

Mapping a Claim

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If you have questions, you can contact me at: 775.861.6493



Questions

- Before I begin, let me say that if you need some clarification about the topic at hand, please ask and I will try to clarify things for you.
- We will have time at the end of this presentation for a question and answer session. So if you have a question, you might want to write it down and we will do our best to answer your questions at the end.

Where do we begin?

- To start with, you're out wandering around Nevada when, you kick over a rock and you make a discovery



Monument

- Next, you erect a discovery monument.



Now you need to
document where your
claim is.

Map it...

- So, now you need to create a map of the land you want to locate your claim on.

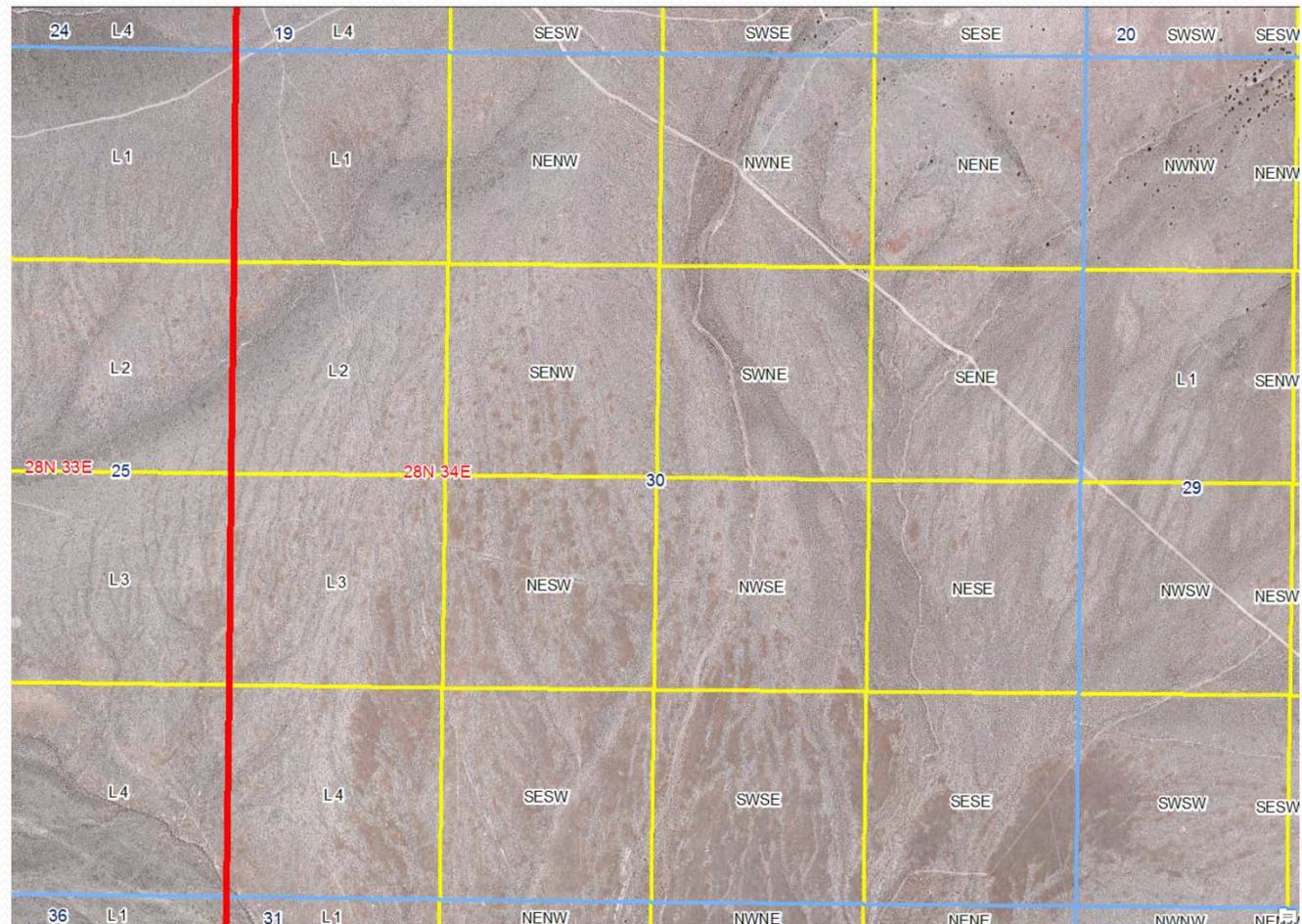


The problem is...there are no lines or labels on the ground.

- This is what you have to work with, and.....



- This is what you want to work with.
- This is the **P**ublic **L**and **S**urvey **S**ystem (PLSS)



Survey markers

Cadastral Survey

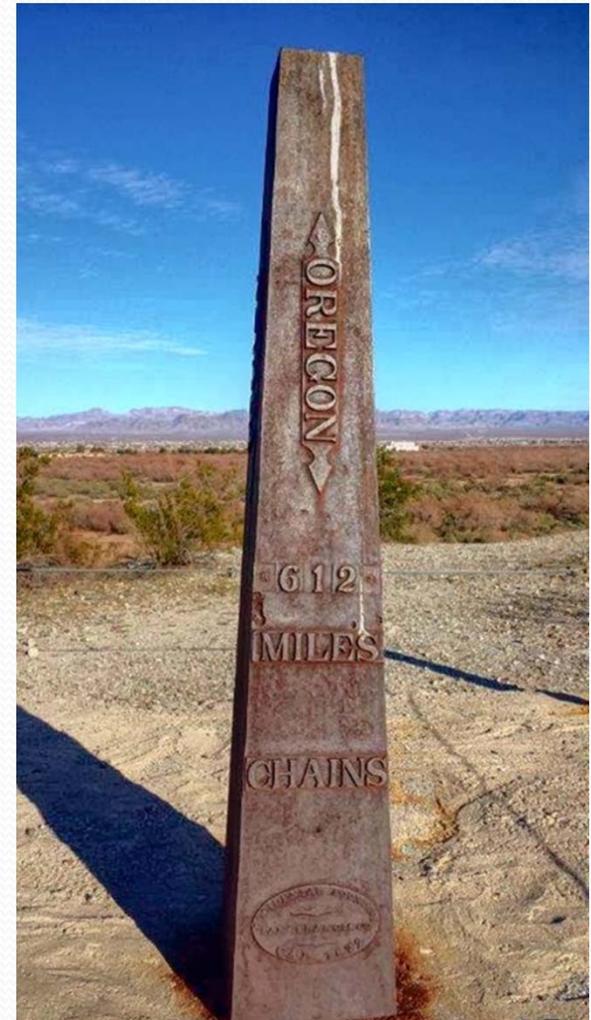
- We often talk about corner markers or brass caps.
- Wouldn't it be nice if the survey markers looked like this?



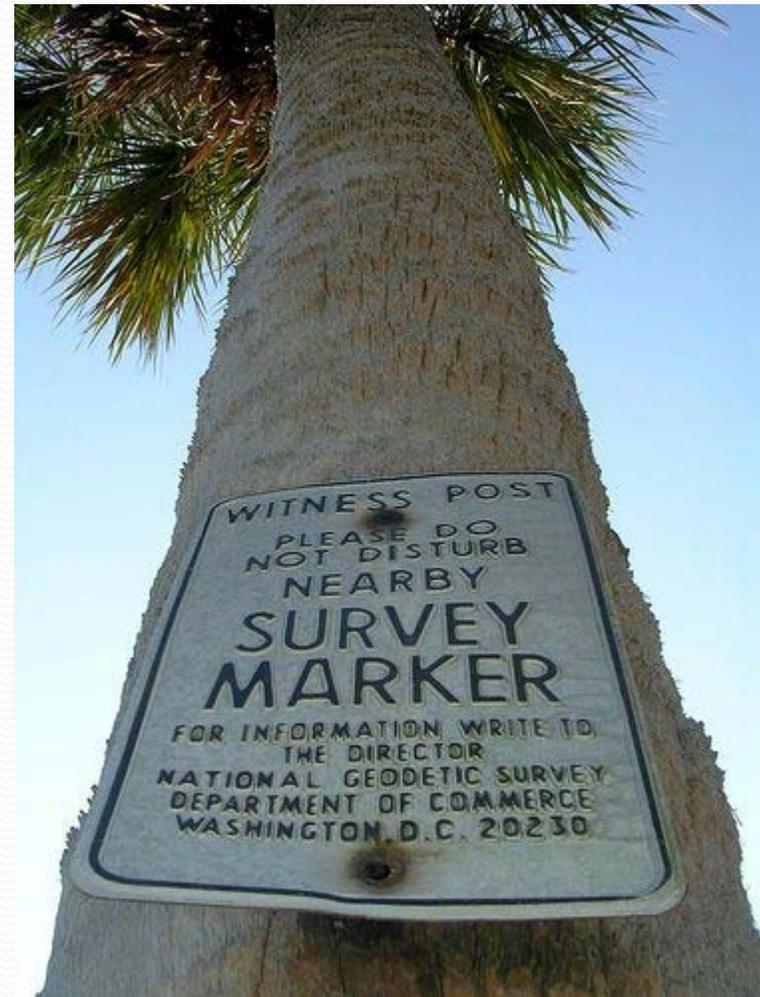
or



- Or even like these...



- Or, better yet, how about like this....



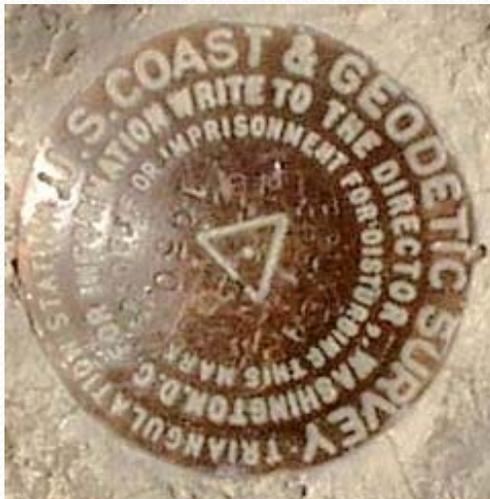
- Some are survey markers like this one for T₃₁N, R₅₈E, section 11. This survey marker was placed by the Forest Service.



- This one is a BLM survey marker for T17S, R12E, section 11

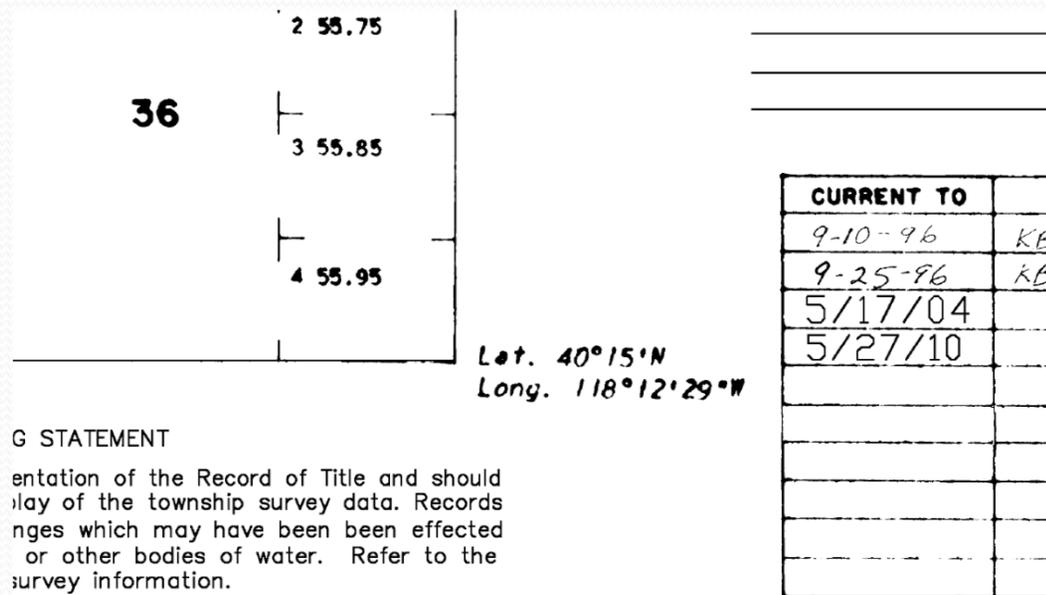


- Some are for Bench Marks.



Known Monument

- After you find the brass cap of a survey marker or bench mark, you can base the location of your claim in relation to this monument.
- Did you know that the GPS coordinates for the corner of the township can be found on the Master Title Plat?



G STATEMENT
 entation of the Record of Title and should
 lay of the township survey data. Records
 nges which may have been effected
 or other bodies of water. Refer to the
 survey information.

**How to find out where
you are.**

http://www.earthpoint.us/townships.aspx

Earth Point Tools for Google Earth [Sign In / Buy Subscription](#) [Contact](#)

Earth Point

- Home
- Sign In / Buy Subscription
- Worldwide Utilities
 - Excel To Google Earth
 - Coordinate Grids
 - Polygon Area
 - Convert Coordinates
 - Batch Convert
- USA Utilities
 - Township & Range
 - BLM Grid**
 - Search By Description
 - Search By Lat Long
 - Alternate Grid
 - California Twp & Rng
 - California Grid
 - Search By Description
 - Search By Lat Long
 - Texas Land Survey
 - Abstract Grid
 - Search By Description
 - Search By Lat Long
 - State Plane
 - Topo Map
- Boise, Idaho, USA
- Real Estate Listings
- County Assessor
 - Land Records Grid
 - Land Records Search
- Help
 - Q & A
- Other
 - Around Town
 - Forum
 - Blog
 - Press
 - About

Township and Range - Public Land Survey System on Google Earth.

A user account is recommended for the features on this web page.

This page maps the United States Public Land Survey System onto Google Earth. For more information about the land survey, Wikipedia has a good [article](#). You can read about locating parcels at [Earth Point Blog](#).

There are two data sets to choose from, "BLM" and "National Atlas".



Click for larger image.

BLM Township, Range, and Section

Displays townships, sections, and quarter-quarter sections if you zoom in close enough (most, but not all areas have quarter-quarter sections mapped). Calculates area, centroid, and corner points. You must zoom into the central or western United States to see the data.

Help: [How to install township and range.](#)

[Options...](#) (hide/show icons, labels, quarter/quarters, change colors)

[View On Google Earth](#) Enhanced feature. [What is this?](#)

You are not signed in to your account. Township and Range will display a pop-up message every ten minutes and will be deactivated after one day. For unrestricted access, please [sign in](#) or [purchase](#) a subscription. You must have Google Earth installed to use this data.

States with complete BLM coverage
Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

States with limited BLM coverage
Alabama, Arkansas, Florida, Illinois, Indiana, Kansas, Michigan, Minnesota, Mississippi, Missouri, North Dakota (central and western portions are covered), Ohio, Oklahoma, South Dakota (western portion covered)

Convert Township, Range, and Section to Latitude and Longitude
This utility has moved to another page: [Search By Description](#)

Convert Latitude and Longitude to Township and Section
This utility has moved to another page: [Search By Lat Long](#)

National Atlas Township and Range
This utility has moved to another page: [Alternate Grid](#)

Hint

Listings

essor

ords Grid

ords Search

States with limited BLM coverage
Alabama, Arkansas, Florida, Illinois, Indiana, Kansas, Michigan, Minnesota, Mississippi, Missouri, North Dakota (central and western portions are covered), Ohio, Oklahoma, South Dakota (western part is covered)

Convert Township, Range, and Section to Latitude and Longitude
This utility has moved to another page: [Search By Description](#)

Convert Latitude and Longitude to Township and Section
This utility has moved to another page: [Search By Lat Long](#)

Enter State, Meridian, Township, Range, and Section

Earth Point Tools for Google Earth [Sign In / Buy Subscription](#) [Contact](#)

Earth Point	Township and Range - Search By Description.
Home	A user account is not needed for the features on this web page.
Sign In / Buy Subscription	Enter Township and Range. Optionally enter Section. Google Earth flies you there using BLM data. Hint: pause for a moment after choosing each of the criteria. This allows the data to be loaded into the drop-down boxes.
Worldwide Utilities	State <input type="text" value="Nevada"/>
Excel To Google Earth	Principal Meridian <input type="text" value="Mount Diablo"/>
Coordinate Grids	Township <input type="text" value="028 N"/>
Polygon Area	Range <input type="text" value="034 F"/>
Convert Coordinates	Section <input type="text" value="030"/>
Batch Convert	<input type="button" value="View"/> <small>Free. User account is not needed.</small>
USA Utilities	<input type="button" value="Fly To On Google Earth"/> <small>If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click the BLM or National Atlas "View on Google Earth" button. Free. User account is not needed.</small>
Township & Range	Hint In mountainous areas it might be helpful to turn off the terrain layer in Google Earth. Otherwise, the survey grid can look distorted as it shapes itself to the earth's surface.
BLM Grid	Information: BLM Township and Range The Bureau of Land Management (BLM) cadastral survey program is responsible for the official boundary surveys for all federal agencies in the U.S. that together manage over 700 million acres. The Public Land Survey System also called the Rectangular Survey System is the foundation for many survey-based land information systems.
Search By Description	Link - http://www.geocommunicator.gov/GeoComm/Isis_home/home/index.shtml
Search By Lat Long	
Alternate Grid	
California Twp & Rng	
California Grid	
Search By Description	
Search By Lat Long	
Texas Land Survey	
Abstract Grid	
Search By Description	
Search By Lat Long	
State Plane	
Topo Map	

Click on the View button

data to be loaded into the drop down boxes.

State
Principal Meridian
Township
Range
Section

Free. User account is not needed.

If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click the BLM or National Atlas "View on Google Earth" button. Free. User account is not needed.

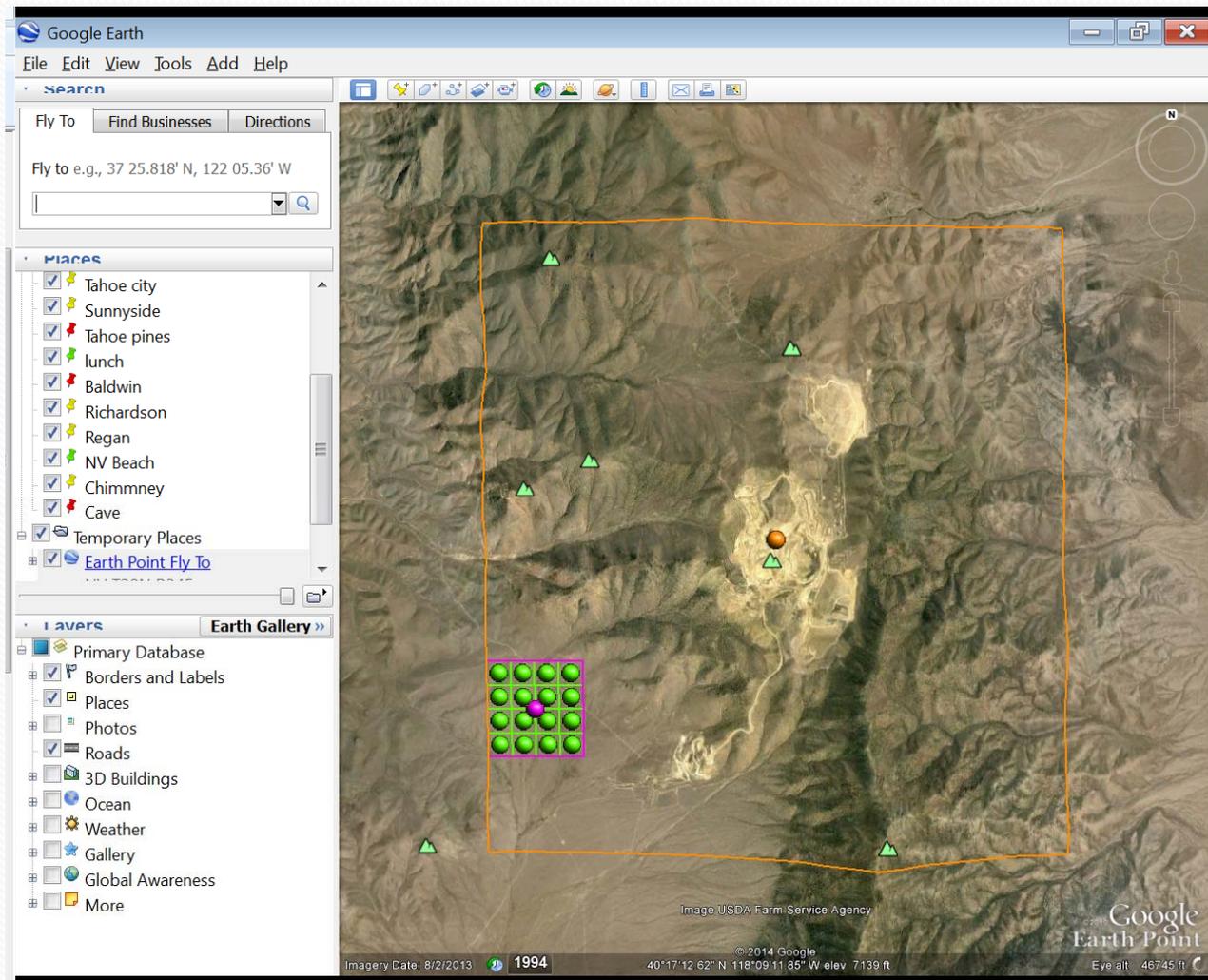
Township - BLM database	
Township	T28N R34E
Meridian	Mount Diablo
State	Nevada
Source	BLM
Calculated Values	
Acres	24,839
Centroid	40.2867156, -118.1532905
Corners	NW40.3334280, -118.2101170 NE 40.3338100, -118.0965074 SE 40.2401180, -118.0963729 SW 40.2397346, -118.2100269
For illustration only. User to verify all information. www.earthpoint.us	

Section - BLM database	
Section	S30 T28N R34E
Meridian	Mount Diablo
State	Nevada
Source	BLM
Calculated Values	
Acres	639
Centroid	40.2614298, -118.2005206
Corners	NW40.2686270, -118.2100076 NE 40.2686985, -118.1910615 SE 40.2542189, -118.1910545 SW 40.2541797, -118.2099714
Quarters	This section has 16 quarter/quarters plotted.
For illustration only. User to verify all information. www.earthpoint.us	

- If you click on the view button, you will get the GPS coordinates for each section corner.

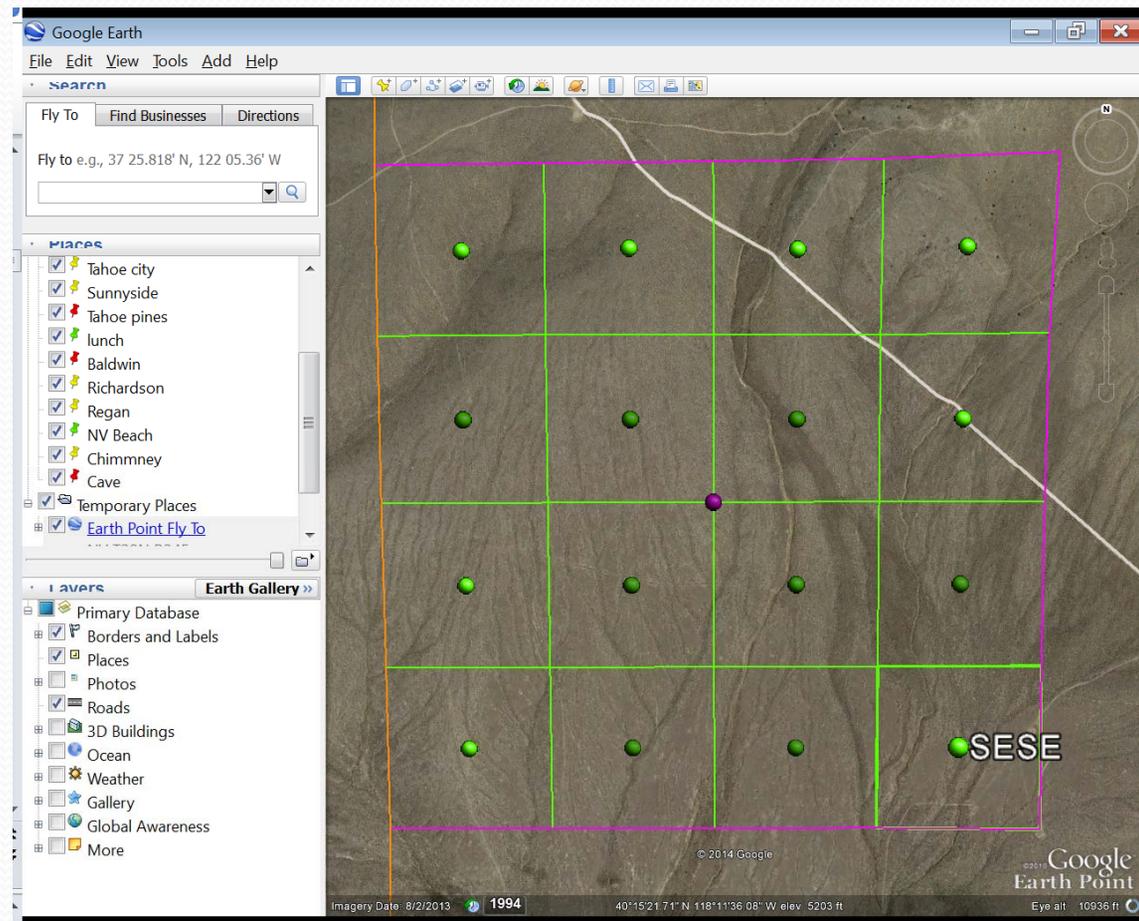
Fly to on Google Earth

- Click on the other button and you can fly to that section on Google Earth.



This shows the land down to the Quarter Quarter.

- Put your mouse on each of the dots and the labels appear. See the SESE quarter quarter.



Finding the aliquot part by GPS.

- Or you can enter the GPS coordinates.

Google Earth

File Edit View Tools Add Help

Search

Fly To Find Businesses Directions

Fly to e.g., 37 25.818' N, 122 05.36' W

Places

- Tahoe pines
- lunch
- Baldwin
- Richardson
- Regan
- NV Beach
- Chimmney
- Cave
- Temporary Places

Enter latitude and longitude. Find the corresponding township and section. The BLM database is searched first. If nothing is found then the National Atlas database is searched. Note that the National Atlas database has only townships, no sections.

Latitude Examples: 43°38'19.39"N, 43 38 19.39, 43.6387194

Longitude Examples: 116°14'28.86"W, 116 14 28.86, -116.2413513

Free. User account is not needed.

If you want to see the surrounding townships, then once you have clicked the "Fly To" button, come back and click the BLM or National Atlas "View on Google Earth" button. Free. User account is not needed.

Hint

In mountainous areas it might be helpful to turn off the terrain layer in Google Earth. Otherwise, the survey grid can look distorted as it shapes itself to the earth's surface.

© 2014 Google

1994 40°15'18.09" N 118°11'29.57" W elev. 5205 ft Eye alt 10508 ft

Google Earth Point

Aliquot part???

So, what is an aliquot part???



- Probably the most common question our customers ask is, “what is an aliquot part.”
- So, before we move forward, lets take a few minutes and discuss what an aliquot part is.

al·i·quot

- Definition of *aliquot* in English: aliquot
Syllabification: al·i·quot
Pronunciation: /'alɪkwət /
- Aliquot Synonyms:
 - aliquot part, fractional.
- Equal fractions of a whole.
(halves, quarters, eighths, etc.)

Aliquot part—The standard subdivisions of a section, such as a half section, quarter section, or quarter-quarter section.

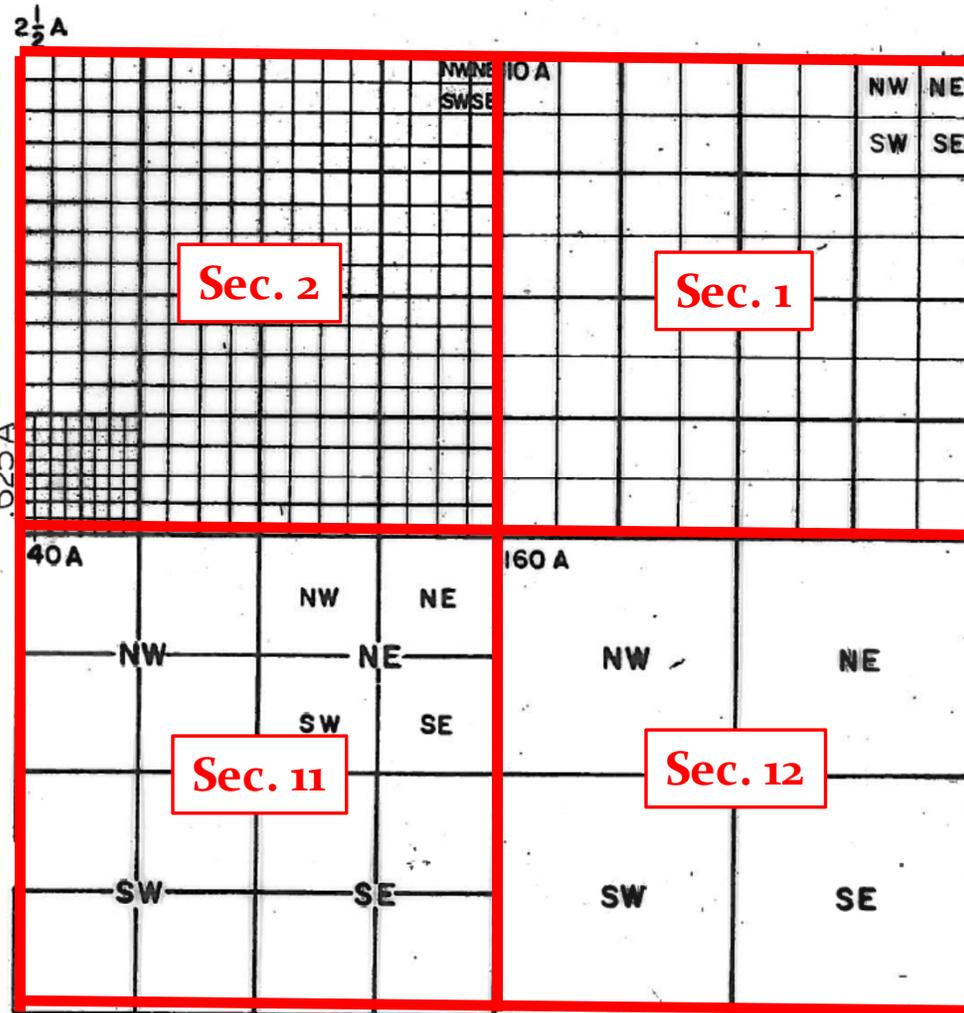
- Aliquot part, in the [Public Land Survey System](#), a subdivision of a section based upon an even division.

	dimensions		area			notes
	(miles)	(mile ²)	(acres)	(m ²)	(km ²)	
Quadrangle	24 by 24	576	368,640		1,492	Usually 16 townships
Township	6 by 6	36	23,040		93	Usually 36 sections
Section	1 by 1	1	640		2.6	
Half-section	1 by 1/2	1/2	320	1,294,994	1.3	
Quarter-section	1/2 by 1/2	1/4	160	647,497		
Half of quarter-section	1/2 by 1/4	1/8	80	323,749		
Quarter of quarter-section	1/4 by 1/4	1/16	40	161,874		



When all goes well...and the
survey comes out the way it
was intended.

4 ADJOINING SECTIONS — 30 CHN'S

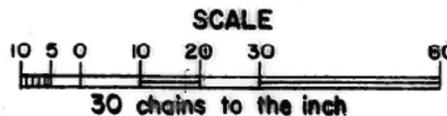


This section is divided into 256 quarter quarter quarters of 2.5 acres each.

This section is divided into 64 quarter quarter quarters of 10 acres each.

This section is divided into 16 quarter quarters of 40 acres each.

This section is divided into 4 quarters of 160 acres each.





When things don't work out the way they were intended to be...and the survey isn't what we expected.

Fractional townships.

When the fractional township
fills in from the west
to the east.

NW sec 6	NE	NW sec 5
SW	SE	SW
NW sec 7	NE	NW sec 8
SW	SE	SW
NW sec 18	NE	NW sec 17
SW	SE	SW

When the fractional township
fills in from the east
to the west.

NE sec 2	NW	NE sec 1
SE	SW	SE
NE sec 11	NW	NE sec 12
SE	SW	SE
NE sec 14	NW	NE sec 13
SE	SW	SE

Fractional townships.

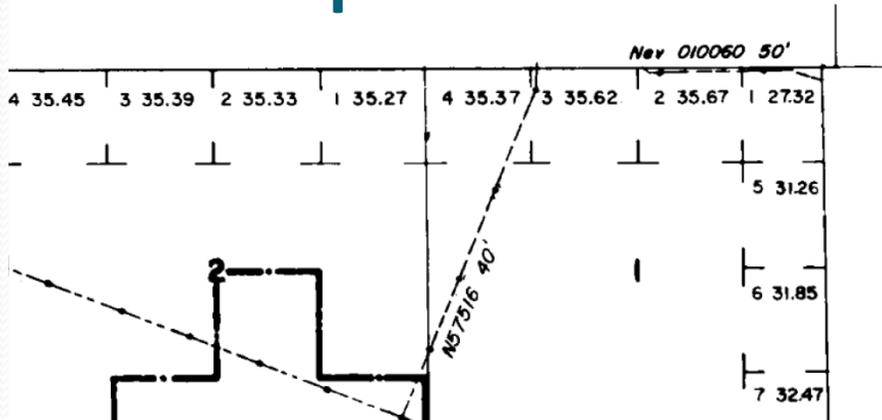
When the fractional township fills in from the north to the south.

NW	NE	NW	NE	NW	NE
sec 3		sec 2		sec 1	
SW	SE	SW	SE	SW	SE
NW	sec 10	NE	NW	sec 11	NE
				NW	sec 12
					NE

SW	sec 27	SE	SW	sec 26	SE	SW	sec 25	SE
NW	NE	NW	NE	NW	NE	NW	NE	
sec 34			sec 35			sec 36		
SW	SE	SW	SE	SW	SE	SW	SE	

When the fractional township fills in from the south to the north.

Aliquot vs. Lots



STATUS OF PUBLIC DOMA
LAND AND MINERAL TITL

MT PLAT

INDEX TO SEGREGATED TRACTS				
RESURVEY	ORIGINAL SURVEY			
TRACT NO	T	R	SEC	SUBDIVISI

- Government lot**—A subpart of a section which is not described as an aliquot part of the section, but which is designated by number, for example, Lot 3. A lot may be regular or irregular in shape, and its acreage may vary from that of regular aliquot parts. These lots frequently border water areas excluded from the PLSS.

**How does our office
adjudicate the location of
your claim.**

History/Background

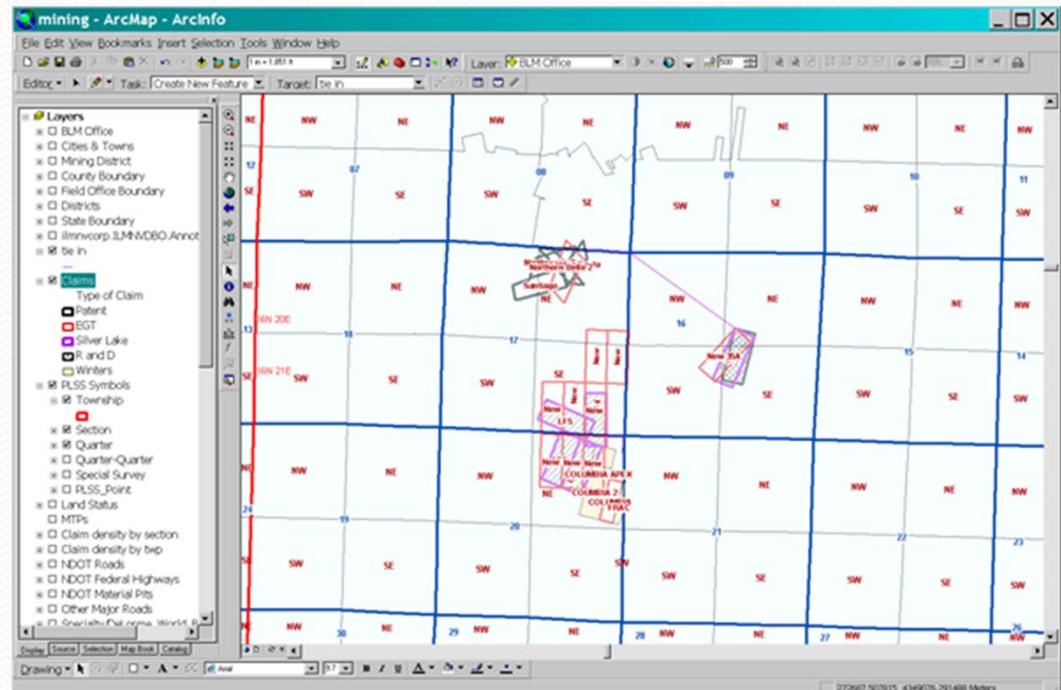
In the past our office was forced to determine your claim location with a ruler, protractor and a Master Title Plat (MTP).



About 7 years ago I bumped into the GIS specialist in our office and he showed me how we could plot mining claims.



- Since that time we have refined our process and identified where, when and how; we should tap into this resource.



Let's begin with the regulations:

have you asked?

- ❖ What is required?????
- ❖ Do I need to hire a professional surveyor?
- ❖ Do I need to file a map for every claim?
- ❖ Why are tie in points such a big deal?
- ❖ What alternatives do I have for tie points?
- ❖ Do I have to use the section corner as a tie point?
- ❖ Are GPS coordinates acceptable?



❖ **What is required?????**

✓ Answers to most of your questions can be found at 43 CFR 3832.12.

❖ **Do I need to hire a professional surveyor?**

✓ No, see 43 CFR 3832.12(a)(2)(iv)

❖ **Do I need to file a map for every claim?**

✓ No, under certain circumstances, a narrative is all you need.

❖ **Why are tie in points such a big deal?**

✓ Before we can find your claim we need some place to start.

❖ **What alternatives do I have for tie points?**

✓ There are a number of alternatives. We will address each in this workshop.

❖ **Do I have to use the section corner as a tie point?**

✓ No, although the PLSS is the most common tie, the regulations provide alternatives.

❖ **Are GPS coordinates acceptable?**

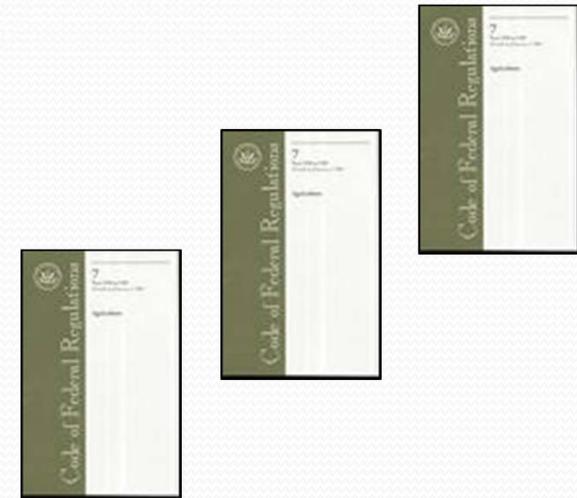
✓ Yes, but you need to make sure they are accurate. And remember, you will need more than just a GPS coordinate.

❖ **What what if I can't find a brass cap?**

✓ The cadastral survey is marked in the field with brass caps. If you can't find one, the township may be unsurveyed. You may decide to use an alternative.

3 steps to success.

1. You must file either:
 - A topographical map,
 - A narrative, or
 - A sketch.
2. Tying the description to a known monument.
3. Accurately enough for BLM to find your claim on the ground.



If your filings provide these 3 things, your location should meet all the requirements.

Title 43: Public Lands: Interior PART 3832 LOCATING MINING CLAIMS OR SITES Subpart A

- “or”
- (A) A topographical map published by the U.S. Geological Survey with a depiction of the claim or site; or
 - (B) A narrative or sketch describing the claim or site and **tying** the description to a natural object, permanent monument or topographic, hydrographic, or man-made feature.
- “and”
- (ii) You must show on a map or sketch the boundaries **and position** of the individual claim or site by aliquot part within the quarter section **accurately enough** for BLM to identify the mining claims or sites on the ground.

43 CFR 3832.12(a)(2)

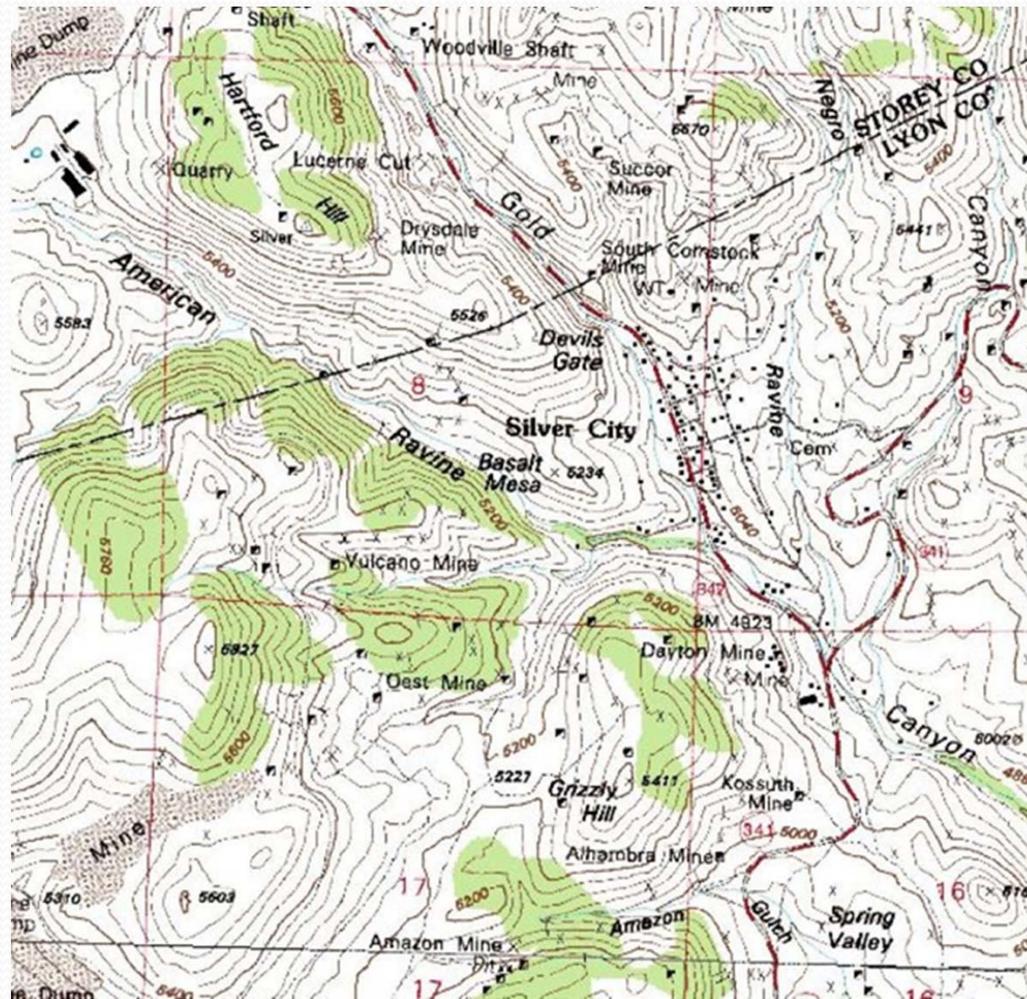
Topo maps...

Ok, so the regulations tell us that we can use: USGS

- ***A topo map.***

The regulations tell us you can use a Topo map published by the U.S. Geological Survey.

43 CFR 3832.12(a)(2)(i)(A)



Narratives...

Also, the regulations tell us that we can use a narrative.

Metes and Bounds...

Caution, remember what your commas mean in an aliquot part description.

Use of the comma = "and the"

No comma = "of the"

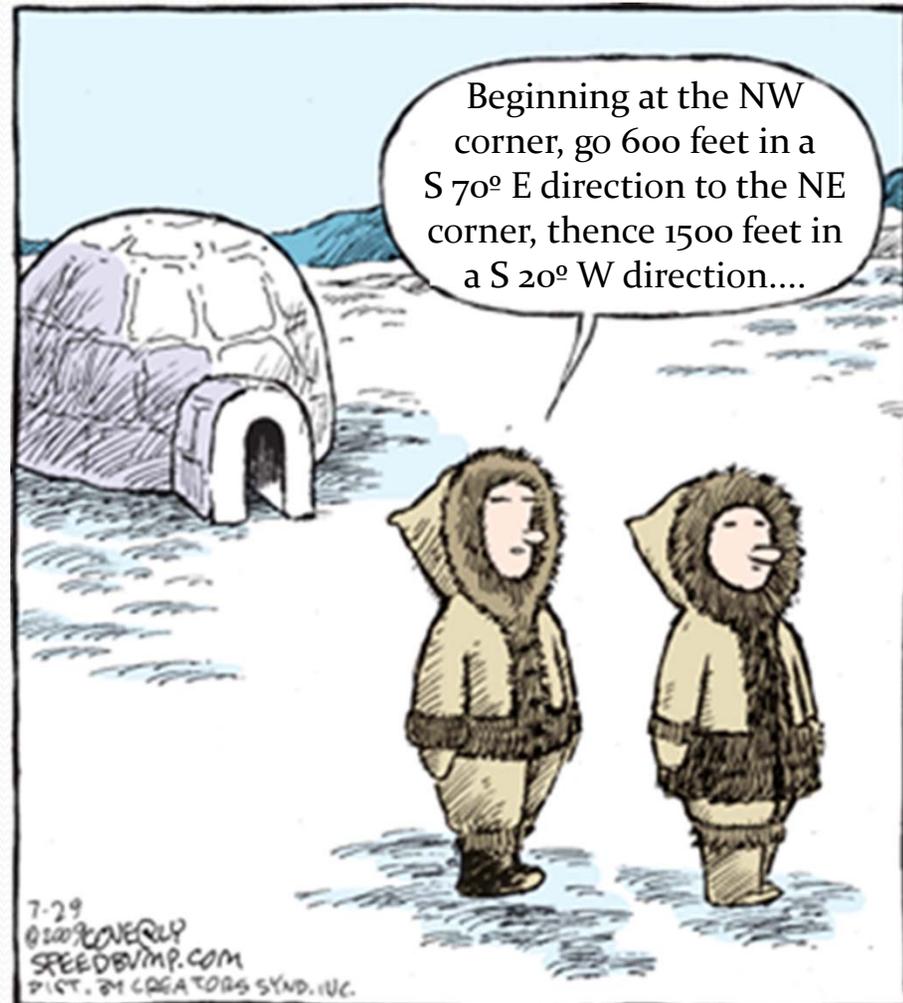
"SW_{1/4}NW_{1/4}" is read as...

SW_{1/4} of the NW_{1/4} = 40 ACS

"SW_{1/4}, NW_{1/4}" is read as...

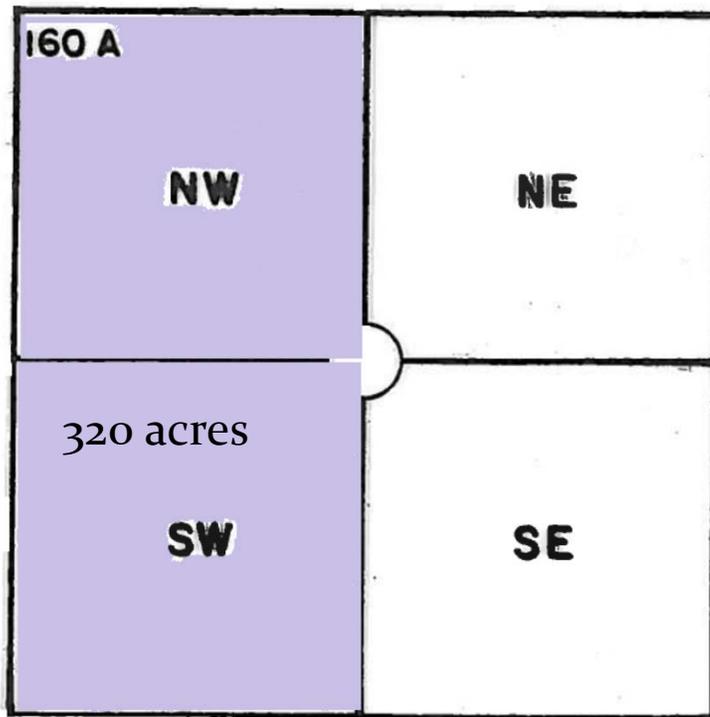
SW_{1/4} and the NW_{1/4} = 320 ACS

43 CFR 3832.12(a)(2)(i)(B)

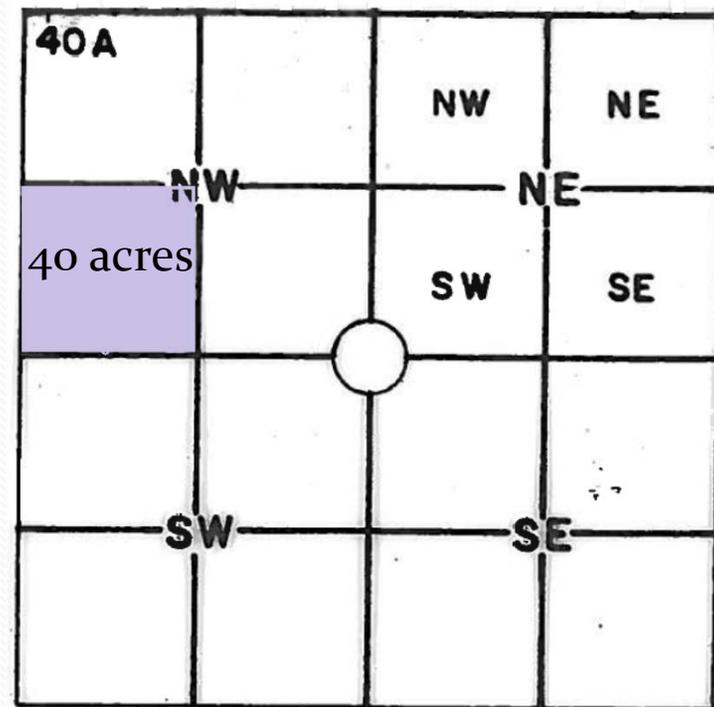


Quick aliquot part review...

The SW and the NW
SW_{1/4}, NW_{1/4}



The SW of the NW
SW_{1/4}NW_{1/4}



Metes and Bounds: (note: this is after providing a tie in to the Northwest corner of the claim.)

Commonly used
with lode claims

- Beginning at the Northwest corner,
 - go 600 feet in a S 70° E direction to the Northeast corner,
 - thence 1500 feet in a S 20° W direction to the Southeast corner,
 - thence 600 feet in a N 70° W direction to the Southwest corner,
 - thence 1500 feet in a N 20° E direction to the Northwest corner and point of beginning.



The history behind the metes and bounds description.

In the early days of the 13 colonies, they would use metes and bounds to describe a piece of land. It would be something like this:



Beginning at Jacobs barn, thence 80 paces east to a mound of stones marked with NE for the Northeast corner, thence south 80 paces to NE corner of Wyatt's fence, thence 80 paces west...and so forth.



This should paint a picture in your mind as to what a metes and bounds description is.

Aliquot part:

Mount Diablo Meridian, Nevada

T. 32 N., R. 34 E.,

sec. 5, S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$.

(20 acres) and (10 acres)

Commonly used
with placer claims

If you locate a placer claim, this is why you need to know aliquot parts.

43 CFR 3832.12

*(c) Placer claims. (1) You **must describe placer claims by aliquot part** and complete lots using the U.S. Public Land Survey System and its rectangular subdivisions except when placer claims are—*

(i) On unsurveyed Federal lands;

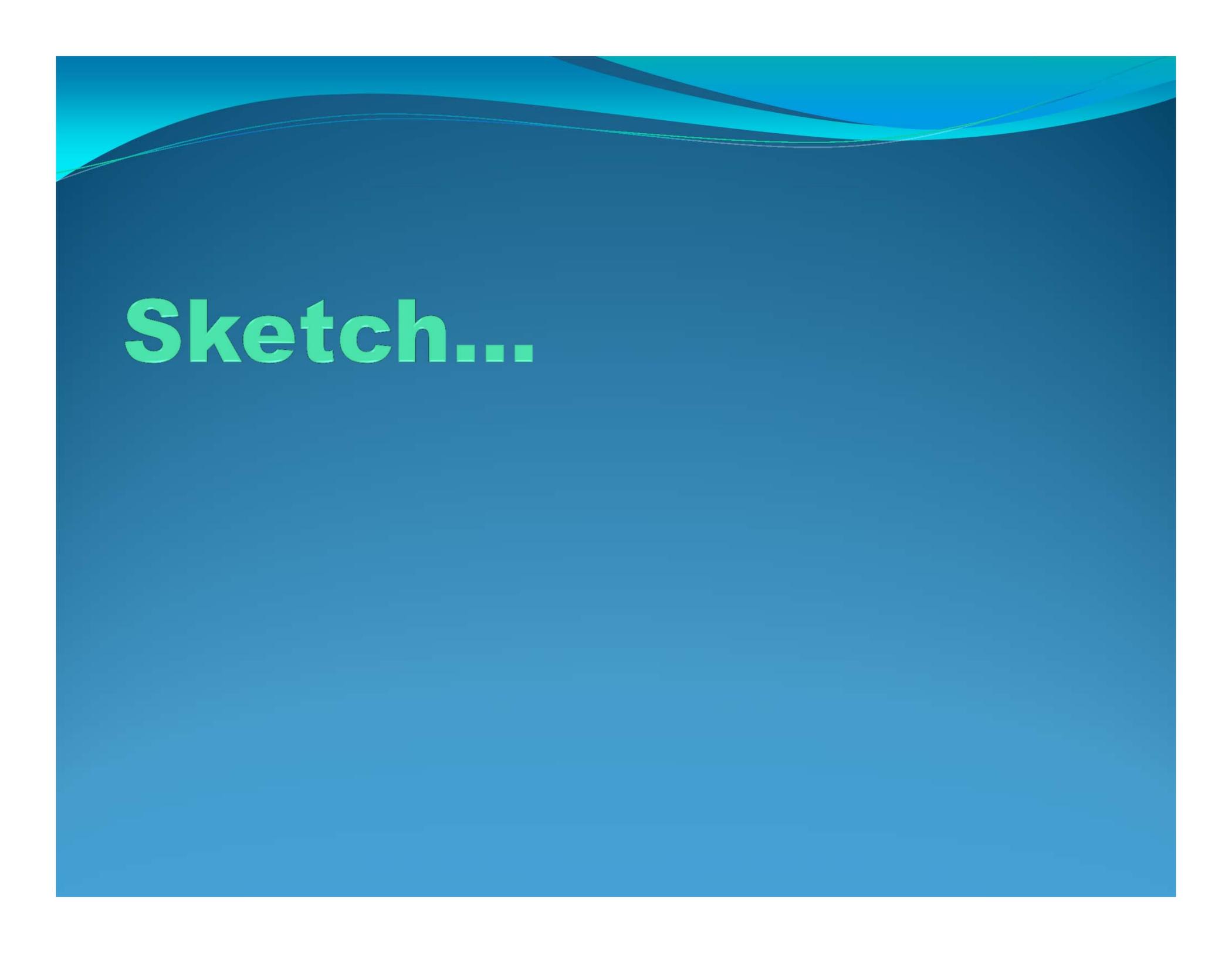
(ii) Gulch or bench placer claims; or

(iii) Bounded by other mining claims or nonmineral lands.



What about Sites??

- **Millsites...** maximum size of 5 acres located on non mineral lands. Can be located by either metes and bounds or aliquot part. This means you can locate a millsite as you would a lode or placer claim.
- **Tunnel sites...** maximum of 3000 feet. You need to provide the location of each end of the tunnel. Note...tunnel sites are a prospecting method, not a claim. Tunnel sites are used to find minerals underground. When you find the vein, you then need to file a lode claim. In theory, you should be able to file up to 5 lode claims on either side of the tunnel (5 claims 600 feet wide = 3000 feet).

The image features a blue gradient background. The top edge is wavy, with a lighter blue area at the very top that transitions into a darker blue. The word "Sketch..." is written in a light blue, sans-serif font on the left side of the image.

Sketch...

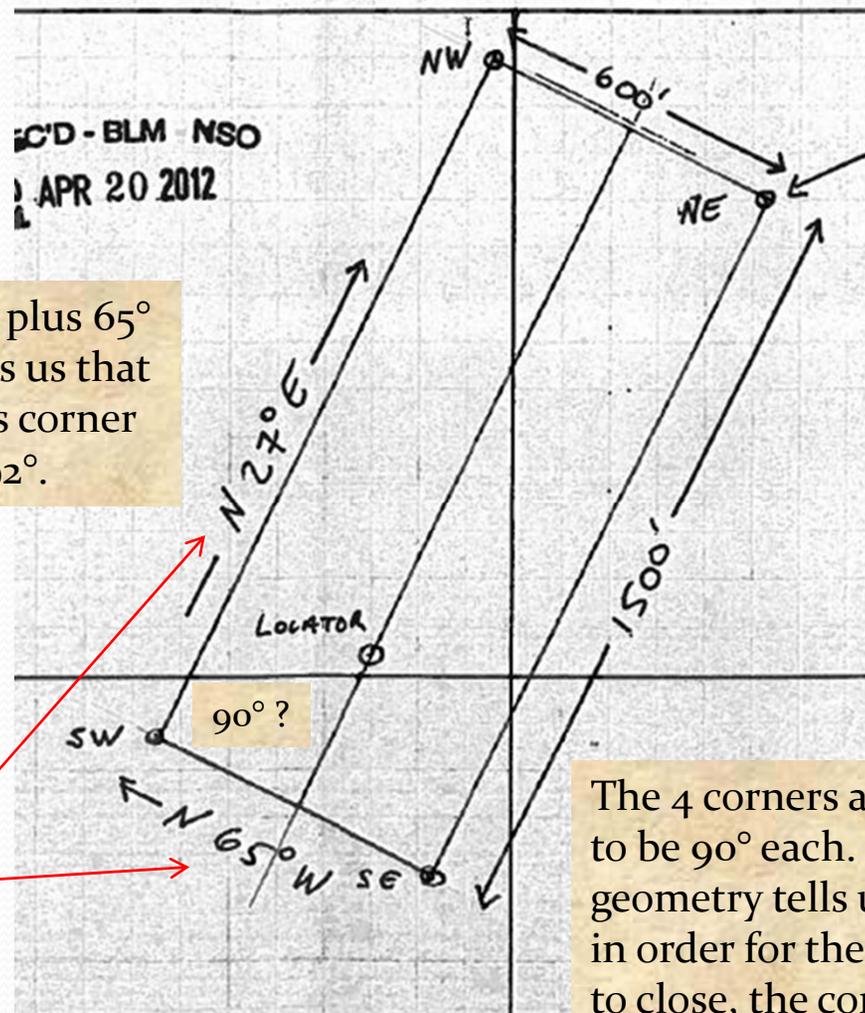
The regulations tell us that we can use:

- *A sketch.*

Don't forget to include the position of the claim, ie. what angle is it positioned in, what is the orientation of the claim.

43 CFR 3832.12(a)(2)(i)(B)

Position of the claim



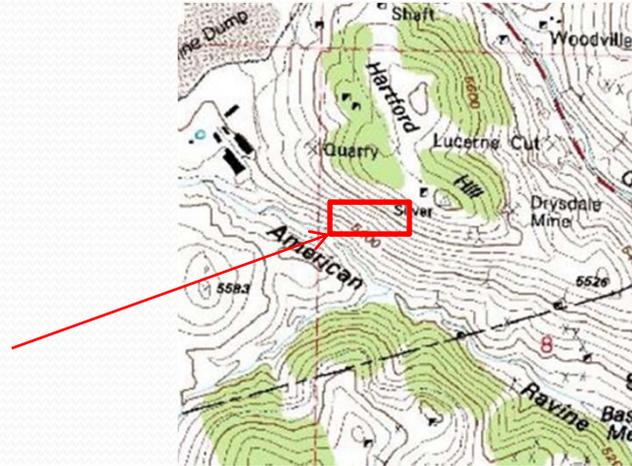
27° plus 65° tells us that this corner is 92°.

The 4 corners appear to be 90° each. Basic geometry tells us that in order for the shape to close, the corners should add up to 360°

Tie in data...

Note; you will need a tie in for the following:

- *A narrative*
- *A sketch*



Often, when using a topo, people will use a benchmark for a tie in.

Why don't you need a tie in with a Topo map?

A tie in is always preferred, for example, you can tie in to a Bench Mark on a Topo. However, when you sketch your claim on a topo map, you automatically indicate a topographical tie in feature. The difficult part is depicting the claim **to scale** correctly.

43 CFR 3832.12(a)(2)(i)(B)

Lets talk about tie in points,

- It is critical that you provide a starting point.
- In order to find your claim on the ground, we need to know where to begin.
- The most commonly used tie in is the Public Land Survey System (PLSS). Since you need to indicate what quarter section your claim is in, this information should be right in front of you.
- However, the regulations provide a number of other tie in options.

43 CFR 3832.12(a)(2)(i)(B)

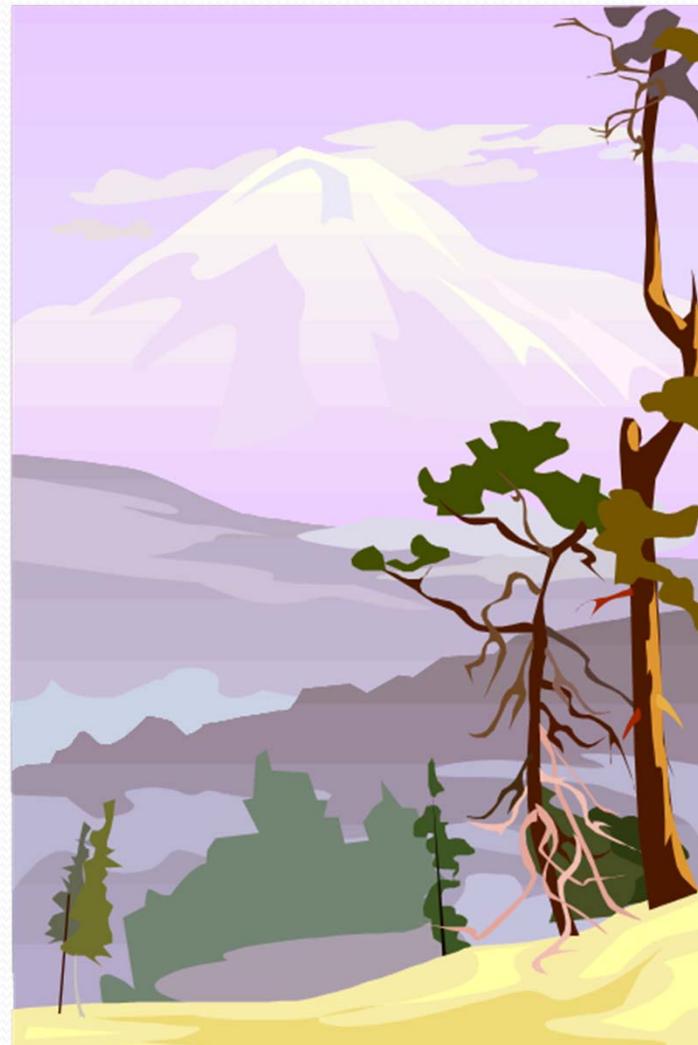


A natural object:

- *An object occurring naturally; not made by man.*

Of course, it wouldn't be prudent to use something like a tree as your tie in. The tree could be cut down and I don't think the tree's location could be found on a map.

43 CFR 3832.12(a)(2)(i)(B)



A permanent monument:

- *A monument of a lasting character for marking a mining claim; it may be a mountain, hill, or ridge.*

Mountain peaks are often recorded on topo maps.

Caution: when using something like a ridge, you will need to identify a point on the ridge.

43 CFR 3832.12(a)(2)(i)(B)



A hydrographic feature:

- *The map representation of the surface water features of the landscape.*

Caution: when using something like a river, you will need to identify a point on the river. Also, rivers can change course from time to time.

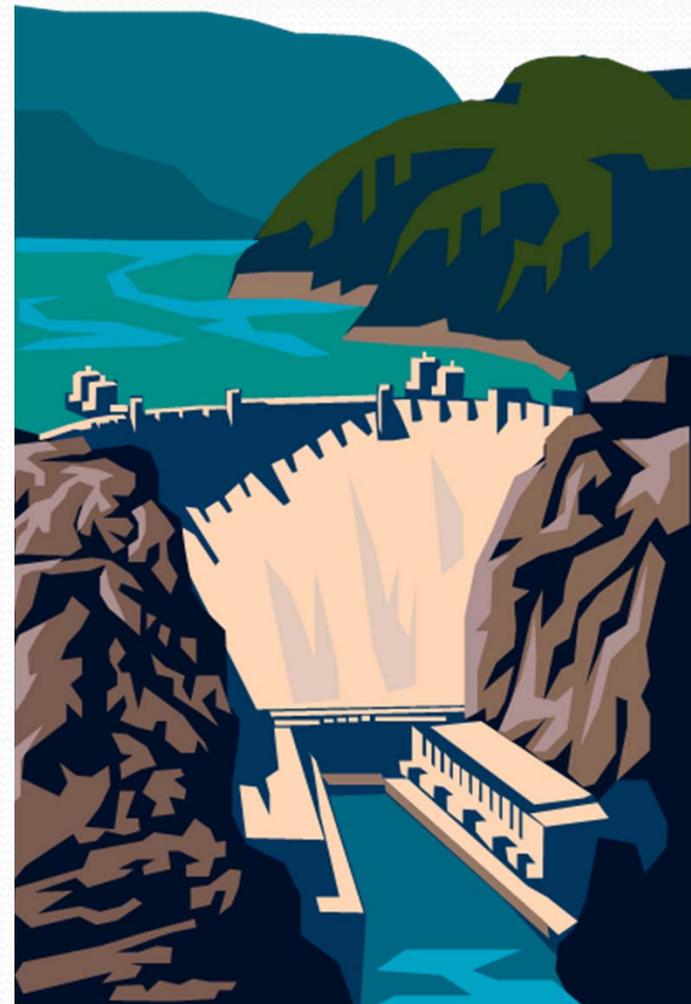


A man-made feature:

- *All features created by man.*

Caution: when using something like a highway, you will need to identify a point on the highway.

43 CFR 3832.12(a)(2)(i)(B)



Are GPS coordinates acceptable tie in points?

- **Yes**, because the data identifies a specific starting point.

Remember, the intent of the regulation is so the BLM can *accurately identify the mining claim on the ground*.

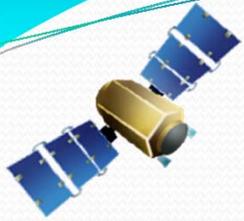
However, **GPS coordinates alone are not sufficient**. You are still required to provide the Meridian, Township, Range, Section and Quarter Section.

Question: ponder this....

- Are you familiar with the *Shoe Tree* on Hwy 50???
- Is the *Shoe Tree* a *Natural* or *Man-made Feature*?



Direction and Distance



Direction and Distance...



- Remember, your tie in point is useless unless you provide a **Direction** and **Distance** to your claim.

Look at it this way...

Let's pretend I just drove my Jeep out to your tie in point. Now, **which way** should I walk and **how far** should I walk to find your corner post?



43 CFR 3832.12(a)(2)(i)(B)

What do we do with your map??

Adjudicating the map you filed.

What does BLM do with your map after it is received?

CERTIFICATE OF LOCATION <u>LODE MINING CLAIM</u>				
TO ALL WHOM IT MAY CONCERN:				
The locator hereby certifies that he has caused to be located the _____ Lode Mining Claim in the following quarter sections(s):				
<u>1/4</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>	<u>Meridian</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
				RECORDER'S STAMP
in _____ County, Nevada, on the ____ day of _____, 20__.				



Your map usually comes in with your COLs for new filings.

We will use your map to verify that the COLs are correct and the lands are open for location.

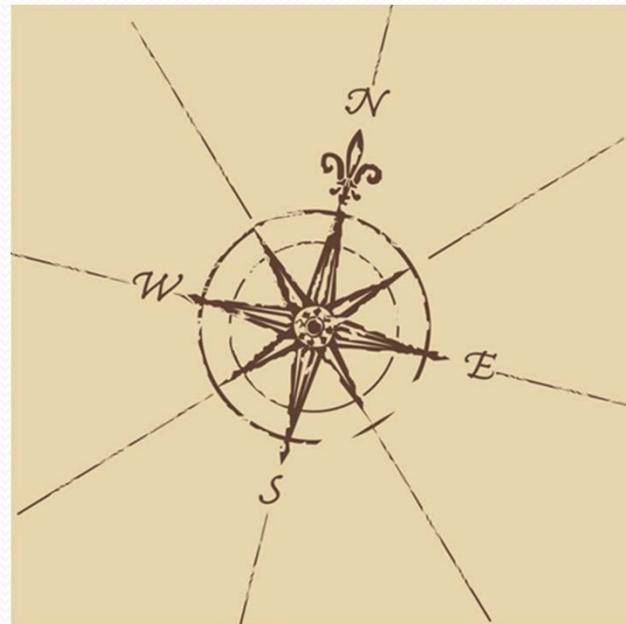
Filing fees...

All claim maps require a filing fee of \$0.

All amended claim maps require a filing fee of \$0.

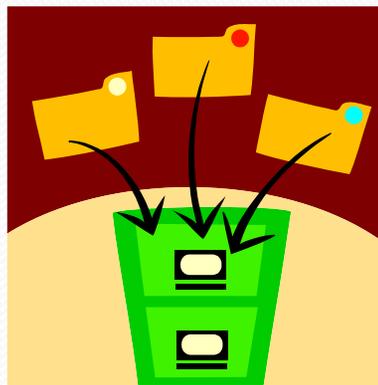
You can't beat a value like that. Why wouldn't you file a map?

Value
Value
Value



Records...

And of course, your map, or your amended map, becomes part of the permanent mining claim file.



Map elements...

The starting point.

1. The first thing we look for on your map is your **tie in** point. This tells us where to start.
2. Next, we use your **direction and distance** data to find your claim. Either the claim corner or the location monument.
3. Then, depending on the land status issues in the area, we will either plot your claim using our GIS software or simply verify that your data is accurate.

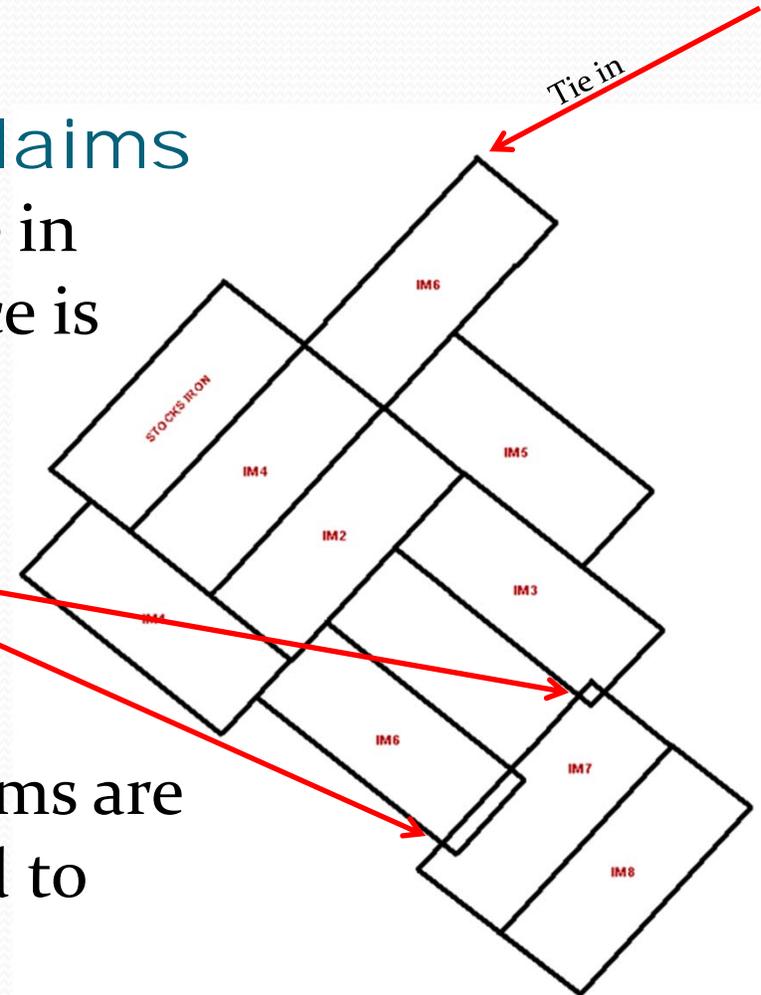


Claim blocks:

- When you locate a **block of claims** that are contiguous, only one tie in point with direction and distance is required.

Offsets

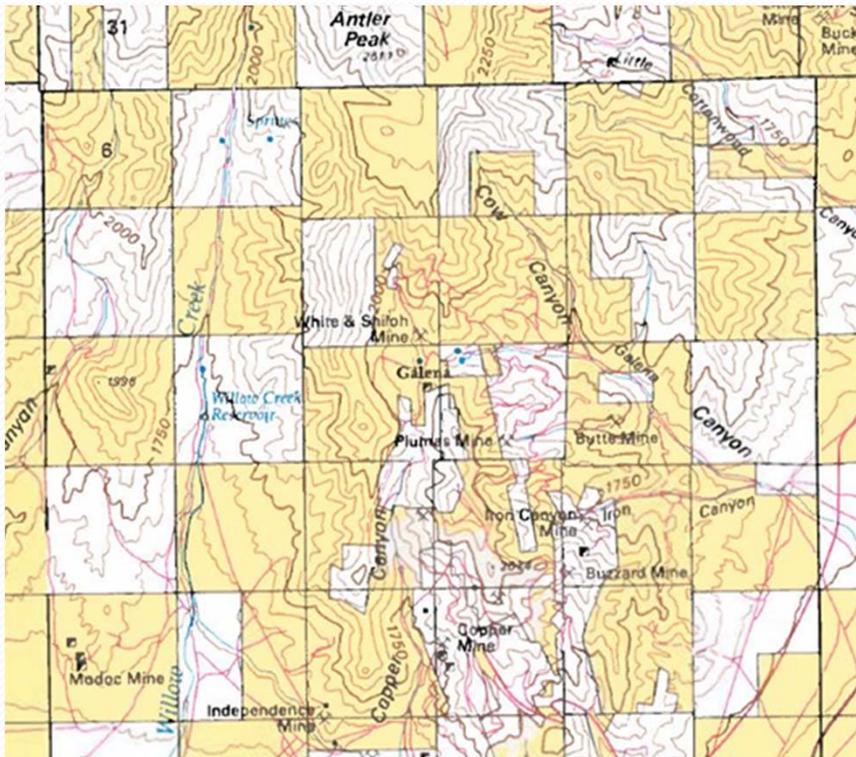
- One exception is when your claims are offset from each other. We need to know what the offset is.



43 CFR 3832.12(a)(2)(iii)

You can increase your accuracy.

- The closer your tie in point is to your claim, the more accurate your location will be.



Don't be too ambiguous.



- Please don't say, "my claim is approximately 1.6 miles in a Northwest direction from the courthouse in Tonopah Nevada."

Direction...The Northwest could be described as bearing of 45° , or 30° , or 60° , etc.

Distance...Where did you come up with "1.6 miles"??
Were you watching your odometer while you were 4 wheeling through the country side??

How should I express Direction and/or Position?

What types of data are acceptable?

Let's start with the compass.

North, South, East, and West are always easiest.



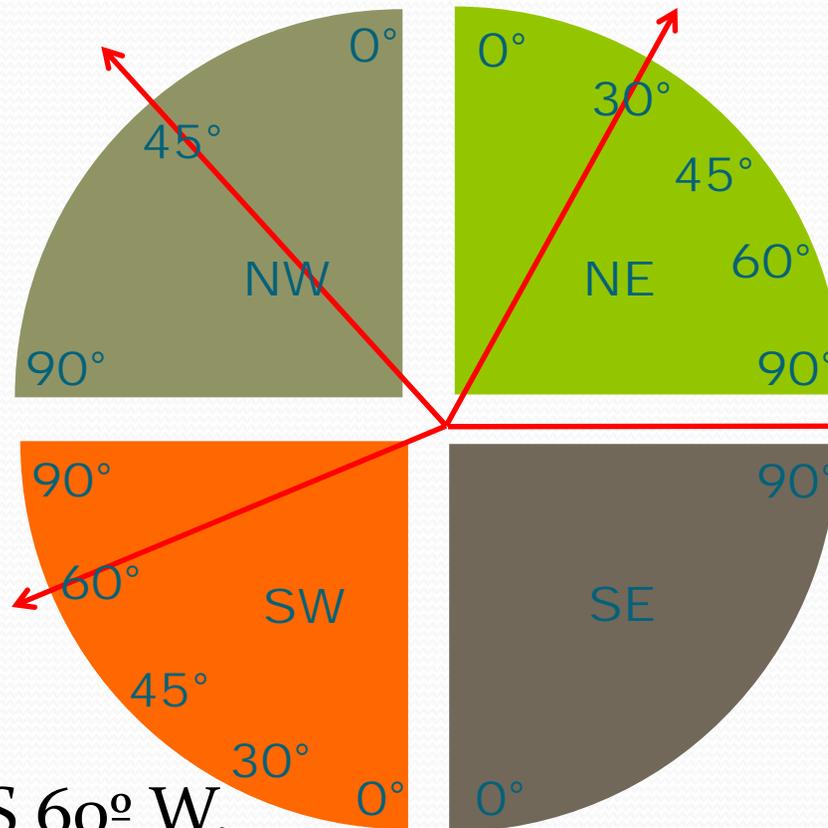
You could record the direction like this, *“the NW corner of my claim is 550 feet south and 1200 feet east of the NW corner of section 20, T32N, R50E”*.

With this method, no angles or degrees are needed!
And we assume you mean “True” North.

Quadrant and Bearing...

- expressed as N 45° W.

- expressed as N 30° E.



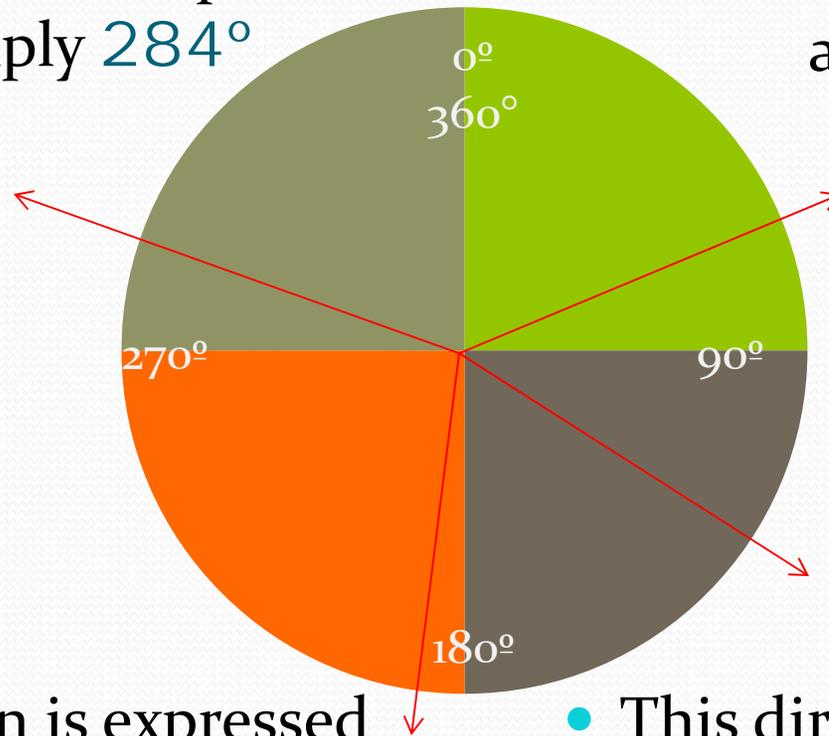
- expressed as either N 90° E or S 90° E.

- expressed as S 60° W.

North Azimuth...

- This direction is expressed as simply 284°

- This direction is expressed as simply 70°



- This direction is expressed as simply 185°

- This direction is expressed as simply 100°

Direction format. You can use:

- Degrees minutes seconds. $68^{\circ} 11' 55''$
- Degrees decimal minutes. $68^{\circ} 11.91666'$
- Decimal degrees. 68.1986111°

There are resources online that can convert your data into any one of these formats.

Please note that there are only 60 seconds in a minute and 60 minutes in a degree. $68^{\circ} 75' 55''$ is not acceptable.



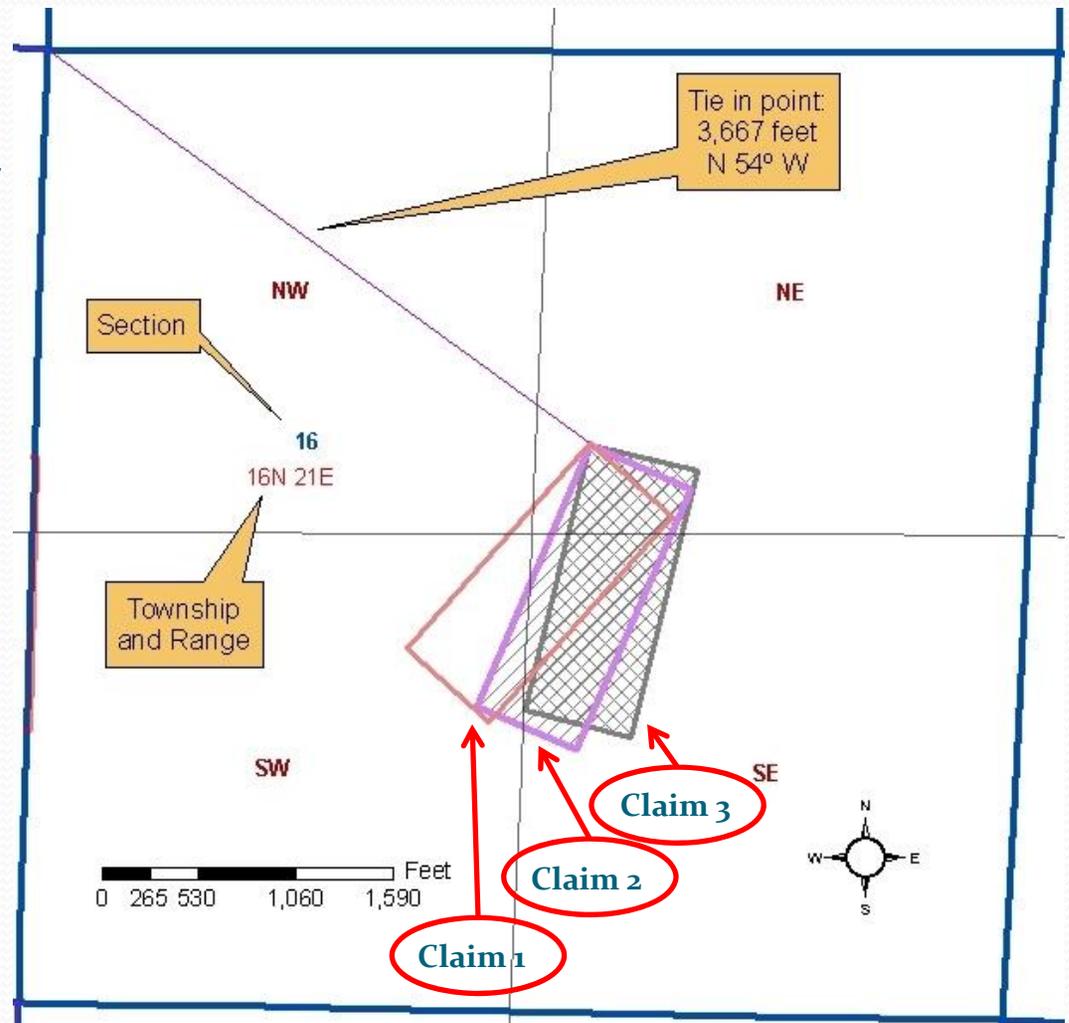
Why is the position of your claim so important?

As you can see in this map:

- Claim 1, is in all 4 quarter sections.
- Claim 2, is in the NE1/4, SW1/4 & SE1/4.
- Claim 3, is in the NE1/4 & SE1/4.

All 3 have the same tie in data.

All 3 have the same dimensions.



What about GPS???



What type should I use?
What type can I use?



Global Positioning System, any format is acceptable:

- You can use UTM's
- Or Latitude and Longitude.

You should always indicate the Datum you are using:

- NAD₂₇
- NAD₈₃

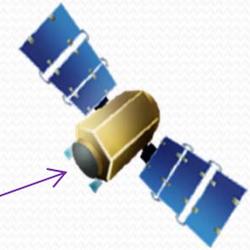


GPS equipment:

- Should you decide to use GPS;
 - You can find inexpensive equipment at most sporting goods stores.



- If you have a smart phone, many have apps you can download.



Some real advantages of GPS.

- You can easily stand at each corner marker and your discovery monument and take a GPS reading.
- Then, when you get back to the office you can view your location on goggle earth...or try this web site:

<http://www.geocommunicator.gov/blmMap/MapLSIS.jsp>

You can enter the GPS coordinate and see where the location falls within the PLSS.

Google earth provides similar information.

I strongly suggest you double check your GPS data before you file your mining claim.



A sample of Geocommunicator.

The screenshot displays the Geocommunicator web application in a Windows Internet Explorer browser window. The main interface is titled "Land Survey Information System" and features a map of a land survey grid. The map shows a grid of sections, with a specific section highlighted in red. A red box with arrows points to this section, containing the text: "Township & Range, section 26, SE1/4." The map also displays a scale bar (0 to 1 mile) and a north arrow. The browser address bar shows the URL: <http://www.geocommunicator.gov/blmMap/MapLSIS.jsp>. A "Live Search" box is visible in the top right corner of the browser window.

Overlaid on the map is a conversion tool window titled "http://www.geocommunicator.gov/...". This window contains several input fields and a "Search" button. The tool displays the following data:

- Decimal Degrees:** Latitude: 39.476563, Longitude: -118.469726
- Degrees/Minutes/Seconds:** Latitude: Degrees: 39, Minutes: 28, Seconds: 35.6268, North; Longitude: Degrees: -118, Minutes: -28, Seconds: -11.0136, West
- UTM:** N: 4370694.36 meters, E: 373589.29 meters, Zone: 11 S
- Conversion Results:** Lat/Long: 39.476563, -118.469726; DMS: 39° 28' 35.6268", -118° -28' -11.0136"; UTM: N: 4370694.36, E: 373589.29, Zone: 11S

Red arrows point from the map to the conversion tool, indicating the source of the data. A red box labeled "GPS location" points to the decimal degrees values, and another red box labeled "conversions" points to the conversion results section. The browser status bar at the bottom shows "Trusted sites" and "100%" zoom.

Township & Range,
section 26,
SE1/4.

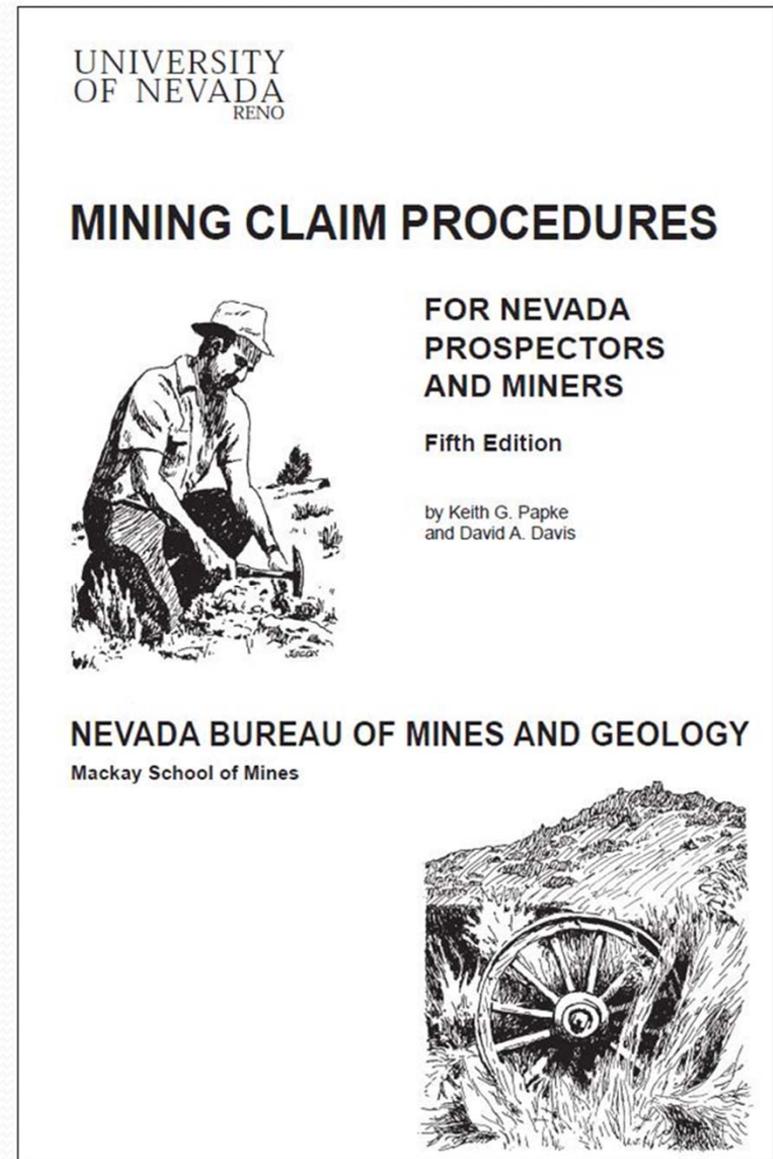
GPS
location

conversions

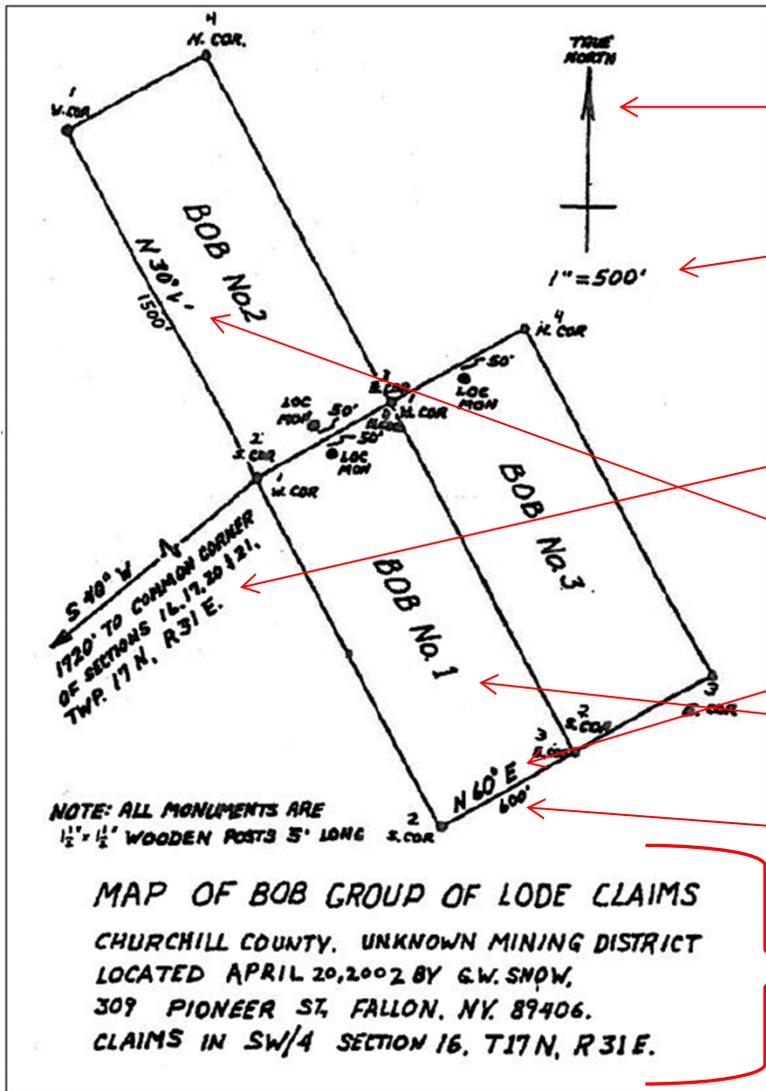
Examples of maps previously filed.

We can learn from mistakes and successes.

- The document shown to the right is a guide to locating and recording mining claims in Nevada and its available online.
- Produced by UNR with emphasis on State Requirements.
- I am including a portion of this guide in my handout because it has a great example of a simple and accurate map.



An example of a simple accurate map.



North arrow

scale

Tie in: 1720' in a S 40° W direction to the common corner of sections 16, 17, 20, 21

Orientation of the claims: N 60° E and N 30° W.

Claim names.

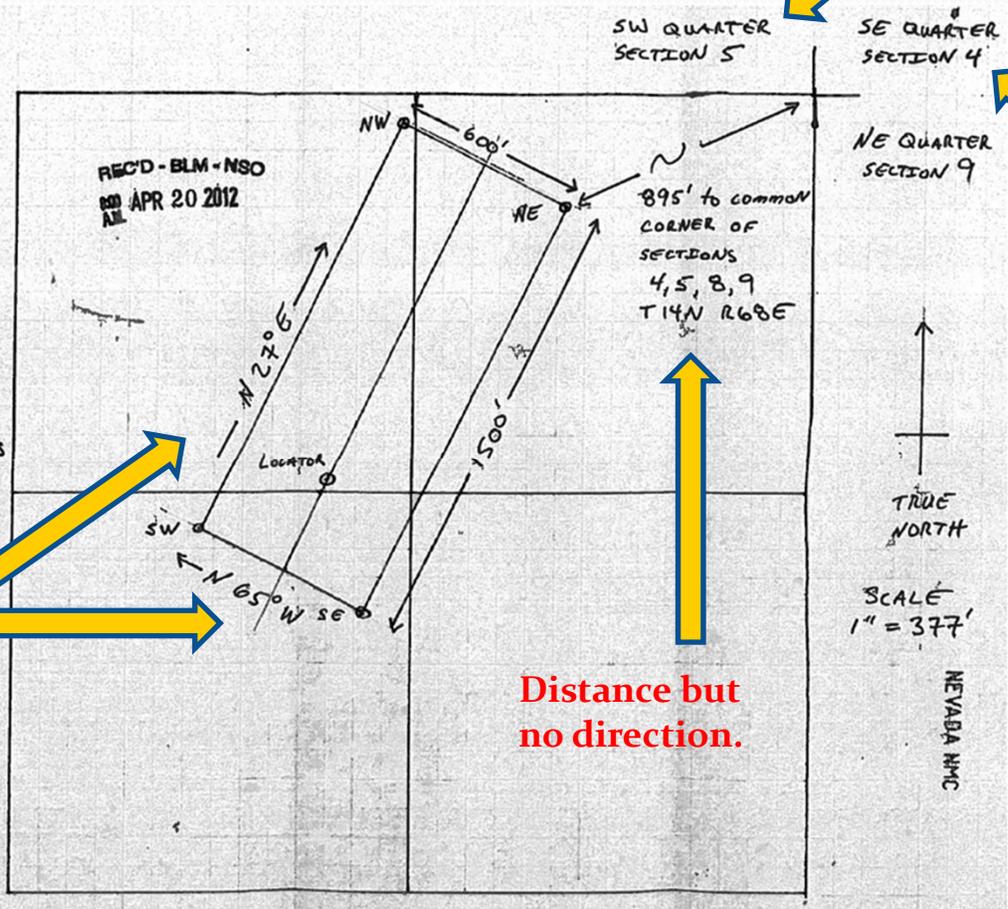
Claim dimensions

Additional information.

Inaccurate map.

BADGER CLAIM (LODE)
OSCEOLA MINING DISTRICT
WHITE PINE COUNTY, NV
T14N R68E SECTION 8
NE QUARTER

LOCATED 4-13-12
4" x 4" WOODEN MONUMENTS x 4'
METES AND BOUNDS + GPS COORDINATES



This would be the SE quarter

This would be the SW quarter

27° and $65^\circ = 92^\circ$
These two should Equal 90°

Distance but no direction.

GPS to the rescue.

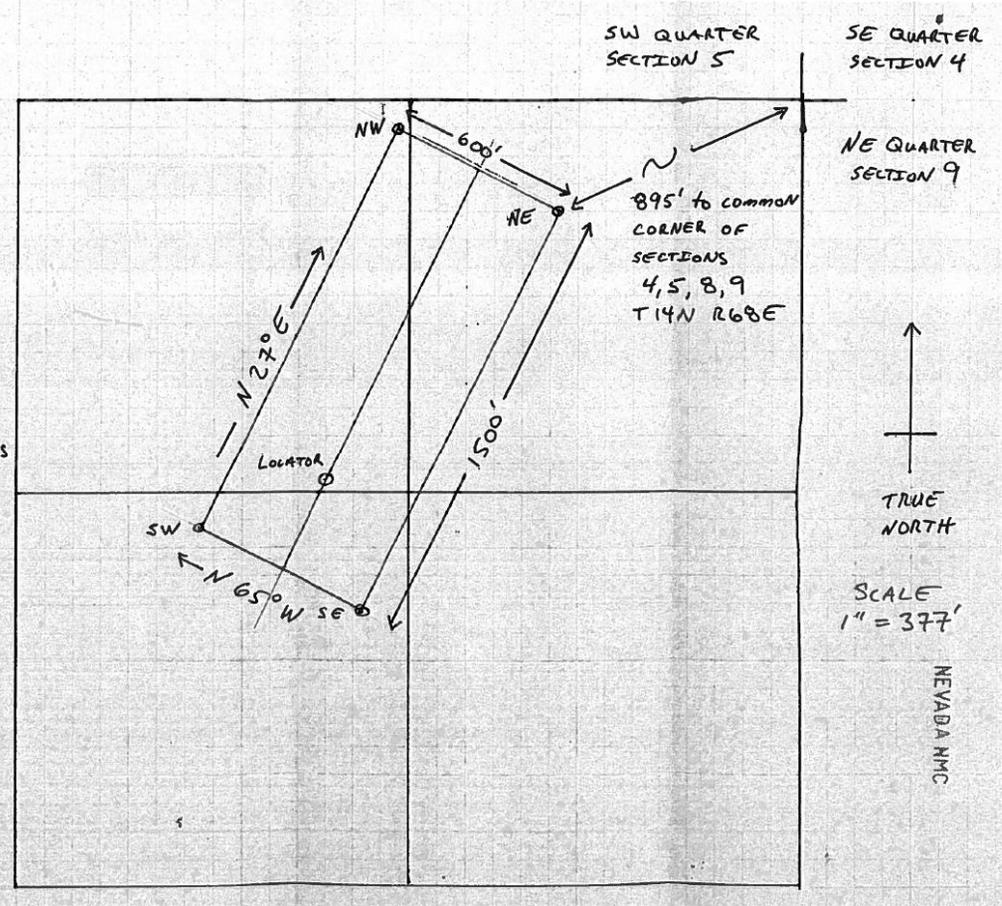
BADGER CLAIM (LODE)
OSCEOLA MINING DISTRICT
WHITE PINE COUNTY, NV
T14N R68E SECTION 8
NE QUARTER

LOCATED 4-13-12
4" x 4" WOODEN MONUMENTS x 4'
METES AND BOUNDS + GPS COORDINATES

MONUMENTS:

LOCATOR: LAT 39° 5' 47.5
LONG 114° 21' 40.5
NW CORNER: LAT 39° 5' 58.9
LONG 114° 21' 37.2
NE CORNER: LAT 39° 5' 56.5
LONG 114° 21' 30.3
SW CORNER: LAT 39° 5' 45.9
LONG 114° 21' 45.8
SE CORNER: LAT 39° 5' 43.5
LONG 114° 1' 38.9

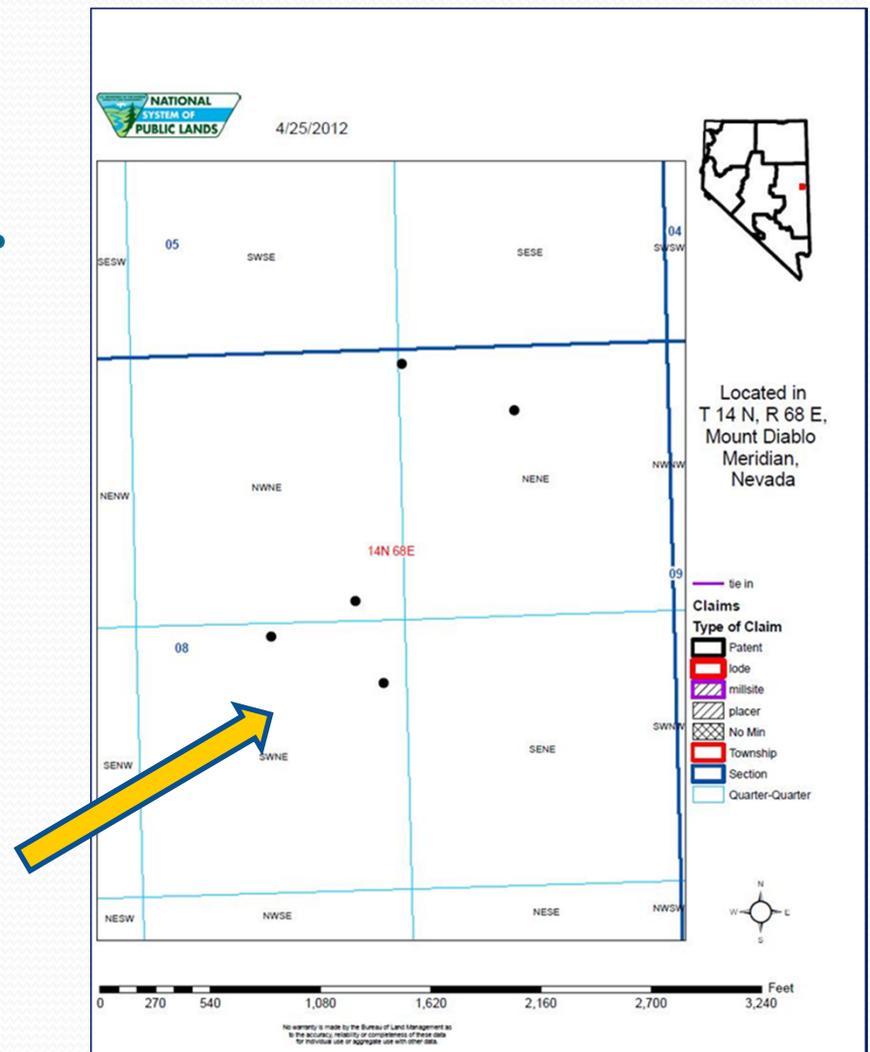
Now we can
find the
claim.



This is how we use your GPS coordinates...

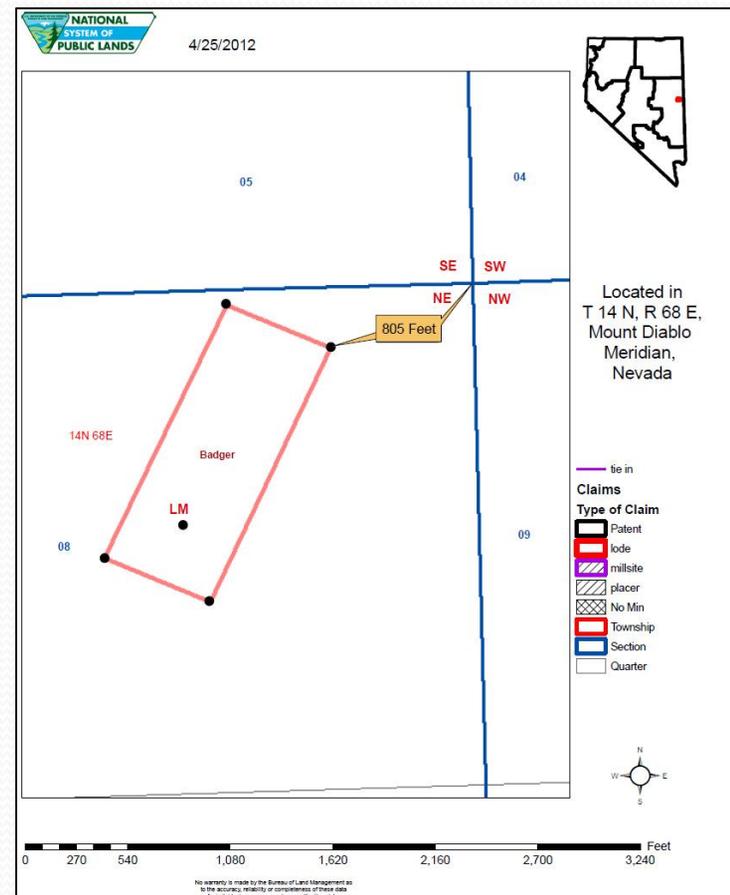
Plot the GPS coordinates.

- The dots represent the GPS coordinates of all 4 corners and the discovery monument.

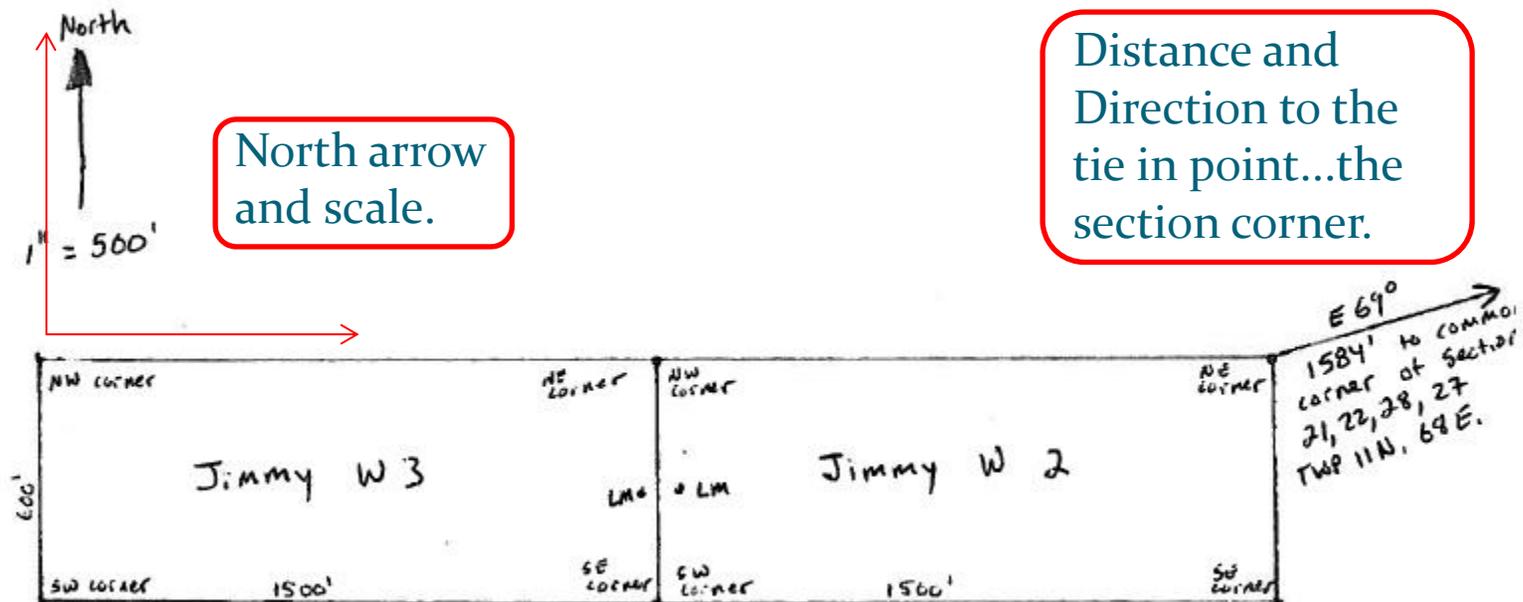


Connect the dots.

- If we connect the dots, we get a pretty accurate location and position of the claim.
- We can then also calculate the distance to the section corner.



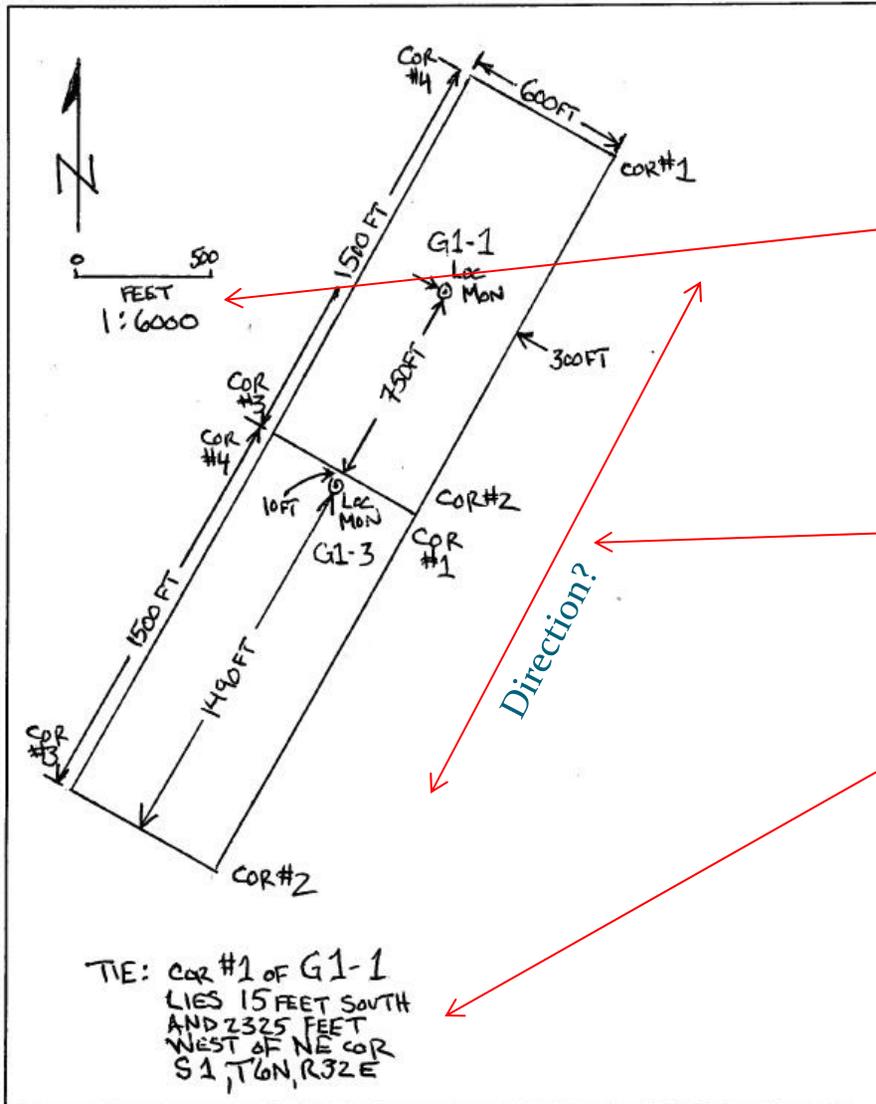
Simple map that meets the requirements.



North arrow and scale.

Distance and Direction to the tie in point...the section corner.

The locator did not provide the position/orientation of the claims. However, if we look at the north arrow and relate it to the claims, it would be reasonable to assume that the claims are positioned due east/west.



Is there a problem or mistake with the scale? Actually, no, it is accurate. In this case 1 inch = 500 feet 1:6,000 means that 1 inch = 6,000 inches or 500 ft.

What angle are the claims positioned at?

The tie in works.

This map is defective. We would send a notice allowing the claimant to amend the filing within 30 days. Remember the regulation at: 43 CFR 3832.12(a)(2)(ii) You must show on a map or sketch the boundaries **and position** of the individual claim or site by aliquot part within the quarter section accurately enough for BLM to identify the mining claims or sites on the ground.

Tie in to the section corner.
Claim located 750 feet from
section corner.
Claim is positioned parallel to
the Section line.

North Arrow

Scale

