

MAPS, GPS & MOBILE APPS

2014 XSC STEN REFRESHER TRAINING

By: Chris Ingram



OVERVIEW



- Map Reading Review
- New NWCG Fireline Symbology
- New GeoTIFF Base Maps
- GPS Review

OVERVIEW

Made for



iPhone



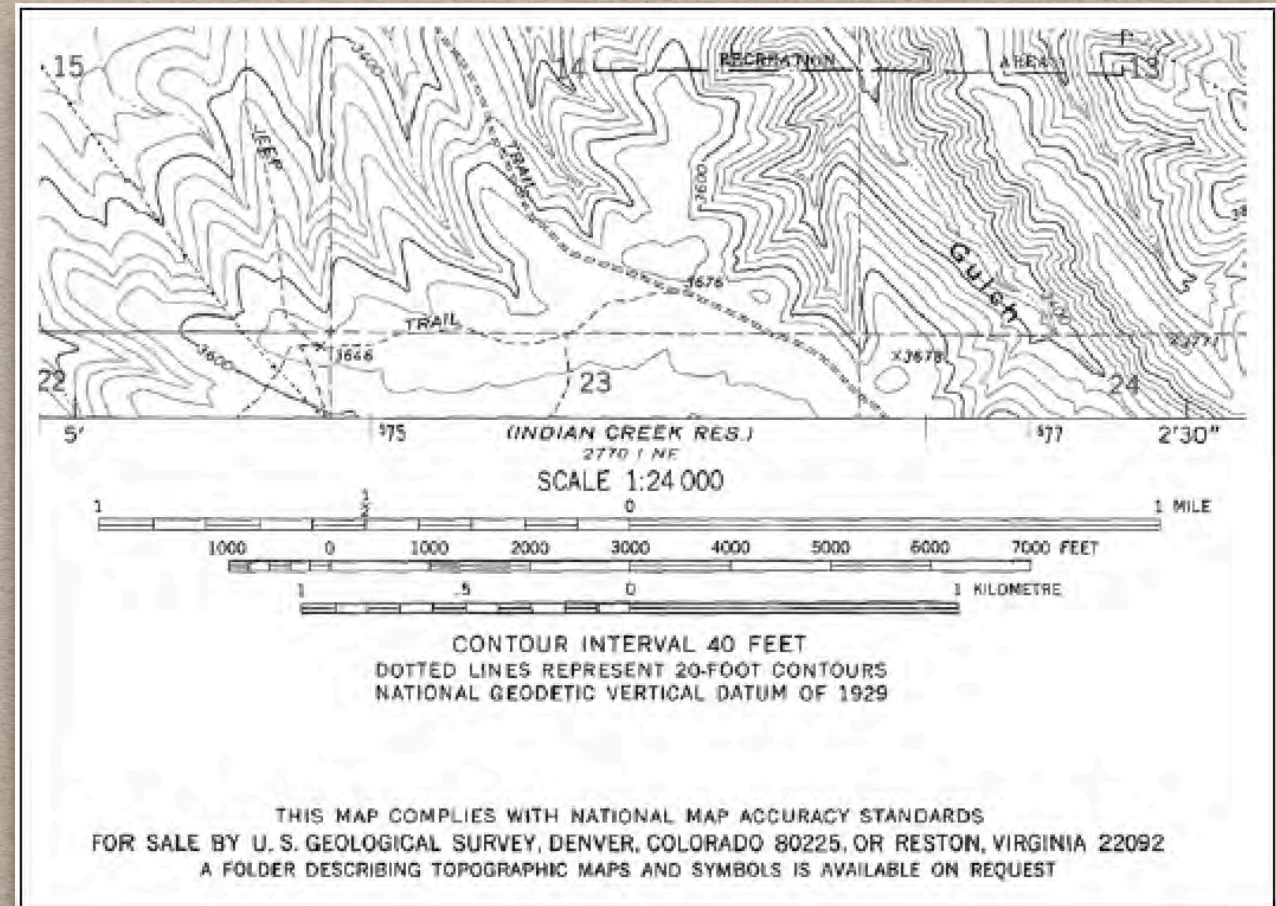
iPad

- Mobile Apps for the Fire Service
 - Next-Generation ICS (NICS)
 - MotionX-GPS
 - Dropbox
 - QR Reader
 - Avenza PDF Maps
 - Topo Maps
 - Wildland Toolkit

MAP READING REVIEW

STANDL SGD

- Scale
- Title
- Author
- North Arrow
- Date
- Legend
- Source Statement
- Graticule/Grid
- Datum



LYTLE FIRE
CA-BDF-9582
Oct. 4, 2003

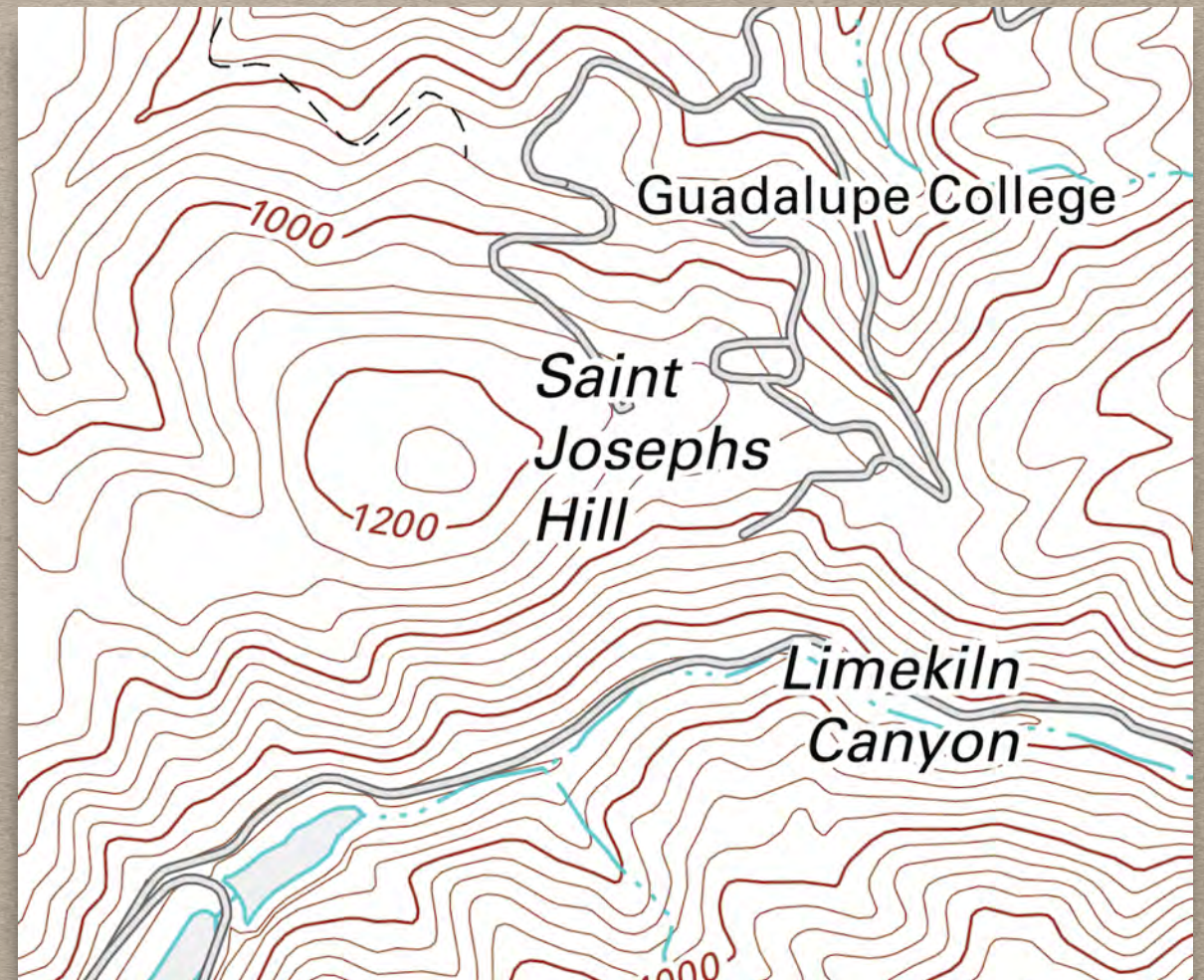
Ingram
August 17, 2003
2230 Hours



MAP READING REVIEW

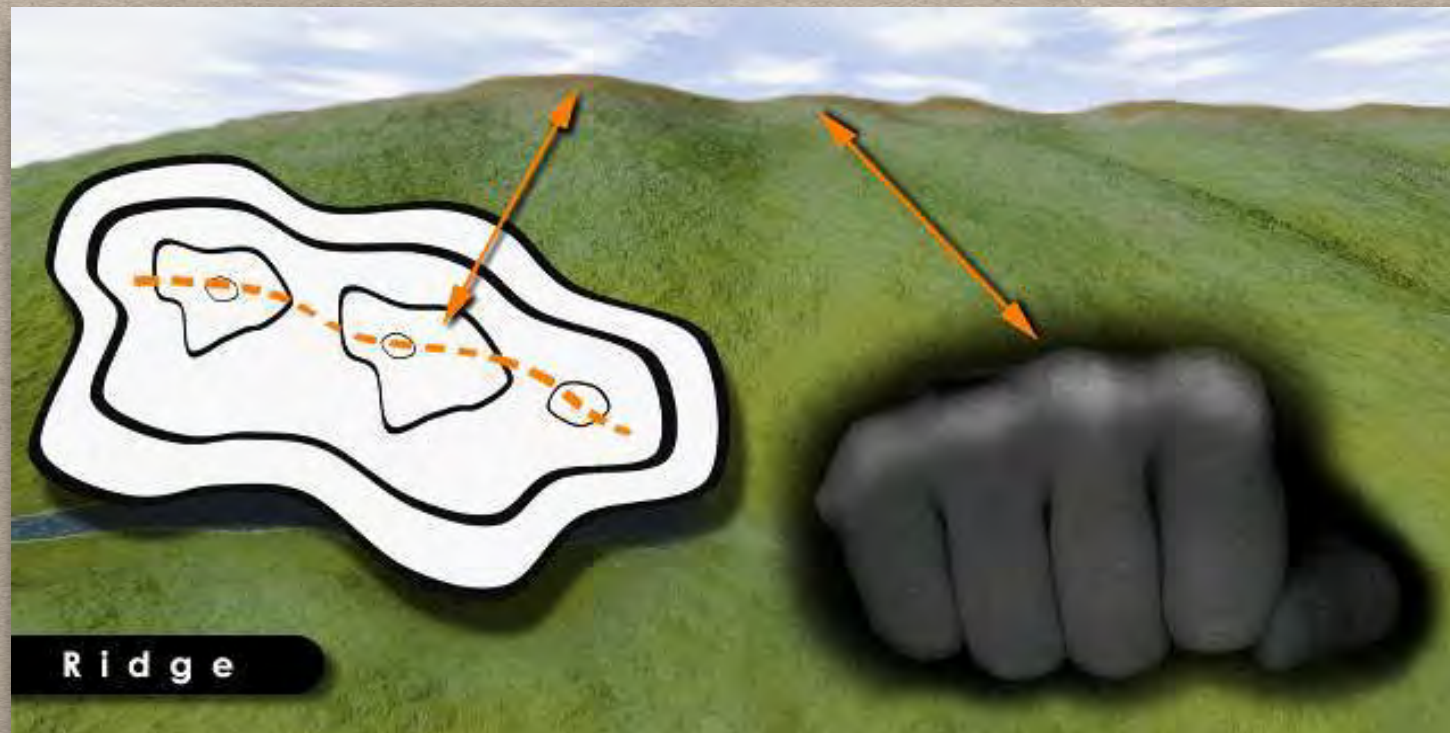
Contour lines

- Contour Interval ~ The contour interval is the distance between each contour line. The contour interval is found along the bottom edge, center of the map.
- Intermediate Contour ~ a brown line on a topographic map and represents a line of equal elevation.
- Index Contour ~ a bolder/wider brown line that has the elevation value marked at various intervals as a part of the line.

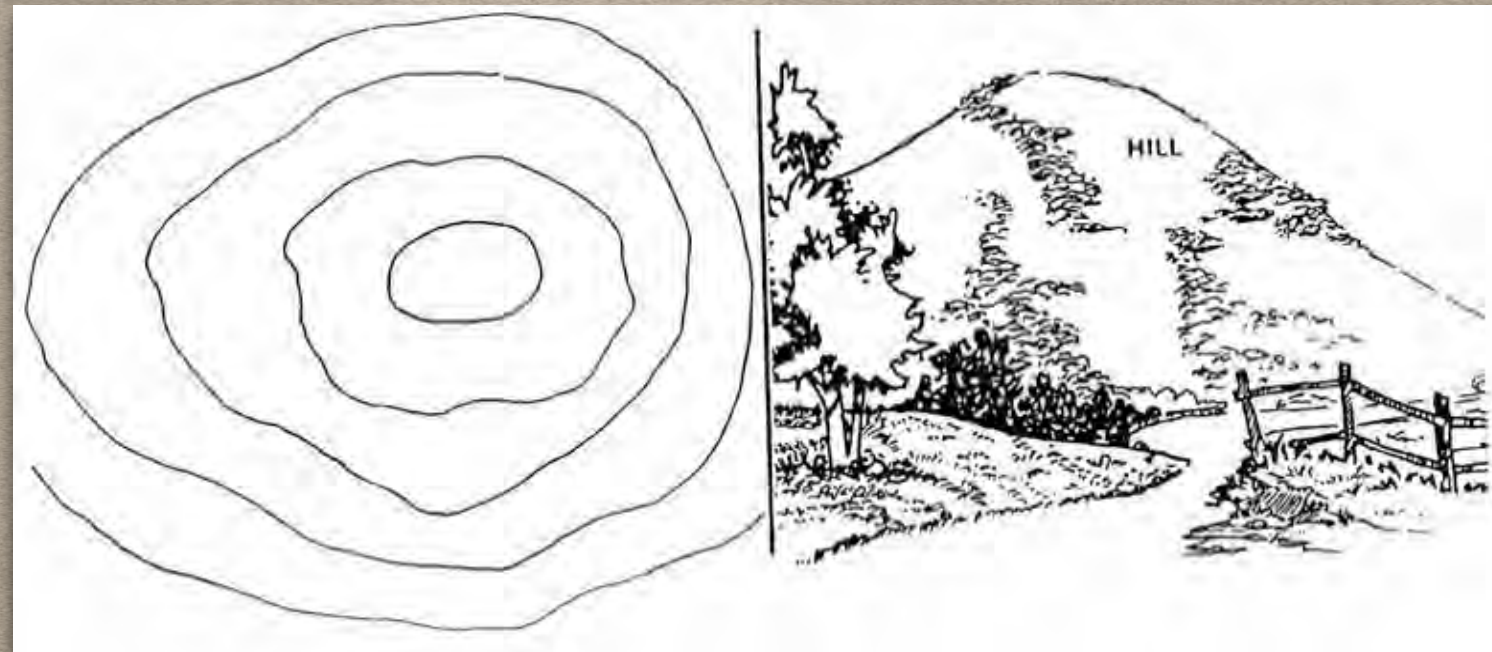


Contour Interval - 40ft

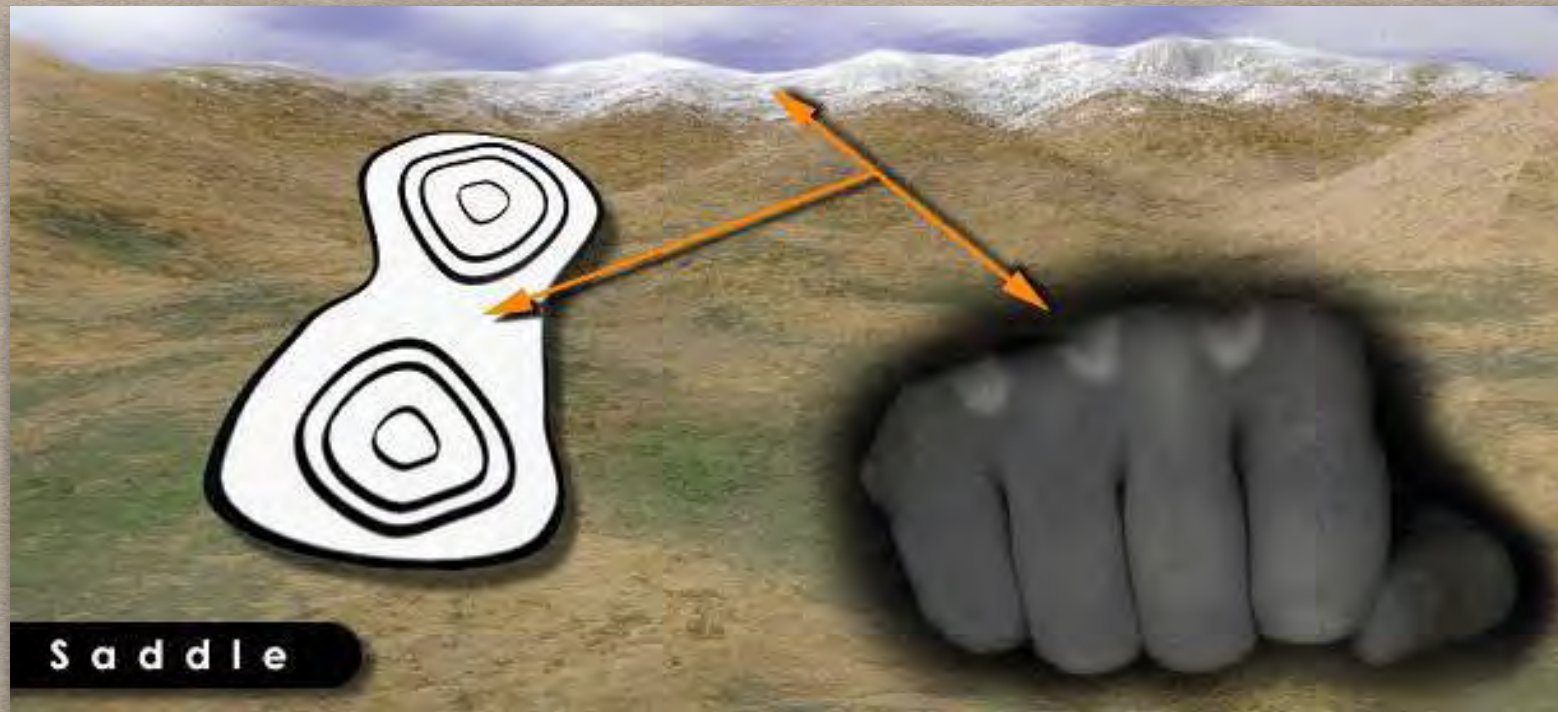
MAP READING REVIEW



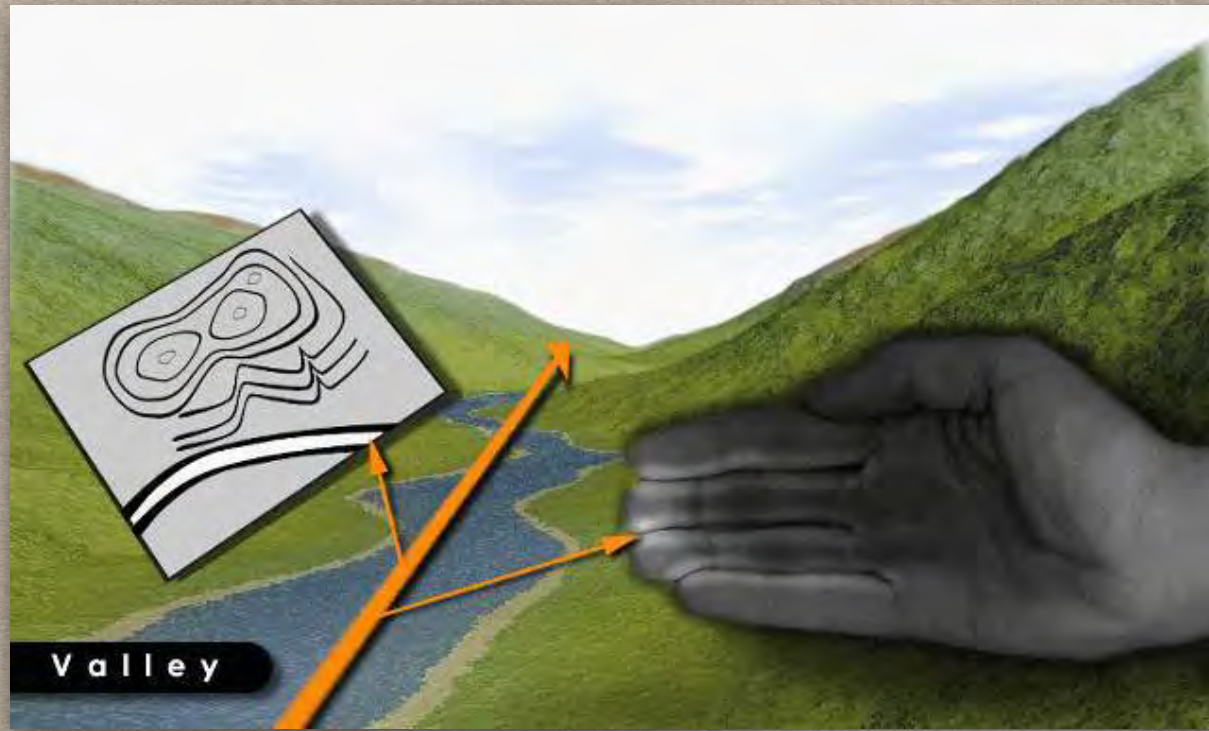
MAP READING REVIEW



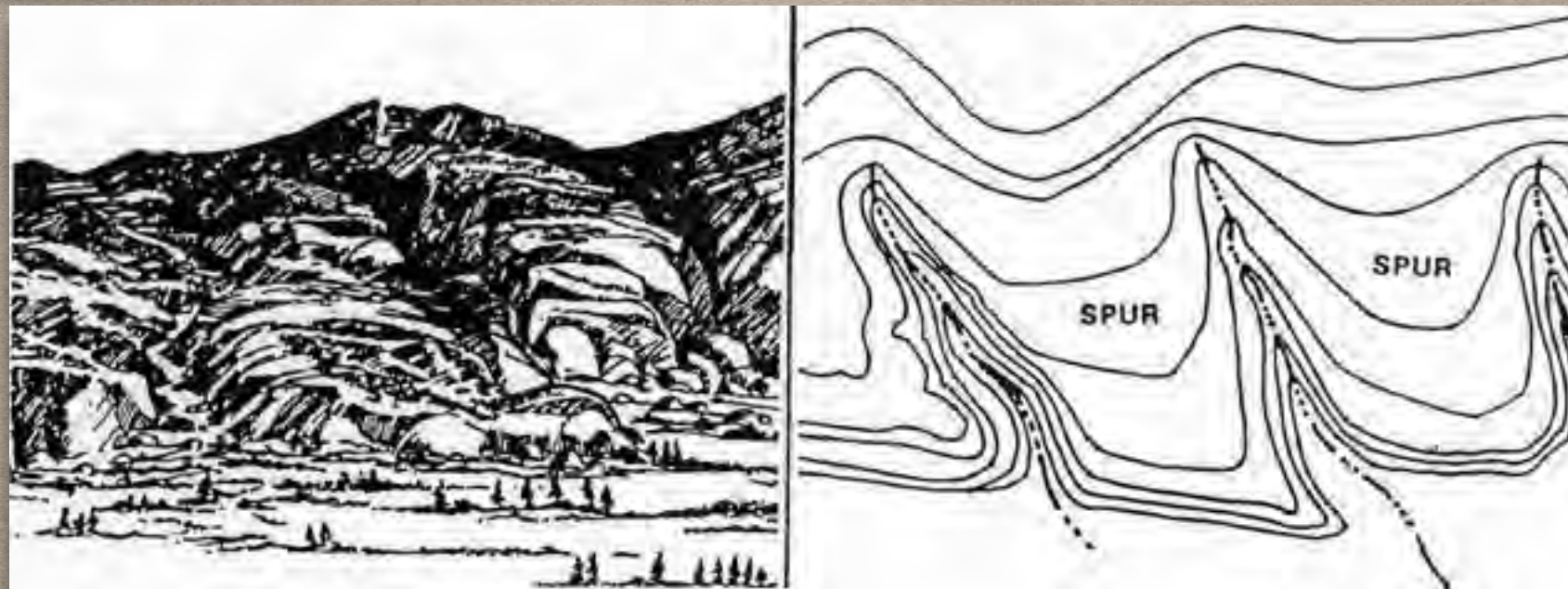
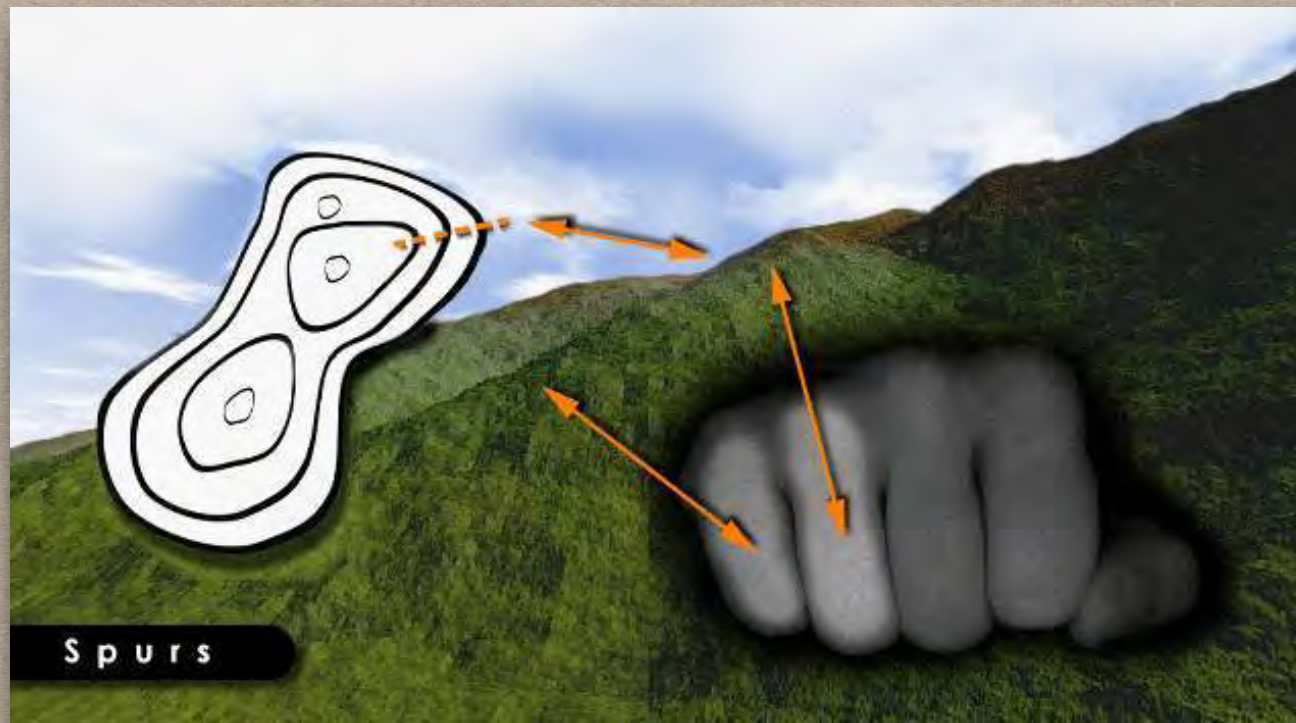
MAP READING REVIEW



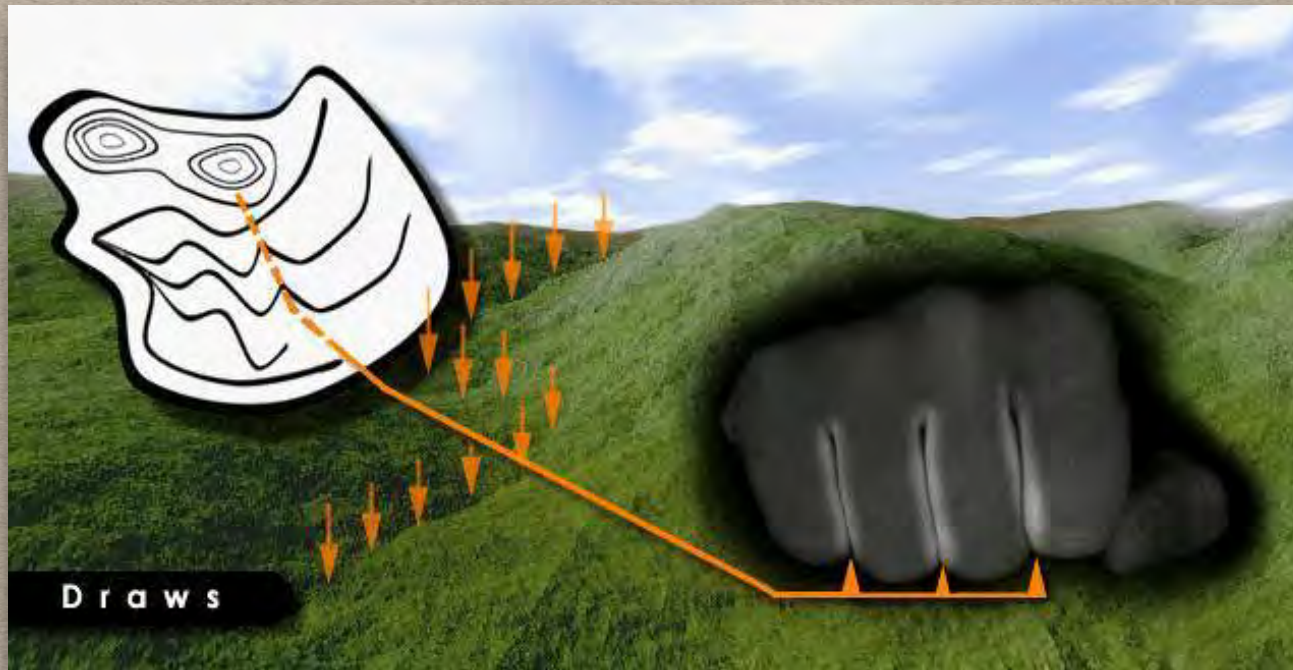
MAP READING REVIEW



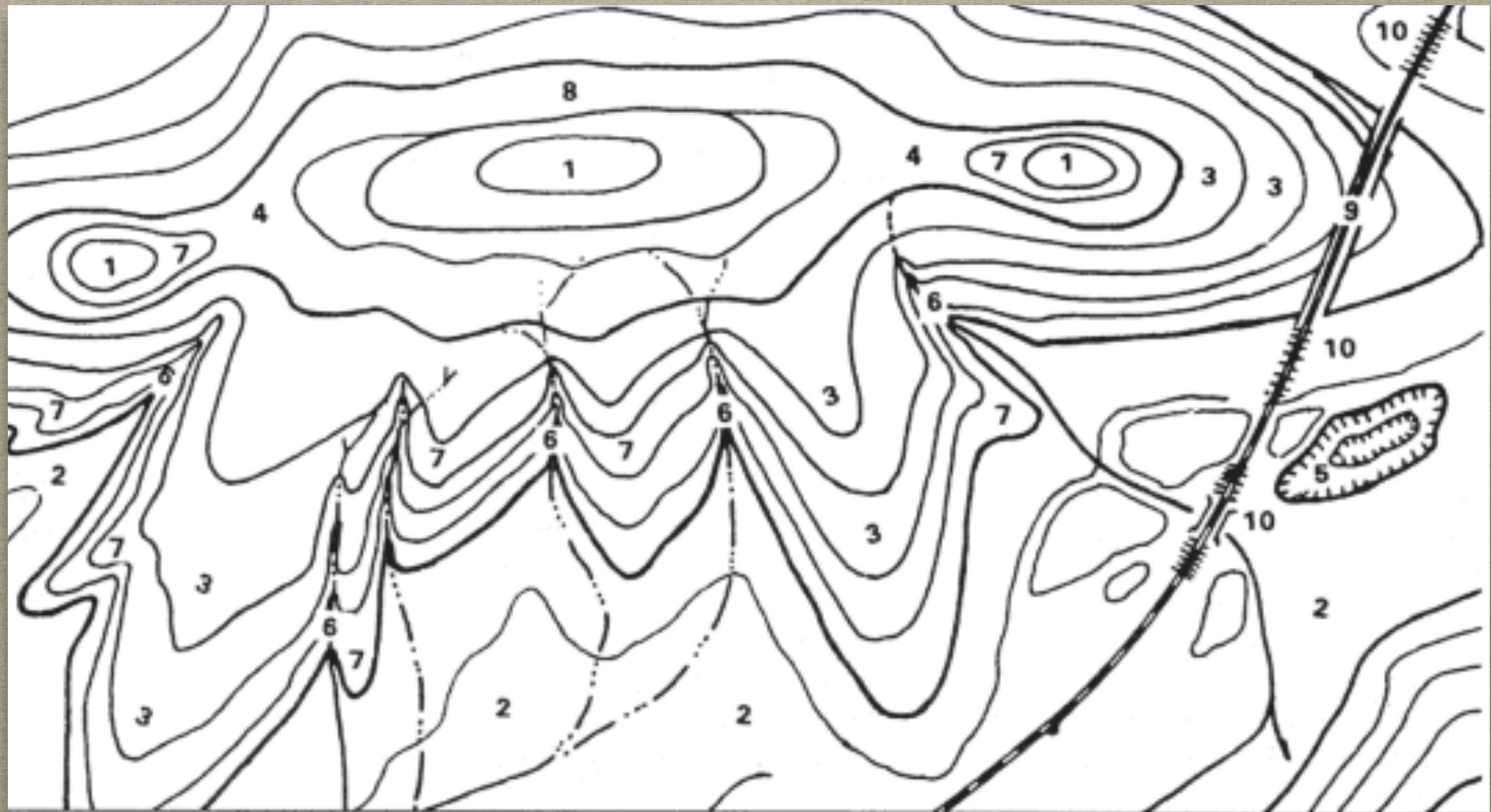
MAP READING REVIEW



MAP READING REVIEW



MAP READING REVIEW



1. HILL

3. RIDGE

5. DEPRESSION

7. SPUR

9. CUT

2. VALLEY

4. SADDLE

6. DRAW

8. CLIFF

10. FILL

NEW NWCG FIRELINE SYMBOLOGY



Aerial Hazard *(purple)*



Aerial Ignition *(red)*



Branch Break *
(Numbered clockwise from origin)



Camp (Name) * *(blue)*



Division Break *
(Lettered clockwise from origin)



Drop Point (Name e.g., DP-1)



Fire Origin (Date Time) * *(red)*



IR Isolated Heat Source



Lookout *(blue)*



MediVac Site *(red cross, blue outer circle)*



Mobile Weather Unit



Pump




Repeater, Mobile Relay * *(blue)*





Safety Zone *(yellow fill)*




NEW NWCG FIRELINE SYMBOLOGY


 Fire Station *(blue)*


 Segment Break *


 First Aid Station * *(blue)*


 Spot Fire (Date Time) * *(red)*
(Arrow rotated in direction of spot fire movement)


 Gate

 Staging Area (Name) * *(blue)*


 Helibase * *(blue)*


 Water Source (Identify Type) * *(blue)*

 Helispot (Name e.g., H-1) * *(blue)*

 Wind Speed Direction (Dir/Speed Time Date) *

 Hot Spot (Date Time) * *(red)*

 Zone Break

 Incident Base * *(blue)*

 Incident Command Post * *(blue)*

* Published in the Fireline Handbook (PMS 410-1)

NEW NWCG FIRELINE SYMBOLOGY



Active Burnout
(black line, red hash)



Aerial Hazard (purple)



Aerial Ignition (red)



Completed Burnout



Completed Dozer Line *



Completed Line *



Line Break Completed *



Management Action Point (MAP)
(orange)



Planned Fire Line *



Planned Secondary Line *



Proposed Burnout

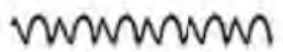


Proposed Dozer Line *

NEW NWCG FIRELINE SYMBOLOGY



Escape Route *(green)*



Fire Break Planned or Incomplete *



Fire Spread Prediction (Date Time)
(orange)



Foam Drop

H - H -

Hand Line (Completed)



Highlighted Geographic Feature *



Highlighted Manmade Feature *



Retardant Drop

R - R -

Road as Completed Line



Uncontrolled Fire Edge * *(red)*



Water Drop



IR Heat Perimeter



IR Intense Heat



IR Scattered Heat

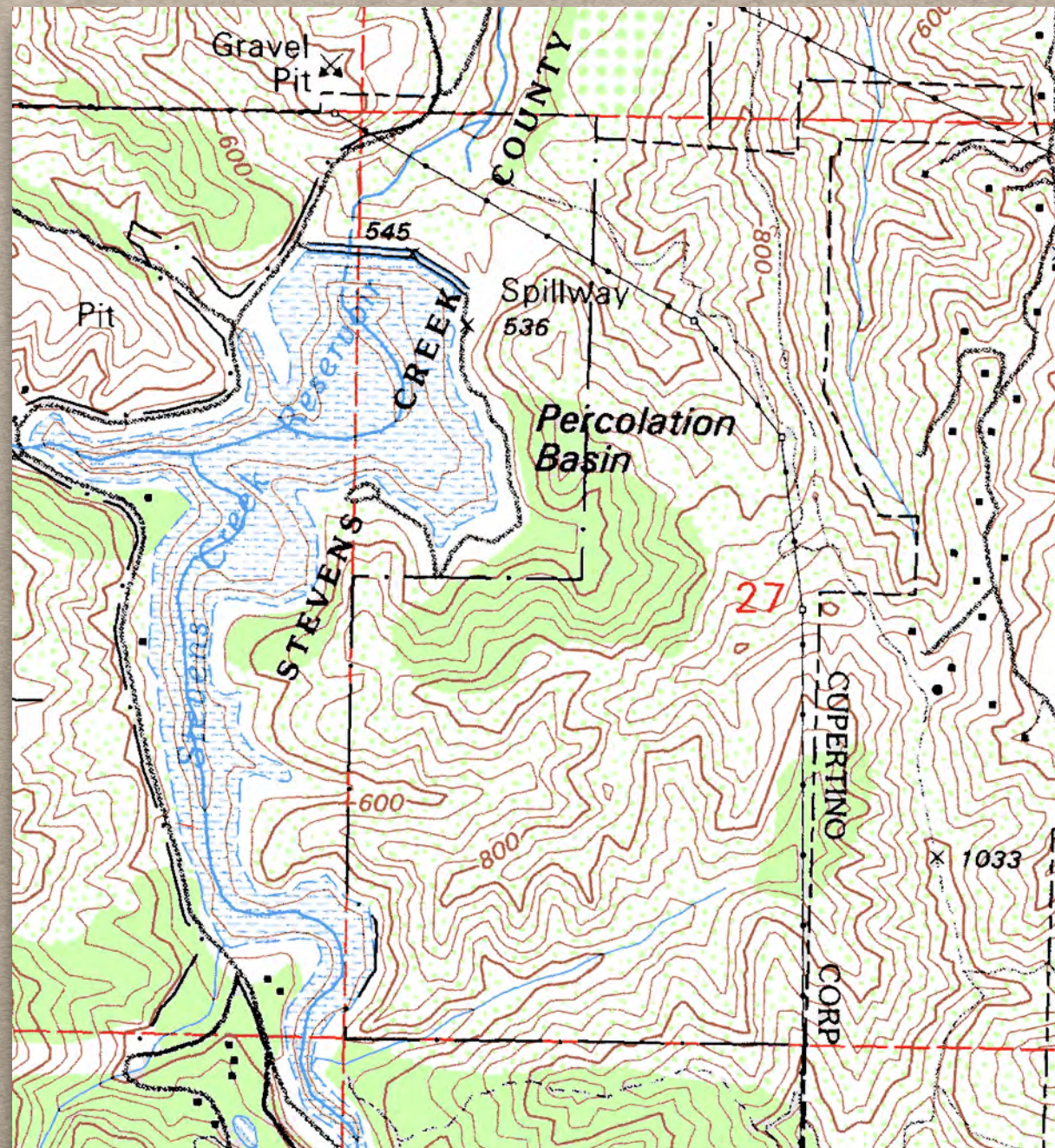


Temporary Flight Restriction (TFR)



NEW GEOTIFF BASE MAPS

Old USGS Topo



NEW GEOTIFF BASE MAPS

New USGS Topo



GPS REVIEW

Settings for use with Aircraft

- Position Format
 - Degrees Decimal Minutes (hddd°mm.mmm')
 - N 37° 14.5' W 121° 53.75'
- Datum
 - World Geodetic System 1984 (WGS 84)

Settings for FEMA All-Hazards Incident

- United States National Grid (USNG)
 - 10SFE03480624



GPS REVIEW

Settings for Navigation

- Position Format
 - Degrees Minutes Seconds (hddd°mm'ss")
 - N 37° 14' 30" W 121° 53' 45"
 - Degrees Decimal Minutes (hddd°mm.mmm')
 - N 37° 14.5' W 121° 53.75'
- Datum
 - North American Datum 1927 (NAD27)
 - North American Datum 1983 (NAD83)



GPS REVIEW

001

Note

Location
N 37°19.404'
W 122°01.615'

Elevation 223 f Depth _____ f

N 0 f

Map Done

Current Track

Archived Tracks

CU

Select Start. Then walk around the perimeter of the area you want to calculate.

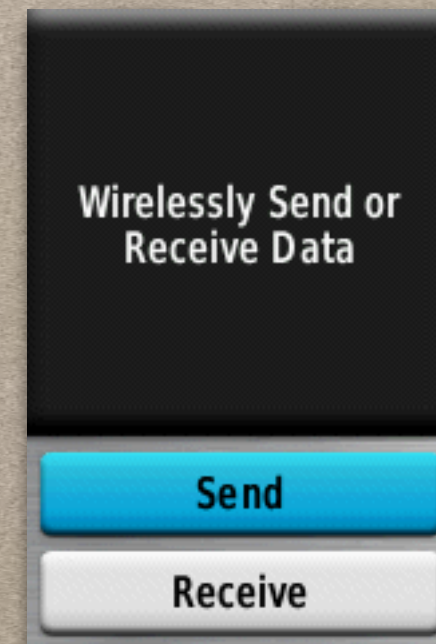
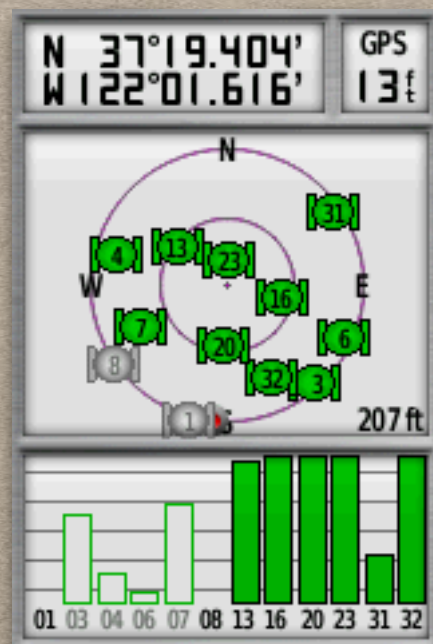
When finished, select Calculate to see the area inside the path you walked.

Start

- Waypoints
 - Can be used to mark points for future reference or to be brought back to Situation Unit for intel.
 - Ex. Water Source, Hot Spot, Helispot, etc.
- Tracks
 - Can be used to track lines for future reference or to be brought back to Situation Unit for intel.
 - Ex. Fireline, Escape Route, Good Road, etc.
- Area Calculation

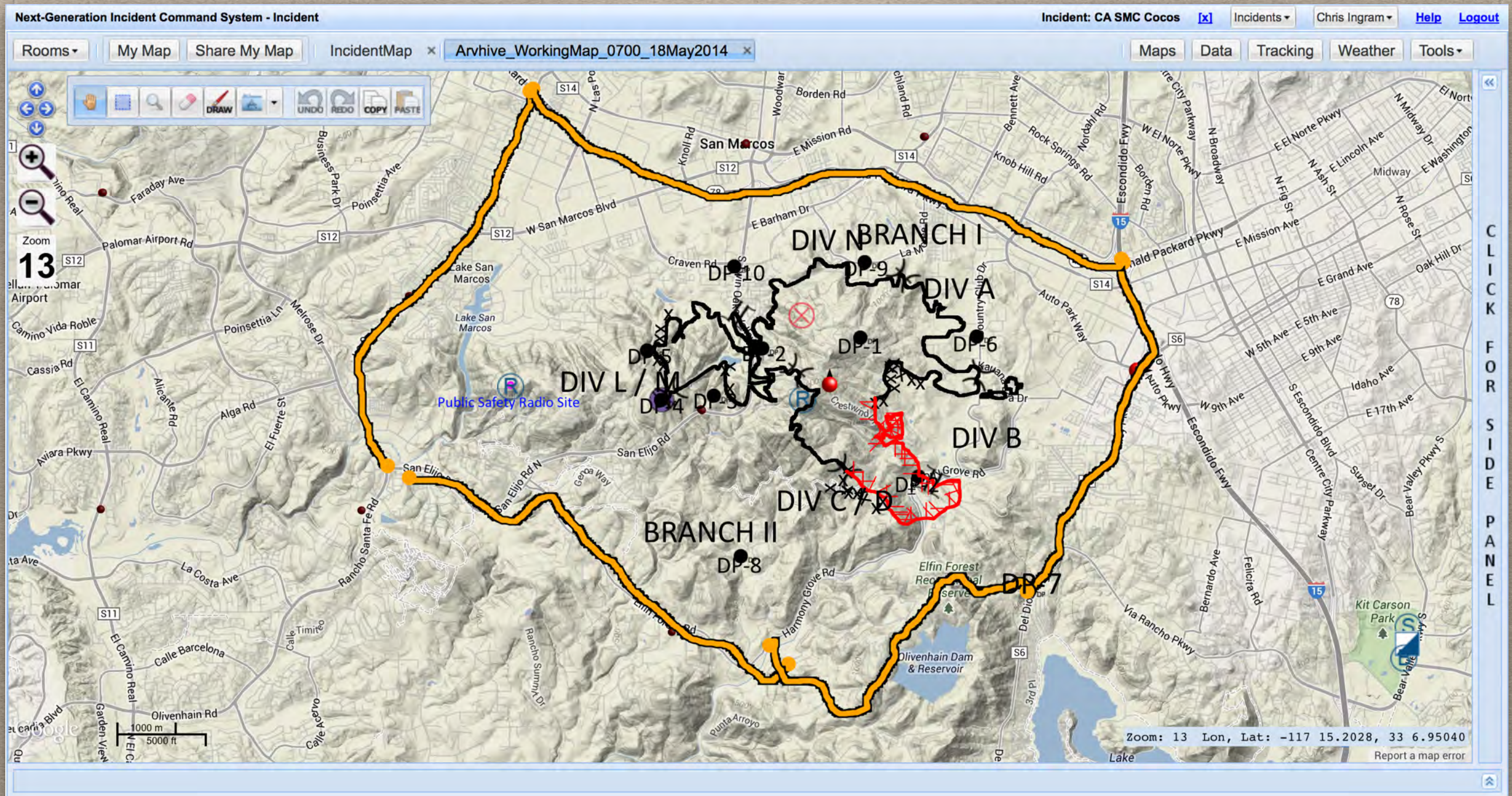
GPS REVIEW

- Some GPS devices come with topographic maps loaded for easy navigation.
- Some GPS devices have a built in compass.
- Newer GPS devices like the Garmin GPSMAP 62s can wirelessly share information between units.



MOBILE APPS

Next-Generation Incident Command System (NICS)



MOBILE APPS

Next-Generation Incident Command System (NICS)

<https://nics.ll.mit.edu/>

Organization Affiliation

- | | | |
|--|--|--|
| <input type="radio"/> Academia | <input type="radio"/> Corporate | <input type="radio"/> Federal |
| <input checked="" type="radio"/> Fire/Rescue | <input type="radio"/> Law Enforcement | <input type="radio"/> Military |
| <input type="radio"/> Non-Governmental Organization | <input type="radio"/> Office of Emergency Services | <input type="radio"/> Other Government |
| <input type="radio"/> Private Volunteer Organization | | |

Please Choose Your Organization

Organization: CA - Santa Clara Co. Fire Dept. ▾



If your organization is not available, contact info@NICSUser.org to request a new organization

Are you a member of an Incident Management Team?

CDF IMT

NONE ▾

Federal IMT

NONE ▾

Other Local IMT

NONE ▾

USAR

NONE ▾

First Name*

Last Name*

Primary Email*

NOTE: This is your username.

Password*

Confirm Password*

MOBILE APPS

MotionX-GPS

Made for



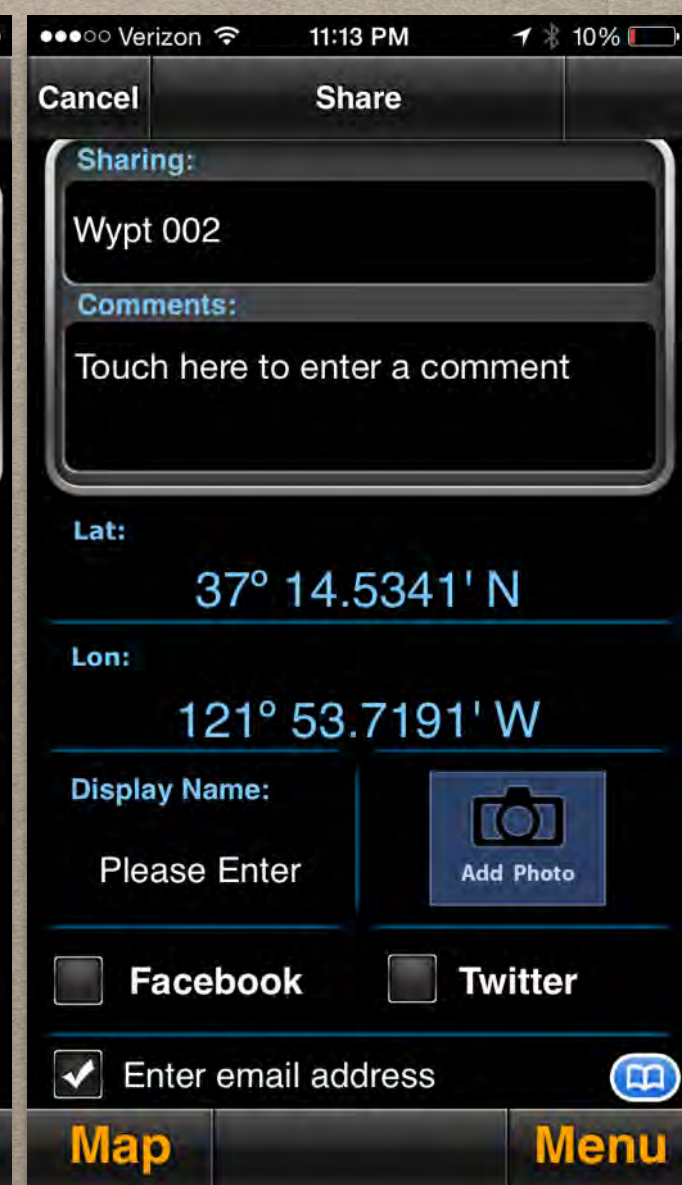
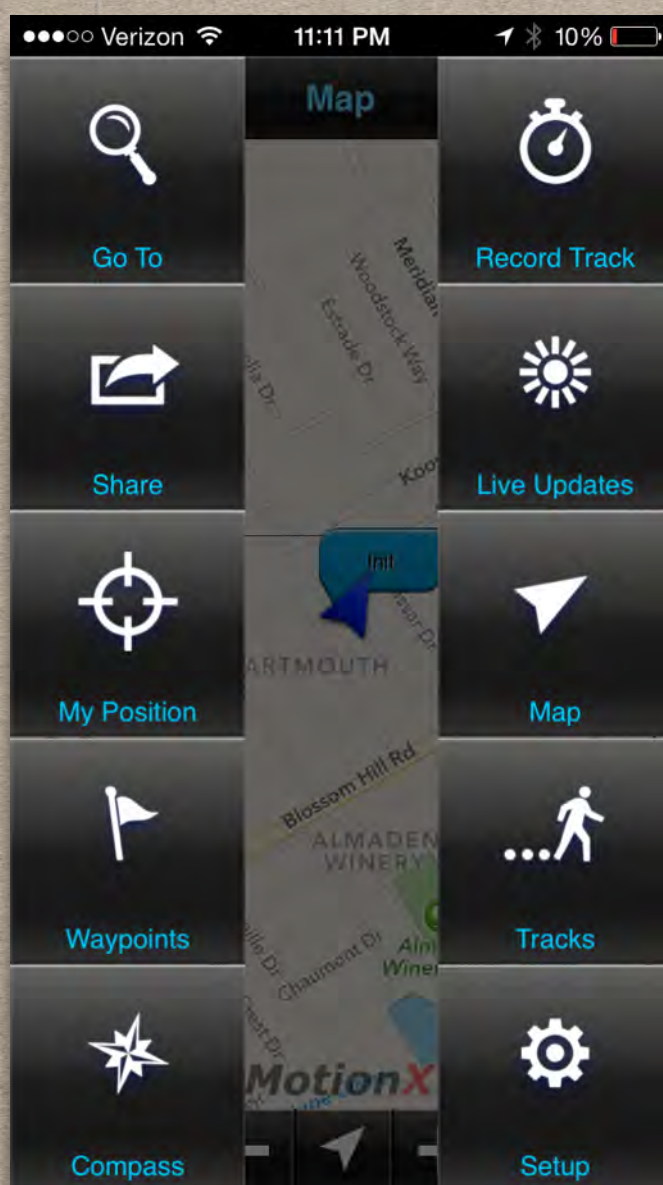
iPhone



iPad



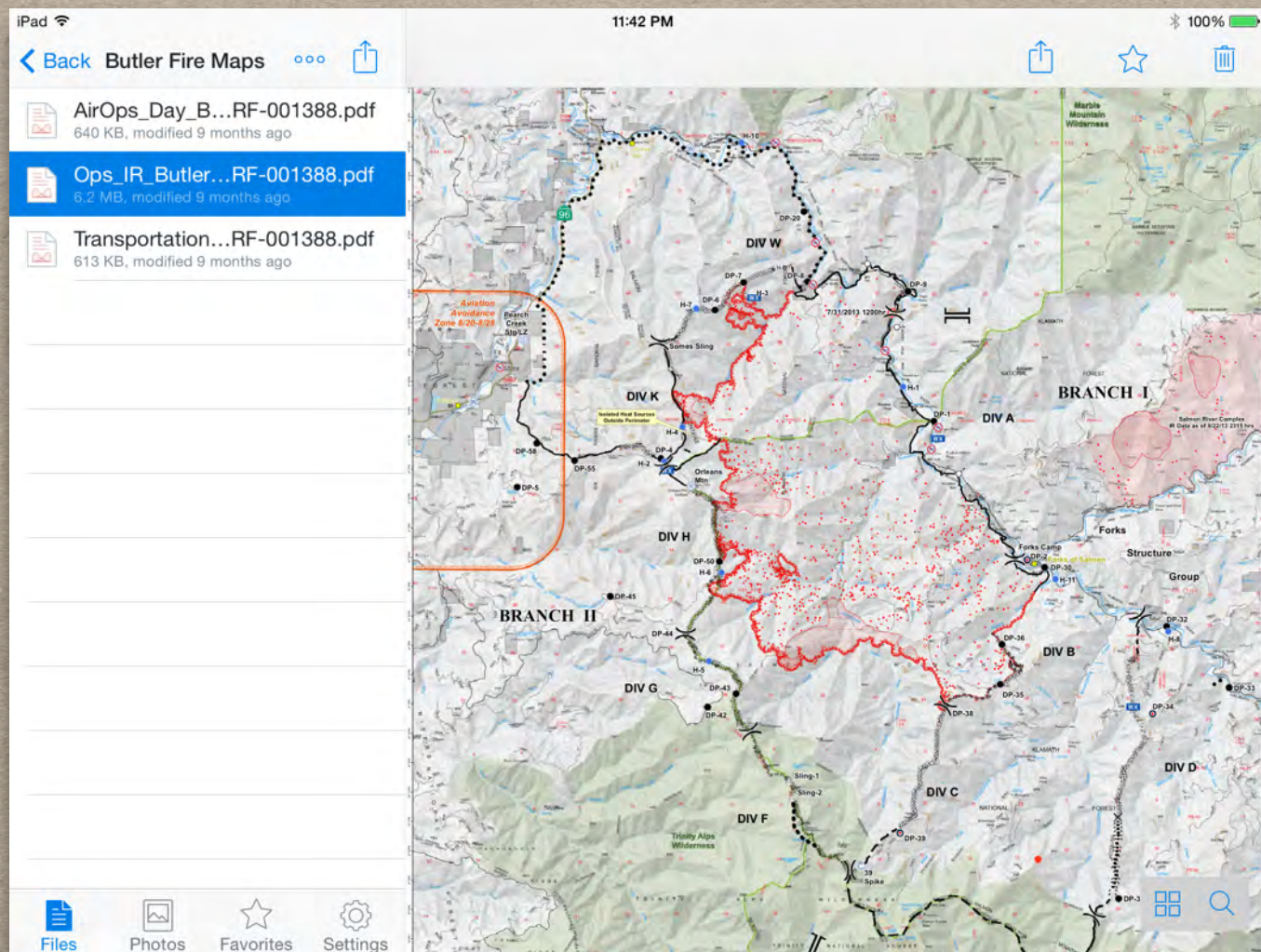
<http://gps.motionx.com>



MOBILE APPS

Dropbox

Dropbox is being used to share data such as IAP or map on an incident to mobile devices.



MORGAN INCIDENT

CA-SCU-005452



Incident Action Plan
Tuesday, September 10, 2013
Operational Period: 0700-0700 hrs.

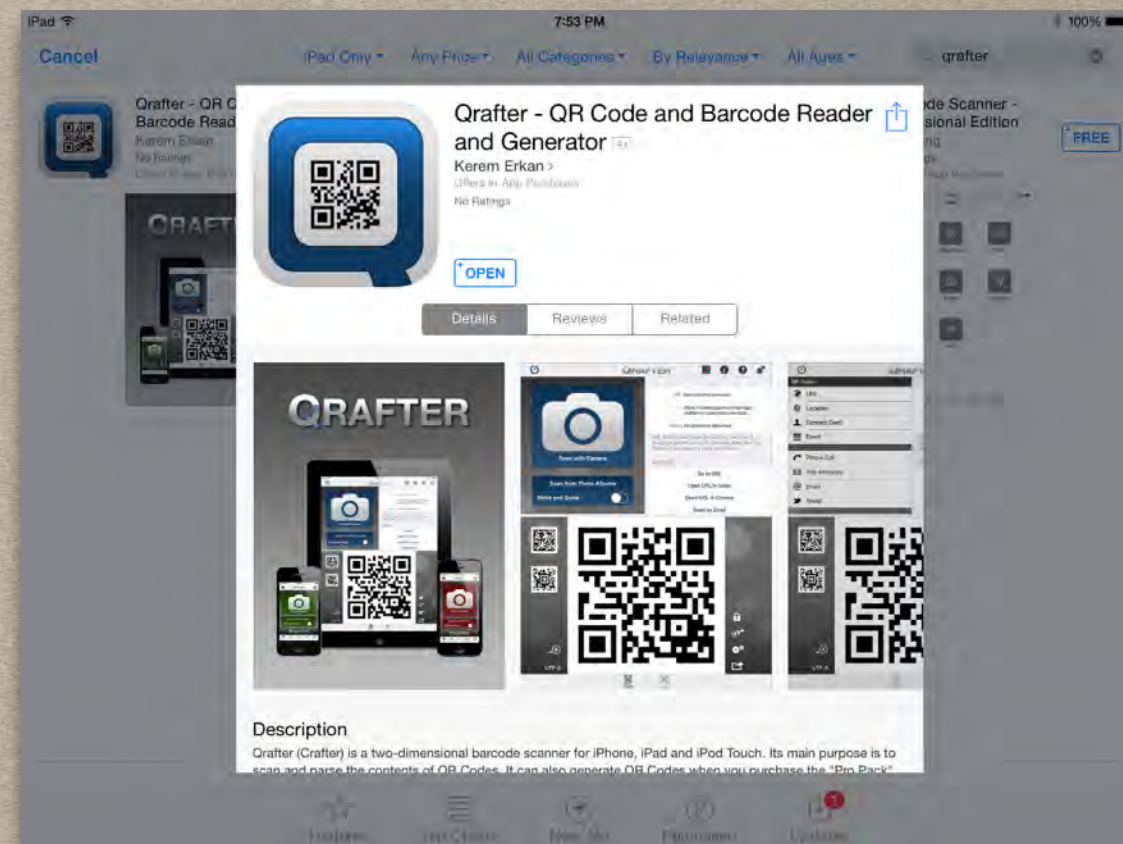
Incident Management Team 4

MOBILE APPS



QR Reader



QR Codes are being used to access maps & IAPs on incidents that might be stored on Dropbox or other cloud storage



Topographic map showing the area around Morgan Fire, including locations like Diablo, Ramona, and Ridge. The map includes coordinates ranging from 122°0.5'W to 121°56.5'W.





Morgan Fire

13CASCU005452

Perimeter as of 2000 9/10/13

Chris Ingram, 9/10/13 2124 hrs
NAD 83



1:16,000
When printed at
ARCH E 36" x 44"

MOBILE APPS

Avenza PDF Maps

Avenza displays georeferenced PDF maps and shows lat/long of selected locations. It also provides tools to measure distance and show your current GPS location.

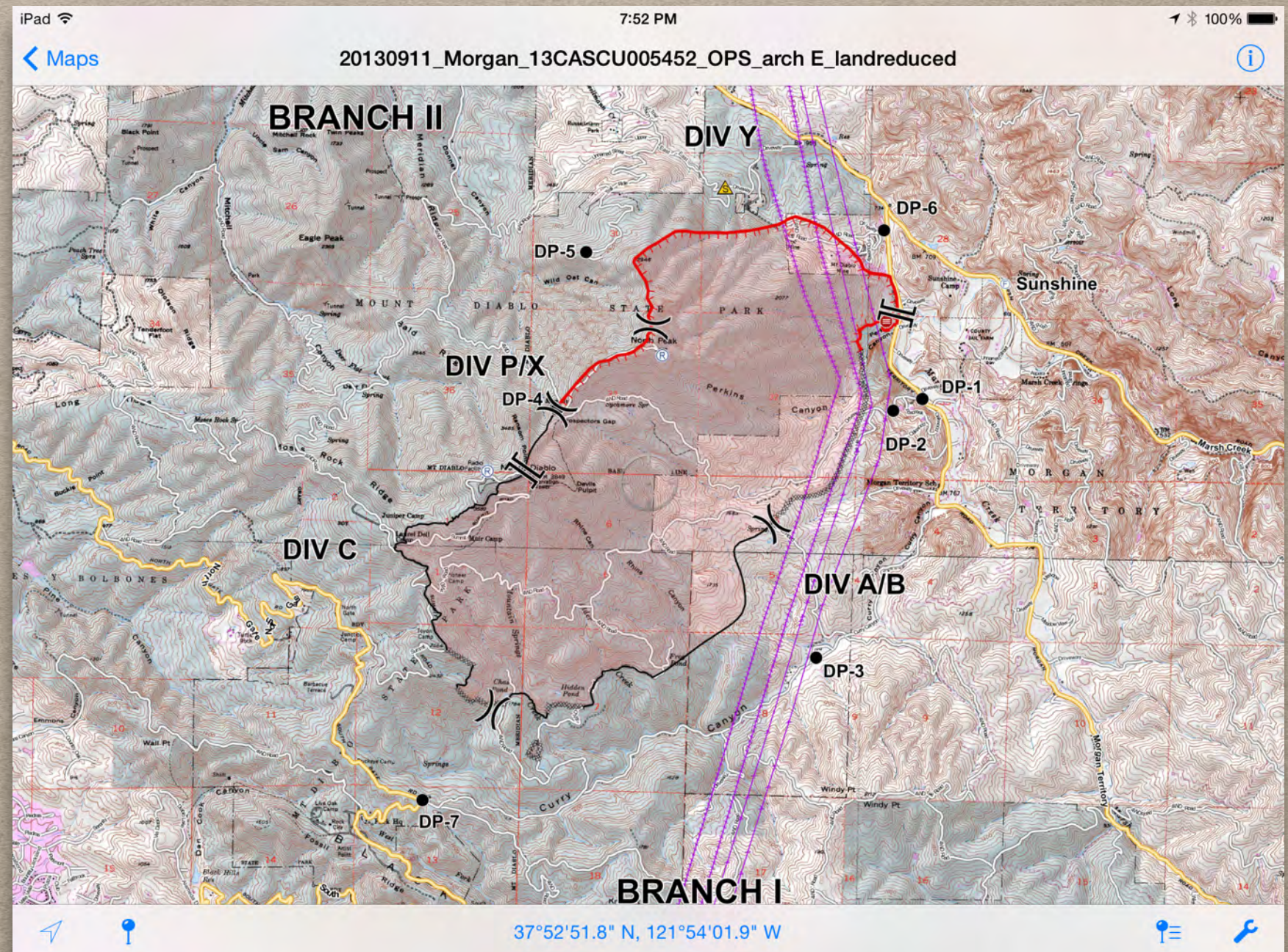


PDF Maps

Get the App. Get the Map.®

Winner of multiple awards including

- Best Map Product Worldwide in 2011
- Best Maps for Multimedia Application
- New Technology & New Media Award
- Technology Innovation Award for Mobile Mapping



MOBILE APPS

Topo Maps

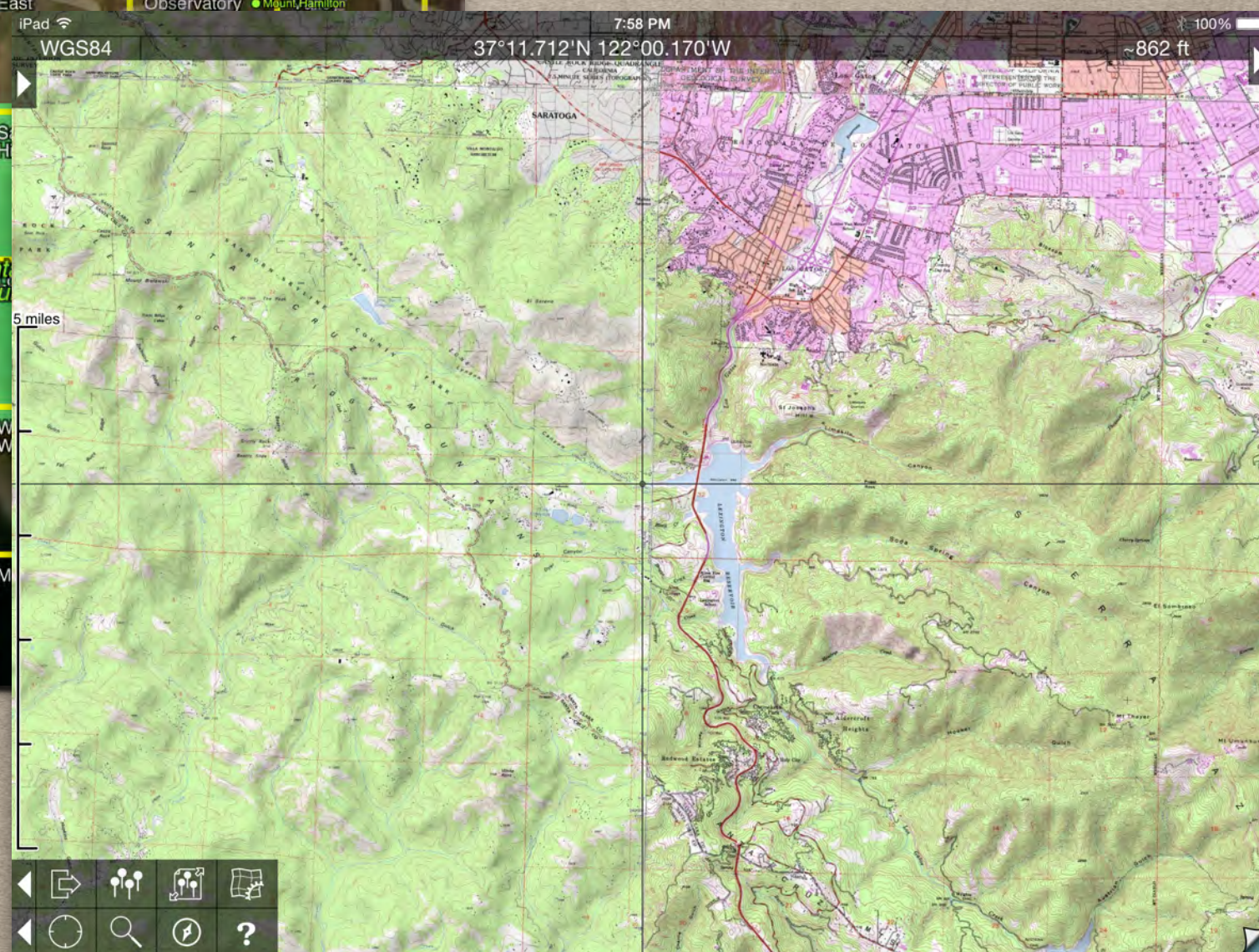
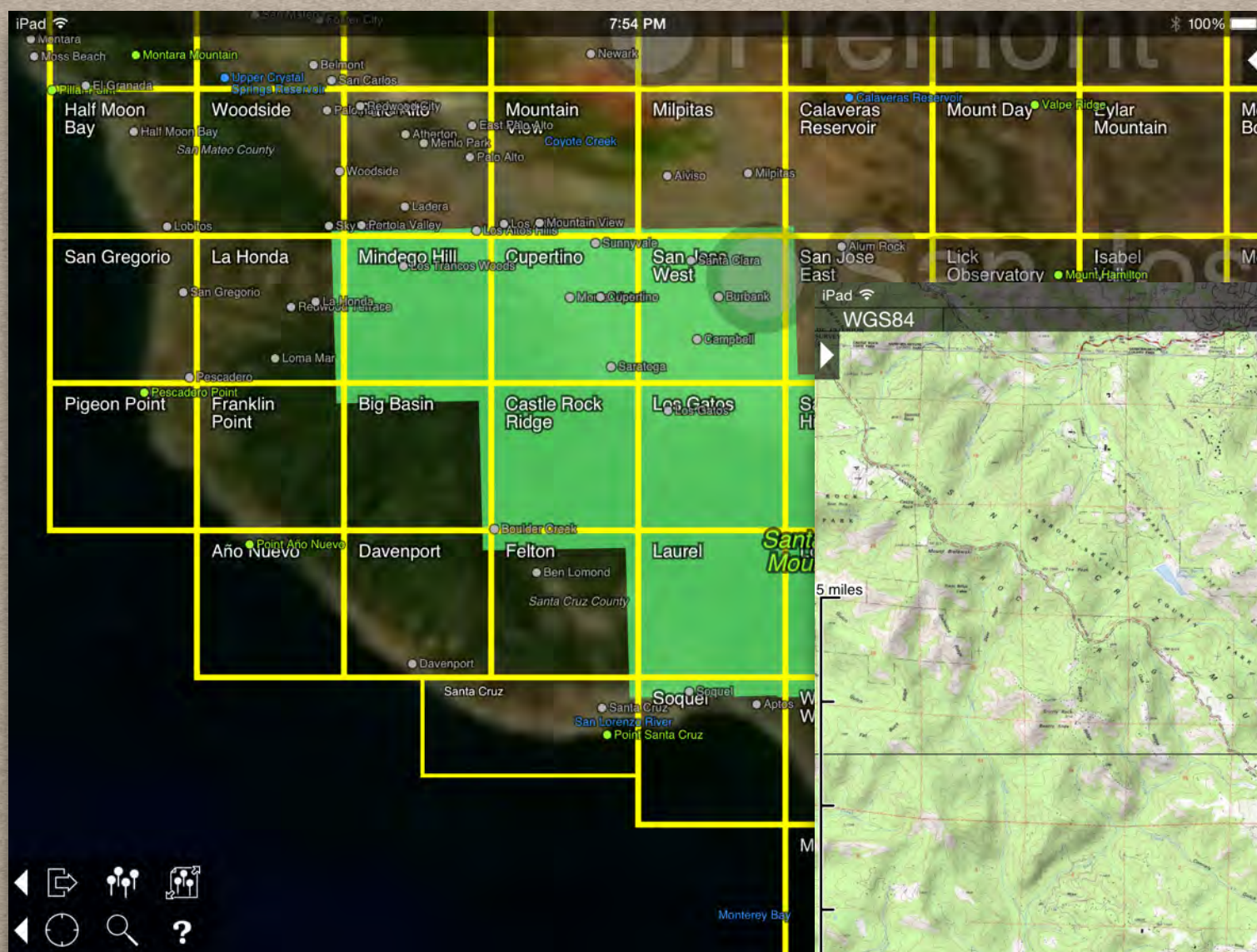
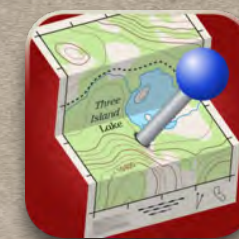
Made for



iPhone



iPad



*Pre-download topo maps
before you loose cell signal*

MOBILE APPS

Wildland Toolkit

Made for



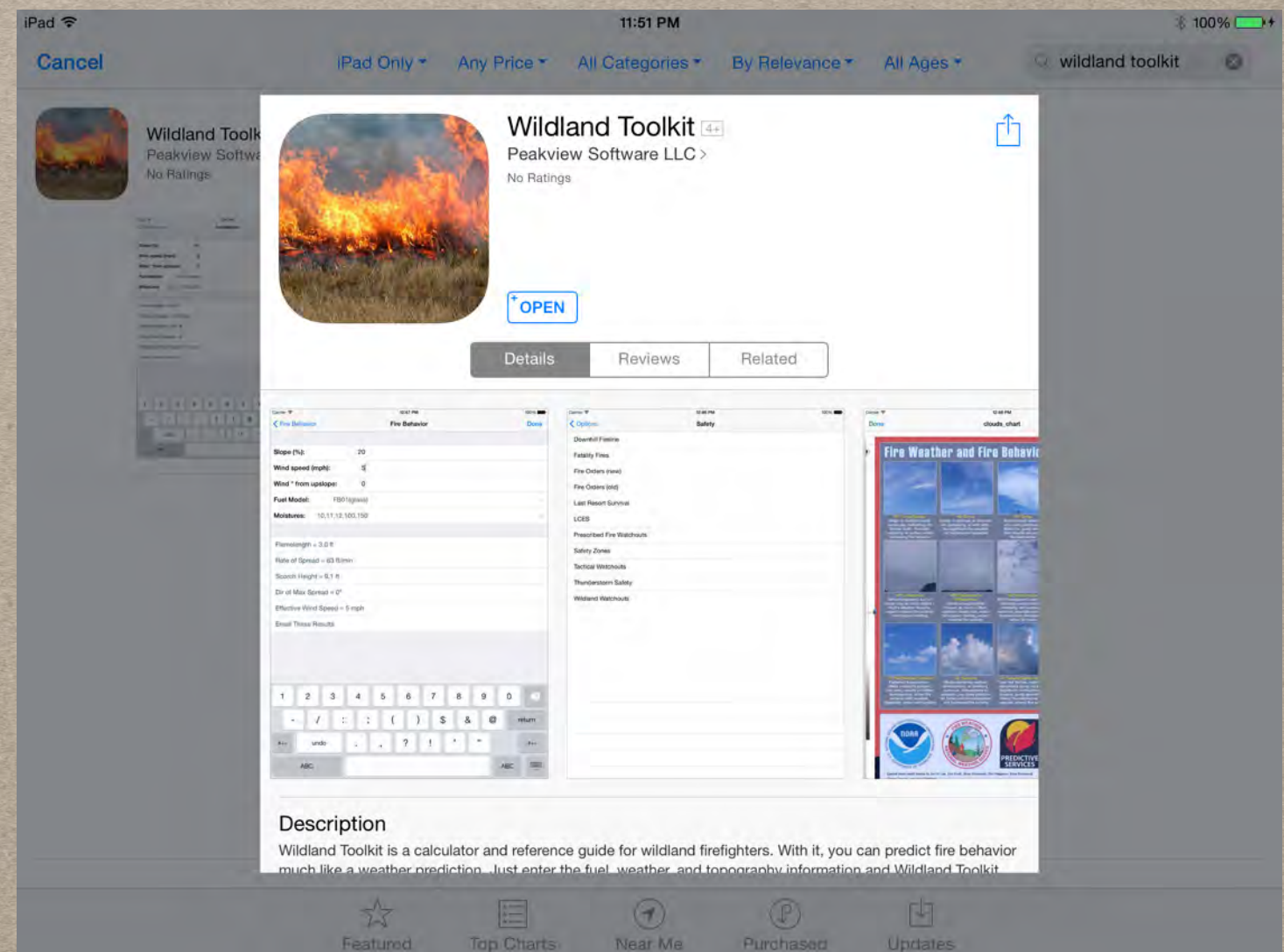
iPhone



iPad



- Fire Behavior Calcs
- Checklists
- 2014 IRPG
- Safety Info
 - Fire Orders
 - Watchouts
 - Fatality Fires
 - Downhill Fireline
- ICS Info
- Weather Resources



QUESTIONS?

chris.ingram@sccfd.org

Additional Resources:

NWCG Basic Land Navigation

NWCG Geospatial Subcommittee <http://gis.nwcg.gov/>