Chapter 11: Excavation Safety

Drawing Requirements

1 Purpose

The purpose of these requirements is to ensure that plans and drawings submitted to the facilities engineer are complete and contain the required level of detail.

These requirements cover preparing plans and drawings associated with excavations (including ground disturbance activities) and related permits and utility location requirements. They apply to persons responsible for those preparing those plans and drawings: the project manager (PM) and field construction manager (FCM) and the utility locator.

2 Requirements

An in-field survey is required to locate all utilities during the planning phase of an excavation (see Excavation Safety: Excavation Procedures). All utilities must be marked at the work location (see Excavation Safety: Utility Marking Requirements) and all utilities must be verified and/or indicated on the drawings (see Excavation Safety: Utility Location Results Form). Specific requirements for each type of plan or drawing follow. Include all applicable details as described.

2.1 As-built Underground Utilities (Mechanical)

Do all of the following on the drawing:

- Identify utility
- Identify size and type
- Provide spot elevations (top/bottom of pipe)
- Show location of installation (dimension from closest landmark, for example, building, curb, manhole, catch basin)
- Show complete routing of pipes, including turn points and elbows
- Show tap-ins from mains, or tie-ins from existing pipes (if applicable)
- Show all shut-offs
- Identify conduit size/duct bank (top of duct) size and width
2.2 Electrical Drawing Plans

For electrical drawing plans, show all of the following:

- Spot elevations (depth) throughout equipment installation
- Installation location (dimension from closest landmark, for example, building, curb, manhole, catch basin)
- Complete conduit or duct routing, including turn points and elbows
- Pull-boxes, hand holes, shut-offs, and panel boxes associated with project

2.3 Piping Plan Drawings

For piping plan drawings, show all of the following:

- Identify pipe size/duct bank (top of duct) size and width for all site and building schematic drawings such as sanitary sewer, storm drain, hot water, chilled water, and domestic water
- Spot elevations (depth) throughout equipment installation
- Location of installation (dimension from closest landmark, for example, building, curb, manhole, catch basin)
- Complete pipe or duct routing, including turn points and elbows
- Catch basins, sanitary sewer manholes, and storm drains associated with project

2.4 Above Ground Utility and Installation Drawings

For above ground utility and installation plan drawings, show all of the following:

- Identify pipe size/duct bank (top of duct) size and width for all site utility drawings such as sanitary sewer, storm drain, hot water, chilled water, and domestic water
- Spot elevations (depth) throughout equipment installation
- Installation location (dimension from closest landmark, for example, building, curb, manhole, catch basin)
- Complete pipe or duct routing, including turn points and elbows
- Catch basins, sanitary sewer manholes, and storm drains associated with project
- Any new installations of guardrails, bollards, speed bumps, concrete pads, foundations
- In addition to any new, relocated or abandoned underground utilities, the following must be marked on the drawings before submitting: new sidewalks, ramps, decks, pathways, pads, structures, stairways, berms, trailers, and new roads

3 Forms

The following forms and systems are required by these requirements:
4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

5 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)

- Chapter 11, “Excavation Safety”
  - Excavation Safety: Excavation Procedures (SLAC-I-730-0A23C-001)
  - Excavation Safety: Excavation Permit Form (SLAC-I-730-0A23J-006)
  - Excavation Safety: Utility Marking Requirements (SLAC-I-730-0A23S-009)
  - Excavation Safety: Utility Location Results Form (SLAC-I-730-0A23J-004)