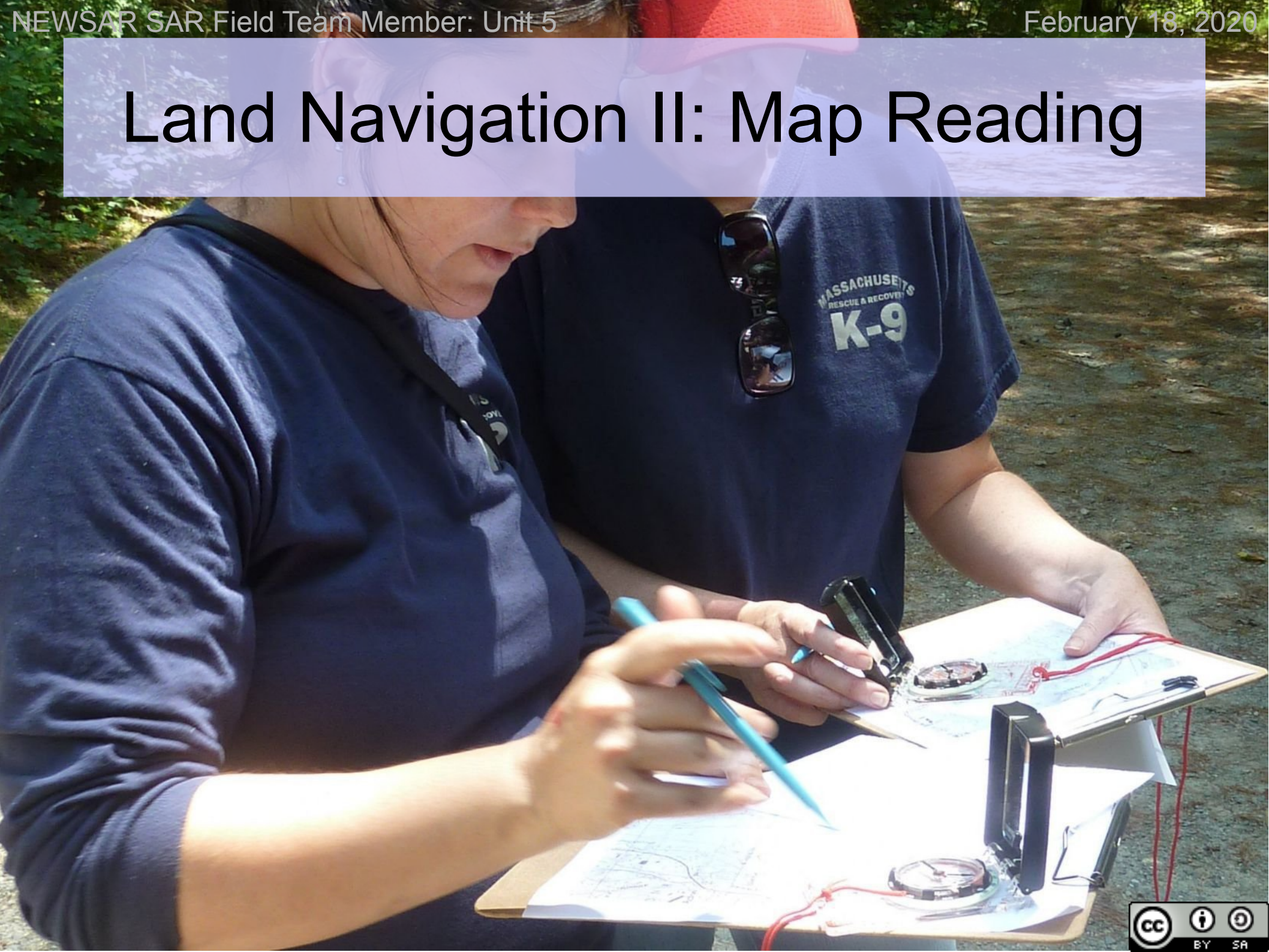
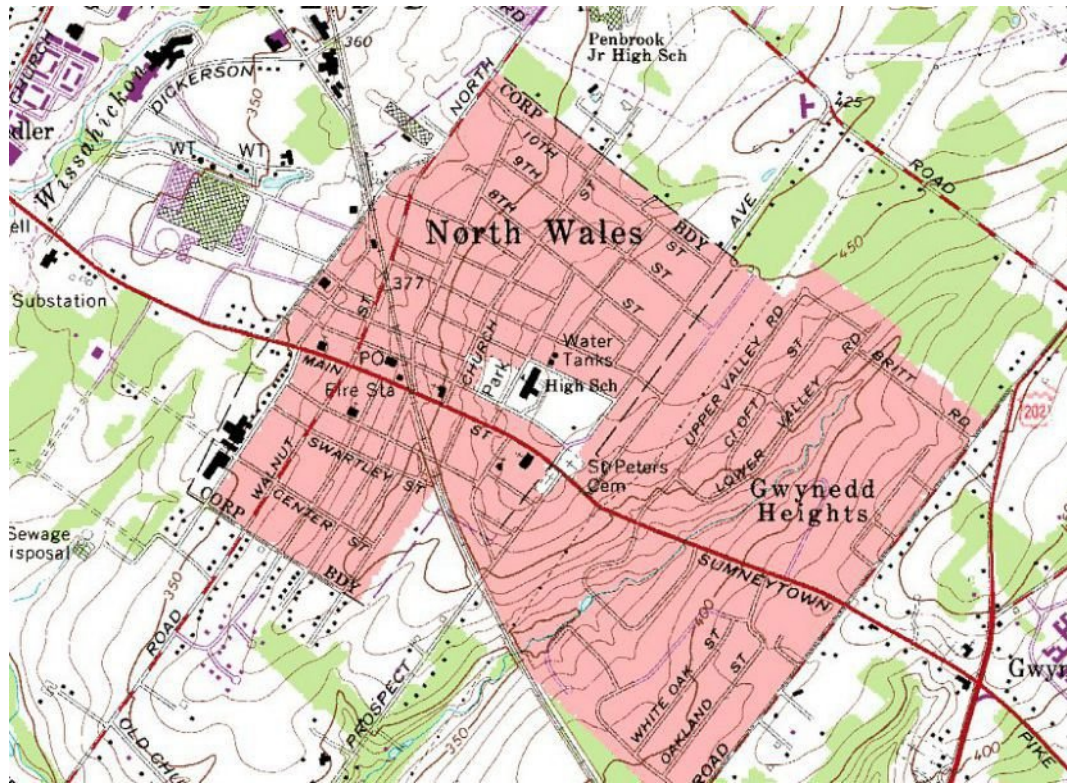
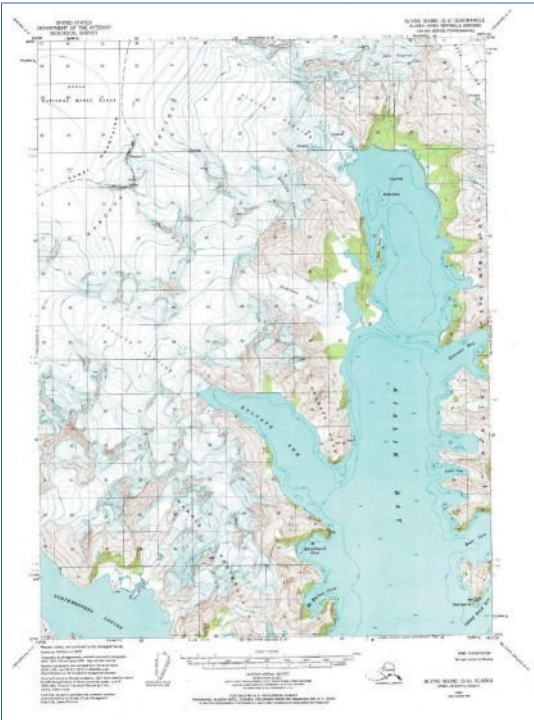


Land Navigation II: Map Reading

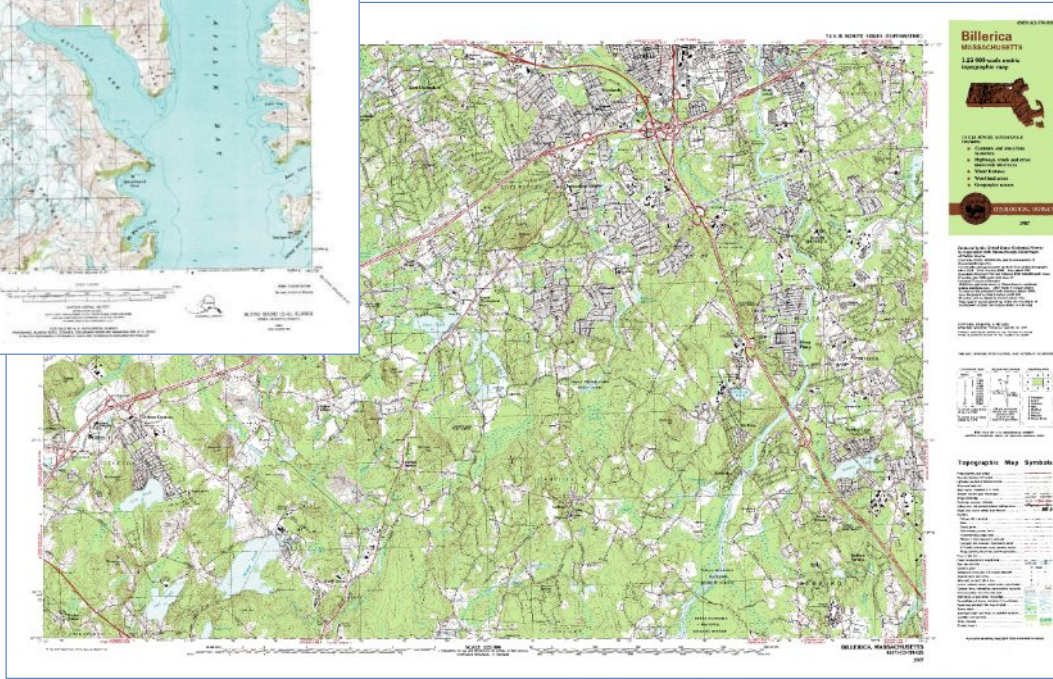


Map and Air Photo

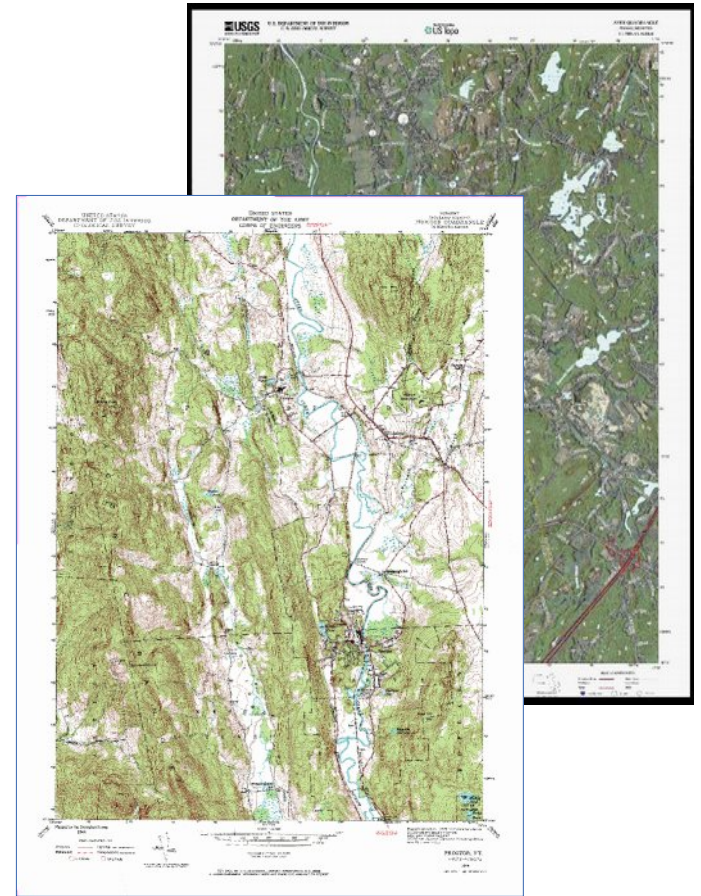




1:63,360
Alaska

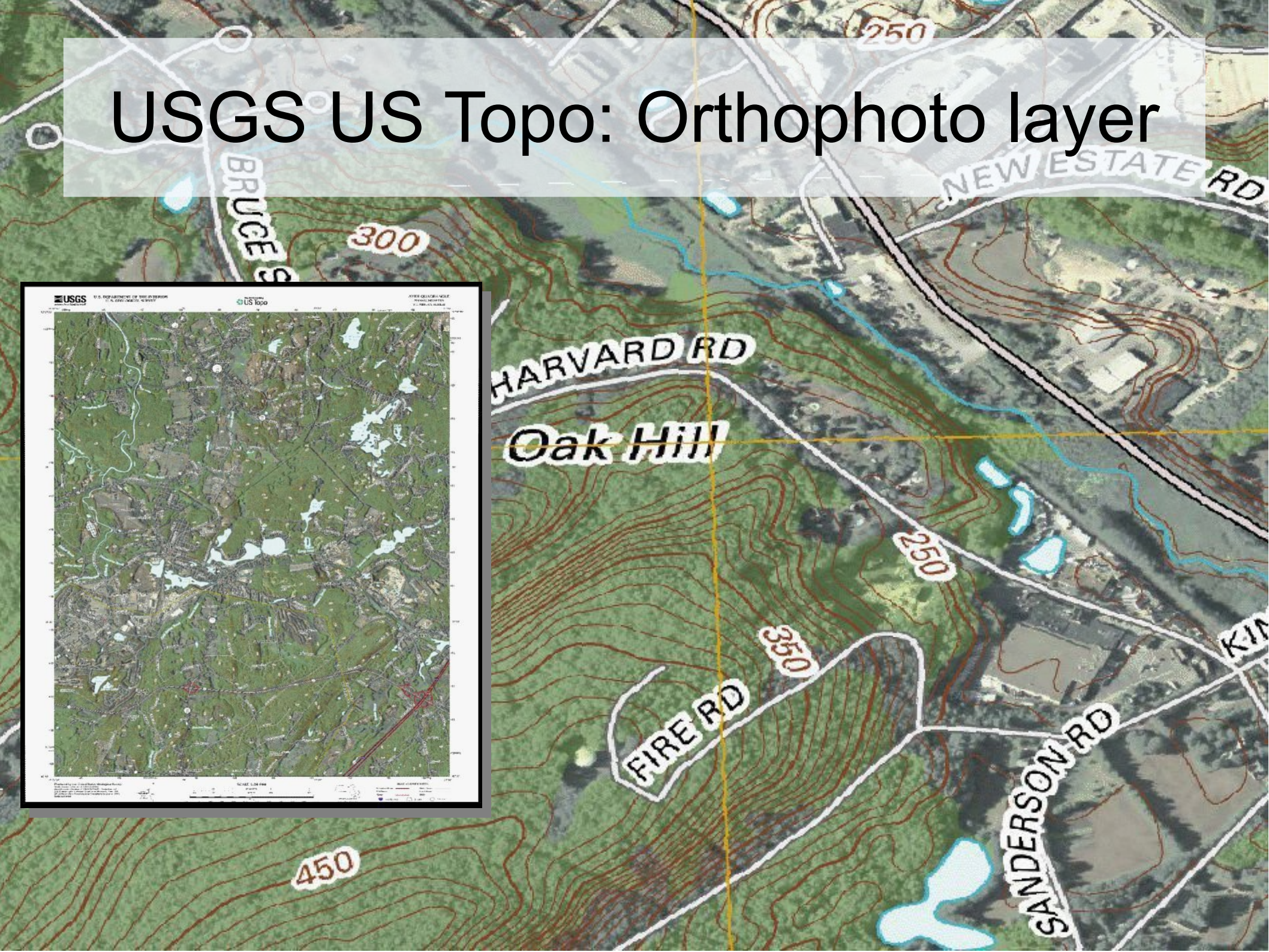
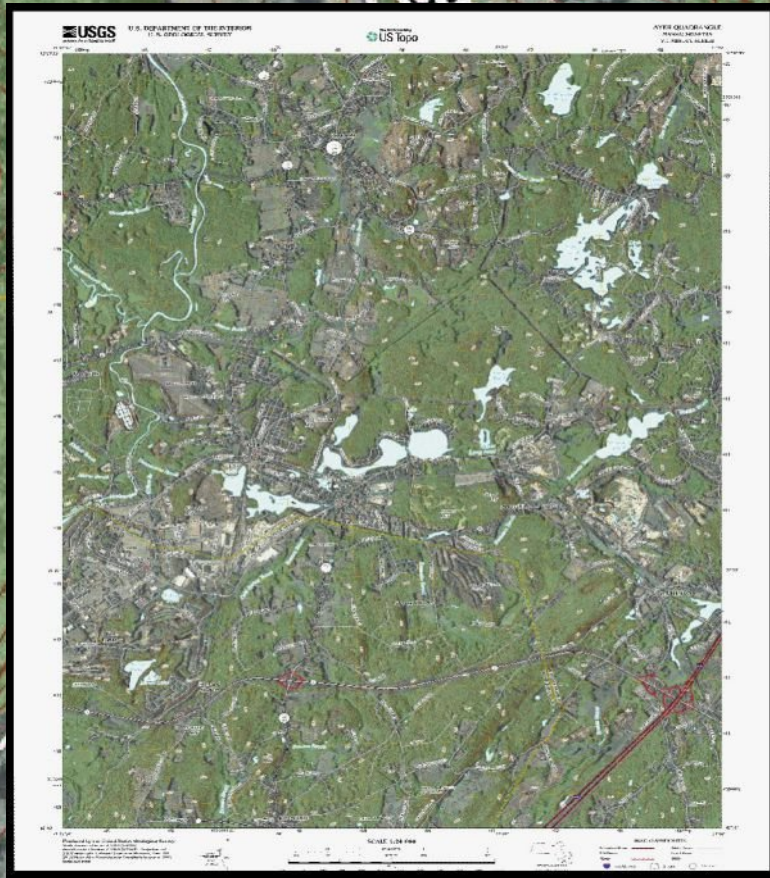


15 minute
1:25,000
Massachusetts



7.5 minute
1:24,000

USGS US Topo: Orthophoto layer





BRUCE ST

300

HARVARD RD

Oak Hill

250

NEW ESTATE RD

250

350

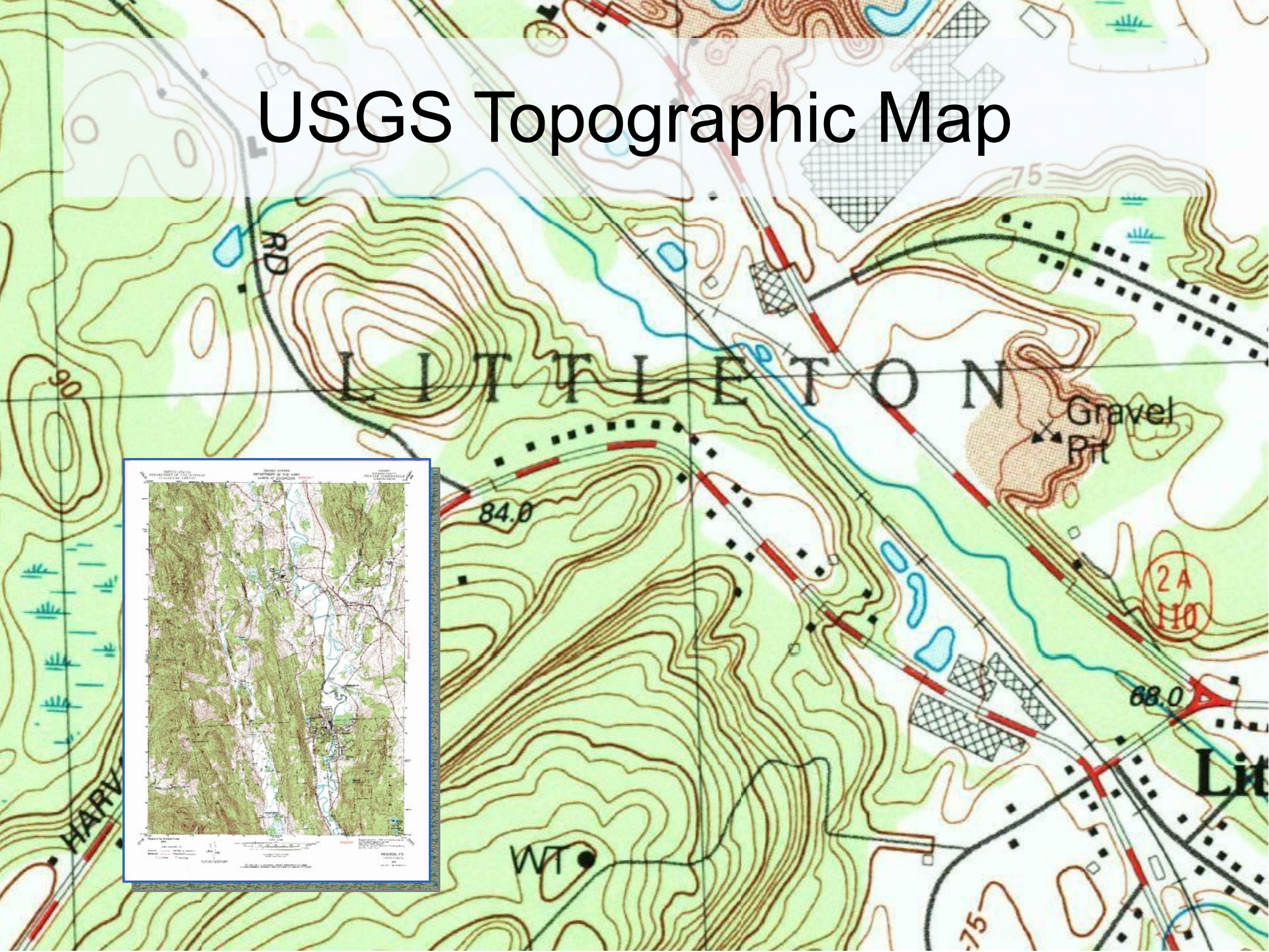
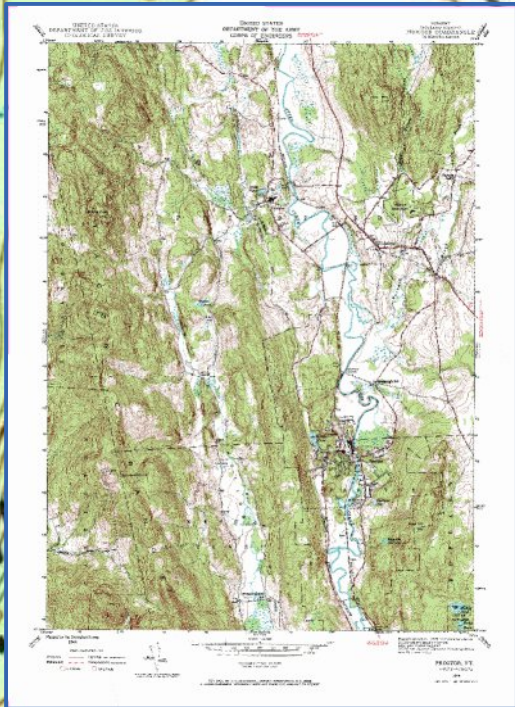
FIRE RD

450

SANDERSON RD

KIN

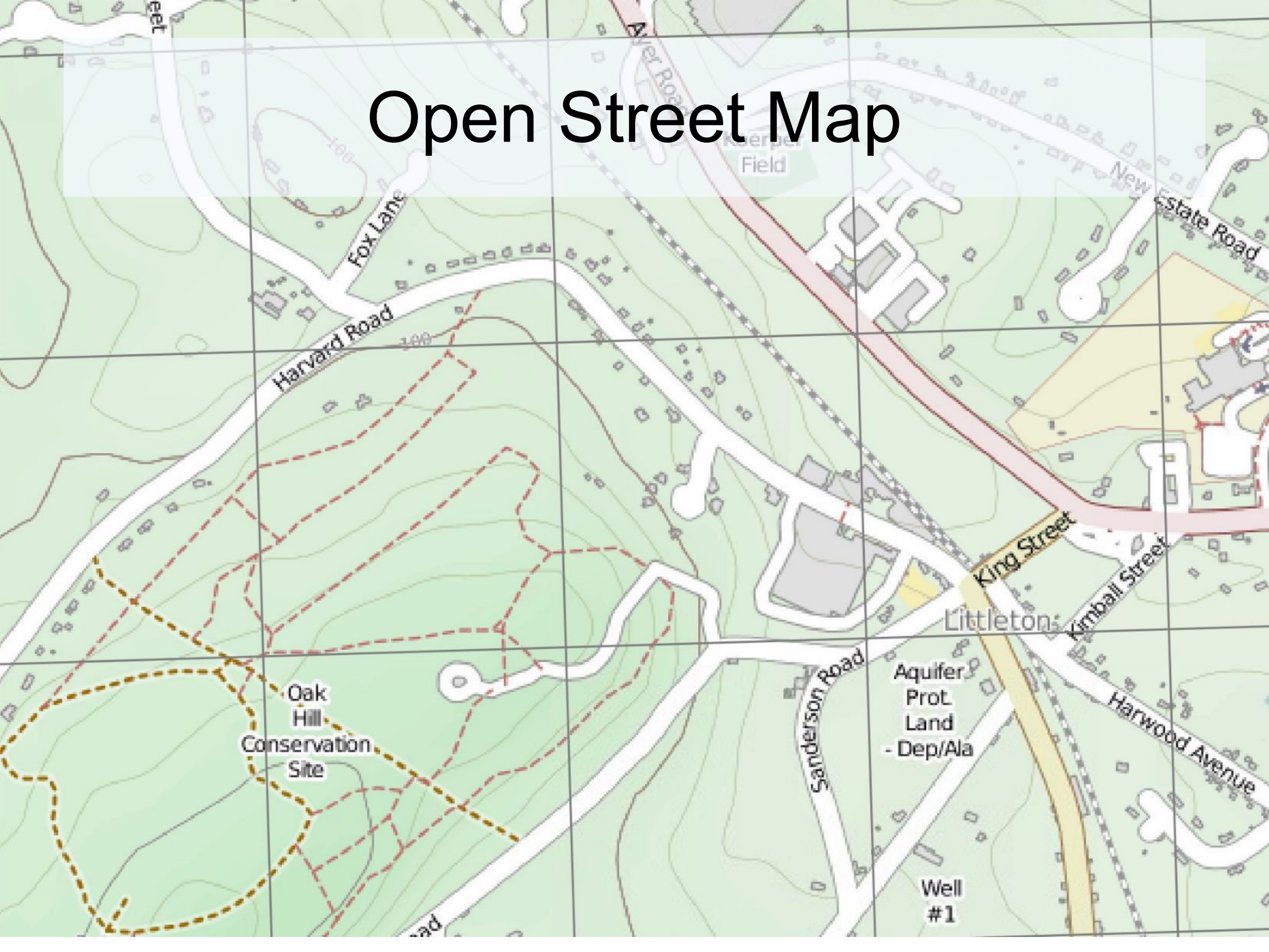
USGS Topographic Map

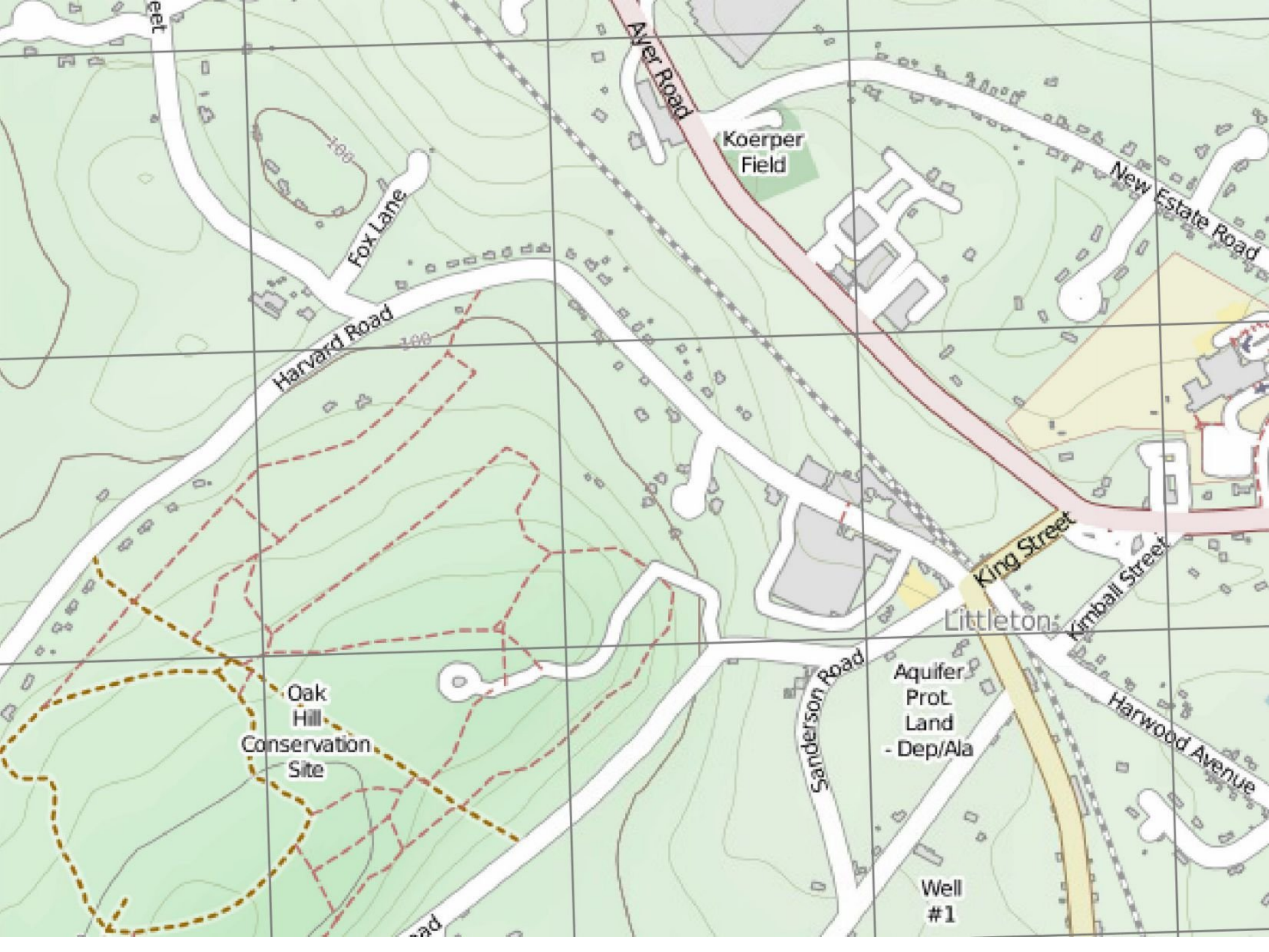




Tophet Chasm

Open Street Map





Koerper Field

Harvard Road

Fox Lane

Ayer Road

New Estate Road

King Street

Littleton

Kimball Street

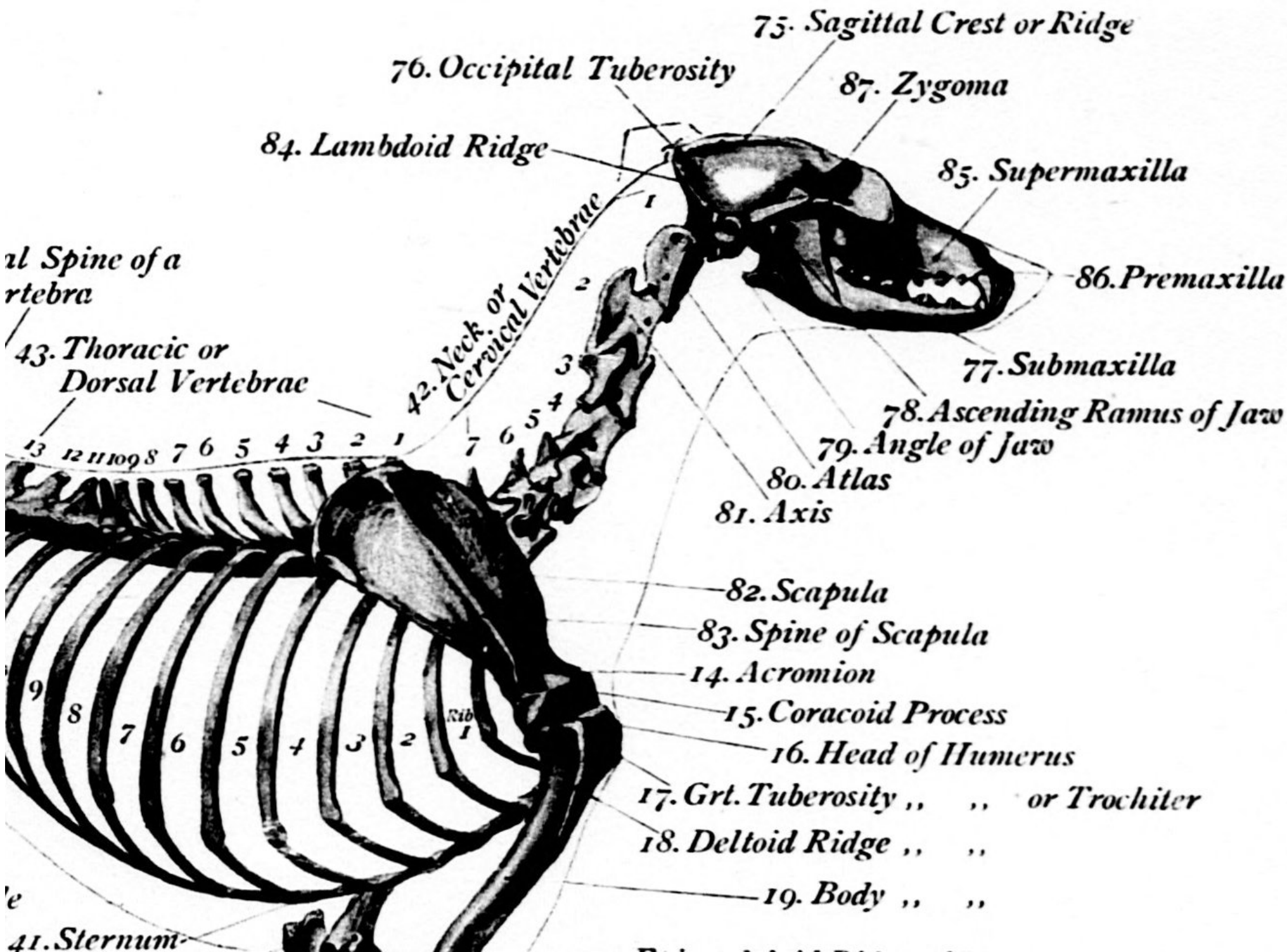
Harwood Avenue

Sanderson Road

Oak Hill Conservation Site

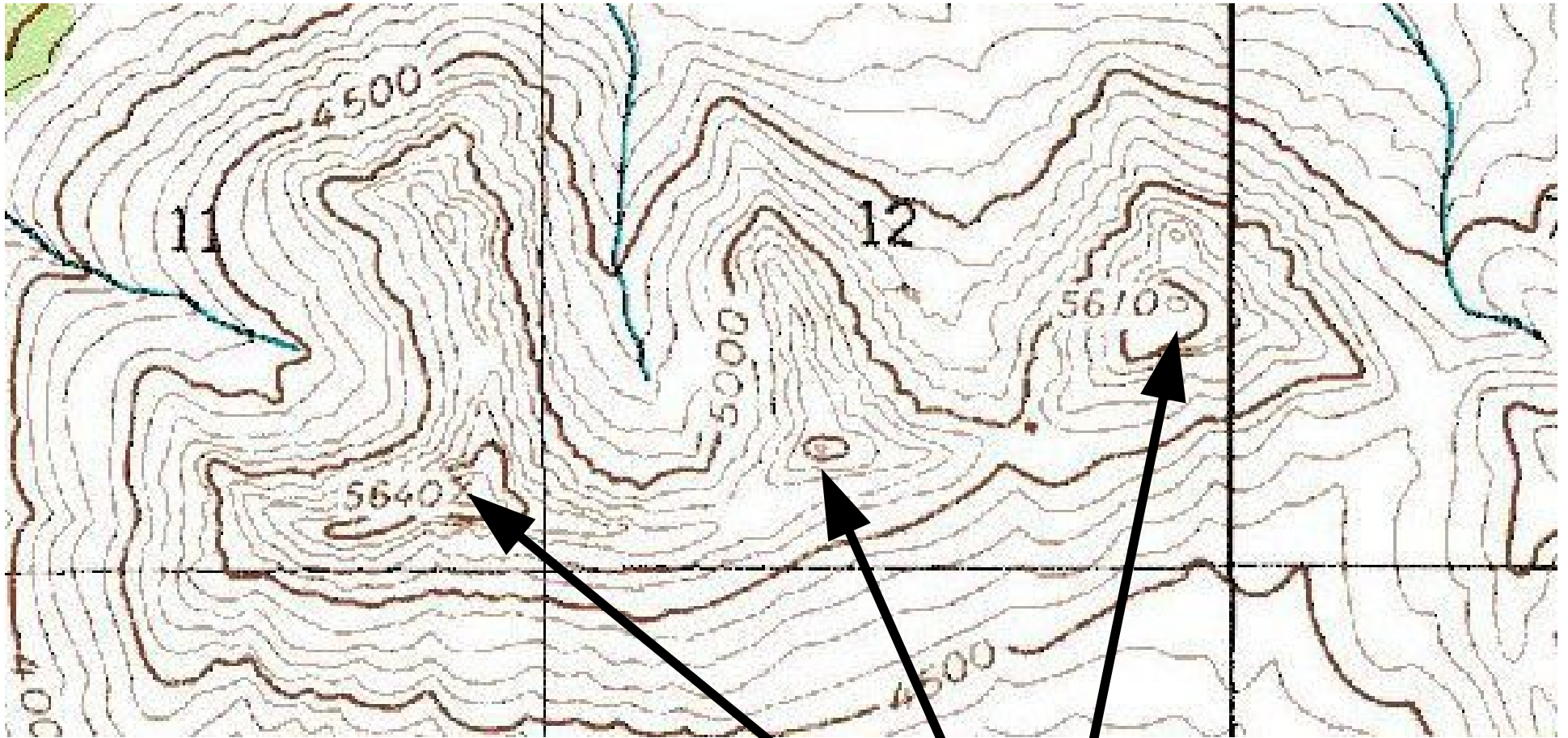
Aquifer Prot. Land - Dep/Ala

Well #1

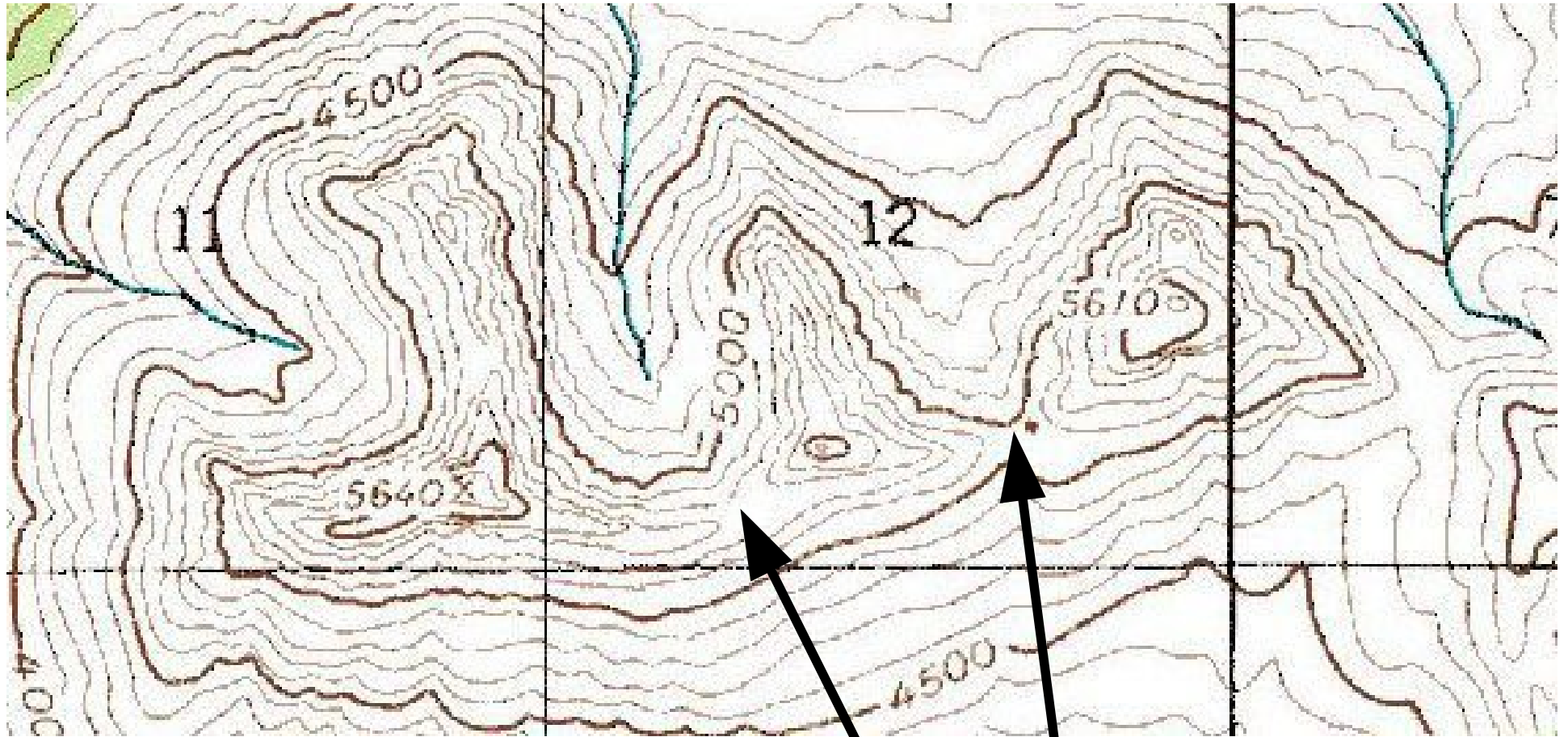


Terrain Features on Topographic Maps

- Depression
- Cut
- Fill
- Hill
- Valley
- Ridge
- Saddle
- Draw
- Spur
- Cliff

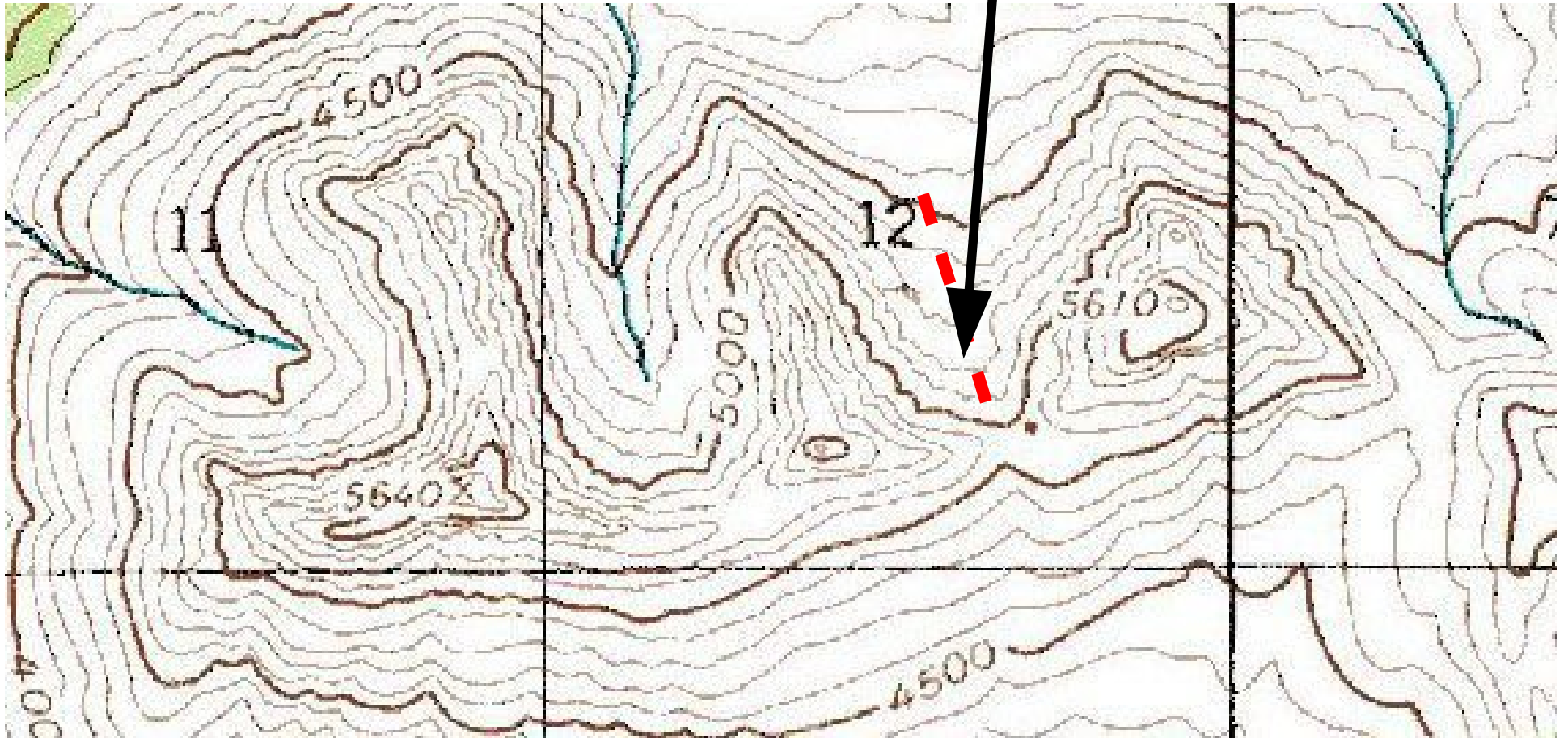


Peak

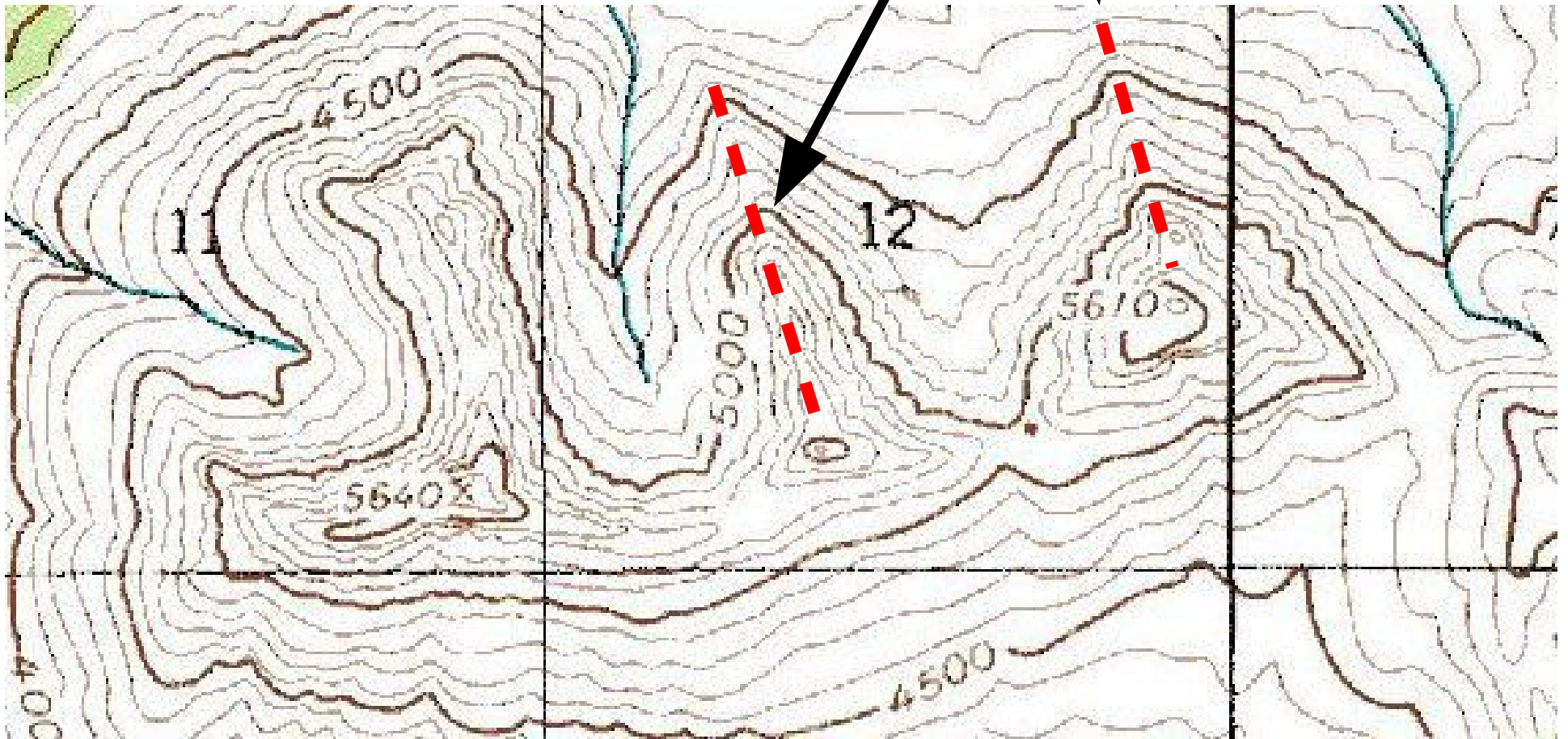


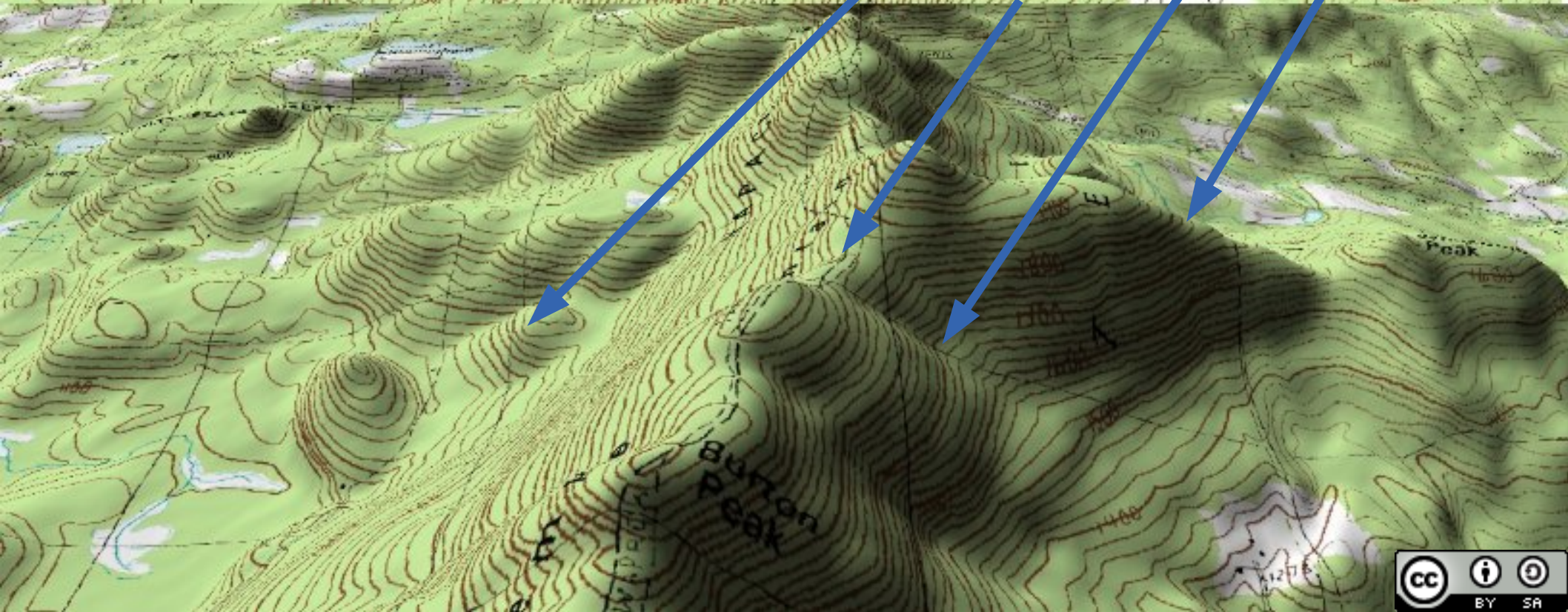
Saddle

Draw



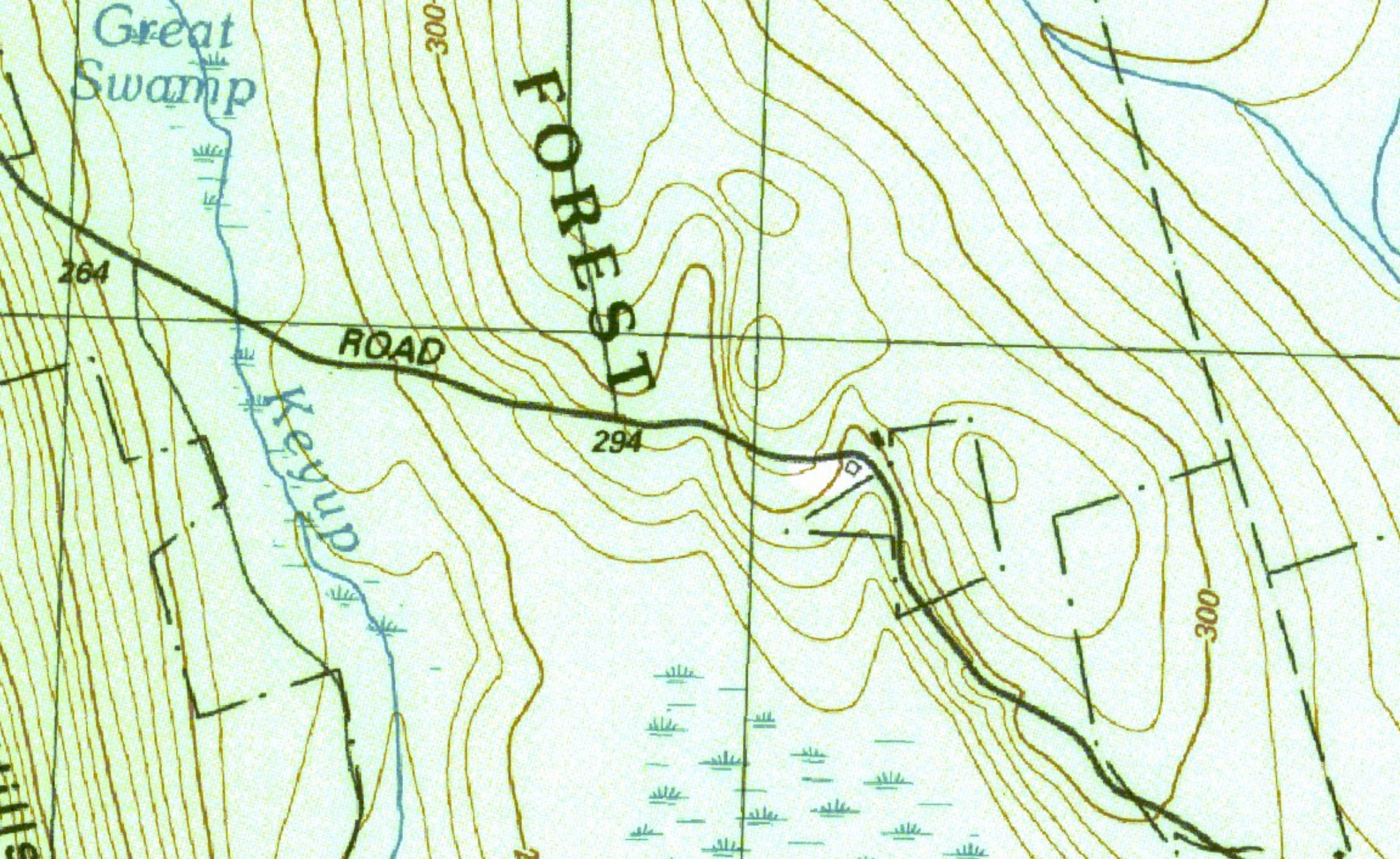
Ridge







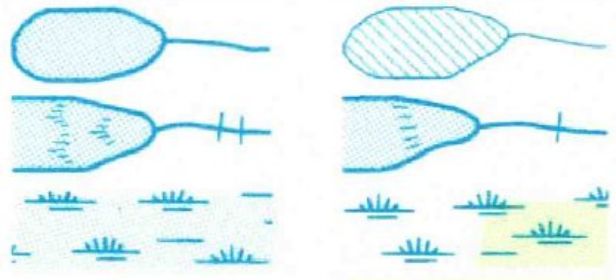


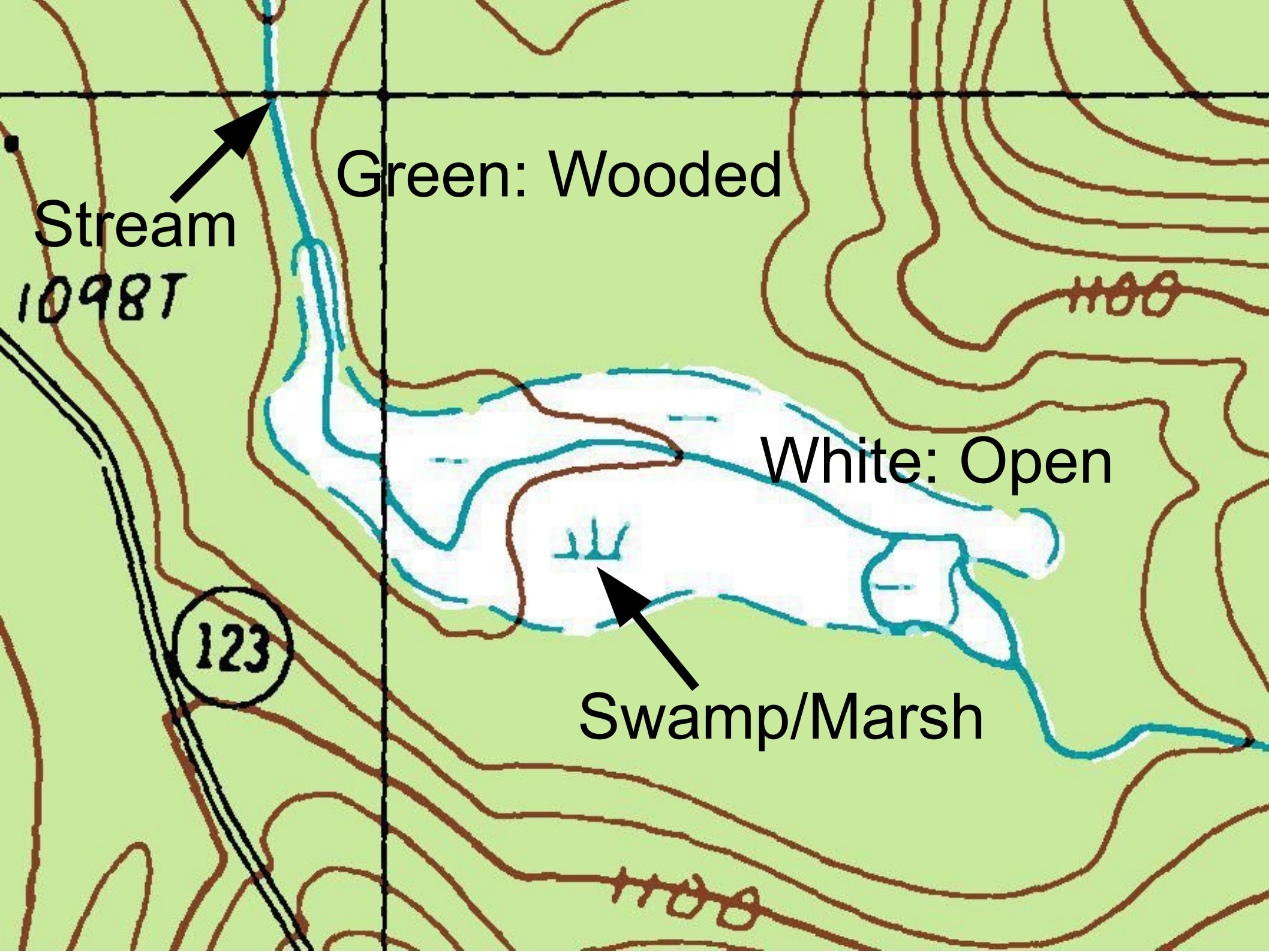


Perennial lake and stream; intermittent lake and stream

Rapids, large and small; falls, large and small

Submerged marsh; marsh, swamp





Green: Wooded

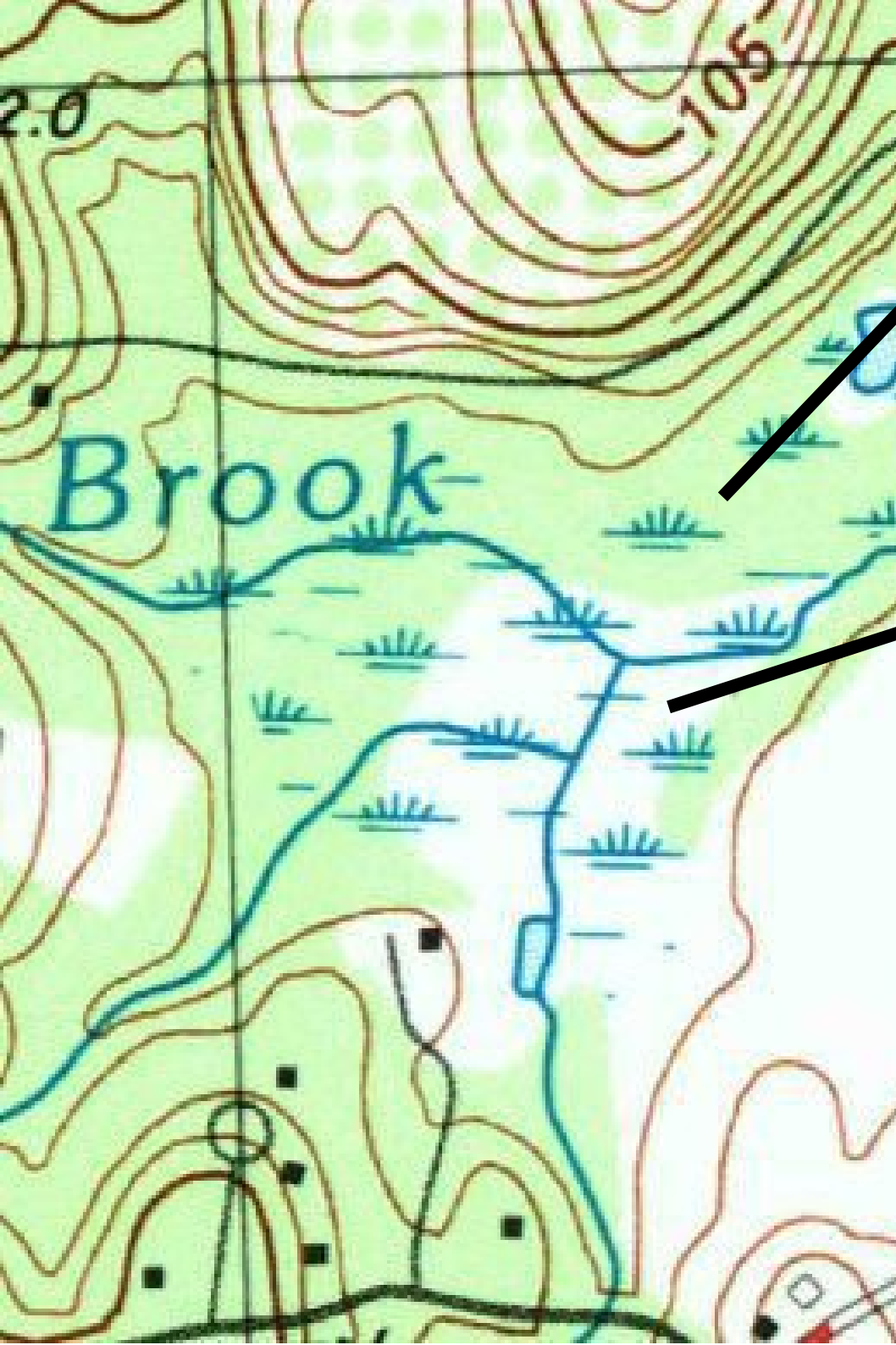
Stream

1098T

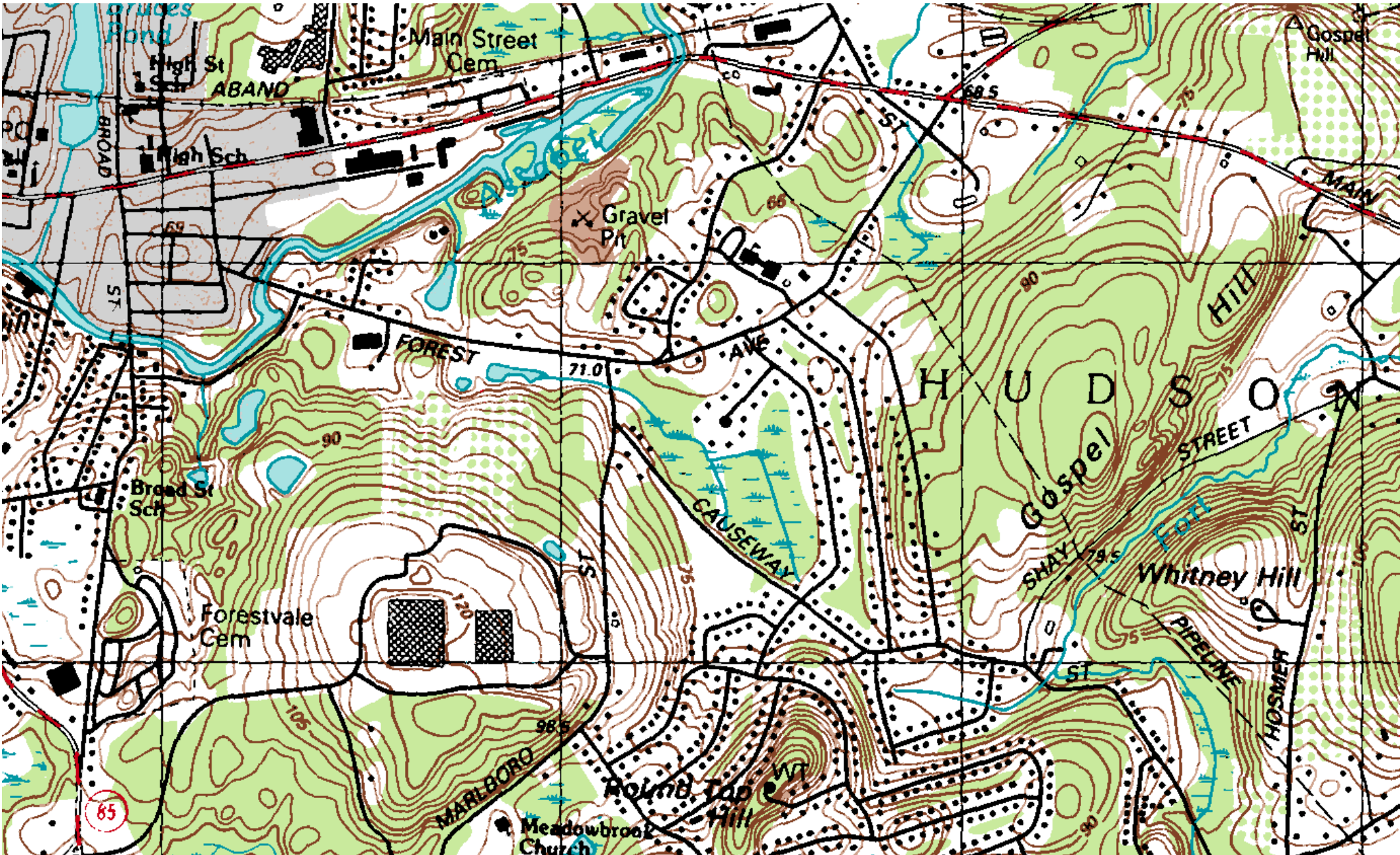
White: Open

123

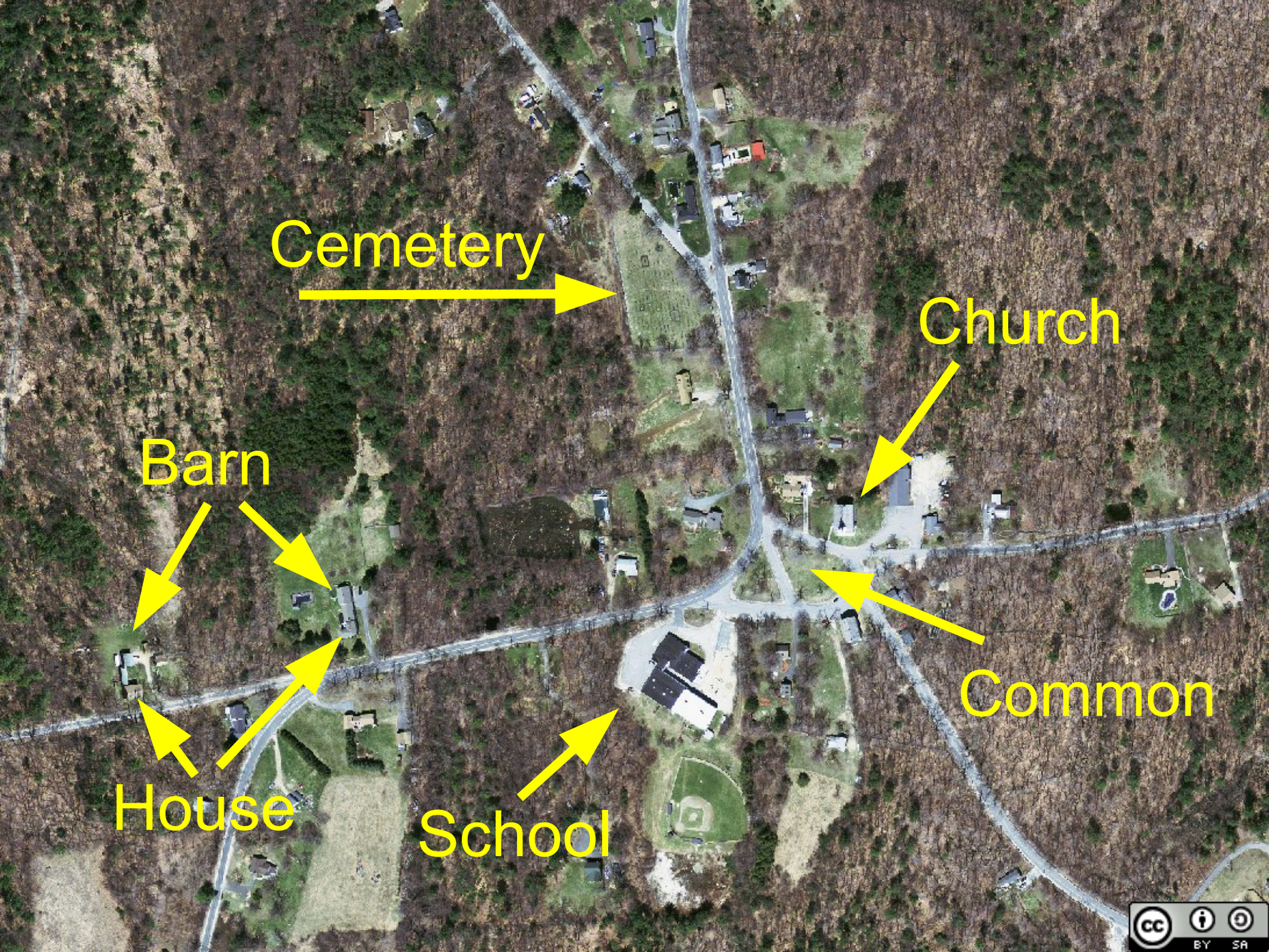
Swamp/Marsh



Cultural Features on Topographic maps







Cemetery



Church



Barn



House



School



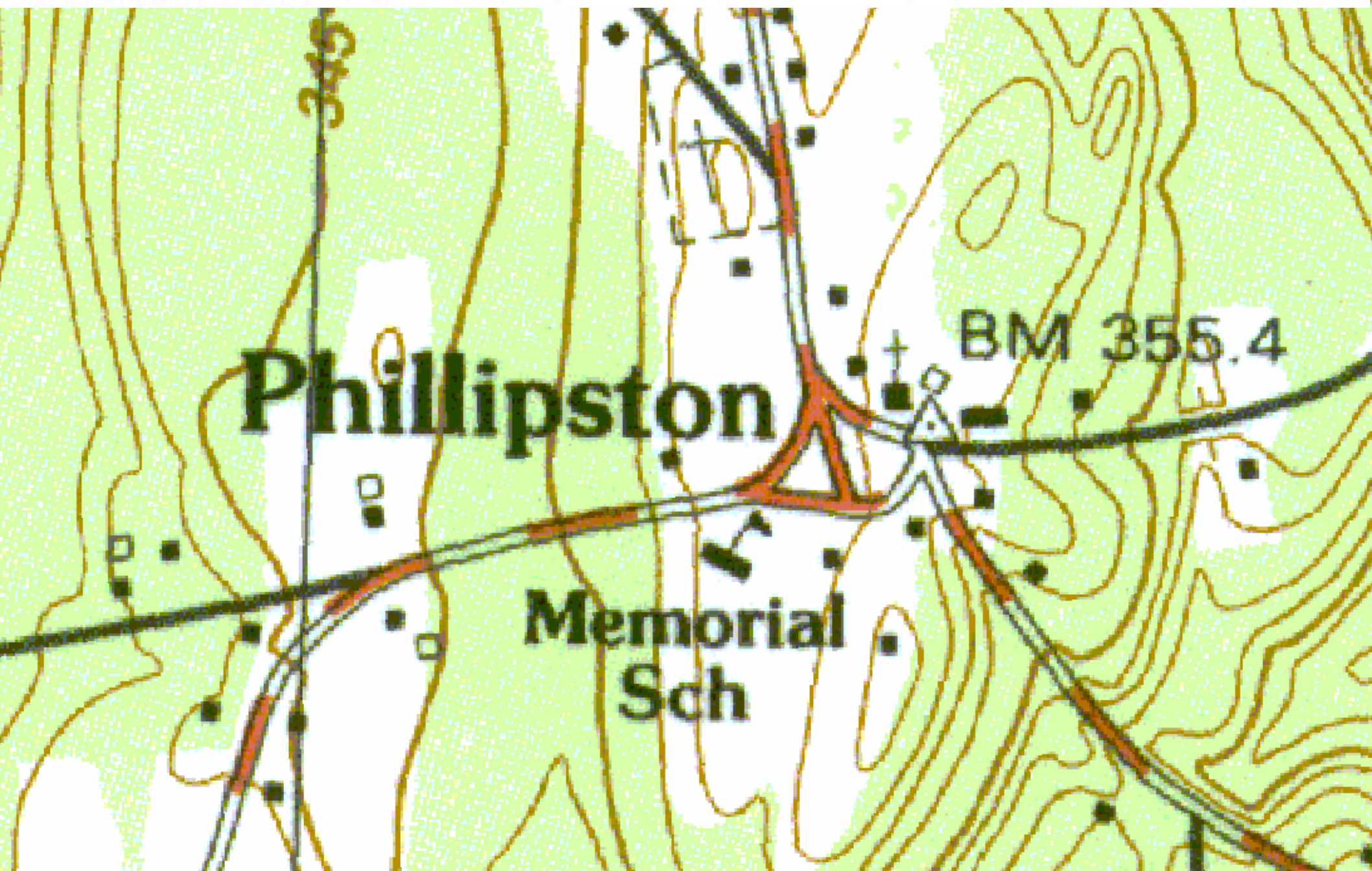
Common

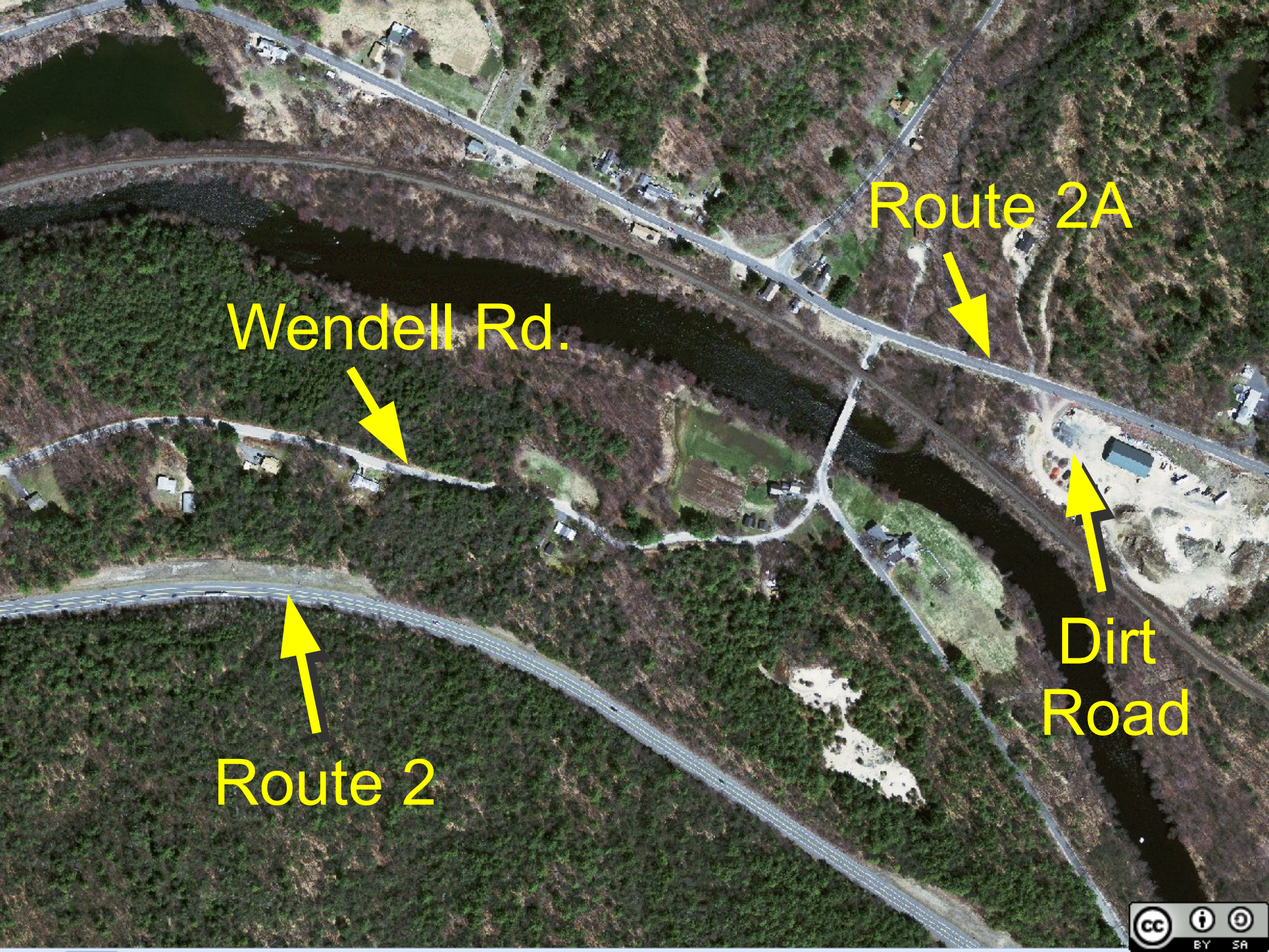


House; barn; church; school; large structure



Cemetery; grave









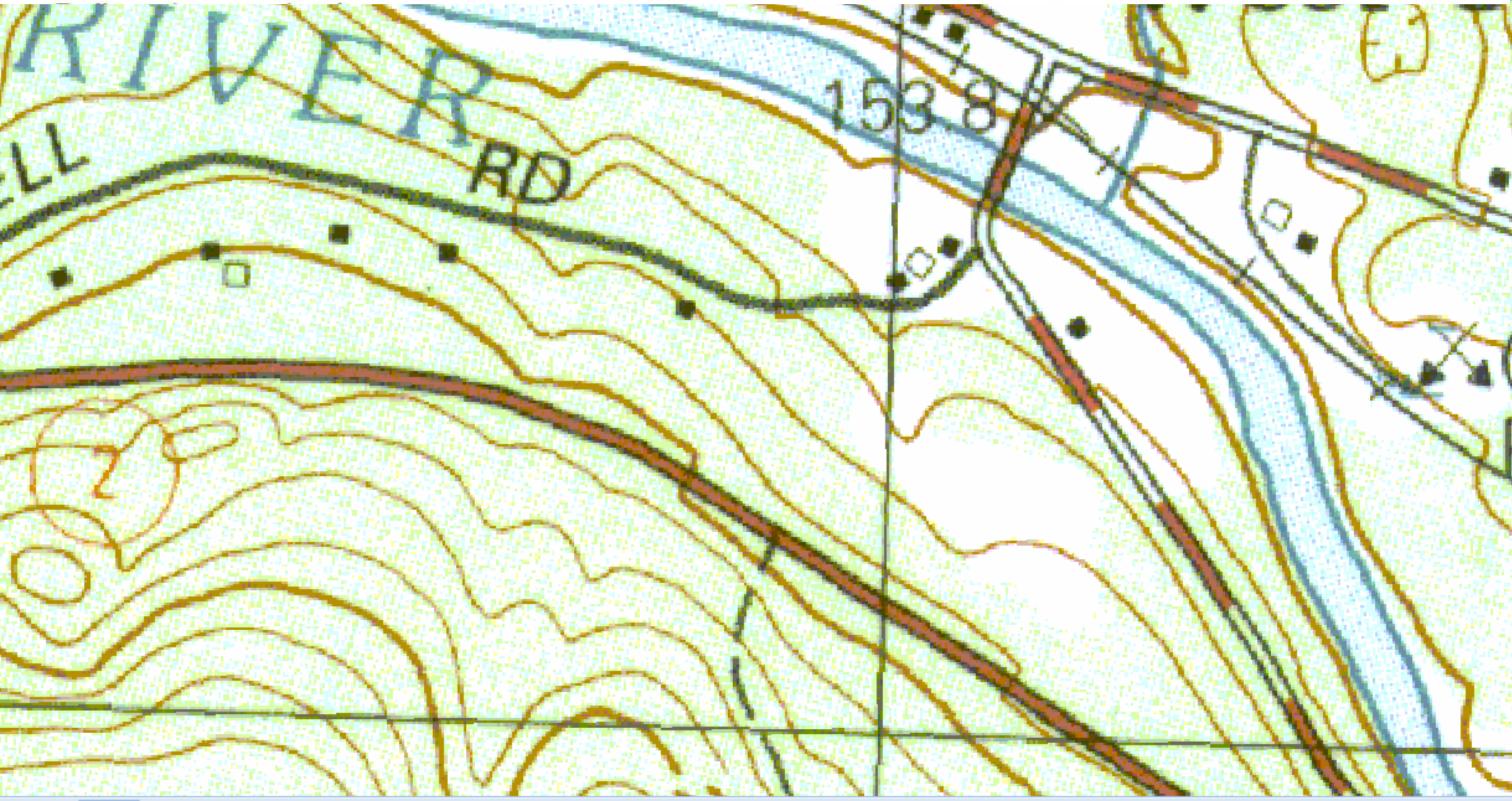
Wendell Rd.

Route 2A

Route 2

Dirt Road

- Primary highway, hard surface 
- Secondary highway, hard surface 
- Light-duty road, hard or improved surface 
- Unimproved road; trail 
- Route marker: Interstate; U. S.; State 

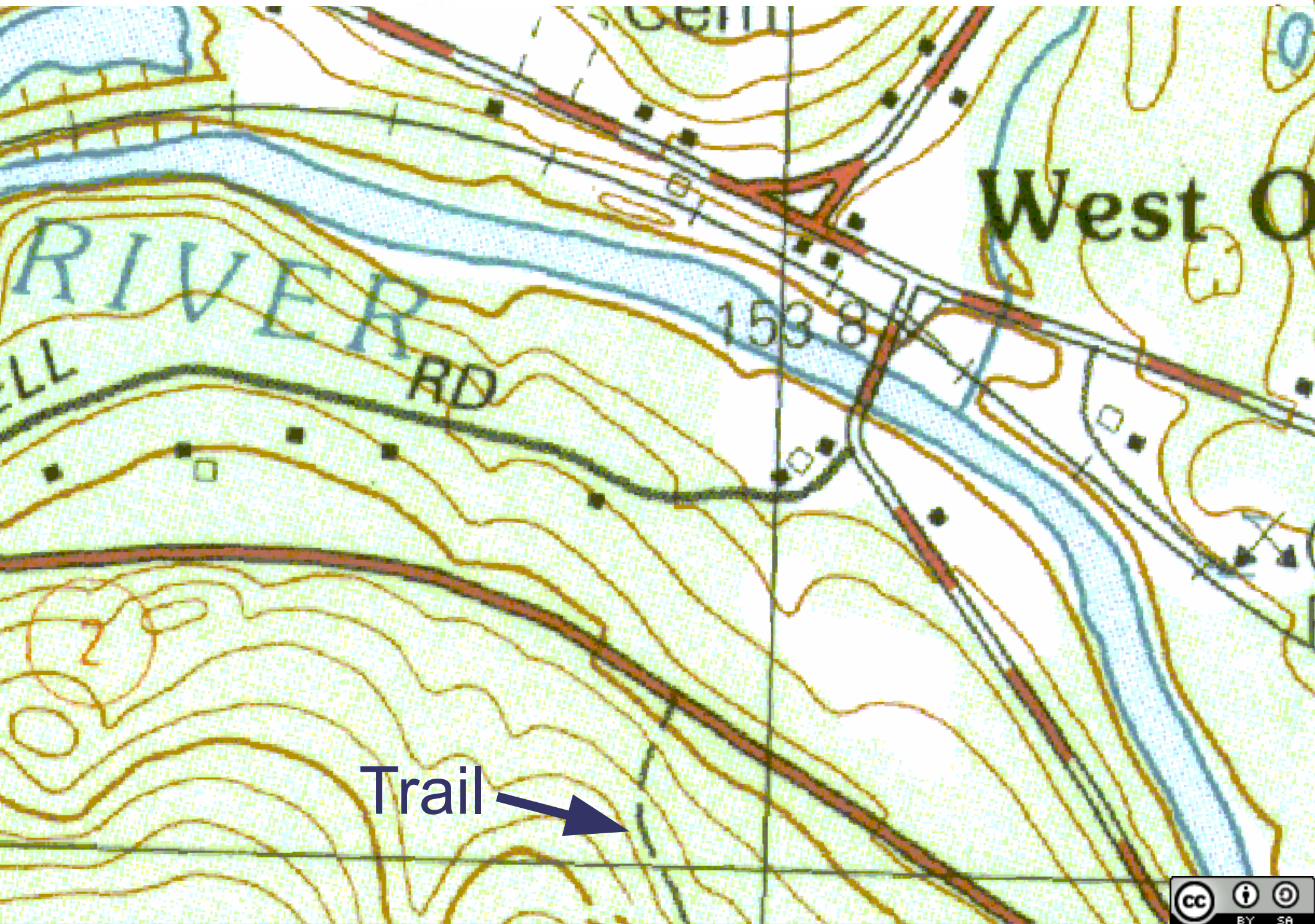




Fill

Railroad

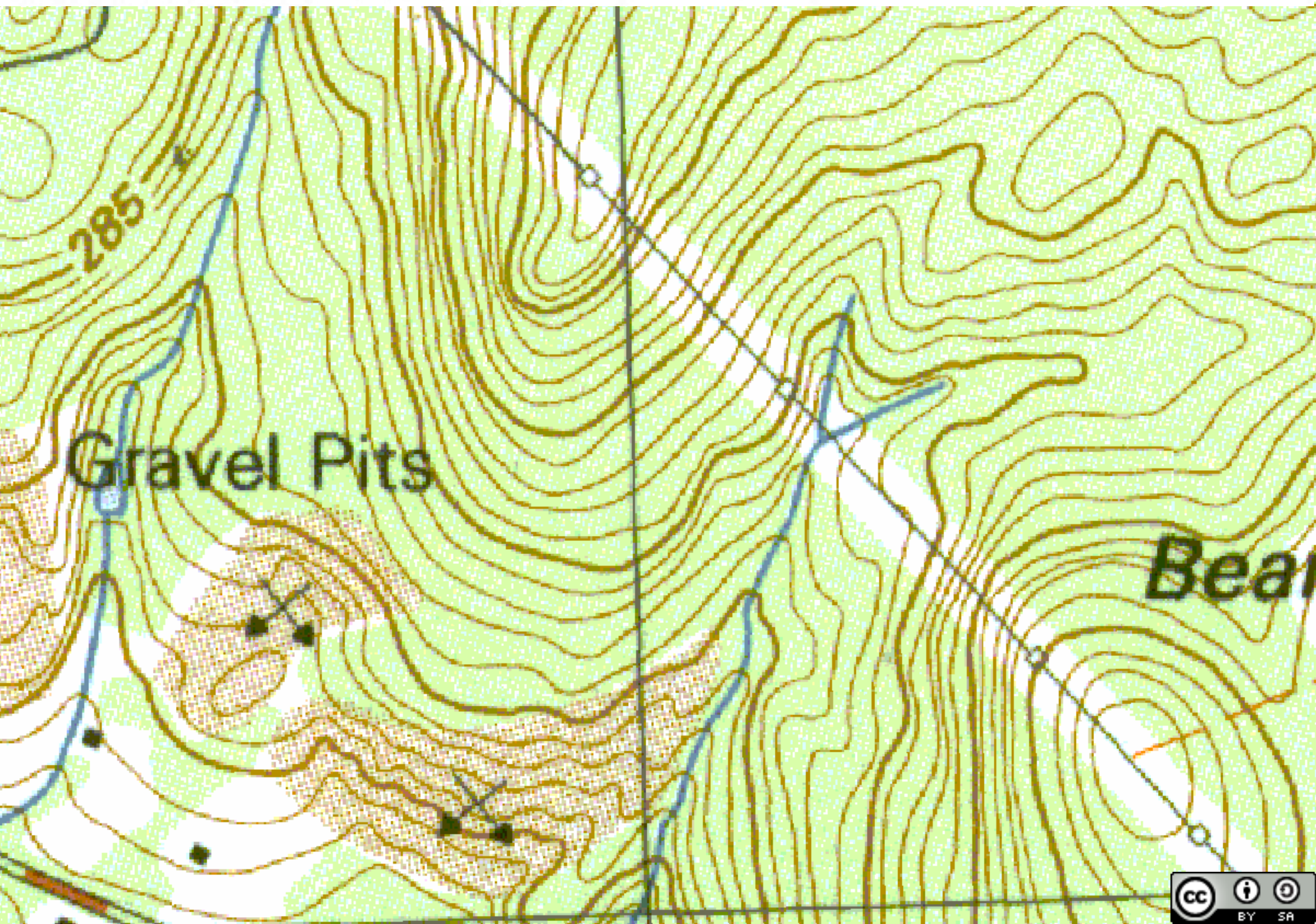
Railroad: standard gage; narrow gage



Trail →



Power transmission line, located tower ————



Gravel Pits

Bear

Railroad



Cut



Fill



Fill

Railroad: standard gage; narrow gage



Railroad



Cut



Fill



Fill



BM
233.3



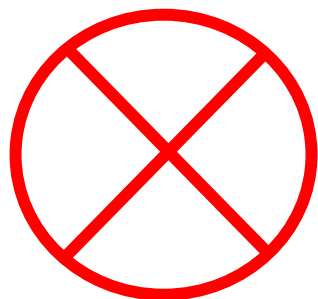


April 2001

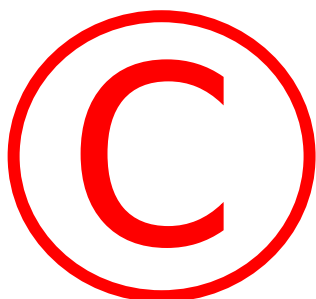


August 2003

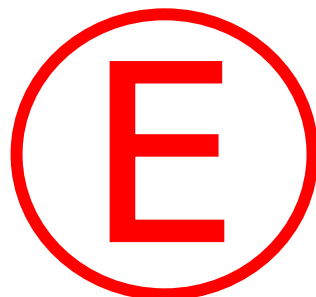
Some Search Related Symbols



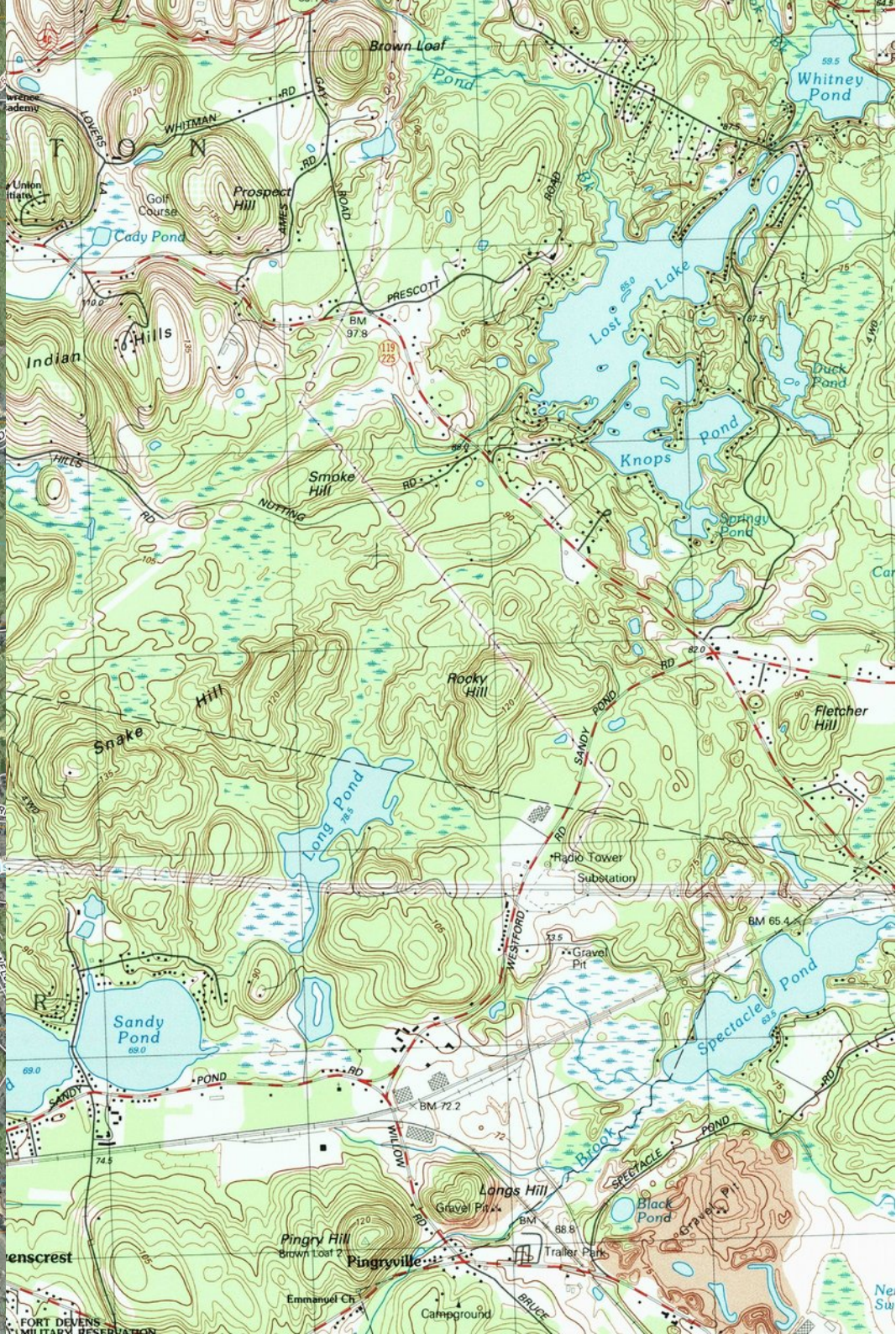
PLS/LKP/IPP



Clue



ELT hit
(SARSAT Location,
PLB hit)



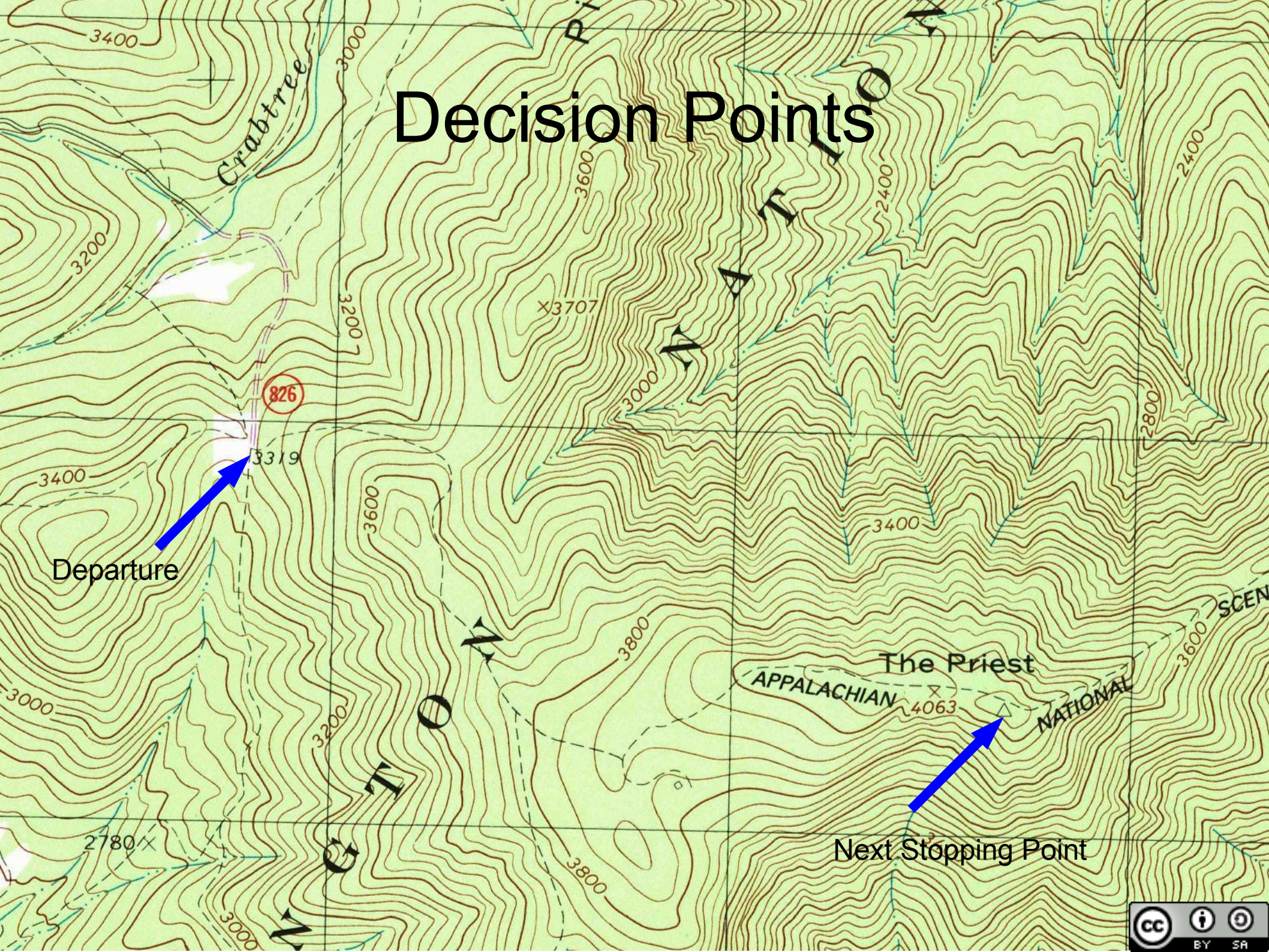


I think I'm here. If I go North 100 meters, I'll go downhill to a stream that flows to the West.

Behaviors on Terrain

- Decision Points
- Paths of least resistance
 - Ridgelines
 - Remain in same watershed
- Goal directed behaviors
 - Route traveling to reorient (trails, roads, streams).
 - View enhancing: Going uphill in search of cell phone signal or view of landmarks.

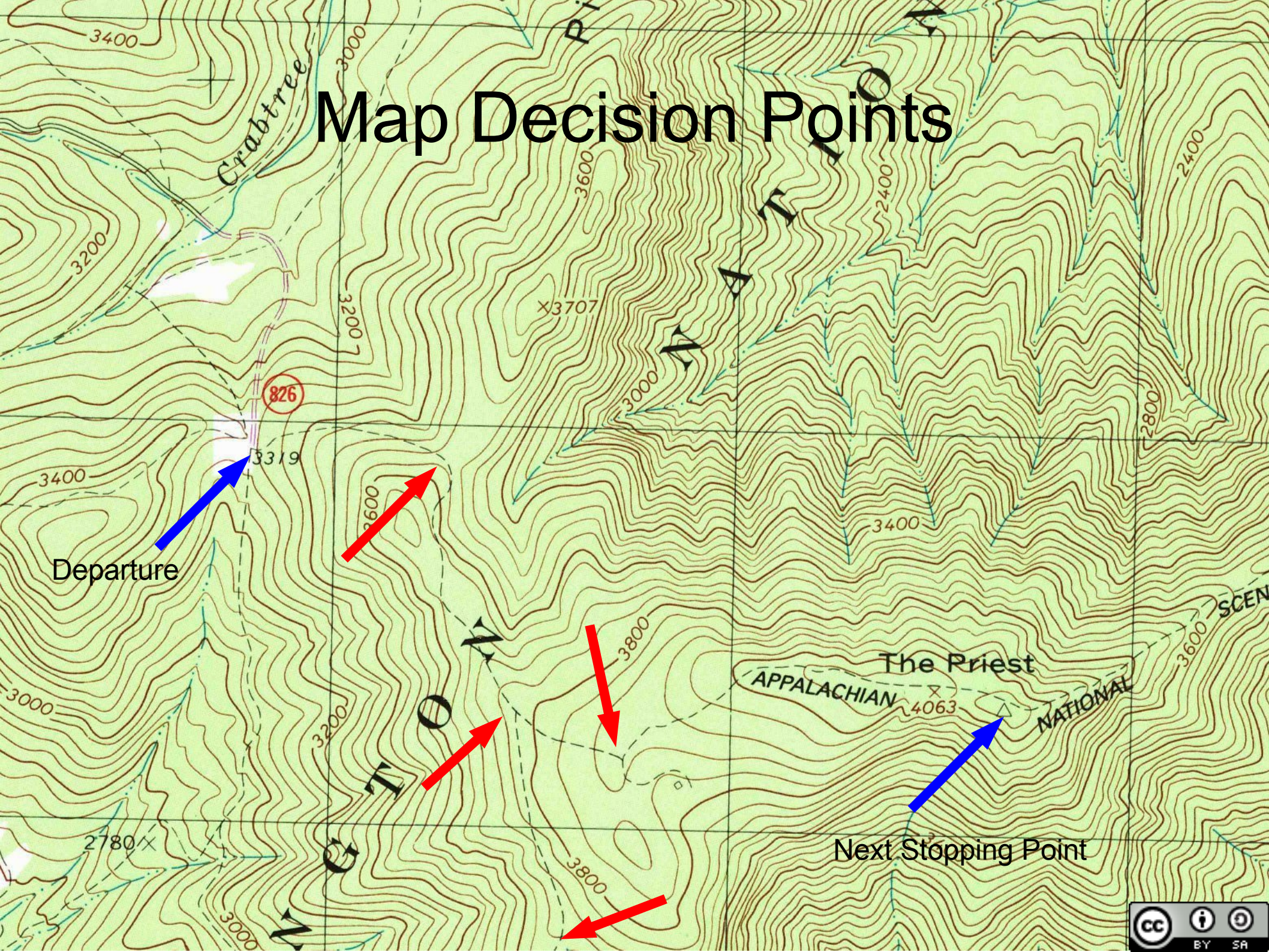
Decision Points



Departure

Next Stopping Point

Map Decision Points



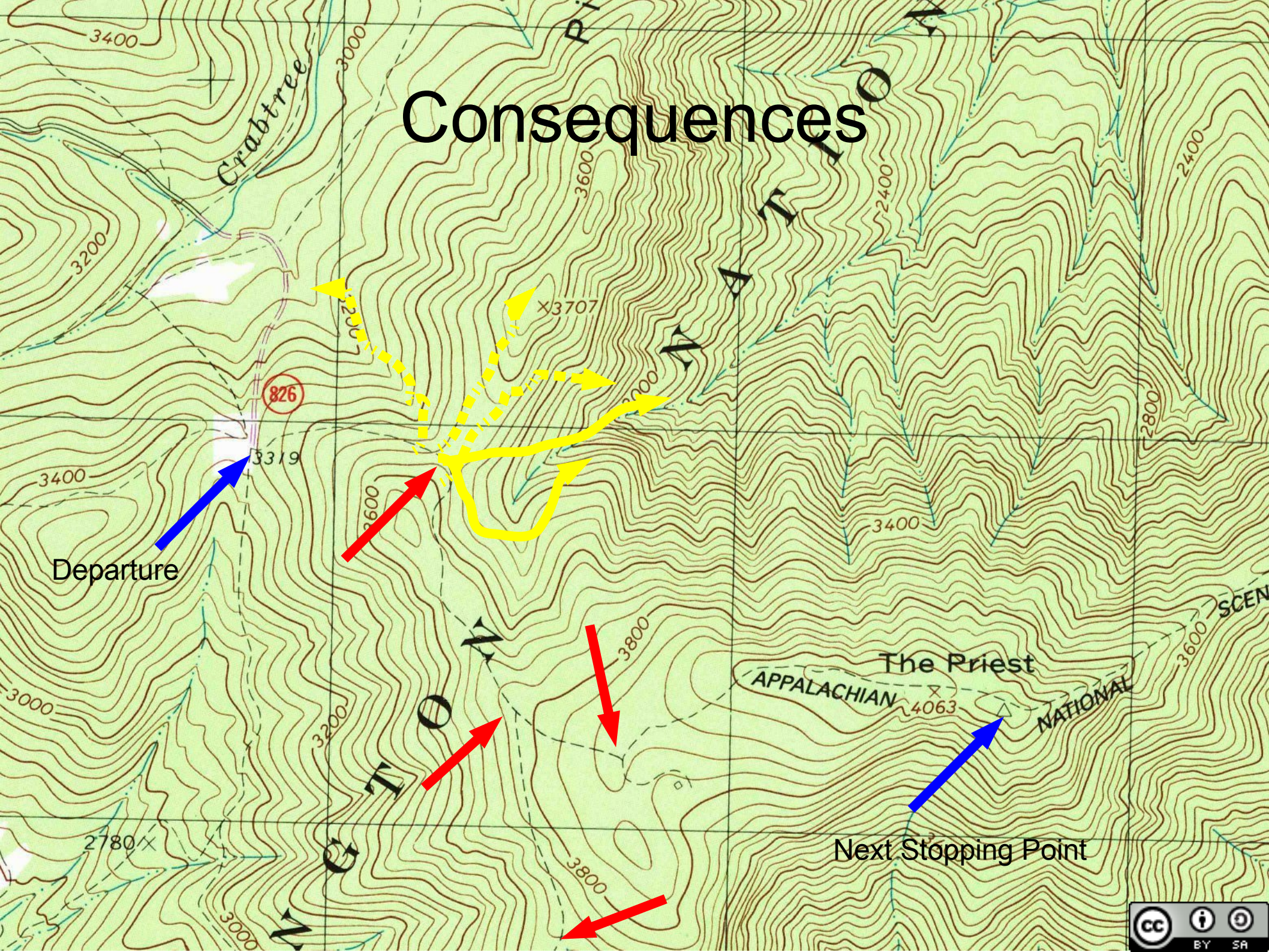
Departure

Next Stopping Point

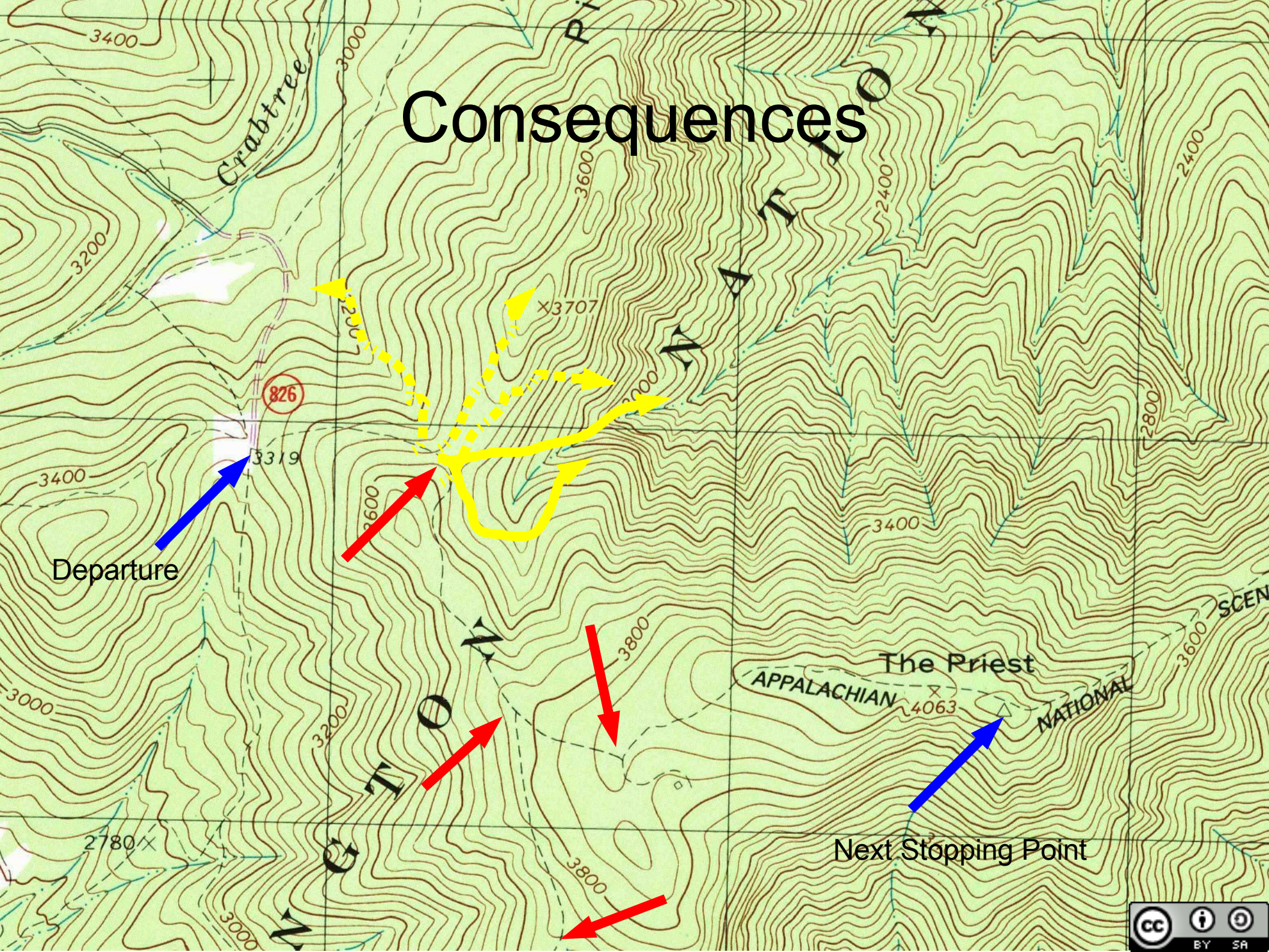
Field Decision Points



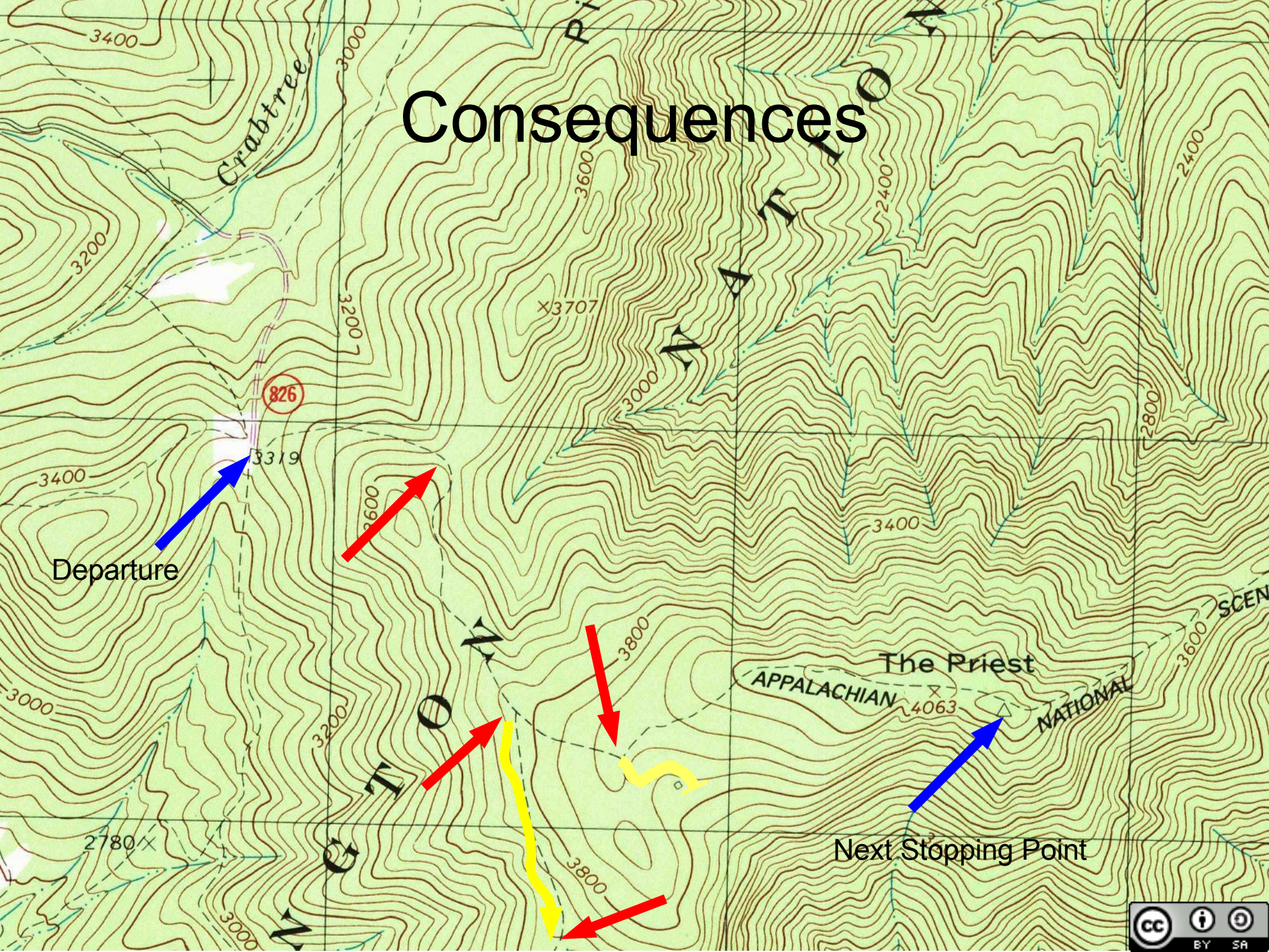
Consequences



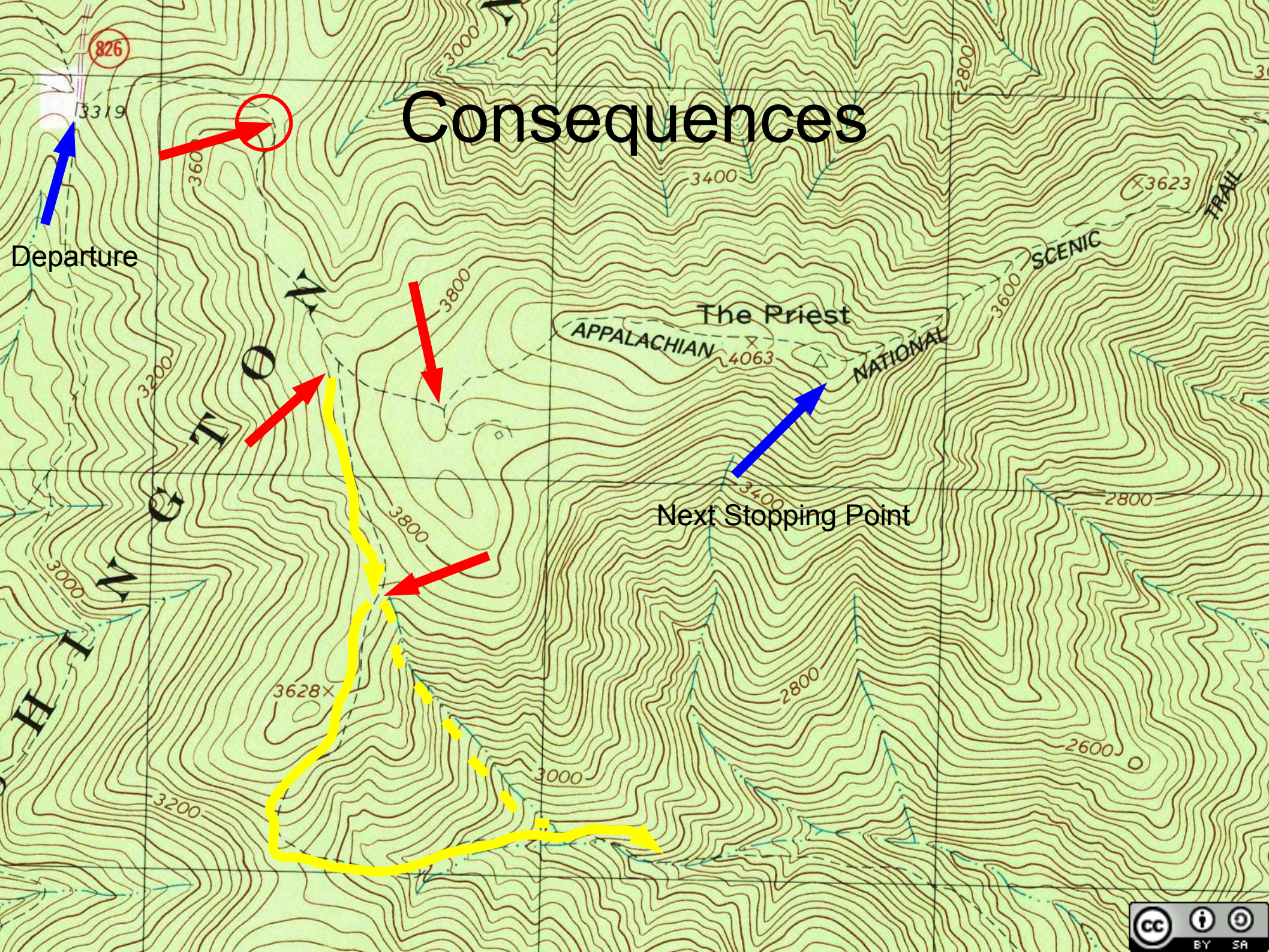
Consequences

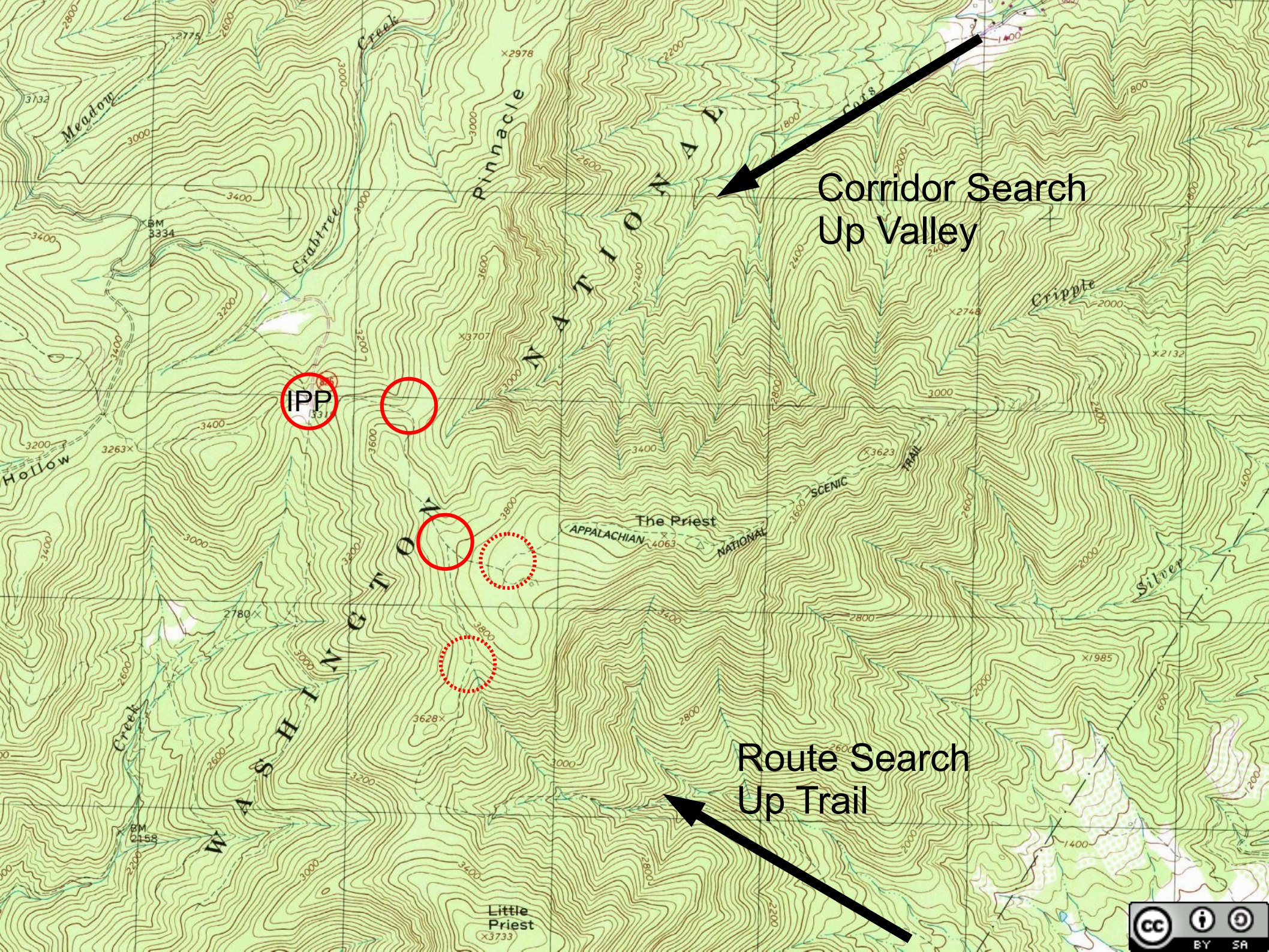


Consequences



Consequences

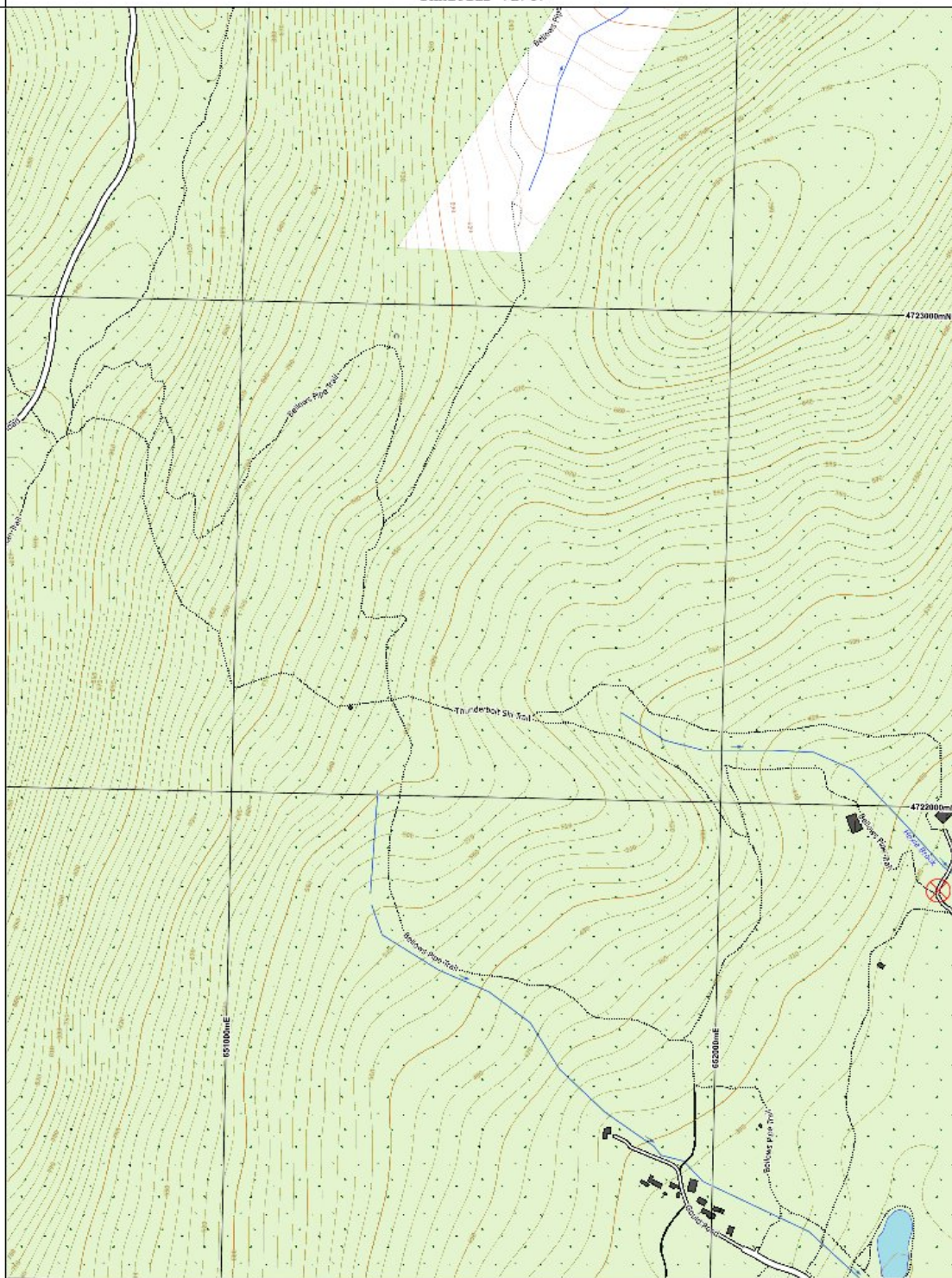




Corridor Search
Up Valley

Route Search
Up Trail

IPP



Subject: 25 year old male day hiker.

PLS: Subject dropped off on the Bellows Pipe Trail trailhead on Thiel Road at about 10 AM by a friend.

Weather: Cool overcast morning, then cold rain and mist for remainder of the day. Temperatures in the 50s.

Subject did not return for pickup at the expected time (4 PM). Friend followed plan and called for help.

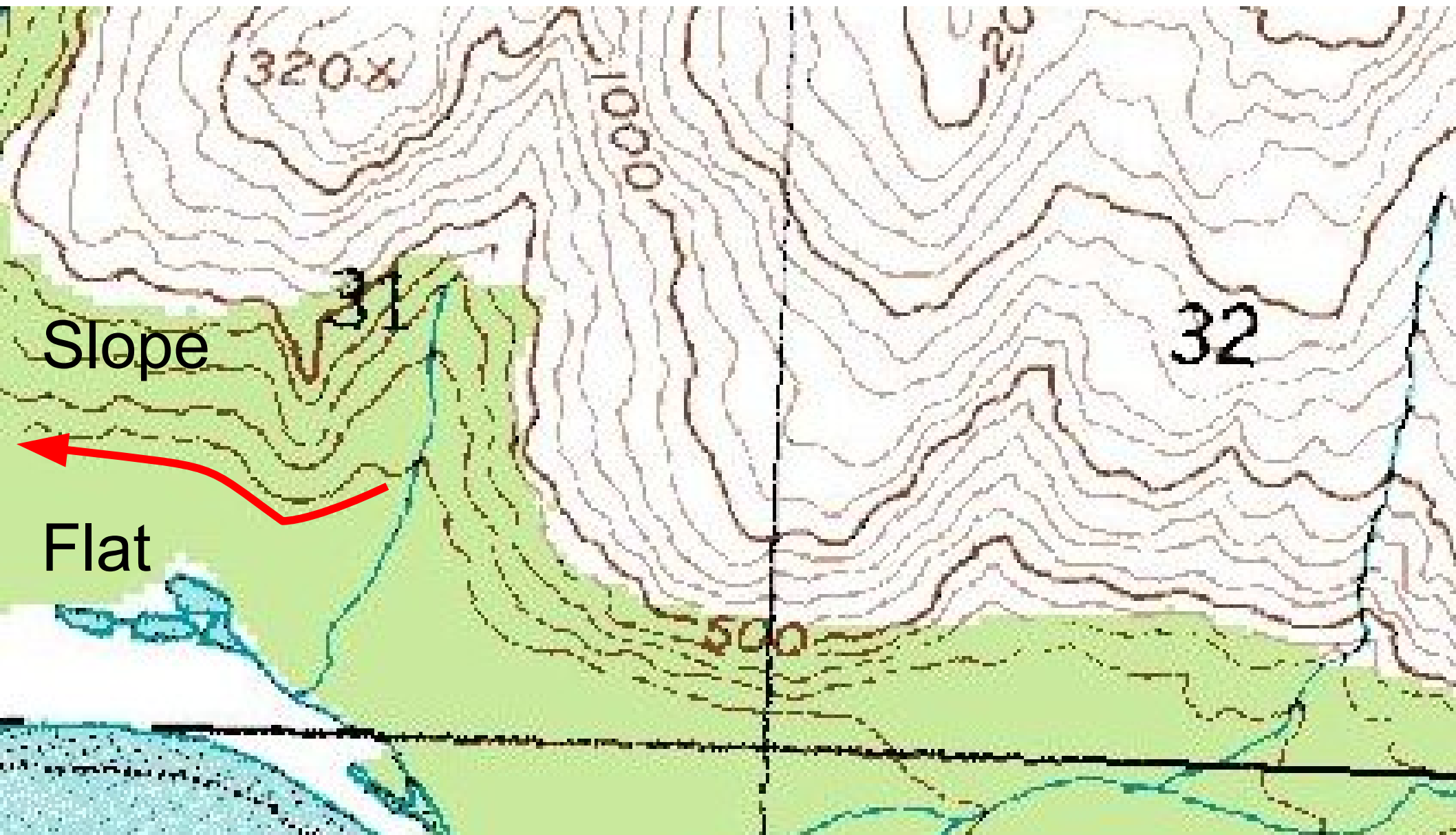
Identify Decision Points

How do people travel on terrain?

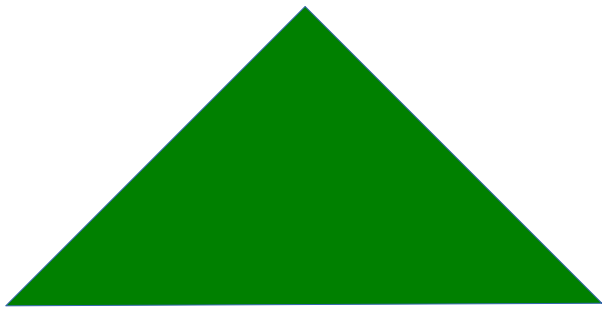
Yosemite Watershed Data

“129 hiker incidents (130 found locations), 63 people/groups (48%) were found within the same watershed in which they were reported last seen, and 15 of these were found at the IPP. Fifty (38%) people/groups were found in a watershed adjacent to the one in which they were reported last seen. Finally, 17 people/groups (13%) were found more than one watershed away.”

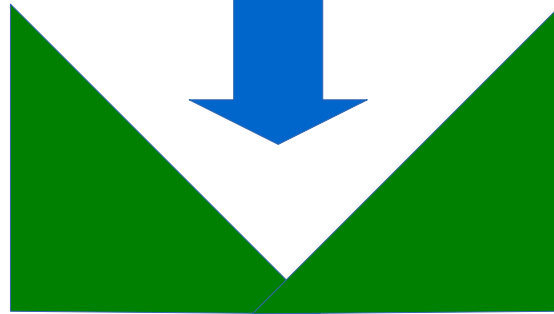
Slope Break



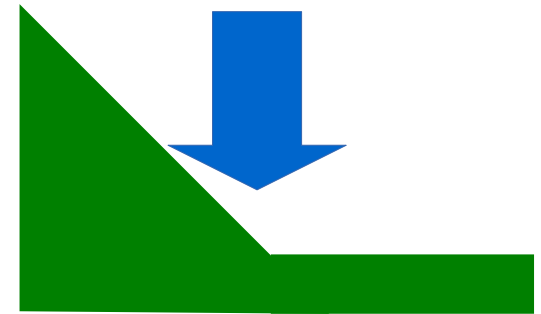
Where People tend to Travel



Ridges

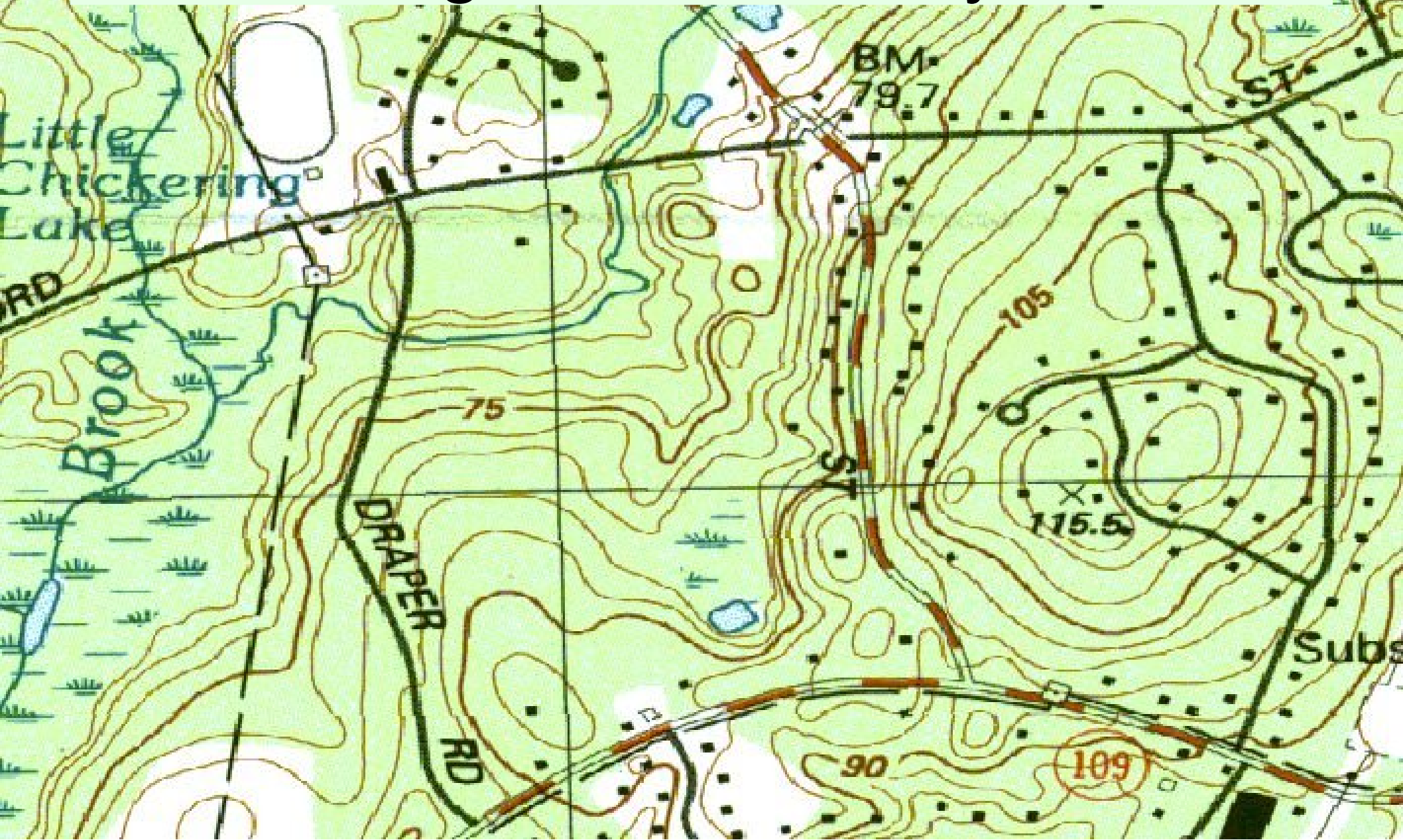


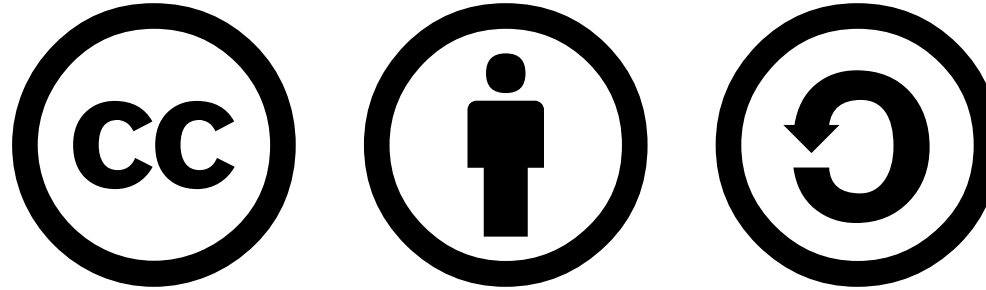
Valleys



Slope
Breaks

What makes a good search segment boundary?





This presentation Copyright © 2014-2020 Paul J. Morris Some Rights Reserved.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License. This material may be freely reproduced and used under the terms of the Creative Commons Attribution-ShareAlike License.

This presentation includes images that have been made available under CC-BY and CC-BY-SA licenses, and material from the public domain. Attributions are noted on individual slides. These contributions to the commons are very gratefully acknowledged.