AOS 453 Lab #2
Due: Thursday, February 4th

Using the sounding information given on the next page, please answer the following questions below. Make sure to include appropriate units where necessary:

a.) Using a blank skew-t, please plot up the sounding data on the back side. Making sure to plot T, Td, and wind speed/direction.
b.) Raise a surface parcel to the top of the sounding.
c.) What is the height of the LCL
d.) What is the height of the LFC
e.) What is the height of the CCL
f.) What is the Convective temperature
g.) What is the height of the EL
h.) What is the height of the tropopause
i.) Identify two inversions, what is the depth of the inversions and what type of inversions are they
j.) Determine the stability of all major layers from the surface to 500mb
k.) Identify any significant stratified layers
l.) Identify any significant mixed layers
m.) What is the approximate height of the boundary layer
n.) Based on what you’ve learned so far in terms of air masses and types of soundings (i.e. Tropical, Arctic, Deep Convection, Loaded Gun, etc) which one would you classify this sounding as and why
o.) Is there any resulting CAPE and/or CIN when you lift a surface parcel? If so try and come up with a ratio of CAPE to CIN. Which dominates?
p.) How would you go about reducing the amount of CAPE in terms of atmospheric processes?
q.) This sounding was taken from the Continental U.S. in late Spring. Without knowing any other outside information, where would you guess the location of this sounding to be and why? Would you anticipate any significant weather in the area this sounding was taken? If your answer is yes, then explain what would be needed for convection to occur. If your answer is no, then explain why no convection would be able to form.