AGEN 325 CLASS 25: Surface Drainage, Land Grading, and Open Ditch Design (Chapter 12 & 13)

Terms

**cut** = ground elevation minus grade elevation

**cut sheet** = sheet given to contractor showing stations along the route of a proposed drain, waterway or ditch along with the respective cuts

**drainage coefficient** = inches of water to be removed from an entire drainage area in 24 hours

**drainage group** = group of soil types with essentially the same drainage characteristics

**fill** = grade elevation minus ground elevation

**grade elevation** = bottom elevation of a proposed drain, waterway or ditch

**land forming** = the process of changing the natural topography so as to control the movement of water onto (irrigation) or from (drainage) the land surface

**limiting velocity** = maximum allowable velocity above which channel scouring will occur

**slope stakes** = stakes set at the intersection of the ground and side slopes of a drain or earth fill to show the contractor where to begin excavating or adding fill

INTRODUCTION

Surface drainage is accomplished using broad, shallow surface channels which may either connect random low spots in a field or are constructed across long gentle slopes. Crops are planted across the drains and the drains are then unnoticeable. Sometimes the land is smoothed between drains using land planes to facilitate row drainage into the surface drains. Water is moved away from the field with open ditches. (Subsurface drains may also empty into open ditches.)

SURFACE DRAINAGE PATTERNS

1. **Random Field Drains**: