

Name _____

Homework Assignment 4 (Due: Friday, September 30)

Please hand in this homework pamphlet as a cover sheet with your answers (everything will be returned once graded). Be sure to list all assumptions and show all your work. Any information that is determined from the attached figures must be clearly indicated on the appropriate figure. Credit will only be assigned if it is clear how each problem was solved.

1. Delineate the catchment area (drainage basin) that will contribute flow to the point of analysis indicated on Figure 1. Estimate the delineated area in acres. (Estimate the area using either the triangle approximation method or the grid method as discussed in class).

2. A subdivision has the following land uses: 160 acres of 2-acre residential lots, 68 acres of good condition open space, and 13 acres of gravel roads. Three percent of the subdivision is covered by swampy areas, and the entire area overlays soil type C. Assuming that the time of concentration has been estimated as 0.6 hr and that AMC-II conditions apply, use the NRCS curve number method for a Type II rainfall distribution to determine the following for a 5-inch rainfall event:
 - A. Effective rainfall (direct runoff)
 - B. Peak discharge

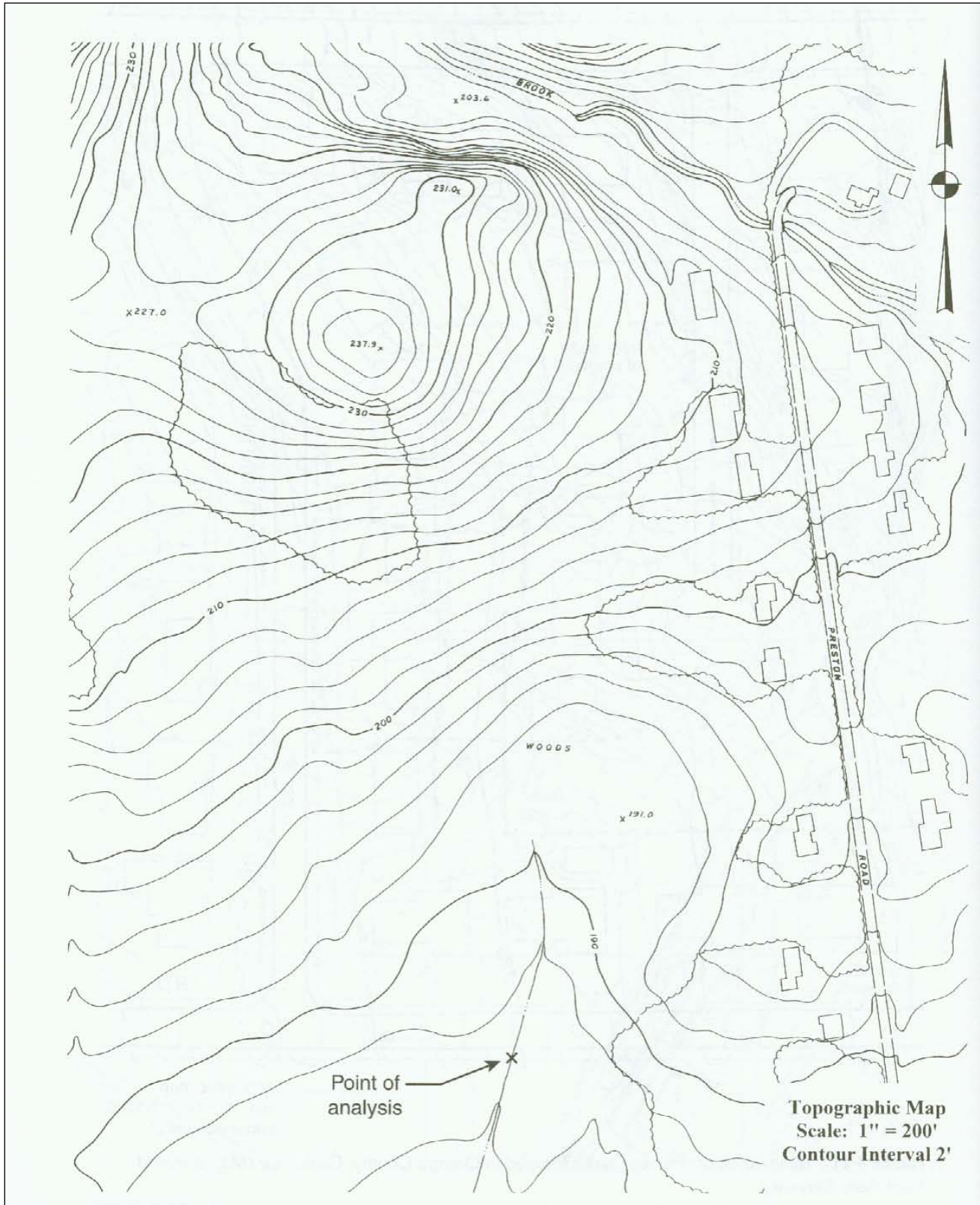


Figure 1. Topographic map of study area for problem 1.