

Need For Expansion

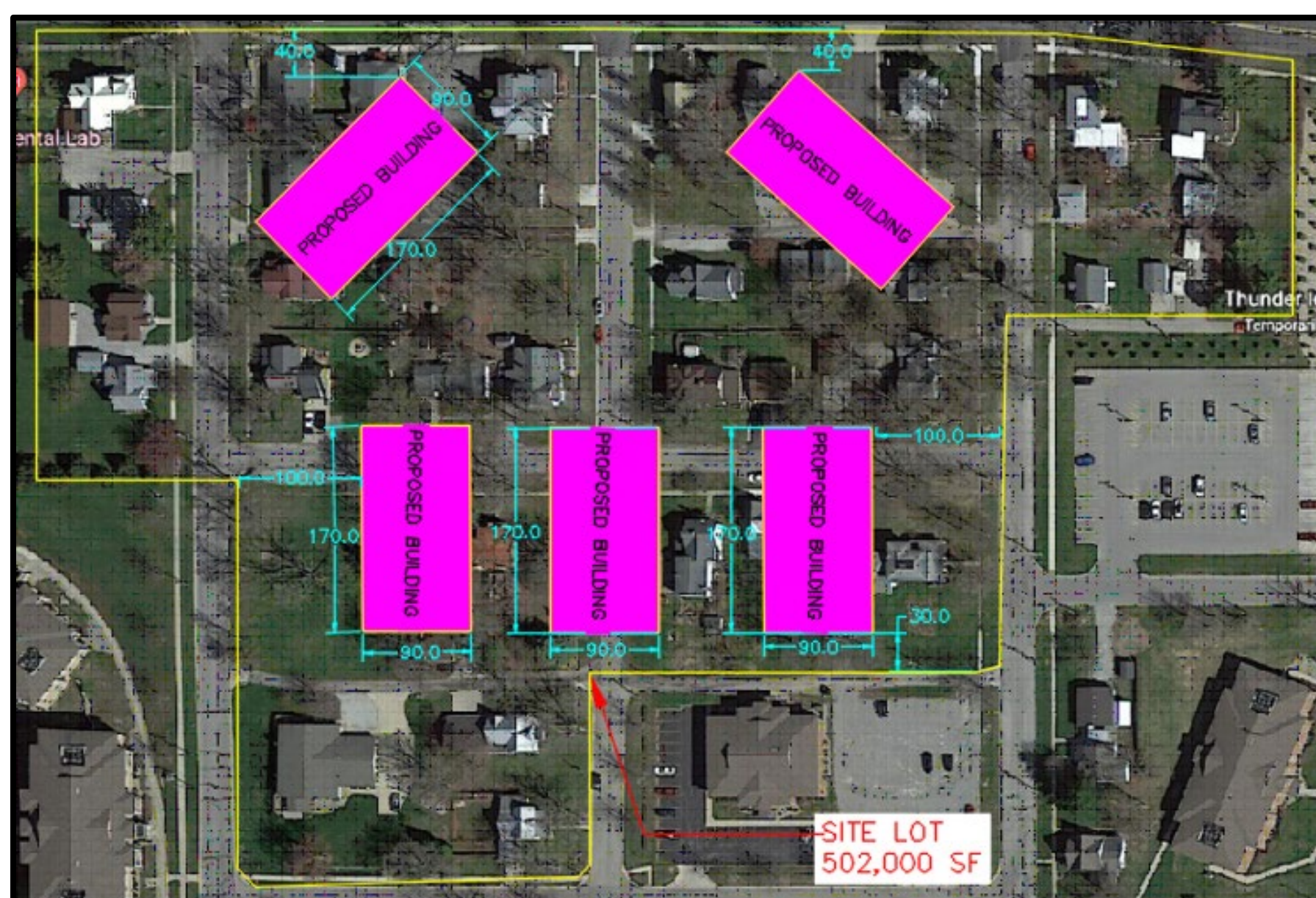
As Trine Universities enrollment continues to grow, a dorm expansion plan is needed to keep up with enrollment and allow the traditional dorms to be demolished. Five new buildings will be constructed which will provide a total of 600 new beds.

Site Selection

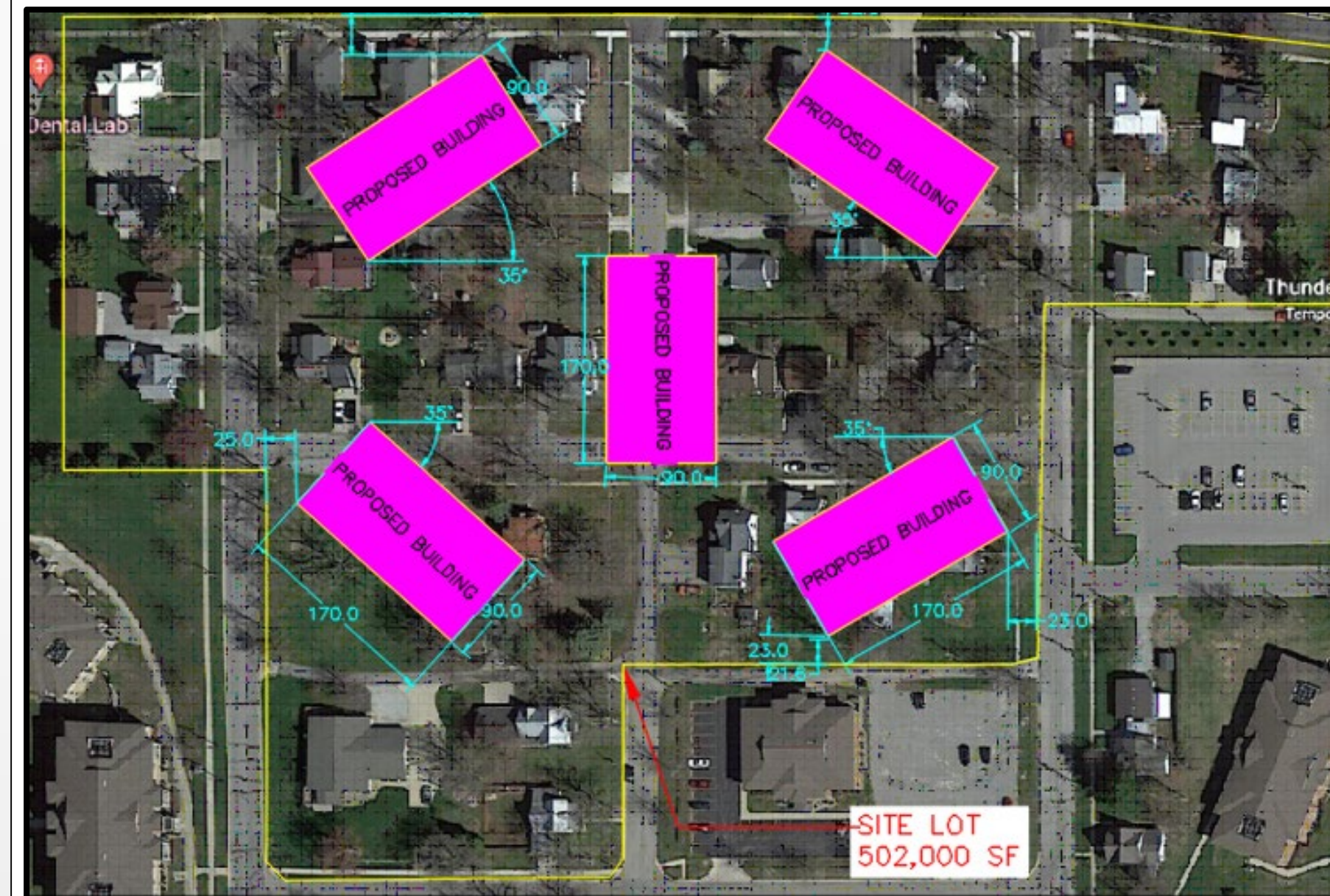


Two sites were considered for the expansion. The north-west site, between Summit St., US 20, S Kinney St., and Moss St. was chosen in order to avoid potential soil issues at the south-east site.

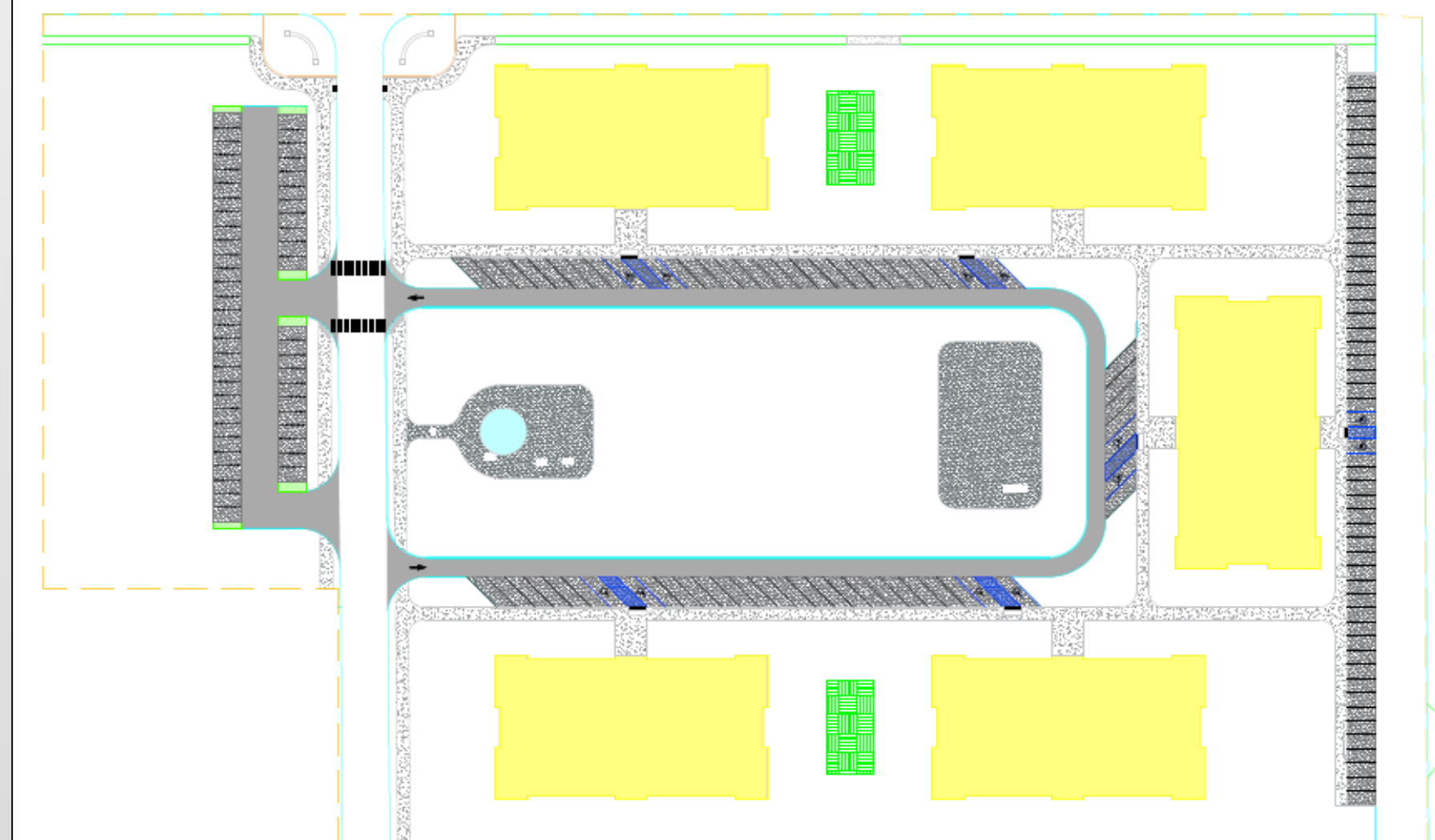
Building Layout



Building Layout



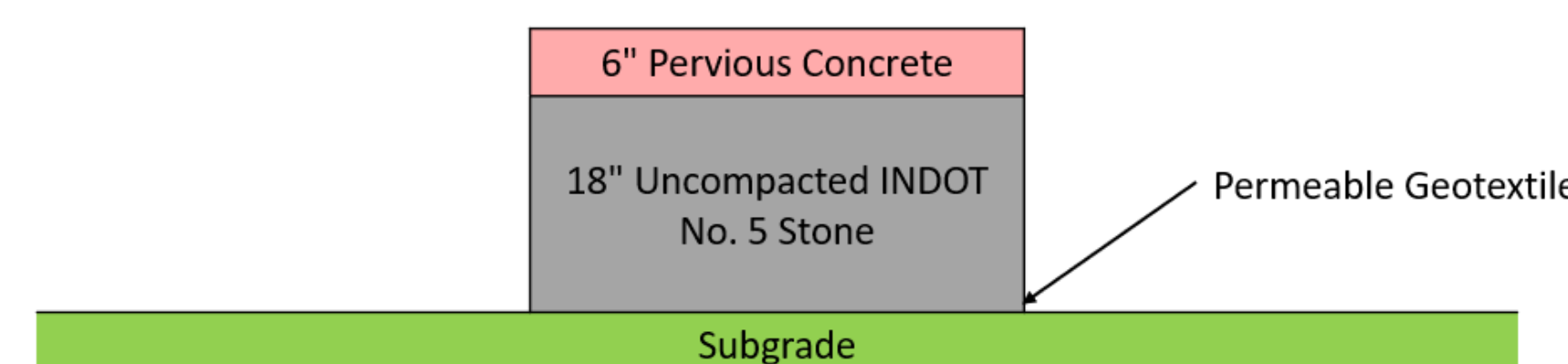
Several building layouts were considered and then abandoned.



This layout was chosen to provide close parking for every student, facilitate easy move-in and move-out, allow for a large, central greenspace, and present an aesthetically pleasing view when entering from Summit St.

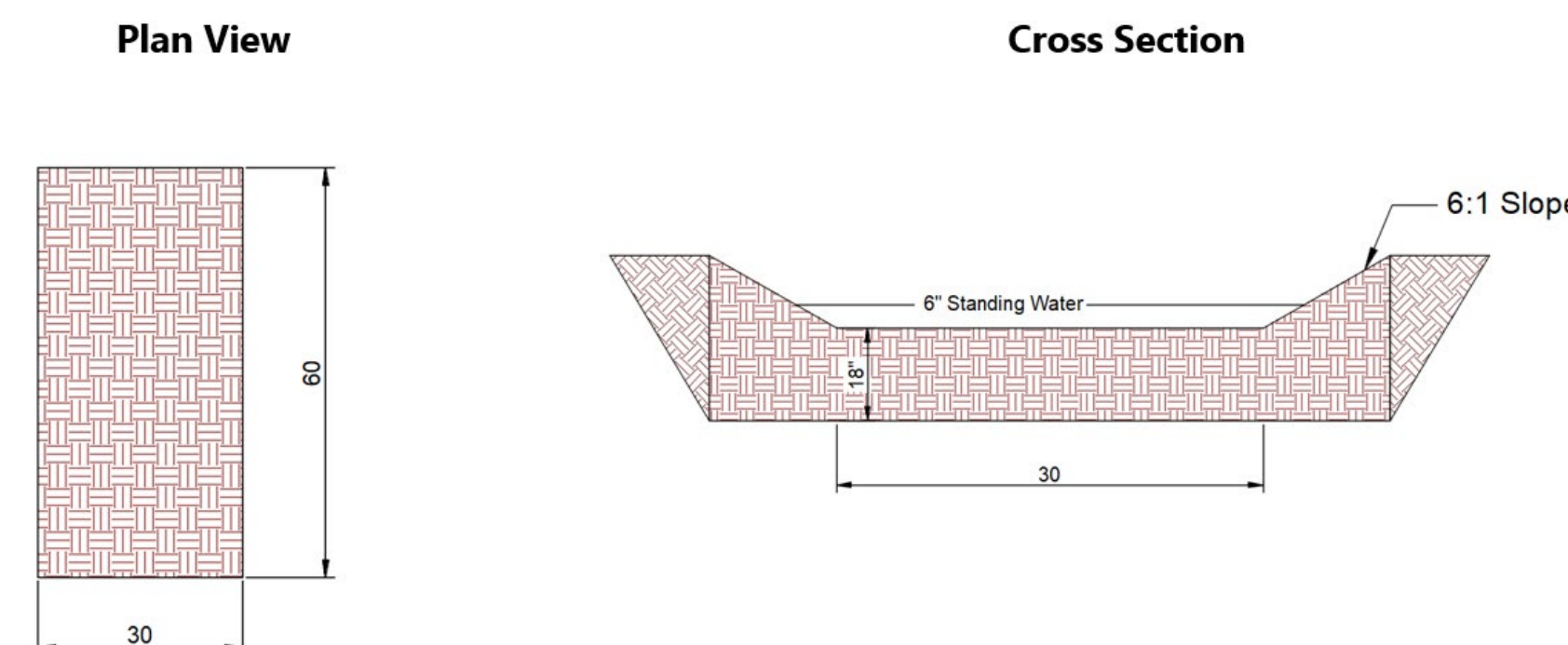
Stormwater Consideration

Given the aging stormwater utilities and lack of low impact development on the existing site, this project was designed to detain nearly all the stormwater on the site and allow it to infiltrate back into the ground. Permeable pavement was implemented in all the parking spots to facilitate this goal.



Stormwater Consideration

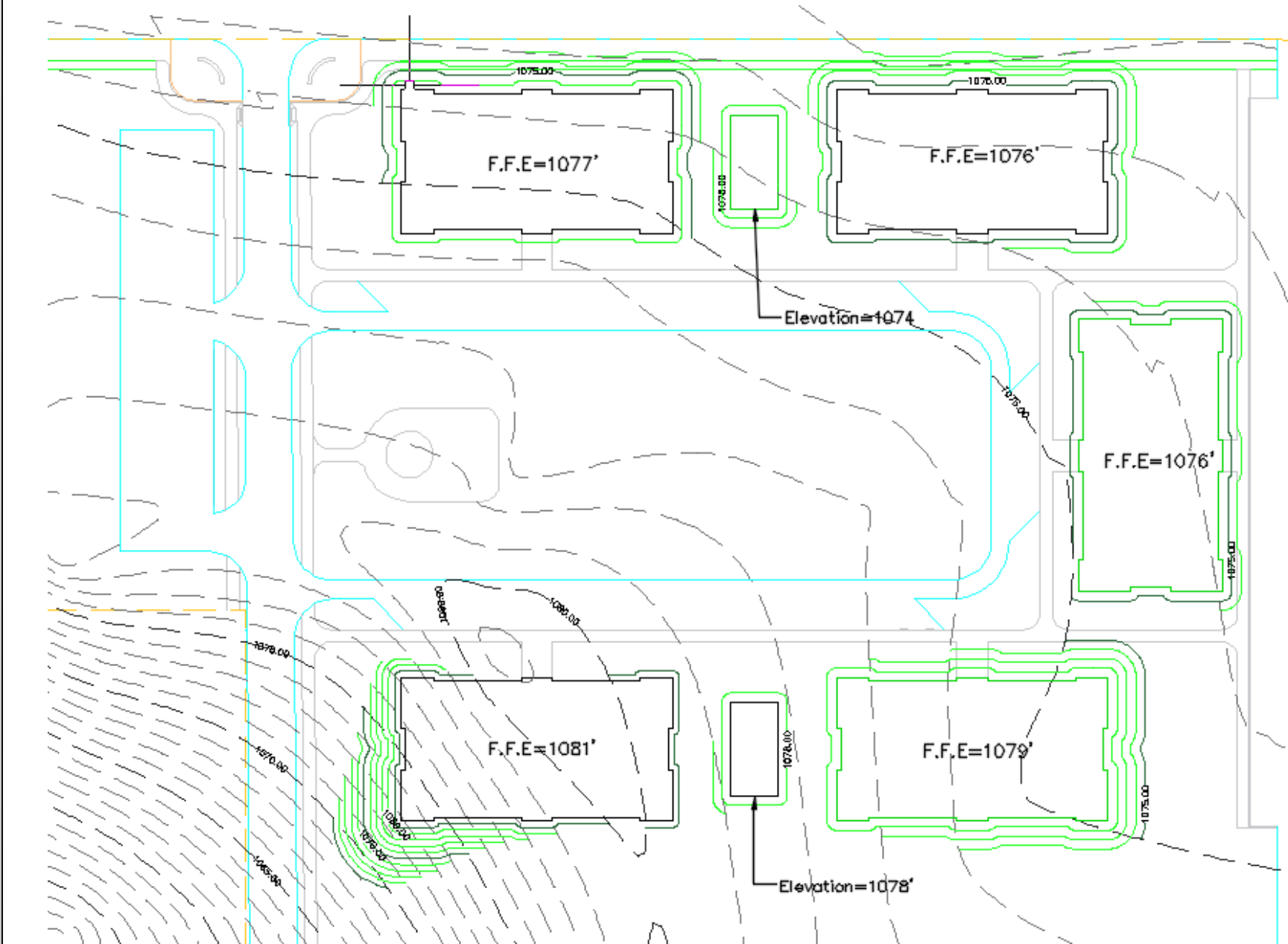
The permeable concrete pavement was designed using the 1993 AASHTO Method. The 18" thick stone reservoir provided over 17,000 cubic feet of stormwater detention.



Two rain gardens were also designed to capture stormwater and allow infiltration. Per Angola municipal code 23,316 cubic feet of stormwater storage must be provided. The pervious parking and rain gardens provided over 30,000 cubic feet of storage.

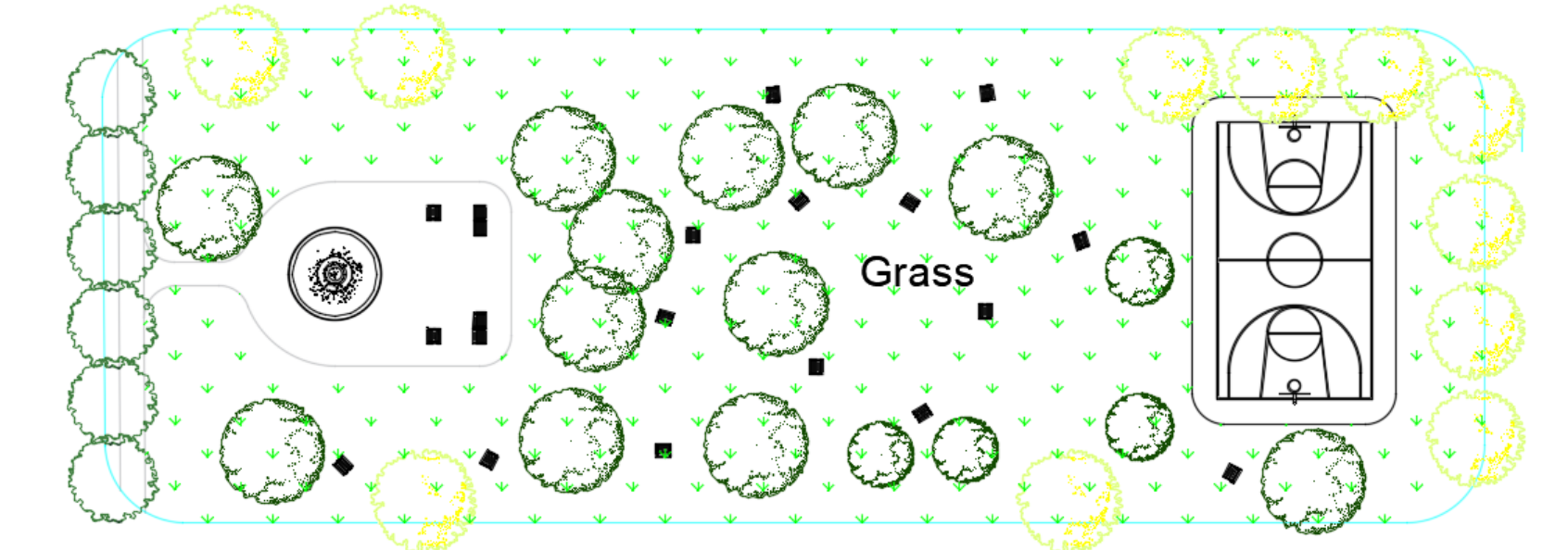
This design reduced peak runoff from 51.3 cfs to 6.71 cfs. This far exceeds the minimum and takes stress off overloaded detention facilities on campus.


Grading



A final grading plan was developed which guided stormwater towards detention facilities, allowed the buildings to sit 1' above grade to prevent flooding, and minimized fill requirements. The minimal grading plan also prevented overcompaction of existing soil.

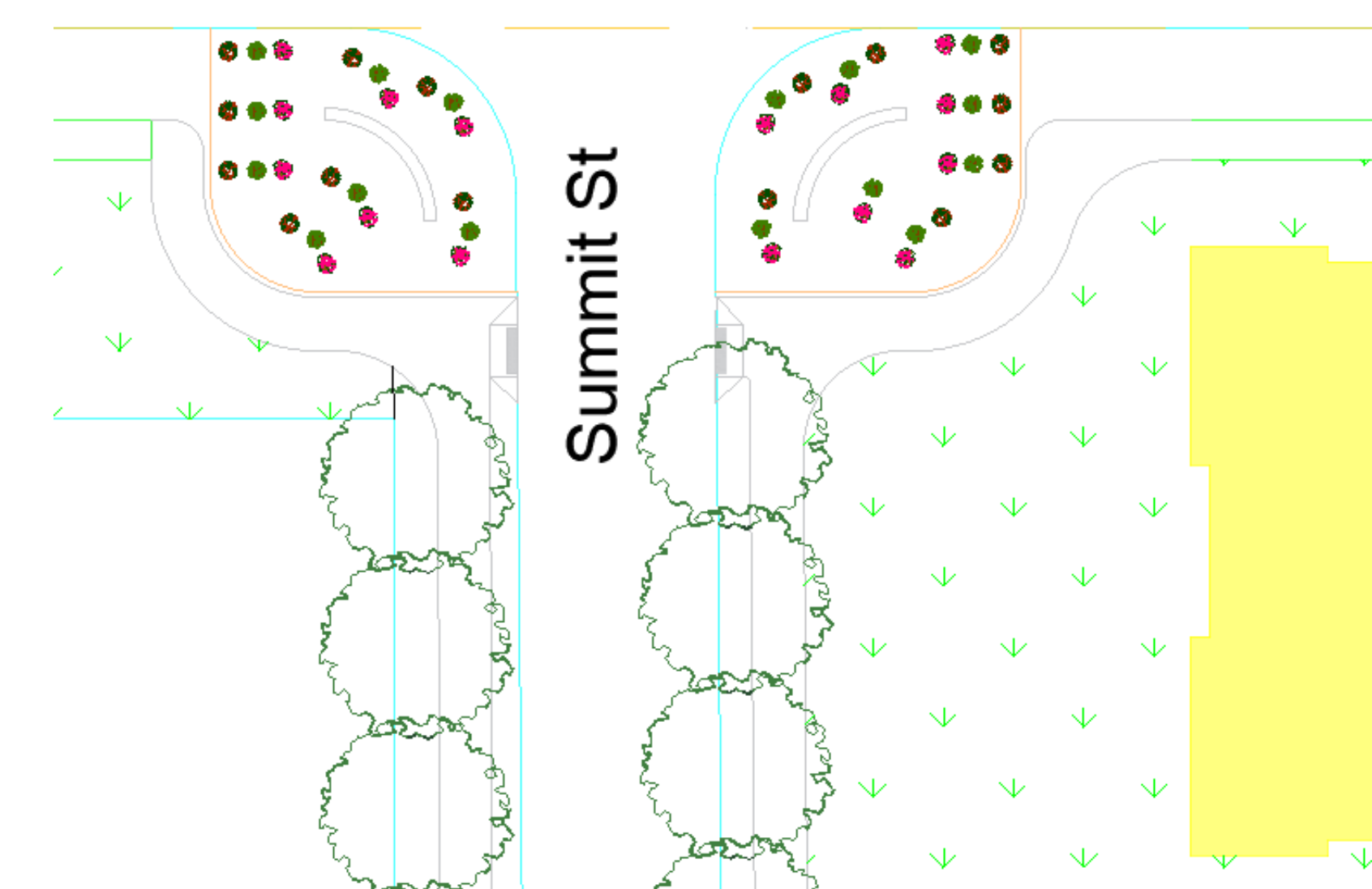
Landscape Design



-  Existing Tree
-  Silver Maple
-  Tulip Tree
-  Picnic Tables

A landscape plan was developed for the interior greenspace to promote outdoor activities for students.

Maumee St



An updated Summit St. entrance was also designed. This heavily trafficked entrance can now reflect the prestige of Trine University.

Project Goals

The design team began with two major design constraints.

1. Provide at least 480 new beds
2. Greatly reduce Stormwater Runoff
3. Ensure at least 40% greenspace

This design provided 600 new beds, reduced stormwater runoff by 87%, and provided 7.87 ac of greenspace (60% of the site).