

Students please affix one of your self-adhesive identification labels to this space. Do not obscure other parts of this page with the label. If you do not have a self-adhesive identification label, please complete the following information. Write your name as it appears on your badge.

Your Name: _____

Participation Number: _____

Two letter state abbreviation. →

State code (0301, 0302, to 0350) ↑

Team member number (01, 02, 03, or 04) ↑

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Students please do not write or mark within this box.

Judges, after this skill sheet has been scored and double checked, write the total score for this activity in the blank below.

Skill Activity Score: _____

Judges Initials: _____

2018 National Agricultural Technology & Mechanical Systems Career Development Event Environmental and Natural Resources Skill

Situation: The Patterson Land Corporation (Patterson Land LLC) is planning to construct a building on their land. They have hired you as a consultant and would like answers to their questions. You are to help by answering the questions below.

Directions: You are to complete the three tasks below. You will be split into three groups. Group 1 will begin with task 1, group 2 will begin with task 2 and group 3 will begin with task 3. When you have completed that task, you will progress to the next task. Your tasks are listed below.

1. Using the topographic map, determine the slope of the location where a farm building is to be located. Using the plat map, determine the legal land description of the land where the building will be located.
2. Lay out a 90 degree angle for one corner of the building.
3. Determine the elevation between two points and calculate the slope.

Task 1 Questions:

1. Study the topographic map on the attached page. Determine the difference in elevation in feet between each line of the topographic map. **Write this number on line 1 of your scan sheet.** (1 point)
2. The arrow on the topographic map is 800 feet long. Determine the percent slope of the land along the arrowed line. **Write this number on line 2 of your scan sheet.** (2 points)
3. Find the dot in the shaded area of the topographic map on the attached page. Draw a line indicating where water will flow from this dot to the edge of the map. **A CDE official will review your line and enter your score on the scan sheet.** (2 points)
4. The Pattersons would like to place the planned building on the most level area of their land. Find the most level area in the shaded area and label it with the letter "B" (for building). **A CDE official will review your line and enter your score on the scan sheet.** (1 point)
5. Study the plat map on the attached page. Provide a legal land description of the shaded area that belongs to Patterson Land LLC in section 11. **Write your legal land description in the place provided on the scan sheet.** (3 points)
6. Determine the number of acres in the shaded area owned by Patterson Land LLC in section 11. **Write your answer in line 6 of the scan sheet.** (1 point)
7. The Patterson Land Corporation also owns land in section 14 of Hazel Green Township. Provide a legal land description for the land owned by Patterson Land LLC in section 14. **Write your legal land description in the place provided on the scan sheet.** (4 points)

Task 2 questions: Proceed to task 2, if you have not yet completed that section.

8. Proceed to the location where you will lay out the corner for the building. Two points on the board form a line that is 12 feet long. Your job is to use two tape measures to locate a third point that creates a 90 degree angle. **A CDE official will score your answer on the scan sheet.** (2 points)

Task 3 questions: Proceed to task 3, if you have not yet completed that section.

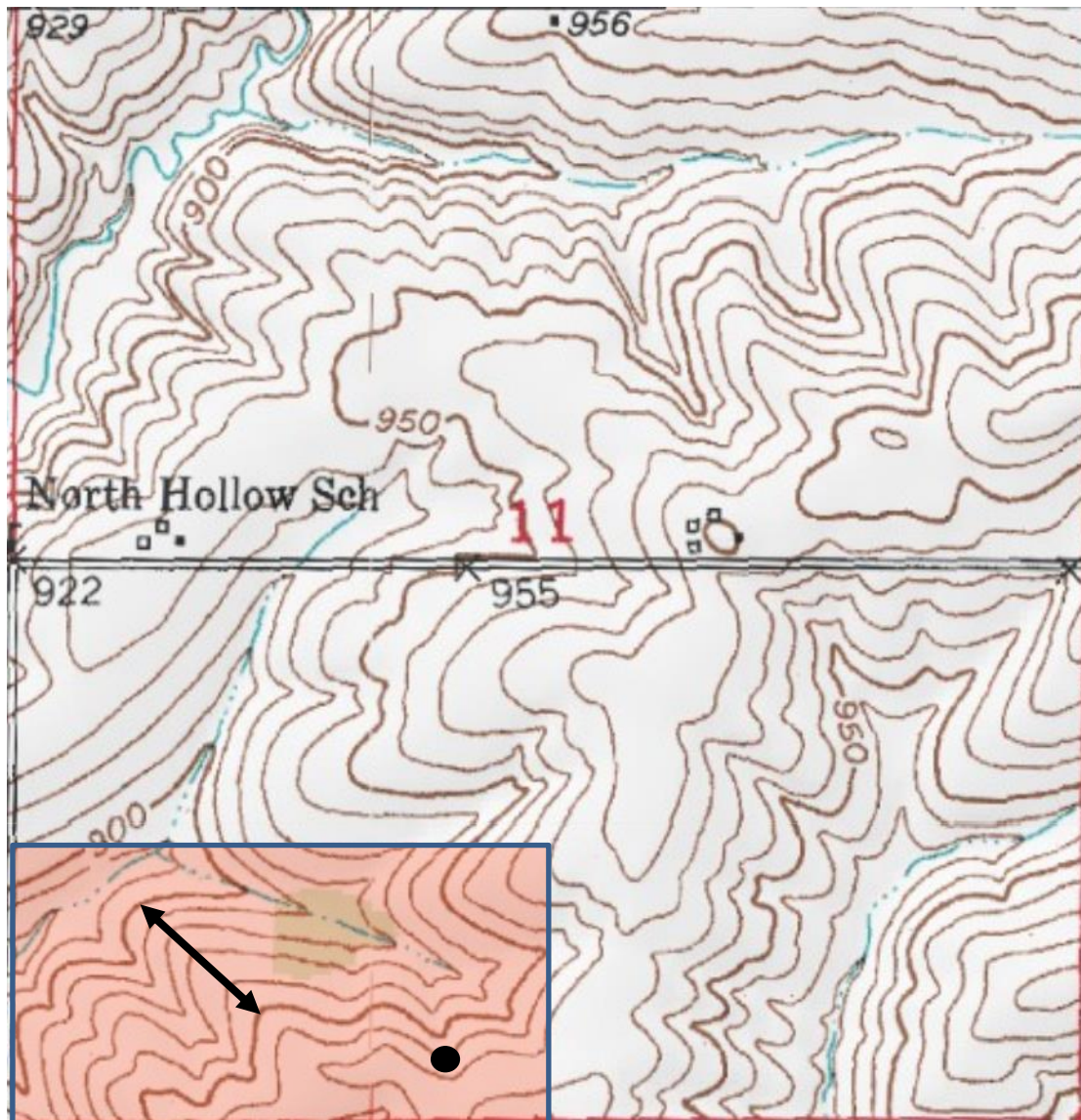
9. Proceed to the surveying instruments. Level the instrument, if necessary. On the table below record the elevation of Benchmark 1 as 100.00. (2 points)
10. Take a backsight to BM1, record it in the proper place on the records and determine the height of the instrument. (4 points)
11. Take foresights to 0+00 and 0+50. Record these foresights. Determine the elevation of stations 0+00 and 0+50 and record these. (4 points)

A CDE official will score your records in line 9, 10 and 11 of your scan sheet.

STA	BS	HI	FS	ELEV	
BM1					
0+00					
0+50					

12. Assume the distance between 0+00 and 0+50 to be 50 feet. Determine the percent slope between 0+00 and 0+50. **Write your answer on line 12 of your scan sheet.** (2 points)
(if you have not completed task 1 yet, proceed to task 1.)
13. Safety. Two points for safe work habits, 1 point for one infraction, 0 points for two or more infractions (2 points)
A CDE official will score safety infractions on your scan sheet.

Topographic map of Section 11.



Plat map of section 11.

