

**Field Trip # 2: Tour of the Facilities at Almet Steel Fabrication Company  
New Haven, Indiana**

Date: July 30, 2008

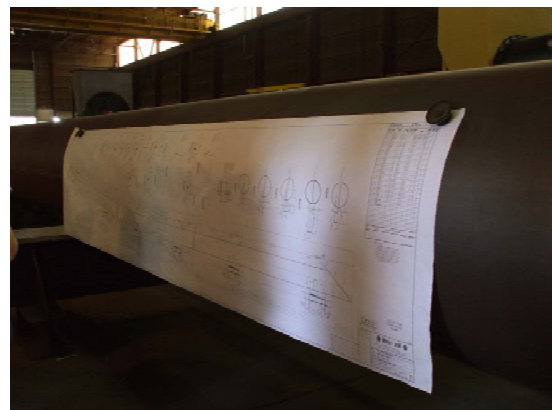


The trip taken on July 30, 2008 was to Fort Wayne, Indiana to visit the Almet Steel Fabrication Company. The company works primarily on the safety of the design, as well as the fabrication of parts needed once designs have been approved. This is a smaller company, employing about eighty workers total. Almet was started about forty years ago, and had been certified by the American Institute of Steel Construction (AISC) for the past fifteen years. The company was one of the first fabricator in Indiana to achieve the distinction of being an AISC certified shop. In addition, it was also one of the first 100 companies in the nation to achieve the AISC Category II certification which states that Almet has the personnel, organization, experience, procedures, knowledge, equipment, capability and commitment to produce fabricated structural steel of the required quality of the conventional steel structures, simple steel bridges and complex steel building structures. The company has also earned endorsements for sophisticated painting and fracture critical work. Almet is one of the few fabricators to have a certified welding inspector and a professional engineer on staff. These strengths emphasize the company's attention to detail and it's commitment to fabricating quality products.

The tour started with the design part of the company. The REU participants were shown the plans for a new church as well as for a bridge to connect two parts of a satellite campus of Purdue. The plans for the church were shown on the computer, through a program called SDS/2. This program allows the engineer to 'build' the steel frame and connections of the structure. Also, it gives the strength of the parts when directed to do so. The program can show the plans from any angle, and allows the engineer to zoom up to any connection on the design. The engineer working on the church project worked on the plans for five months before they were ready to be sent out for approval. As the plans are viewed in real-time, meaning any changes made are effective instantly any where the file is open, the engineer worked this project alone.

The bridge project for the Purdue satellite campus was shown both on paper and through the SDS/2 program. The bridge will span nearly 400 feet and is designed to have two pylon towers to which steel cords will connect from the bridge. Each pylon tower is approximately 120 feet tall, and curved slightly; the base of the tower is the same width as the bridge, while the top of the tower joins together. The plans were sent back to the structural engineer and had been looked over to ensure proper calculations before fabrication started.

In the shop, the REU participants were able to see many different pieces being fabricated for the bridge project, as well as other projects. As shown in Figure 1, the pylon towers for the bridge had been fabricated, according to the plans, as shown on one part of a pylon tower. The parts for these towers had to be fabricated in smaller sections, and were later welded together into



**Figure 1. Pylon for Bridge with Design**

a single piece.

Almet is also known for the fabrication of the parts needed to make an asphalt mixer (see Figure 2). In the shop, there was not only one of the fabricated mixers sitting out, waiting to be assembled with the other parts, but a completed mixer was also present. The students were able to see not only the inside of an asphalt mixer, but the completed machine, with all coats of paint present and all connections where needed. Almet has their own paint mixers as well, and they can paint the fabricated and welded pieces according to the needs of the buyer. The complete asphalt mixer was the only piece seen (see Figure 3) that had been painted with Almet's process, which usually includes three coats.



**Figure 2. Inside of Asphalt Mixer**



**Figure 3. Completed Asphalt Mixer**

The last part of the shop that was toured included watching a flat piece of steel being cut down to size (see Figures 4 and 5). This was being cut with a flame cutting machine, where all the dimensions were set in beforehand, and the machine did all the work. After the cut was made, the metal was still hot, as expected, though not burning. After the piece was cut down to size, it would be taken off to be beveled, as another piece of the same size was being beveled earlier in the shop. Beveling smoothes down the edge of a steel piece, taking the edge off in a corkscrew type fashion



**Figure 4. Flame Cutting Steel Piece**



**Figure 5. Flame Cutting Steel**