

# ENGINEERING / SURVEY

Objective:

This session provides information on how to read engineering/construction plans and the techniques and principles of surveying. Possible career fields will be demonstrated.

Outline:

1. Engineering and Surveying Professions
2. Engineering Plans
  - a. Scale
  - b. Layout of drawings
  - c. Line weights and line formatting
  - d. Elevations
  - e. Plan view
  - f. Profile view
  - g. Cross Sectional view
  - h. Detail drawings
3. Surveying
  - a. Equipment (Level, rod, tape, theodolite, and GPS)
  - b. Principles of basic surveying
    - i. Elevations from a benchmark, and relative elevations
    - ii. Location
  - c. Staking/marketing
  - d. Mapping
  - e. Public relations
4. Field Demo
  - a. Level
    - i. Elevations
    - ii. Benchmarks
  - b. Simple location using tapes
    - i. Swing ties
  - c. Typical types of survey data collection
    - i. Manholes, catch basins
    - ii. Water facilities (meters, valves, etc)
    - iii. Curb cuts
  - d. Construction stake out
5. Review
  - a. Questions and answers