Objective:

The objective for this project is to design a site that will be a retail store on a current vacant piece of property located on the campus of the University of Tennessee at Martin at the corner of University Street and Highway 431. The site will be on a total of 5.2 acres and will contain a building of 30,000 square feet along with a parking lot.

Procedure:

The procedures to complete this task were: Code Research, Survey Review/Corrections, Site Layout, Site Grading, Sedimentation Pond, Drainage and Culvert Design, and Budget. To carry out the project these procedures were accomplished through resources such as AASHTO Manual, MUTCD, Martin Tennessee Municipal Zoning Ordinance, TDEC, TDOT, and ADA.

Code Review

Research for the project came from the resources such as the following: AASHTO (American Association of State and Highway Transportation Officials), ADA (American Disabilities Act), TDOT (Tennessee Department of Transportation), TDEC (Tennessee Department of Environment and Conservation), MUTCD (Manual of Uniform Traffic Control Devices), and City of Martin Zoning Ordinance.

Site Grading

The grading was achieved through assigning spot elevations to determine the new contour lines that need to be applied to the site. This method was accomplished by using AutoCAD. Cut and fill was also determined for the site by using the end area method.

Note: Due to time conflict and not being able to meet with the advisor the following were not accomplished: Utility layout, PondPack, and permitting.

Site Layout

The design of all the key elements were applied using the requirements researched. A final layout was created in order to achieve maximum satisfaction to the client and employer.

Survey Review/Corrections

The site was reviewed for any corrections of missing key elements on the surveying plan. The site did not have any corrections to be made to the plan.

Drainage

The structures that needed to properly drain the site were designed through calculations such as Hydraulic. These calculations were also used to determine the size of the structures and pipes which run from one to another. Regulations must be met for this step.

Sedimentation Basin

The storage volume of the basin was calculated using calculations from TDEC requirements and through AutoCAD. It is temporary at the time of construction.