Sheet Metal Fabrication Training Program Curriculum

Training Star Date: Monday, May 1st, 2023
Program End Date: Wednesday, June 28th, 2023
Training Days: Monday – Thursday
Training Days: Saturdays on May 20th, June 10th and June 24th (8 hour training days)
Training Hours: M-F, 4:30 pm – 8:30 pm, Saturdays 8:00 am to 4:00 pm
Total Training Hours: 165 Hours
Training Location: Local 63 Sheet Metal Union-32 Stevens Street, Springfield, MA, 01104-3119

No training on the following holidays:

- Memorial Day, Monday May 29th
- Juneteenth, Monday June 19th

What You Will Learn During Training

OSHA -10 General Industry Safety Certification

Fundamentals of Shop Safety

- Utilize Personal Protective Equipment.
- Perform safe and proper operation of equipment.
- Explain and apply lockout/tag out procedures.

Blueprint Reading and Drafting

- Identify and demonstrate proper measuring devices for specific applications
- Determine measurement from common shop hand tools such as: combination squares, tape measures, trammel points, dividers, protractors

- Read and interpret mechanical prints.
- Recognize and identify title block, basic print terms, abbreviations, line types, symbols and notes.
- Interpret and follow drawing dimensions.
- Using a scale rule.
- Read and interpret: Sections and detail views.
- Hand sketching – Orthographic Projection, Oblique, isometric
- 2D to 3D drawing recognition

Related Mathematics

- Determine final measurements of fractions from a decimal equivalent chart
- Production/trade mathematics/ Conversions

Sheet Metal Fabrication/Assembly- Hand and Power Tools

- Identify safety procedures for all tools
- Demonstrate the use of hand tools
- Use wrenches, hammers and screwdrivers
- The use of clamping tools
- Create holes using awls, punches and drills
- How to determine square, level, and plumb
- The use of a manual pop-rivet gun, pneumatic, and electric
- Identify and use the appropriate chisels and center punches for varied applications
- Select and use appropriate hand files
- Use hand Aviation snips
- Demonstrate mechanical cutting operations, according to industry and OSHA standards
- Identify appropriate cutting tools and techniques for specific projects
- Use of variety of grinding tools, electric and pneumatic
- The use of a Hydraulic and foot operated shear
- Use a drill press
- Use a horizontal band saw
- Demonstrate the proper use of pallet jacks
- Proper applications of adhesive tapes and caulking
- Basic sheet metal fabrications – **Duct – Architectural - Ornamental**
- Understanding the use of different locks and seams
- Determine correct tap and drill sizes for SAE and Metric applications
- Proper use of drilling and Tapping

- Identifying Bolts and Strengths needed for torquing
- Demonstrate the use and understanding of decimal equivalence charts that display all drill descriptions, letter drills, number drills and fractional drills, as well as thread pitch and size with corresponding taps and drill bits

Basic Welding Techniques

Identify safety practices and procedures for all welding and cutting processes.
Perform set up, start up, and shut down procedures on for all welding and cutting processes.
Demonstrate the oxy-acetylene welding process, following industry and OSHA standards.
Identify weld symbols.

OFC – learn the basic process of Oxy-Fuel Cutting

PAC – Learn the basic process of Plasma Arc Cutting

SMAW – Demonstrate and use Shielded Metal Arc Welding Process

- Identify various types of electrode rods, by their diameters and characteristics
- Form a weld bead using SMAW
- Pad welding using flat and horizontal positions
- Fillet weld in different positions on structural shapes and plate
- Groove weld in different positions on structural shapes and plate

GMAW – Demonstrate and use Gas Metal Arc Welding process.

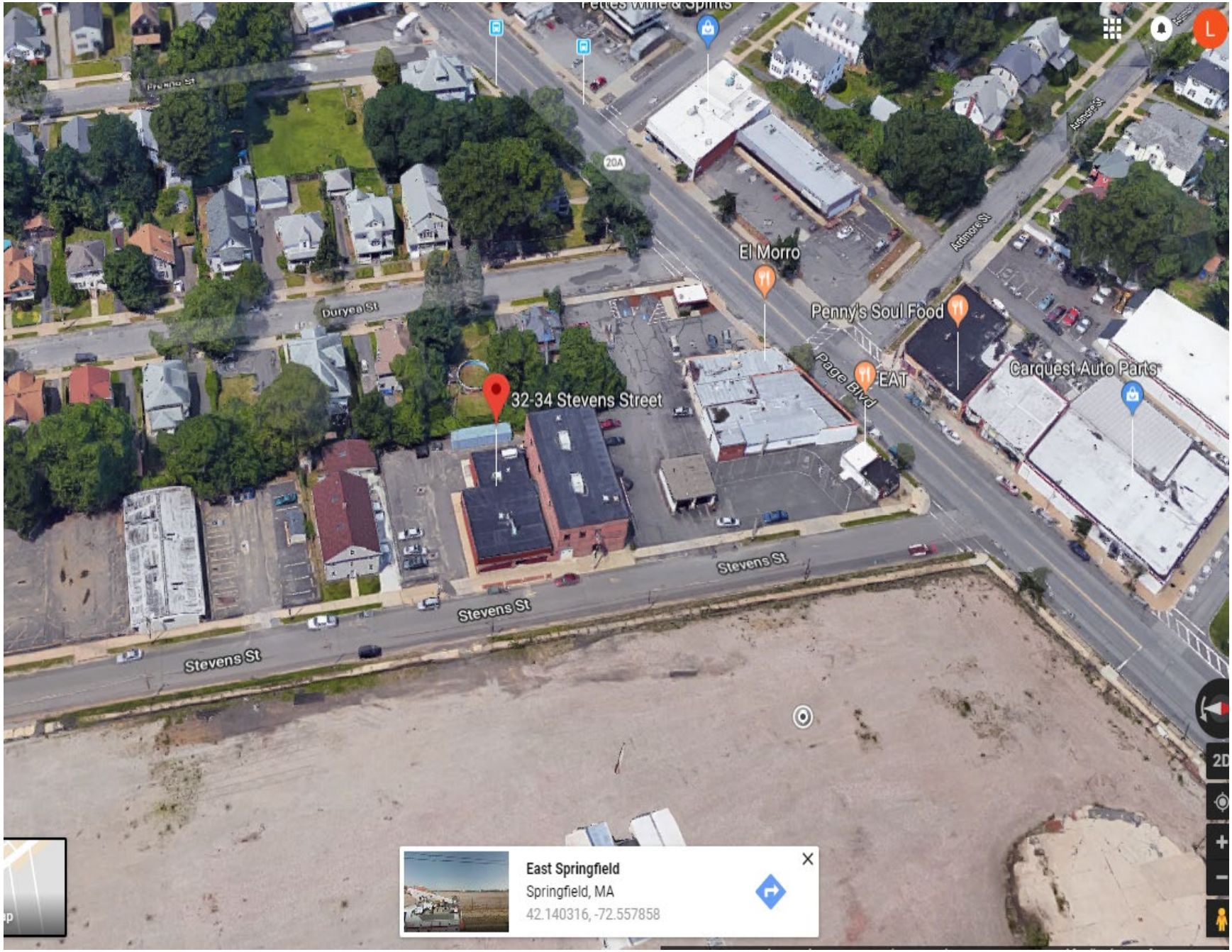
- Identify various metal transfer modes, electrodes, and shielding gases needed
- Identify sizes and application of common spool and filler wires
- Form a weld bead using GMAW
- Groove weld in the flat and horizontal position
- Fillet weld in different positions on structural shapes and plate
- The opportunity to perform a Qualification test to AWS Code D9.1

FCAW - Demonstrate the Flux Core Arc Welding process.

GTAW - Demonstrate the Gas Tungsten Arc Welding process.

- The set-up of equipment

RSW – Resistance Spot Welding -Demonstrate the spot welding process. Set up and maintain spot welding equipment


20A
El Morro
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