INTRODUCTION

In this exercise we will use a chain (steel tape) to measure the perimeter of Bomar Commons (see attached map). Even though use of the tape as a measuring device has declined as electronic distance measurement (EDM) instruments are more frequently used, the techniques of using a tape are still important.

EQUIPMENT REQUIRED:
- 100’ tape, plumb bobs
- chaining clamps
- chaining pins
- hand level
- tension handle
- range poles

PARTY COMPOSITION:
- Front chainperson
- rear chainperson
- notetaker
- rodperson (responsible for setting range poles and checking tape alignment)

PURPOSE:

The traverse you will measure is the perimeter of grassed area of Bomar Commons. Each party will begin at a different point. If time allows you should go around the traverse in both directions. After the measurement of the perimeter is completed, determine the area of the grass region in acres.

PROCEDURE:

As you measure a leg of the traverse, keep the following in mind:

1. Keep tape tension about 15 lbs. Exert the pull smoothly and gradually.

2. Try to have tape fully supported if possible. Otherwise try to keep one end at ground level.

3. When setting chaining pins, put them in the ground at about a 45° angle in the plane perpendicular to the line being measured. The rear chainperson should keep the pins
4. Keep both ends of tape at the same elevation using the hand level (if provided).

5. After each leg the party chief is responsible to have crew members rotate jobs. For example, after leg 1, the front chainperson becomes notetaker, notetaker becomes rodperson, etc. The exercise is not complete until each member of the crew has performed each task.

NOTEKEEPING:

1. Your notes should follow all rules as to neatness and completeness as outlined elsewhere.

2. Correct for sag when tape is not fully supported on the ground. Ask your instructor or teaching assistant for the weight of the tape. Correct for sag using the formula

\[ C_s = \frac{W^2L}{24P^2} \]

Where:
- \( C_s \) = sag correction
- \( W \) = total weight of the section of tape between supports
- \( L \) = interval between supports
- \( P \) = tension in the tape

3. The party chief's notebook will be used to record notes. All other crew members will copy their notes from the party chief's notebook. Notebooks are due at our next class meeting.