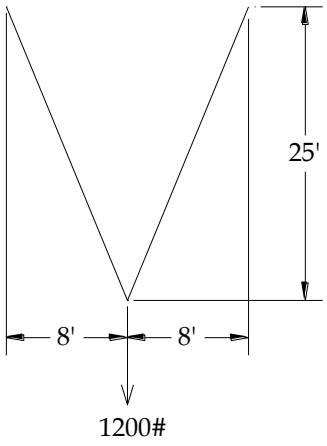
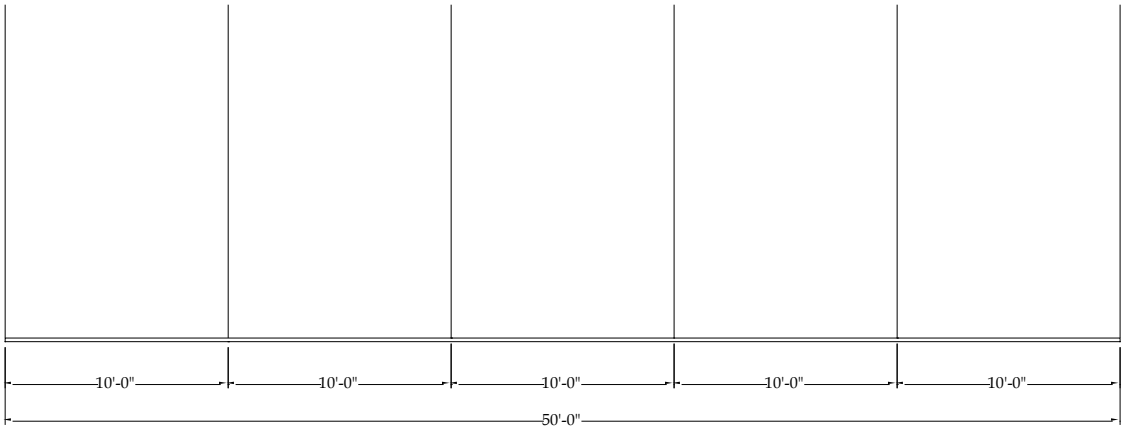
Name:_____

1) Find the length and tension of each leg in this dead-hung bridle. Choose an appropriate size and termination style of aircraft cable for the bridle legs. Indicate what design factor you used and why. (6 points)



2) The pictured batten is 1-1/2" schedule 40 pipe, 50' long with 6 lift lines 10' apart: (8 points)
a) Calculate the total maximum load on the batten based on the uniform (distributed) load at 1/3 yield.
b) Calculate the load on each lift line if the batten is loaded to that maximum capacity, using "Rule of Thumb Beam Loads." Include the weight of the pipe.
c) Choose an appropriately sized shackle and aircraft cable (including termination style) for the lift line with the greatest load.



Show all your work!

3. Sketch and label the parts of a single purchase counterweight lineset. What is the relationship between the load on the batten and amount of weight loaded on the arbor? (8 points)

4. Sketch and label the parts of a double-purchase counterweight system. What makes a double-purchase system different from a single-purchase system?(8 points)