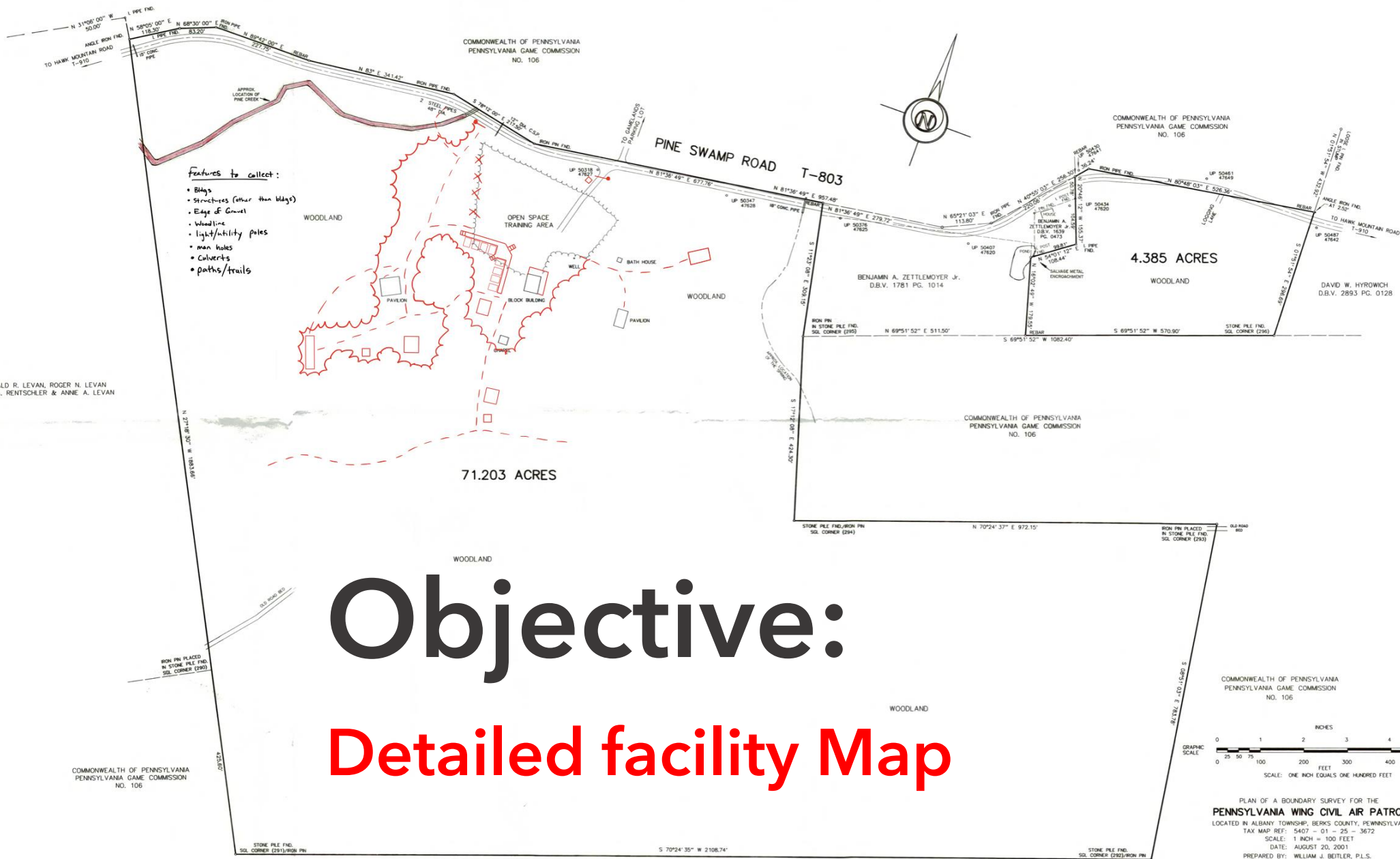


Hawk Mountain Ranger School Facilities Mapping

Nikolas Hawley, GISP
Location Laboratories
1st Lt, CAP

George Mason University
GGG 308
Prof. Lori Mandable

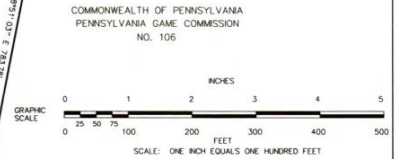




- Features to collect:
- Bligs
 - Structures (other than bldgs)
 - Edge of Gravel
 - Woodline
 - light/utility poles
 - man holes
 - Culverts
 - paths/trails

Objective:

Detailed facility Map



PLAN OF A BOUNDARY SURVEY FOR THE
PENNSYLVANIA WING CIVIL AIR PATROL
LOCATED IN ALBANY TOWNSHIP, BERKS COUNTY, PENNSYLVANIA
TAX MAP REF: 5407 - 01 - 25 - 3672
SCALE: 1 INCH = 100 FEET
DATE: AUGUST 20, 2001
PREPARED BY: WILLIAM J. BETLER, P.L.S.
2370 SEPSTOWN ROAD
FOGELSVILLE, PA 18051

DONALD R. LEVAN, ROGER N. LEVAN
LOIS A. RENTSCHLER & ANNE A. LEVAN

BENJAMIN A. ZETTELMEYER JR.
D.B.V. 1781 PG. 1014

DAVID W. HYROWICH
D.B.V. 2893 PG. 0128

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
NO. 106

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
NO. 106

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
NO. 106

Background

2001 Boundary survey

- Poor internal detail
- New facilities since 2001

DOD Standards

- Military Installation Maps (MIM)
- Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE)

Planning

1. Identify features of interest

2. Create editable ArcGIS feature service & web map

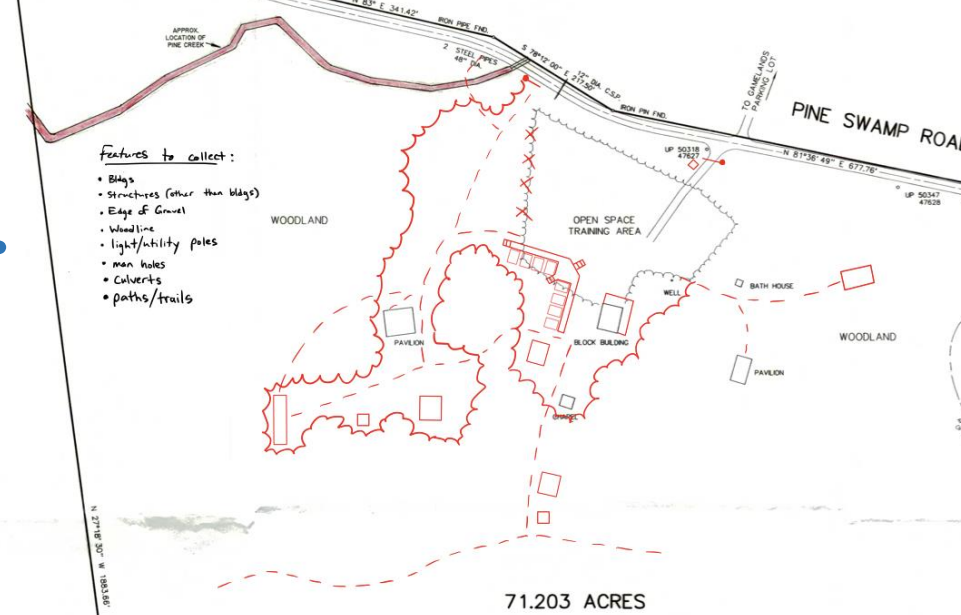
3. Test map in ArcGIS Field Maps

1.

DONALD R. LEVAN, ROGER N. LEVAN
LOIS A. RENTSCHLER & ANNE A. LEVAN

Features to collect:

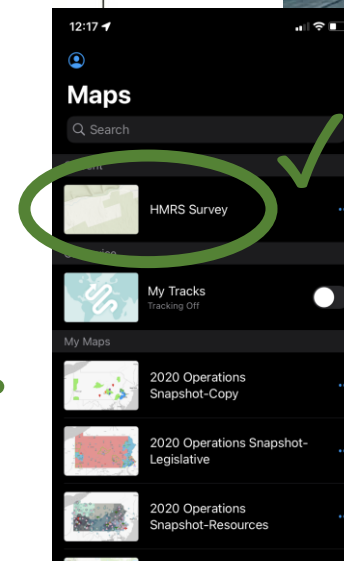
- Bligs
- Structures (other than bligs)
- Edge of Gravel
- Woodline
- Light/utility poles
- man holes
- Culverts
- paths/trails



2.



3.



Mission

The Civil Air Patrol Geospatial Team provides end-to-end geographically and spatially focused information solutions, enhancing situational awareness across CAP missions.

Authoritative Content

Connect to these official layers and apps in your GIS products to have the most up-to-date CAP data!



Data Collection

1. Geolocate facility features

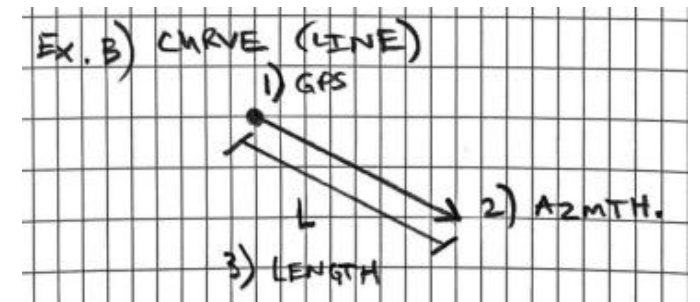
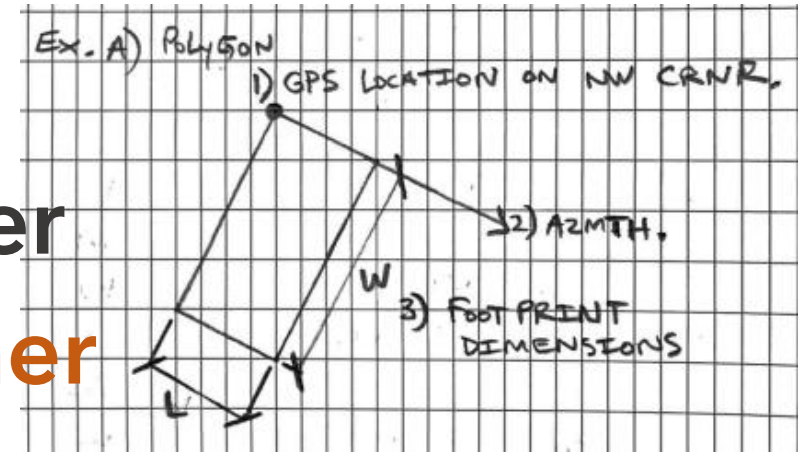
→ iPhone GPS @ NW Corner

2. Shoot Azimuth from NW corner along Northern Edge

→ iPhone Compass

3. Measure Dimensions (L or LxW)

→ Canvas 50ft Tape



Accuracy/Precision

iPhone GPS: 8.7 meter accuracy

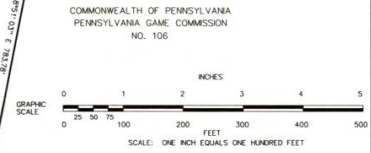
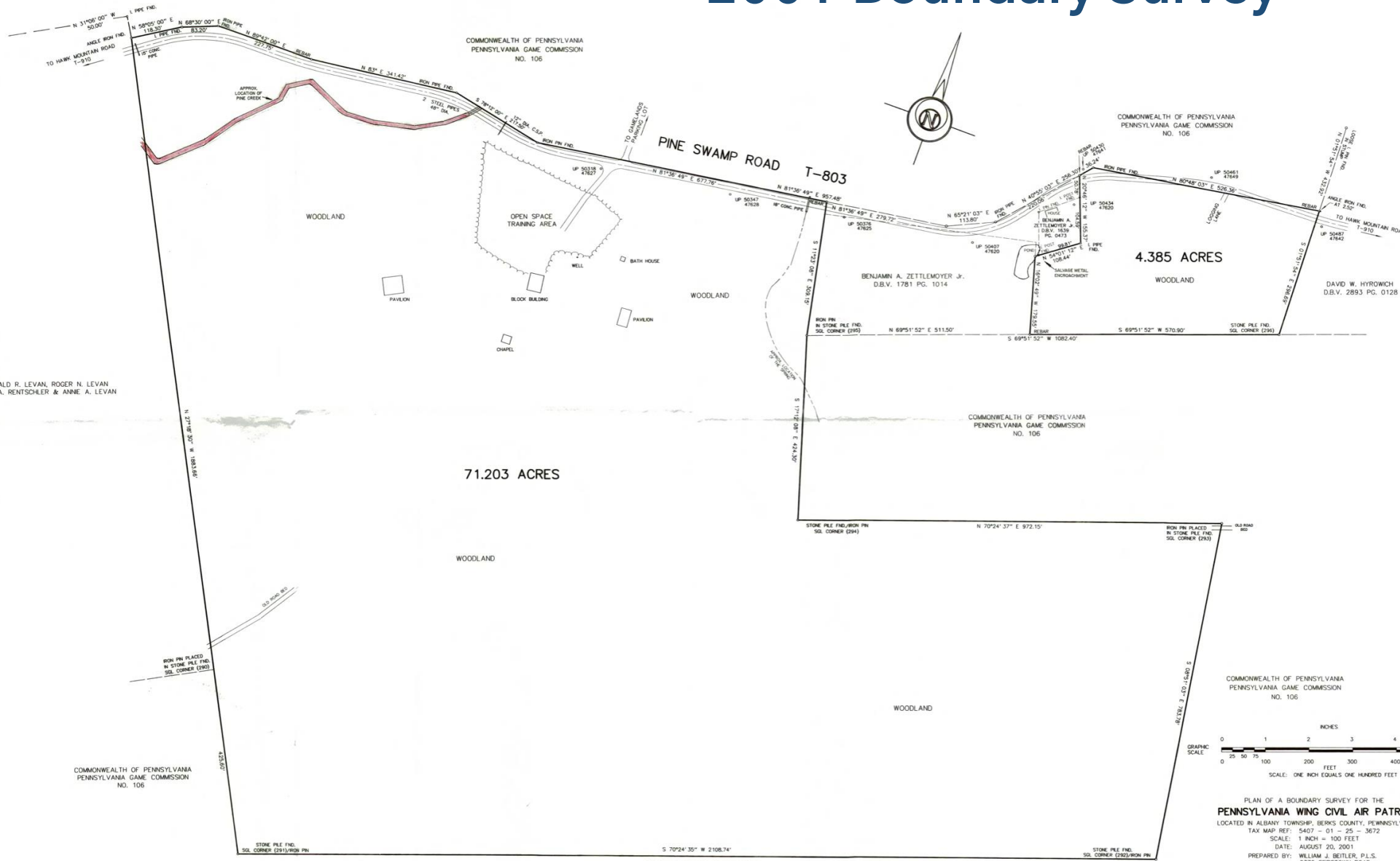
iPhone Compass: unknown?

Poor Reception
(mountains, woods,
dense structures)

Canvas 50ft Tape: 1ft precision (0.1ft capable,
read to nearest foot)

Maps

2001 Boundary Survey



PLAN OF A BOUNDARY SURVEY FOR THE
PENNSYLVANIA WING CIVIL AIR PATROL
 LOCATED IN ALBANY TOWNSHIP, BERKS COUNTY, PENNSYLVANIA
 TAX MAP REF: 5407 - 01 - 25 - 3672
 SCALE: 1 INCH = 100 FEET
 DATE: AUGUST 20, 2001
 PREPARED BY: WILLIAM J. BETLER, P.L.S.
 2370 SEPERTOWN ROAD
 FOGELSVILLE, PA 18051

S 70°24' 35" W 2108.74'
 COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA GAME COMMISSION
 NO. 106

COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA GAME COMMISSION
 NO. 106

COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA GAME COMMISSION
 NO. 106

COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA GAME COMMISSION
 NO. 106

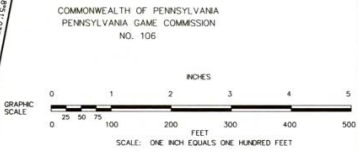
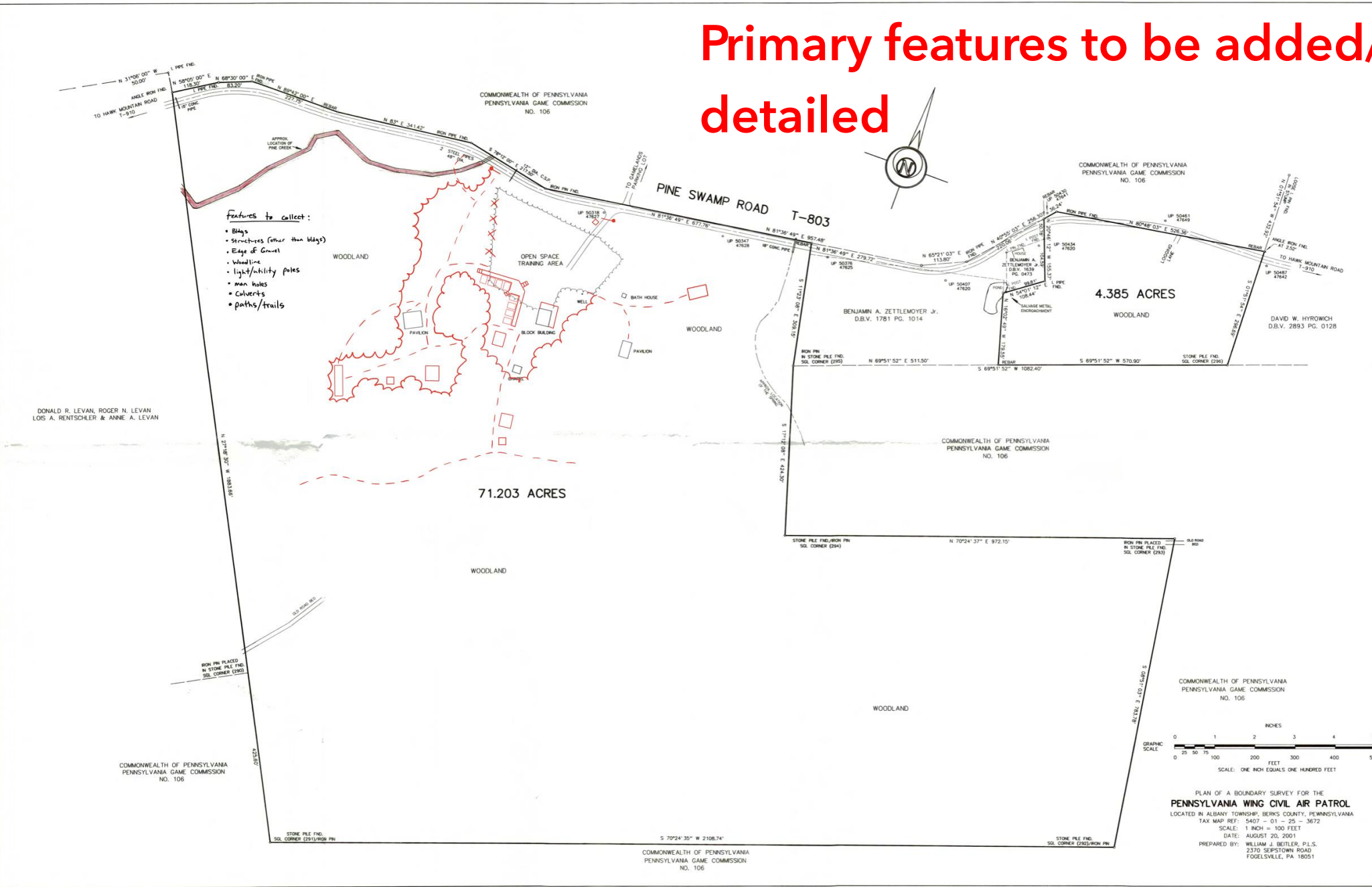
COMMONWEALTH OF PENNSYLVANIA
 PENNSYLVANIA GAME COMMISSION
 NO. 106

Primary features to be added/ detailed



Features to collect:

- Blags
- Structures (other than bldgs)
- Edge of Crown
- Woodline
- Light/utility poles
- main hubs
- Culverts
- paths/trails



PLAN OF A BOUNDARY SURVEY FOR THE
PENNSYLVANIA WING CIVIL AIR PATROL
 LOCATED IN ALBANY TOWNSHIP, BERKS COUNTY, PENNSYLVANIA
 TAX MAP REF: 5407 - 01 - 25 - 3672
 SCALE: 1 INCH = 100 FEET
 DATE: AUGUST 20, 2001
 PREPARED BY: WILLIAM J. BEITLER, P.L.S.
 2370 SEIPSTOWN ROAD
 FOGELSVILLE, PA 18051



Hawk Mountain Ranger School

4.6 ★★★★★ 10 reviews
Training school

- Directions
- Save
- Nearby
- Send to your phone
- Share

- 218 Pine Swamp Rd, Kempton, PA 19529
- capranger.org
- (717) 685-5041
- J3G6+76 Kempton, Pennsylvania
- Claim this business
- Add a label

Suggest an edit

Add missing information

Add hours

Restaurants Hotels Attractions Transit Parking Pharmacies ATMs

Pine Creek

Pine Swamp Rd

Civil Air Patrol

Hawk Mountain Ranger School

Layers

Google

Map data ©2021 United States Terms Privacy Send feedback 100 ft

**Lack of facilities detail
(Google Maps)**

Hawk Mountain Ranger School, P



Hawk Mountain Ranger School

4.6 ★★★★★ 10 reviews
Training school

- Directions
- Save
- Nearby
- Send to your phone
- Share

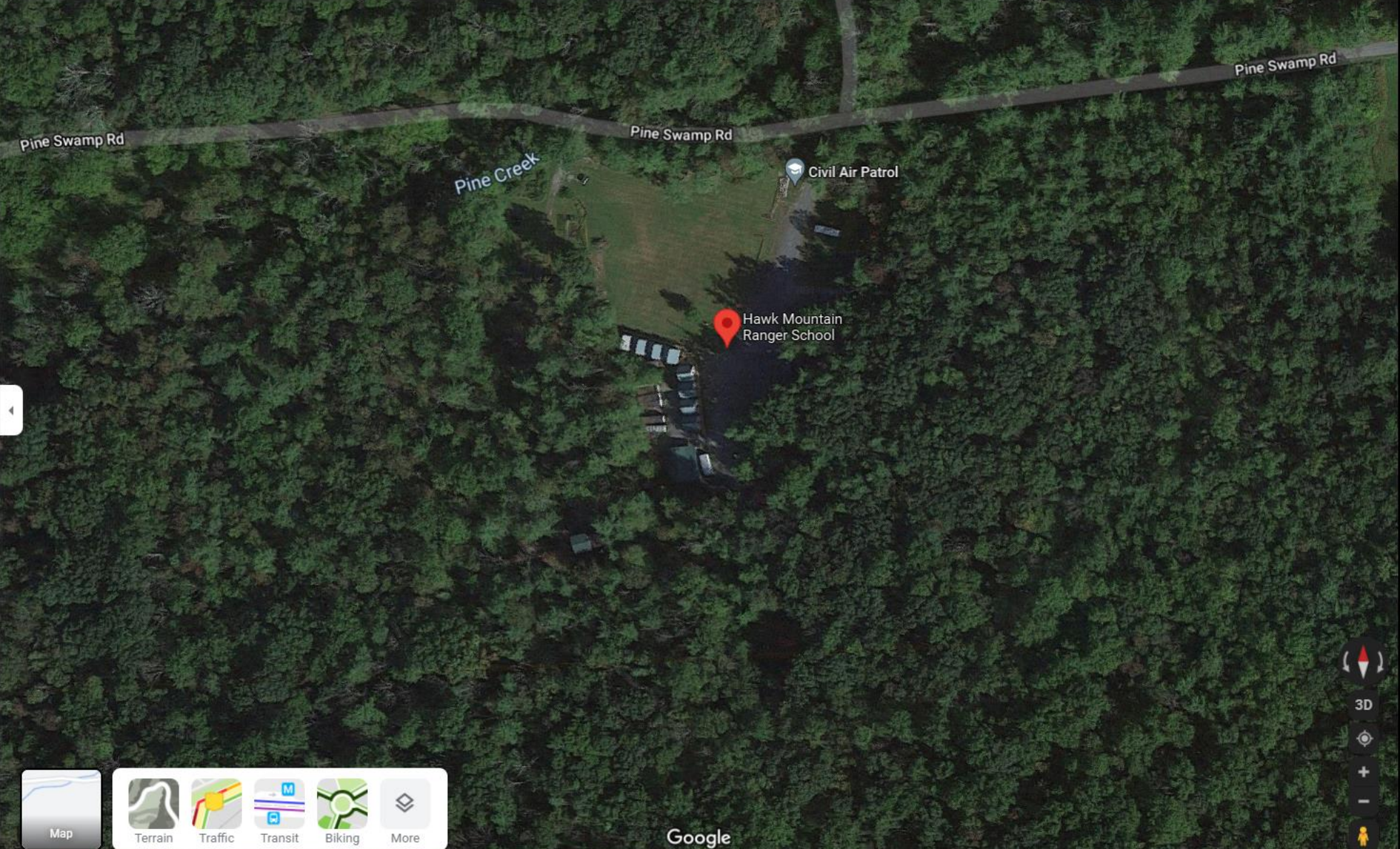
- 218 Pine Swamp Rd, Kempton, PA 19529
- capranger.org
- (717) 685-5041
- J3G6+76 Kempton, Pennsylvania
- Claim this business
- Add a label

Suggest an edit

Add missing information

Add hours

- Restaurants
- Hotels
- Attractions
- Transit
- Parking
- Pharmacies
- ATMs



- Map
- Terrain
- Traffic
- Transit
- Biking
- More

Google

Hawk Mountain Ranger School, P



Hawk Mountain Ranger School
4.6 ★★★★★ 10 reviews
Training school

- Directions
- Save
- Nearby
- Send to your phone
- Share

- 218 Pine Swamp Rd, Kempton, PA 19529
- capranger.org
- (717) 685-5041
- J3G6+76 Kempton, Pennsylvania
- Claim this business
- Add a label
- Suggest an edit

Add missing information
Add hours

Restaurants Hotels Attractions Transit Parking Pharmacies ATMs

The map displays the location of Hawk Mountain Ranger School, marked with a red pin. To the north, a Civil Air Patrol station is also marked. A blue line representing Pine Creek flows through the area, crossing Pine Swamp Rd. The map includes various navigation and utility icons at the bottom, such as Satellite, Terrain, Traffic, Transit, Biking, and More. The Google logo is visible in the bottom right corner of the map area.

Hawk Mountain Ranger School, P



Hawk Mountain Ranger School
4.6 ★★★★★ 10 reviews
Training school

Directions Save Nearby Send to your phone Share

- 218 Pine Swamp Rd, Kempton, PA 19529
- capranger.org
- (717) 685-5041
- J3G6+76 Kempton, Pennsylvania
- Claim this business
- Add a label
- Suggest an edit

Add missing information Add hours

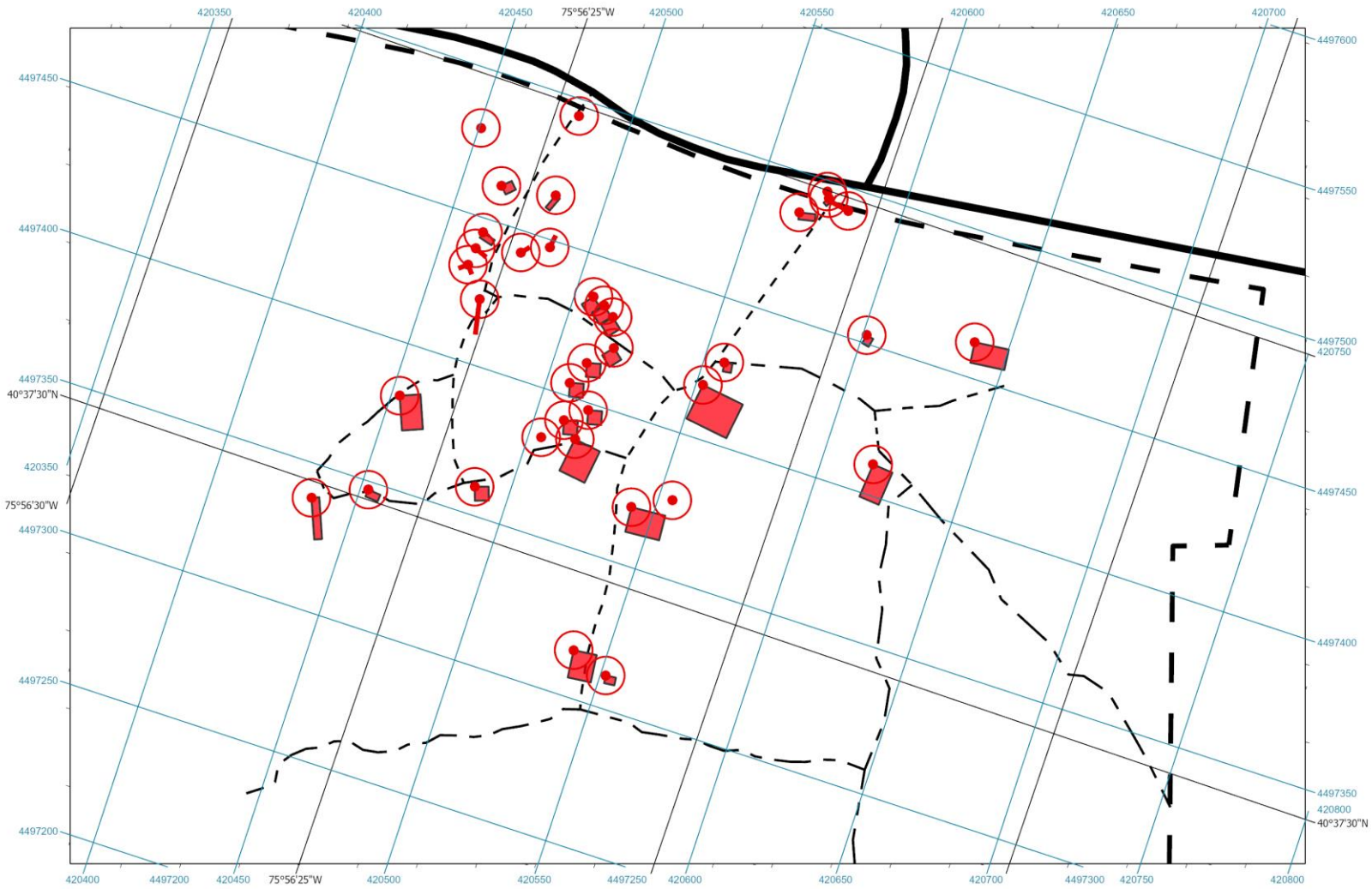
Restaurants Hotels Attractions Transit Parking Pharmacies ATMs

Pine Swamp Rd Pine Creek Civil Air Patrol Hawk Mountain Ranger School

Layers

Google

Imagery ©2021 Google, Imagery ©2021 Maxar Technologies, PA Department of Conservation and Natural Resources-PAMAP/USGS, USDA Farm Service Agency, Map data ©2021 United States Terms Privacy Send feedback 200 ft



Location Laboratories

Produced by: Nikolas Hawley, GISP
9 December 2021

Created for: GGS 308 Field Mapping Techniques
George Mason University
Prof. Lori Mandable

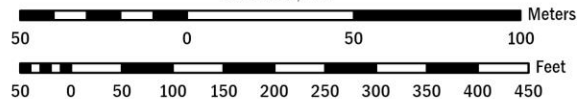
NAD 1983 HARN
PA State Plane South (FIPS 3702)



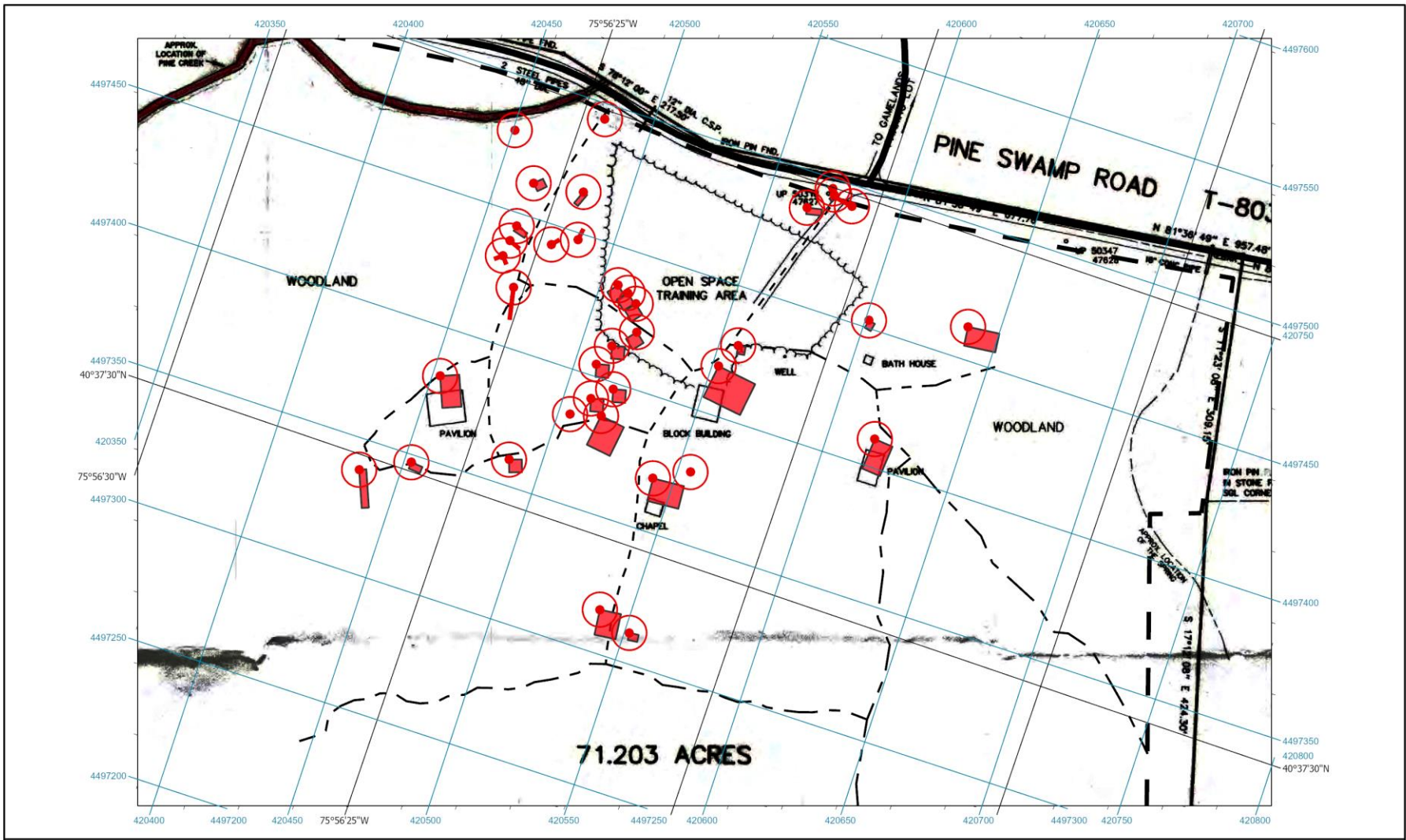
HAWK MOUNTAIN RANGER SCHOOL

Search and Rescue Training Facility
Pennsylvania Wing, Civil Air Patrol

SCALE: 1:2,000



- GPS Survey Point
- 8.7m Accuracy Buffer
- Feature Footprint
- Surveyed Line Feature
- RoadCenterline
- - - Off Road Vehicle
- - - Foot Trail
- ┌ Property Boundary



Location Laboratories

Produced by: Nikolas Hawley, GISP
9 December 2021

Created for: GGS 308 Field Mapping Techniques
George Mason University
Prof. Lori Mandable

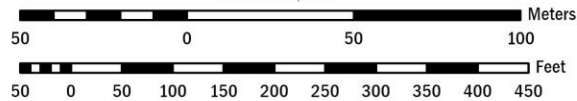
NAD 1983 HARN
PA State Plane South (FIPS 3702)



HAWK MOUNTAIN RANGER SCHOOL

Search and Rescue Training Facility
Pennsylvania Wing, Civil Air Patrol

SCALE: 1:2,000



- GPS Survey Point
- 8.7m Accuracy Buffer
- Feature Footprint
- Surveyed Line Feature
- Road Centerline
- Off Road Vehicle
- Foot Trail
- Property Boundary

Reflection & Conclusion

iPhone GPS won't cut it... → Maybe GNSS RTK would work

Could have recruited teammates for a more precise transit survey → however... long drive, multi-day project...

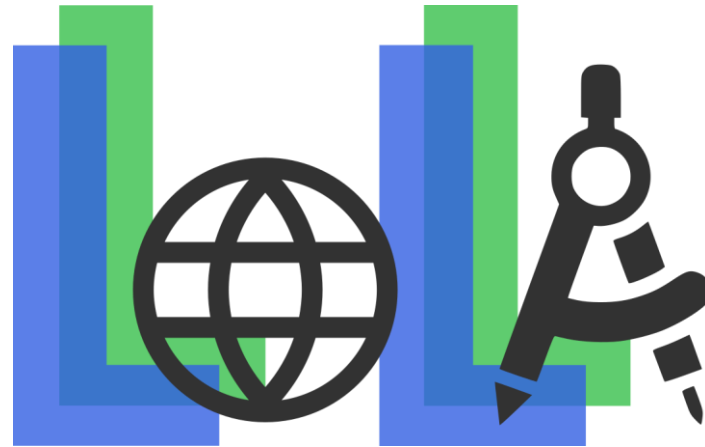
Will be conducting a more precise survey in the future → verify boundary survey as well? Parcel .shp - Survey plat mismatch...

Citations

Beitler, W. J. (2001). "Plan of a Boundary Survey for the Pennsylvania Wing Civil Air Patrol." map, Fogelsville, PA.

Department of Defense. (n.d.). *SDSFIE Online*. SDSFIE. Retrieved December 9, 2021, from <https://www.sdsfieonline.org/>.

Google maps. Hawk Mountain Ranger School · 218 Pine Swamp Rd, Kempton, PA 19529. (n.d.). Retrieved December 9, 2021, from <https://goo.gl/maps/3yNpJ4rCHaNvSHHs6>.



Questions

Nikolas Hawley, GISP

nhawley2@gmu.edu