**Prints and Diagrams**

**Instructor Guide**

**Prints and Drawings**

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Overview and Goals

Natural gas workers rely on prints and drawings to provide information about underground lines, pipes, equipment, and structures. These prints and drawings are essential to identifying and avoiding underground obstacles that cannot be seen and can only be visualized by studying prints and drawings. Natural gas workers also need to know how to document their work in as-built drawings that show the location of work they have completed and covered.

In this unit of work the instructor will:

* Present principles of prints and drawings using the PowerPoint presentation.
* Show how to interpret prints and drawings.
* Guide the participants through hands-on activities to extract information from local prints and drawings presented.

Upon completion of this unit of work, participants will be able to:

* Identify symbols used in prints and drawings.
* Identify dimensions shown on prints and drawings.
* Identify instructions shown on prints and drawings.
* Get relevant information from prints and drawings used on the job.

**Note:** *Specific step-by-step details and the outcomes of the demonstrations and participant activities will be determined by prints and drawings available at the training facility.*

Preparation – Facilitation Guidelines

Conduct this training in a classroom setting, using the local materials for illustration, demonstration, and the hands-on workshop activities.

Introduce the information and activities by using the PowerPoint presentation.

During the class introduction:

* Encourage discussion through demonstrations and activities.
* Discuss the importance of participation.
* Explain that participants may work with a partner or in small groups to complete the activities. After each activity, the participants will be encouraged to present their findings for further discussion to the workshop.

Use a flipchart to capture key lessons learned from the group discussions, or to identify questions that will be answered in upcoming units of work or that require further research and discussion.

Materials

Provide the following to each participant:

* A copy of the Activity Worksheet.
* Copies of prints and drawings used in the presentation and during the activity.

**Note:** *These items, and any other materials used for demonstrations and participant activities, will be determined by the materials available at the training facility.*

Schedule

|  |  |
| --- | --- |
| **Time** | **Topics for Discussion, Demonstrations, and Activities** |
| **45 minutes** | **Presentation**   * Present the topics in the PowerPoint presentation * Use local prints and drawings to replace or augment those provided in the presentation. |
| **45 minutes** | **Activity**   * Provide prints, drawings and activity sheets. Provide enough activities for each of the prints and drawings used in the activity. * Direct learners to study the prints and drawings and answer the questions on the activity sheets (revise activity sheets to fit the prints and drawing used in your location).   **Discussion**   * Have learners report the information they have obtained from the prints and drawings. * Explore the reasons behind any differences and explain the “correct” answers. |

Boot Camp Activities

Working with a partner or partners, identify the following items on the prints and drawings provided for the activity.

|  |  |
| --- | --- |
| Activity Worksheet | |
| Scenario | Examine the print or drawing provided. |
| What is to be installed |  |
| Length of pipe |  |
| Location of pipe |  |
| Equipment to be installed |  |
| Location of visible reference points |  |
| Location of end points |  |
| Distances from street curbs  manholes,  underground structures and equipment  water, electricity, communication, etc. lines  utility poles  street corners  buildings |  |
| Depth of cover |  |
| General discussion questions or notes |  |