## Front Compartment

The front battery cage was completely rebuilt since the cage had to be bolted instead of being welded to the front compartment of the car. The new design is simple and was designed using Pro Engineering as shown by figures 44 and 45 (individual part figures are shown in the appendix by figures A5-1 through A5-5). A stress analysis was conducted using Algore to make sure that the design is able to hold the weight of the field pack batteries as shown in figure 46. Algore analysis shows that the braces will displace 0.0005inches and have maximum stresses of 582.3lbf/in<sup>2</sup> as shown by figures 47 and 48 respectively. Comparing the new design values to the old values shows that the displacement and stress will decrease by .0055inches and 2736lbf/in<sup>2</sup> respectively.



Figure 44: Front Compartment battery cage assembly view



Figure 45: Front Compartment battery cage Exploded view



Figure 46: Forces acting on the battery cage



Figure 47: Displacement Analysis using ALGORE (maximum Displacement0.0005 in)

