

Mapping the Campus Trails for Christ School, Asheville, NC

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ABSTRACT

Christ School is a private school in Arden, NC, that lies on a forested 500 acre campus with an extensive system of trails. Until now, this trail system has yet to be accurately mapped using modern GIS methodology. Without a decent map, the school's land managing potential is limited.

To solve these issues, a map was created incorporating a satellite photo backdrop overlain by translucent shaded relief DEM, contour, property line, and street layers for base GIS map. The key data utilized is available for free download via the Buncombe County Office. Using cell phone GPS, the trails were then plotted.

Per client request, all data was re-projected as a UTM NAD82 17N datum for navigational purposes. Following assemblage in the ArcGIS Desktop software, the tracking points were conjoined, with routing corrected where necessary. The trails were delineated, assigned IDs, and assigned type symbols.

Prominent trails were then analyzed for length and elevation/gradient using the DEM.

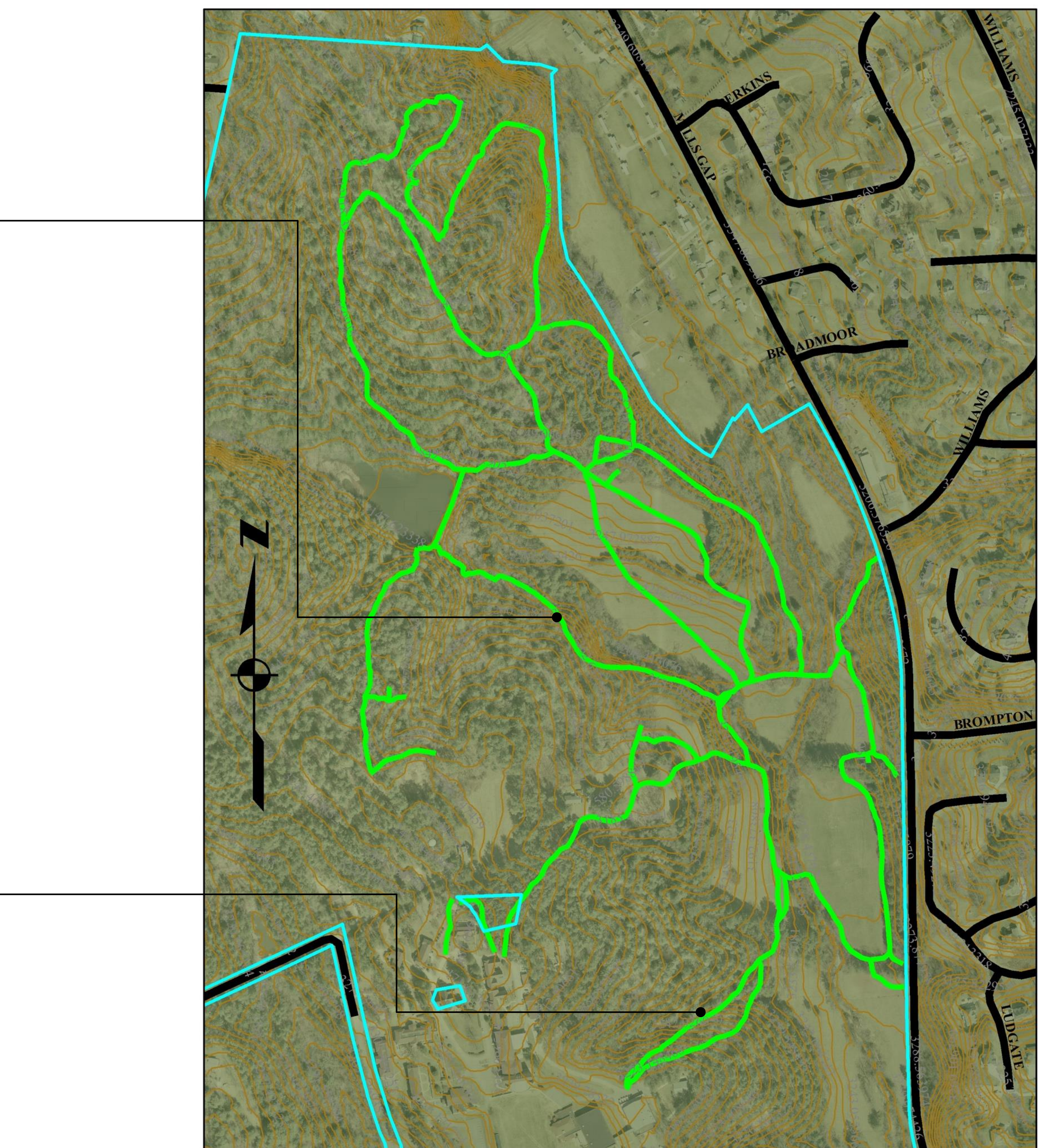
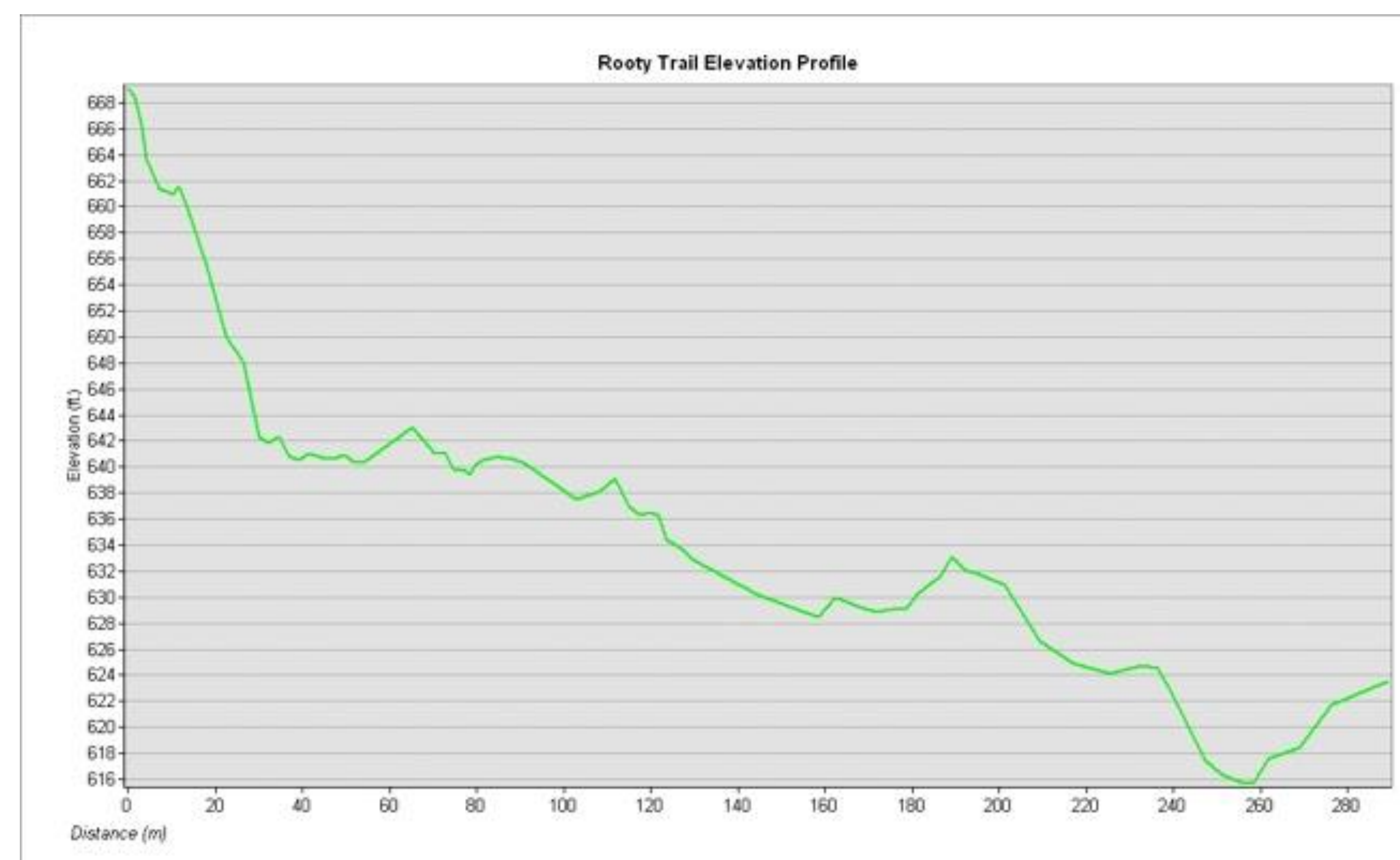
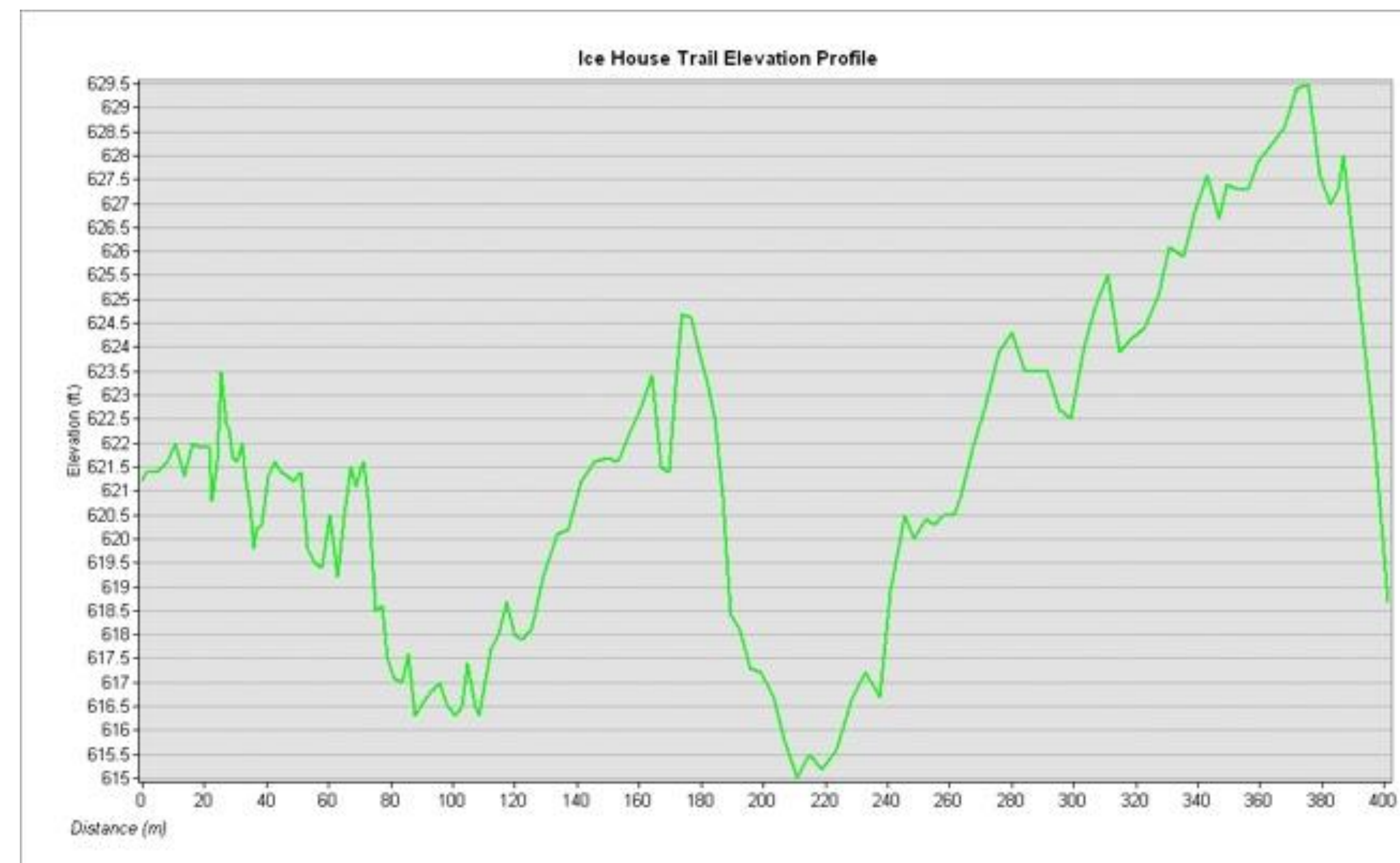


Figure 3a. Christ School Campus, NE Corner

Figure 3b-c. Elevation profiles of two presently definable and named trails

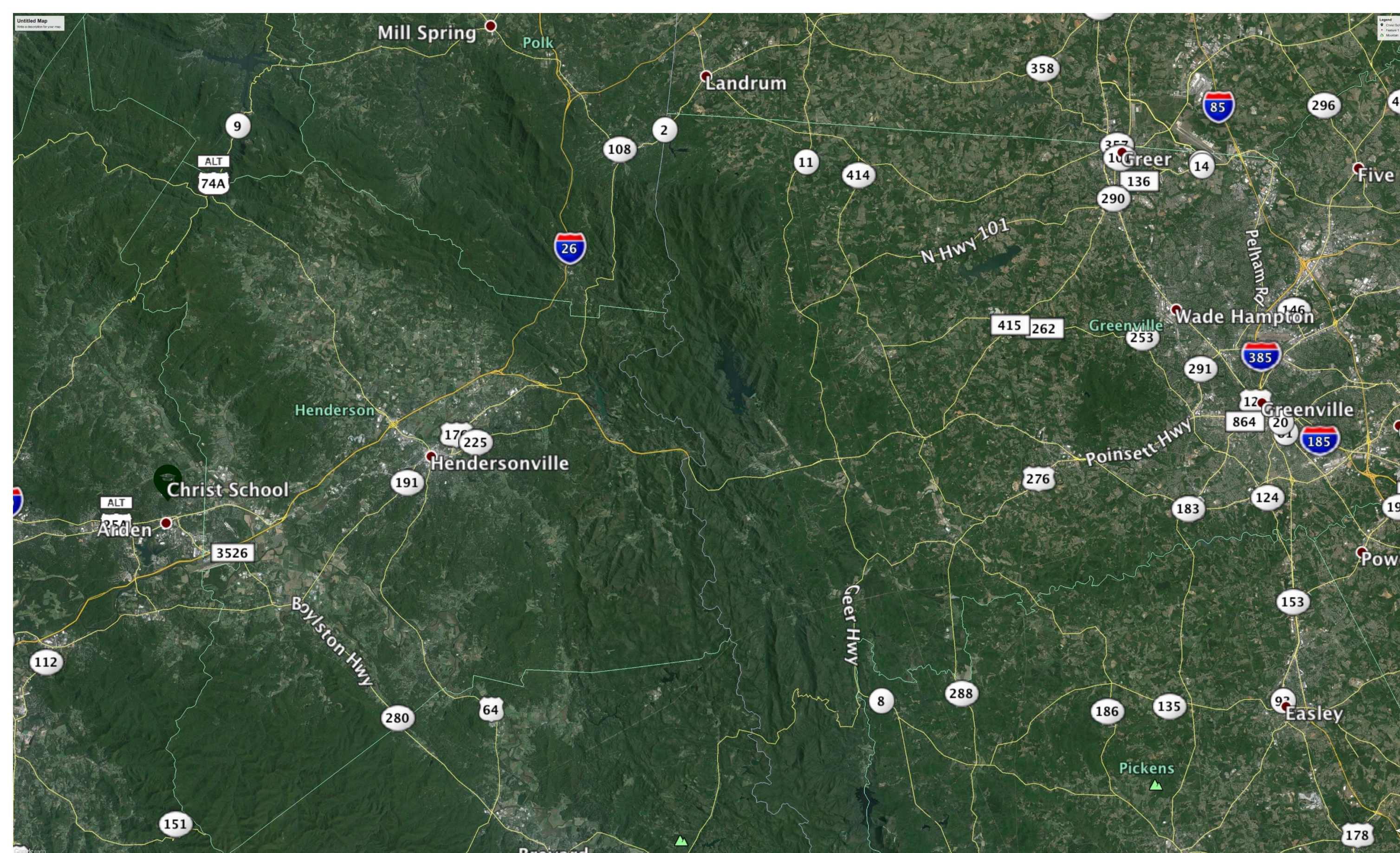


Figure 1. An aerial overview showing Christ School's location in the French Broad River Valley an hour's drive north of Furman.

METHODS

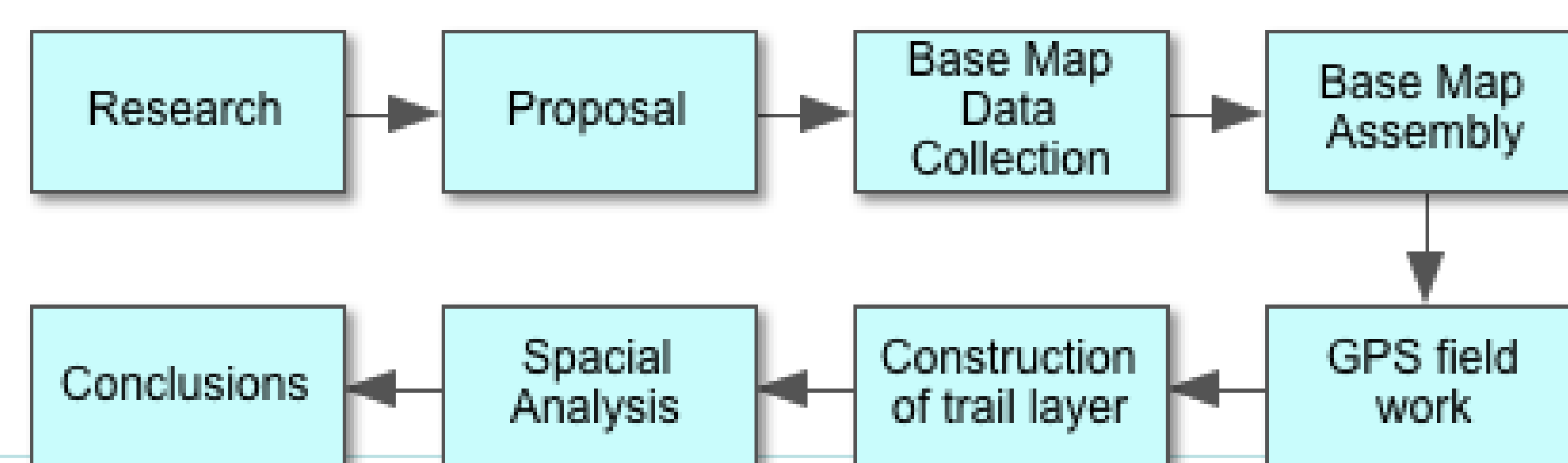


Figure 2. A procedural flowchart.

DISCUSSION

Christ School's trail system is quite complex, which, while adding difficulty to the task, reinforced its necessity.

During the process, some things were revealed that were lost with time regarding the two landlocked land parcels. Property boundaries are highlighted in blue and said parcels are located in the southwest corner of the above map. The lower left parcel is the grounds for St. Joseph's Chapel. This church is the schools chapel in the parcel is probably separate due to that land have been deed to the Episcopal Church during the original building of the school. The upper right parcel is a residence of the Harris family, descendant of the prominent minister co-founder. The map shows that their property's northern dimensions are more extensive than originally thought. The angled parallel boundaries represent the road and their easements, although municipal maintenance ends long before then, meaning that this represents an error that may result in some confusion for city road planners using this data.

While the Buncombe County GIS Office's data offering was comprehensive, the last aerial photography was collected in 2006. Since then, development has altered the campus appearance with the addition of a new gate and a playing field. For this reason, they have requested updated imagery with the end product. I will be continuing work on this project for them over the next month.



Figure 4. St. Joseph's Chapel

REFERENCES

Map Data
Download Digital Data.
Google Earth Pro.