Project:
ESP Structure Lift

Challenge:
These ESP main box and hoppers were constructed independently; assembly of the unit required the components be properly oriented and lifted into their final location. The precipitator box walls (lower left photo) were constructed one on top of the other and needed to be rotated into an upright position and stabilized with internal bracing. Hoppers were constructed with the cone tip pointing upward and needed to be rotated 180˚ and lowered into the steel frame bays provided for their support (as seen in the upper left photo). Once the hoppers were in place, the fully assembled precipitator box was placed atop the steel frame and hoppers. The lifting of these structures was challenging due to their thin walls and tendency to flex/warp. It was crucial that the structures not be damaged during lifting and assembly.

Resolution:
Our engineering team fit the precipitator box with additional top beams for lifting lug attachments. By using these beams, the concentrated lifting load was more evenly distributed throughout the structure and warping of the walls was prevented. To prevent warping of the hoppers, a lifting frame was designed to fit within the hopper; this frame was reused for each of the eight individual hopper lifts. This resulted in an efficient and cost effective solution for our client.