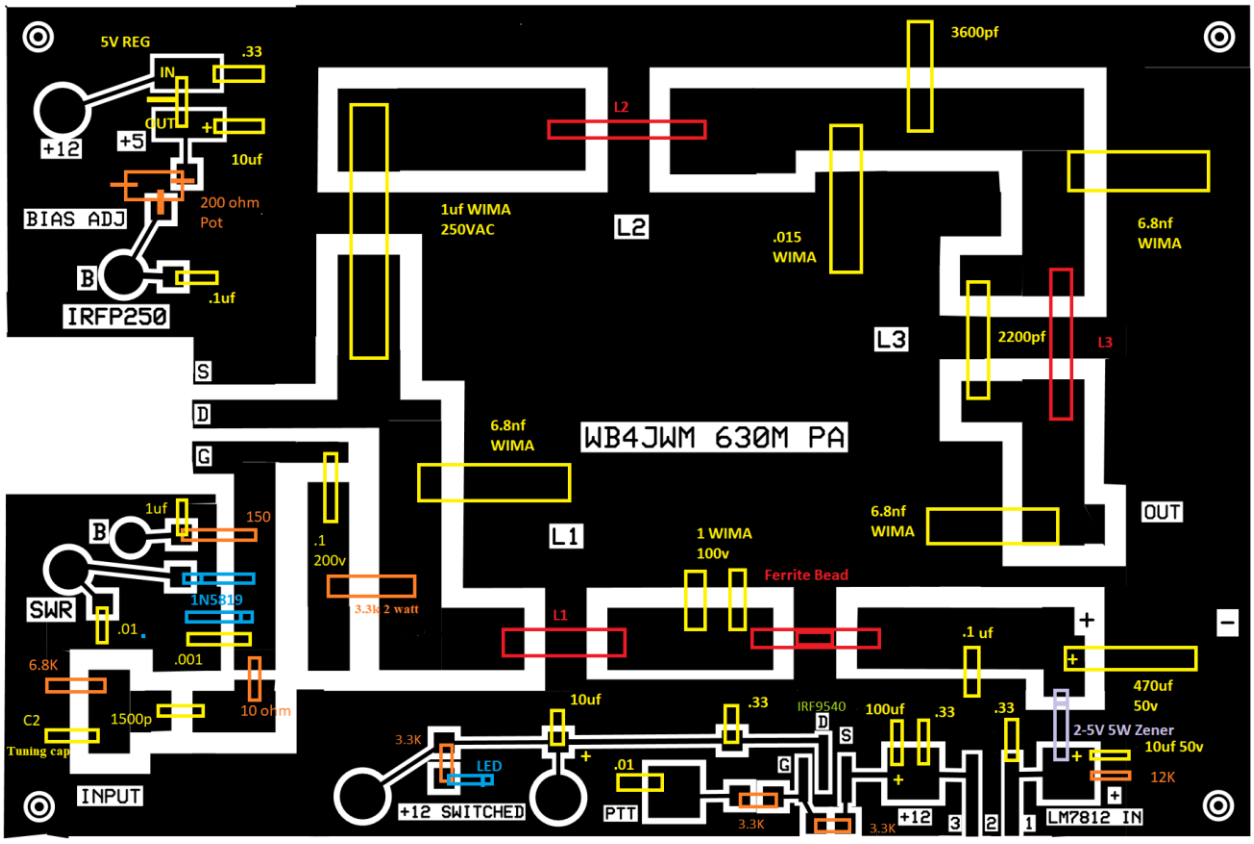

+12
+5
BIAS ADJ
B
IRFP250
S
D
G
L2
L3
WB4JWM 630M PA
L1
OUT
B
SWR
+
-
INPUT
D
S
G
+12 SWITCHED
PTT
+12
3
2
1
LM7812 IN



Schematic for the low voltage circuits on the PA board

This Circuit Is designed to take care of the switching circuits for the amplifier. I now prefer leaving the Drain of the RF MOSFET hot all the time, eliminating the need for the high current switching FET or relay. This circuit will take care of the necessary auxiliary switching, plus giving a continuous +12 VDC out of the LM7812. If not running the DC input above 35 VDC, a jumper can be used in place of the two 5V 5W Zener.

The LM7812 will require a heatsink, attach to chassis. The IFR9540 and LM7805 do not require a heatsink.



The board is populated with all the components needed for the Linear amplifier. The bias circuit is not needed with class E Amplifiers. Not shown but a jumper is needed from tab B to B for the linear amplifier.

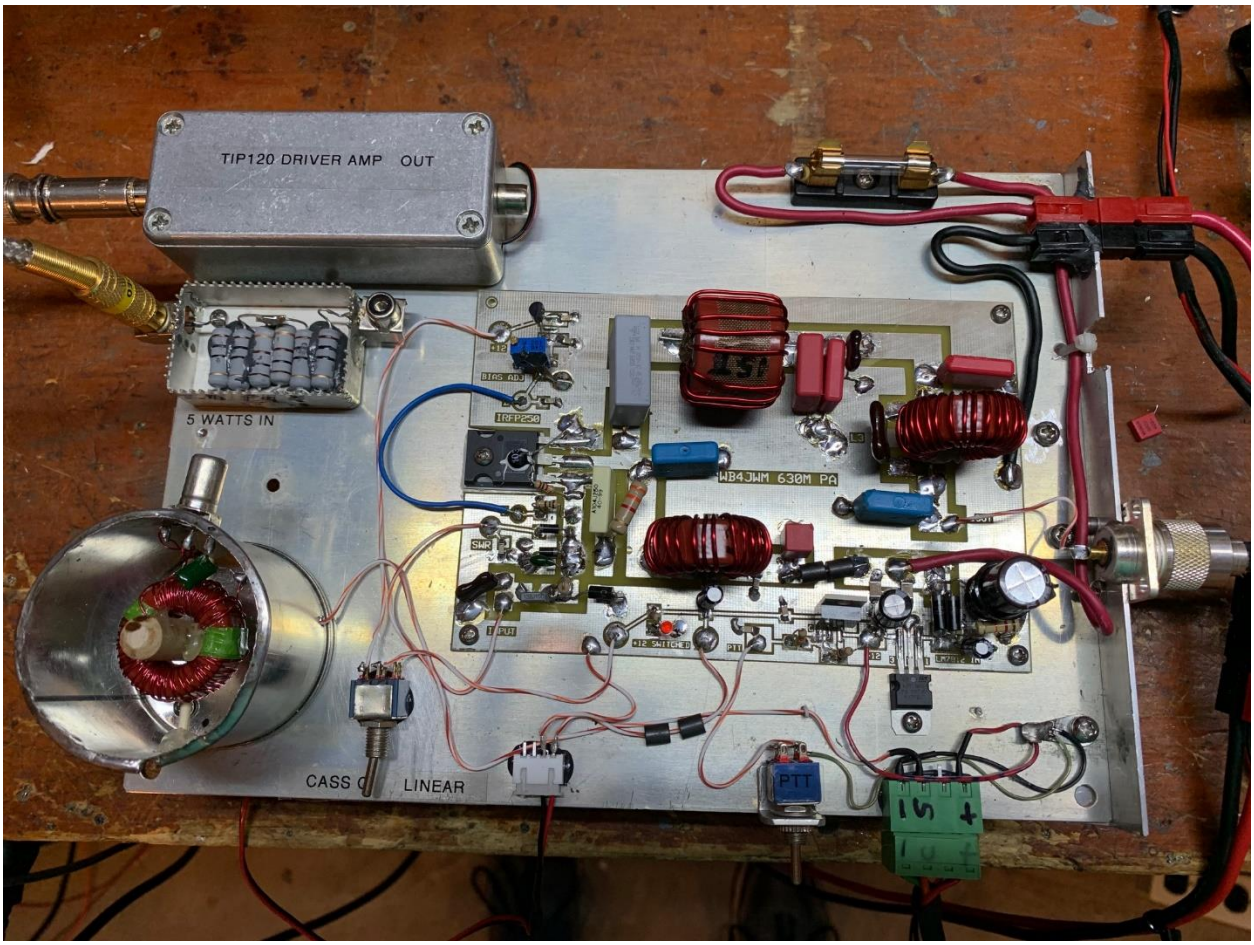
Resistors are Orange

Capacitors or Yellow

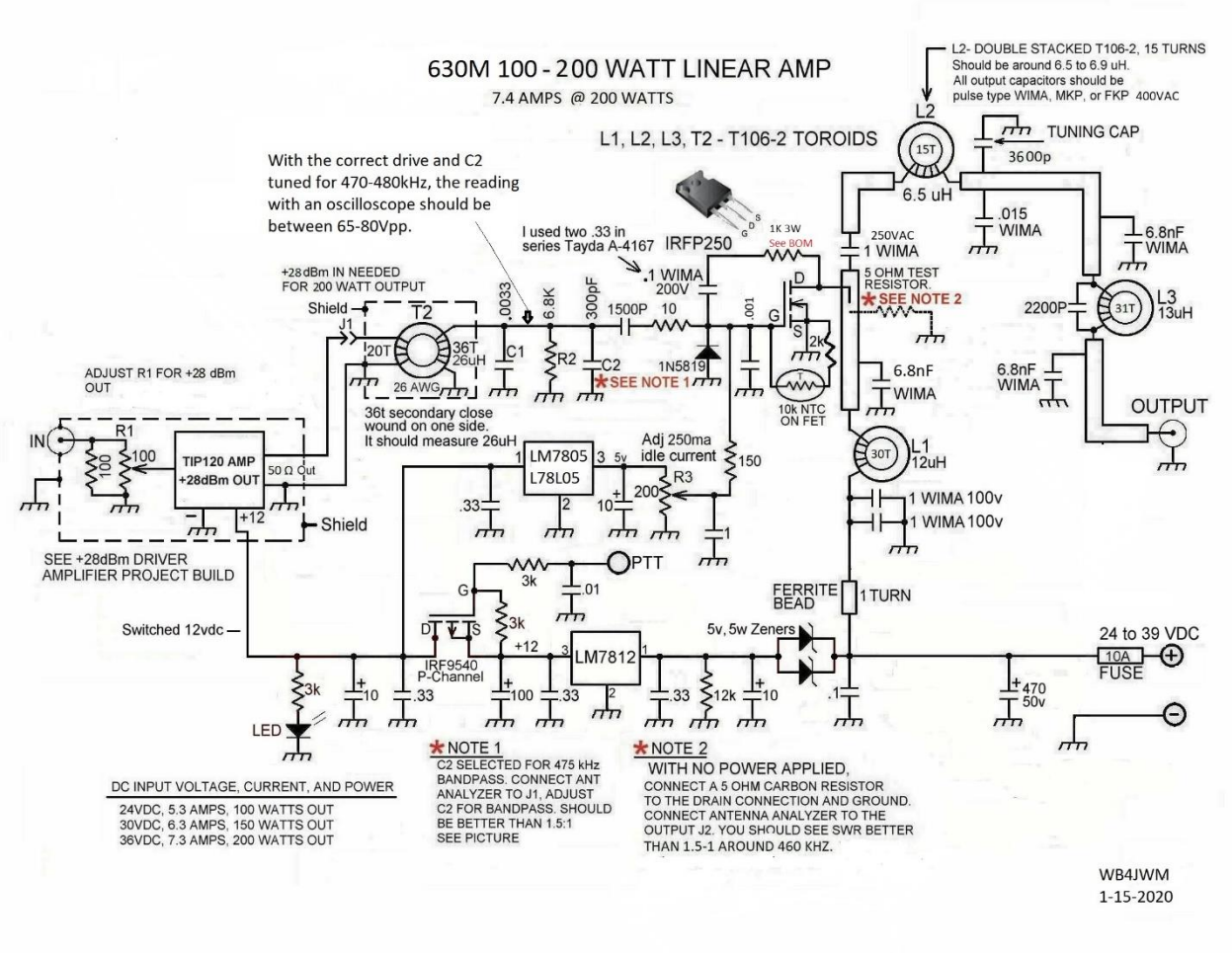
Diodes are Blue

Coils are Red

I like using 1206 sized SMD components, but conventional lead components will work on the board as well.



The board is mounted on my bench test setup so every combination is added. Not all components are needed for an amplifier.



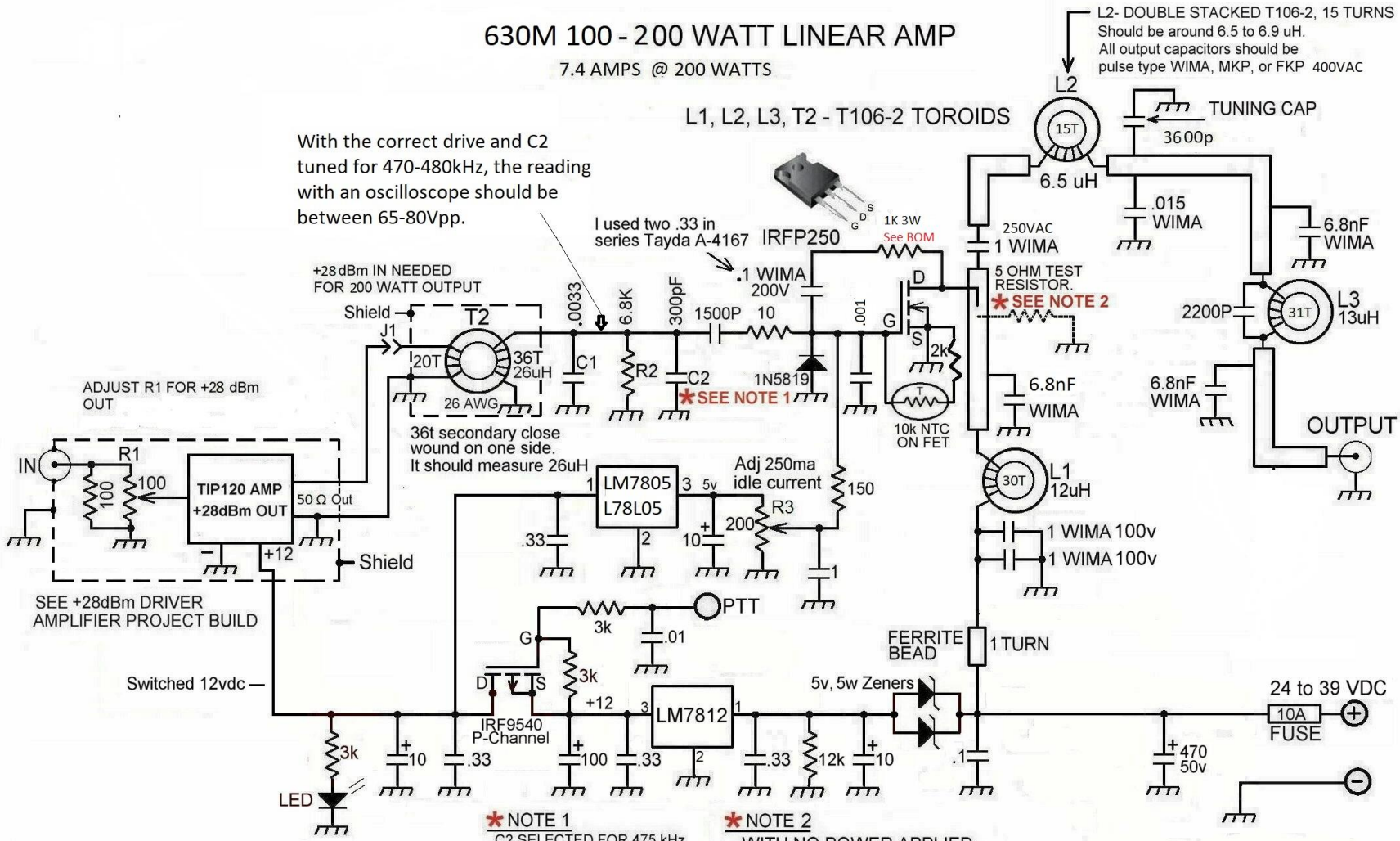
LINEAR AMPLIFIER USING THE CIRCUIT CONFIGURATION ON THE PCB. If not building linear just don't add the LM7805 bias circuit and connect the 150 ohm resistor from Gate to ground.

L1 wound with #18 or #16 wire

L2, L3 wound with #16

630M 100 - 200 WATT LINEAR AMP

7.4 AMPS @ 200 WATTS



WB4JWM
1-15-2020