

Process Piping Blueprint Reading Syllabus

Time: 40 hours

Maximum Class Size: 12

Prerequisites: None

Course Description: This course will give the participant the basic knowledge needed to navigate through a set of Process Piping blueprints. The class will cover all aspects of a complete set of drawings and reading a scale (Architects and Engineers). Participants will develop a thorough understanding of blue prints and develop the ability to cross reference through architectural, structural and other working drawings. Ample time will be devoted to hands-on exercises using actual Process Piping Blueprints.

Goals/Objectives/Student Learning Outcomes:

- Read and interpret Mechanical Pipe plans and specifications.
- Identify schematic symbols and line types.
- Interpret different views and schedules.
- Interpret lines and elevations.
- Interpret and explain the cover page, index, drawing identification and designation systems, sheet types, page numbering and drawing types.
- Explain and demonstrate scaling measurement on drawings.
- Describe how and when to use Architects' and Engineers' scale rulers.
- Understand and describe dimensions on drawings.
- Demonstrate how to move through drawings and track down specific information.
- Describe how plans and specifications work together.
- Describe uses of submittals and shop drawings.
 - Perform a take-off from a complete set of blue prints.
- Calculate and estimate materials per blueprint scale.
- Identify specific lines and symbols.
- Complete a bill of materials off a print.
- Define and explain why specifications are needed
- Find a specific topic within specifications
- Identify flow meters, clarifiers, digesters, pumps, and aeration tanks on blue prints.
- Understand and describe RFI's (Requests for Information).

Standards

- API: American Petroleum Institute

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- ASTM: American Society for Testing and Materials
- AWWA: American Water Works Association
- NPT: National Pipe Thread
- AWS: American Welding Society

Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE.

Textbooks/Readings/Materials:

- Set of Orange County Sanitation District Process Piping Blue Prints
- (Job # P2-90) & Skanska March Wastewater Reclamation Facility
- Mechanical and HVAC Drawings
- Classroom Exercises 1, 2 & 3
- Classroom Exercises 1, 2, & 3 Keys
- Materials Order Sheet (3 copies)
- Materials Order Sheet Exercises Keys
- Pipe Pressure Test Data Sheet
- Krieger & Stewart Incorporated Clarification No. 65
- Gas Company Handout
- Request for Information Sheet (2 samples)
- Sample Submittal Transmittal Form
- Construction Standard Specification Submittal Procedures packet
- Using Engineer and Architect Scales

Personal Protective Equipment

- 12 pairs of gloves
- 12 pairs of safety glasses
- 20 pairs of ear plugs
- 12 hard hats

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Course Requirements

To receive credit for the course, participants must:

- Be present for full forty hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment

Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

Safety

Failure to maintain and use PPE may result in dismissal from the course.