frame is to support the weight of a traffic light and withstand wind gusts of 120 miles/hr and should have a factor of safety of at least 2. Optimize the design to minimize the mass of the frame. You may also model the frame in SolidWorks and import it to ANSYS for analysis.

Write a brief report summarizing your design, including the assumptions you made regarding the applied loads and constraints, type of element(s) you used, mesh analysis, and final stresses, reaction forces, and safety factor. Also, include hand calculations for the combined stresses at the base of the frame to verify your ANSYS results. Provide a plot of the optimum geometry and stress. Provide history of the design goal, stress constraints, and design parameters. Upload your final Workbench file and results folder in a zip file as well as a pdf document of the report to Blackboard. You must submit a hard-copy of the report in class on May 8th. For a sample guideline on how to organize your technical report, please visit https://www.monash.edu/__data/assets/pdf_file/0003/567156/guidelines-writing-reports.pdf

Drag Force: $F_D = C_D A(\frac{\rho v^2}{2})$