

Non-Rectangular Surveys

2009



UNIT 3 STUDY GUIDE

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Land Grants, Small Holding Claims, and Reservations, Part 1

Introduction

Hello my name is Paul Hickey, I am currently the BLM Indian Lands Surveyor stationed at the BIA Southwest Regional office in Albuquerque.



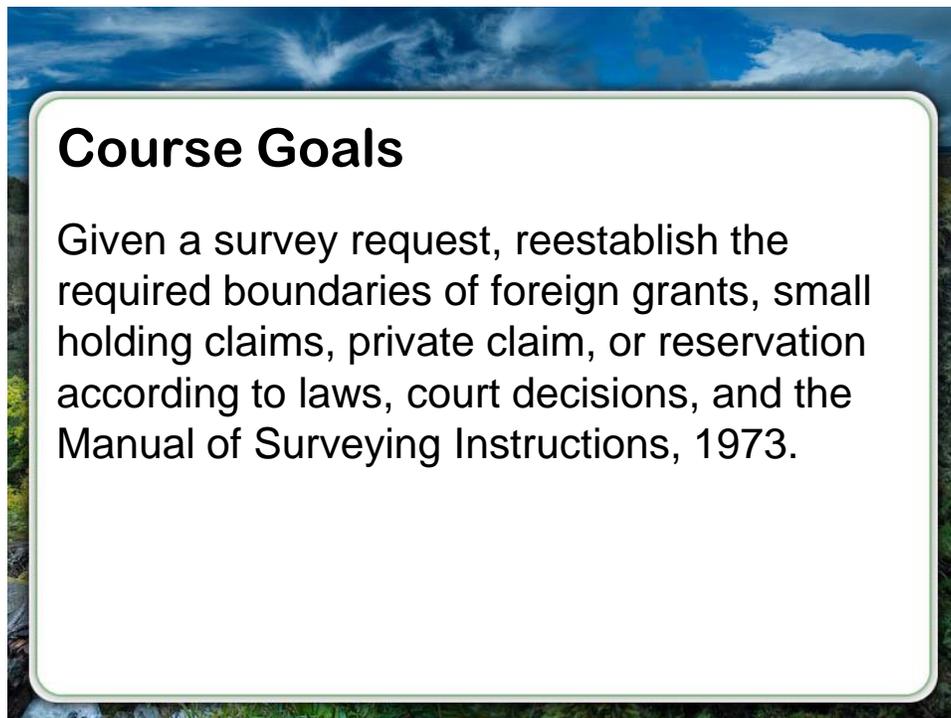
I started my survey career on a Forest Service Survey crew back in 1976. I decided I liked it so I went to college for it and while a student at Oregon Institute of Technology, I got involved in the BLM co-op program and I signed on in 1979 and have been a BLM employee ever since.

I hired on as a permanent employee and I have worked in Alaska, New Mexico, Oregon and then back in New Mexico. So I have worked in the field, I have worked in the Geographic Coordinate Database and I have also worked as a reviewer. I've been in my current job for about 2 years.

Course Goals

Alright well let's get the formalities out of the way. First of all I would like to go to the overhead here and go over the lesson goals. Given a survey request, reestablish the required boundaries of foreign grant, small holding claim, private claim, or reservations according to laws, court decisions, and the Manual of Surveying Instructions.

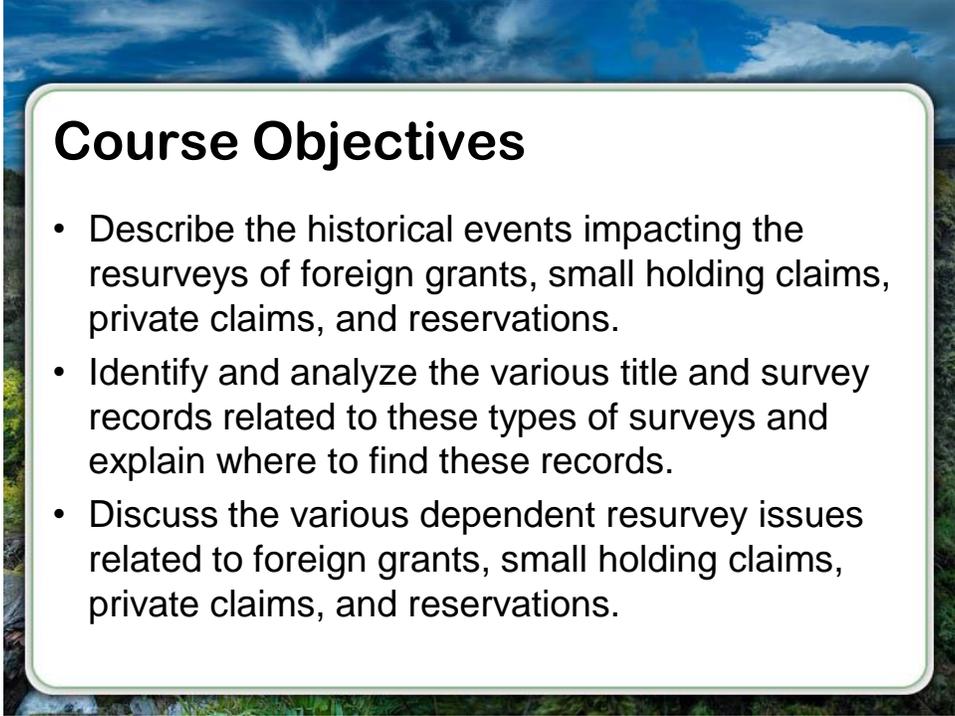
Then we will have to go over the lesson objectives that goes along with that, I'll put that up on the overhead.



Course Objectives

And the lesson objectives we are going to describe the historical events impacting the resurvey of foreign grants, small holding claims, private claims, and reservations. Then we are going to identify and analyze the various title and survey records related to these types of surveys and explain where to find these records.

Discuss the various dependent resurvey issues related to foreign grants, small holding claims, private claims, and reservations.



Course Objectives

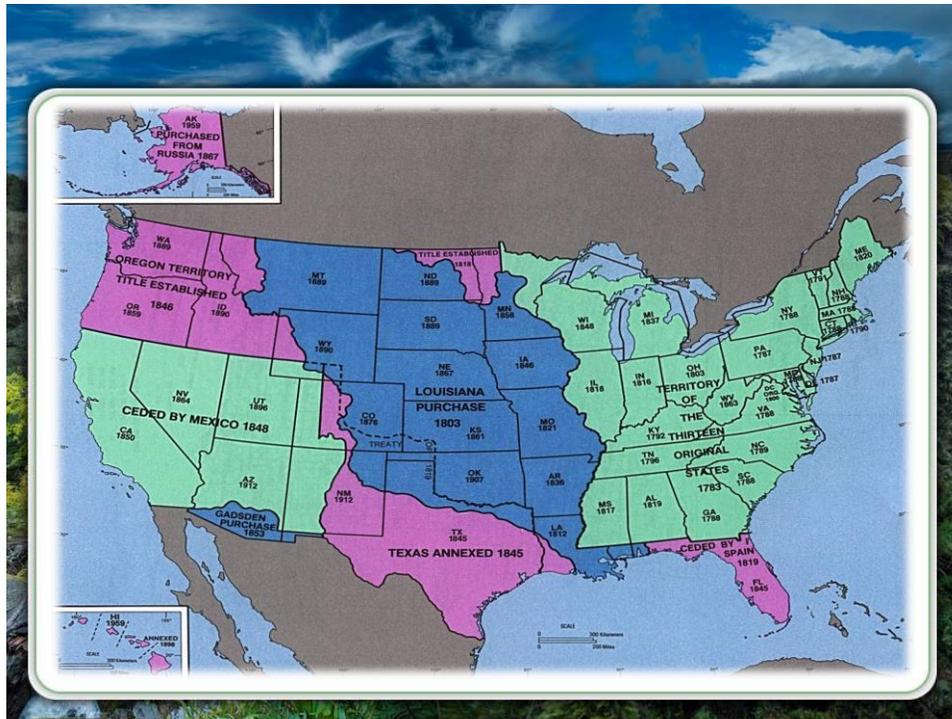
- Describe the historical events impacting the resurveys of foreign grants, small holding claims, private claims, and reservations.
- Identify and analyze the various title and survey records related to these types of surveys and explain where to find these records.
- Discuss the various dependent resurvey issues related to foreign grants, small holding claims, private claims, and reservations.

So, we are going to talk about historical events, we are going to talk about the records, and then we are going to talk about dependent resurvey. So we are going to spend quite a bit of time on history. So were going to go right to that.

History

What I want you to do right now is just think back to your 11th grade history class and think about where you live and where you think it became part of the United States under what acquisition. Was it from France, was it from Mexico, or from Russia? And then we will go to the next slide and we'll see if you guessed right on that.

So here's the next slide, you can see from this, if you live in the middle part of the United States you would live in an area that was came about under the Louisiana Purchase.



If you live in the Southwest it came from Mexico, then we have Texas down here. Louisiana came from the French, part of the Louisiana Purchase. So as you can see it's very important to know where, how, where you live came from because there are many different survey types that came about because the United States, as they acquired this land their main goal was to protect the valid existing property rights to those that were already living there.

Topics of Discussion

The topics of discussion, we are going to talk about foreign grants; French, Russians, Spanish and Mexican. We are going to be talking small holding claims, private claims, reservations, which include military reservations, Indian reservations, national parks, and monuments.



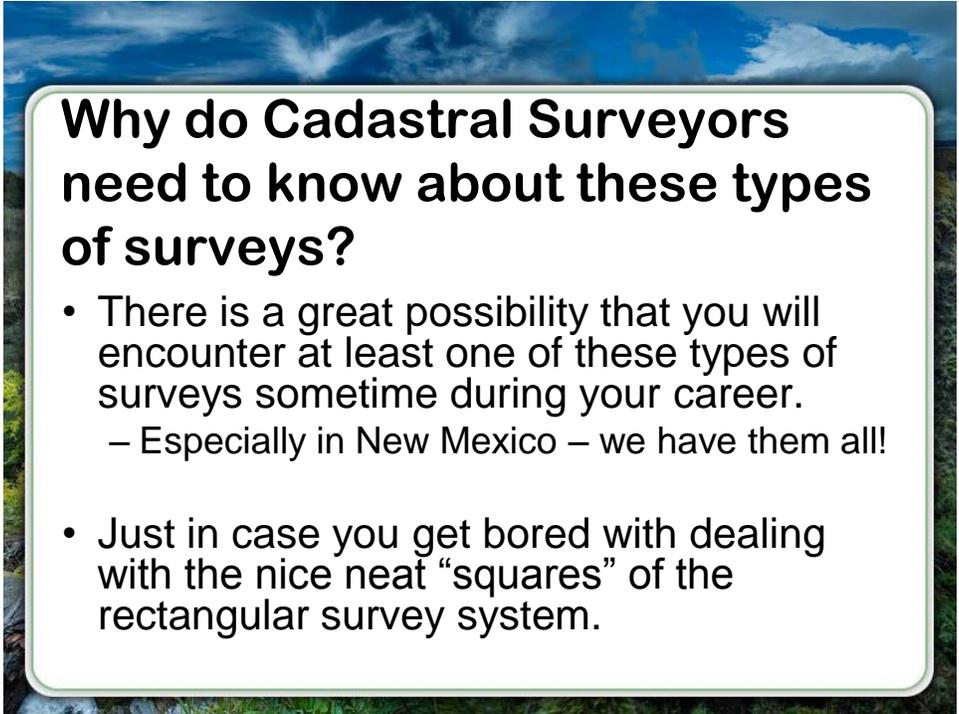
Topics of Discussion

- Foreign Grants
 - French
 - Russian
 - Spanish and Mexican
- Small Holding Claims
- Private Claims
- Reservations
 - Military Reservations
 - Indian Reservations
 - National Parks and Monuments

So you may not work on all of these in your career but there is a good chance you'll work on at least one of these types of surveys.

Why do I need to know this?

Why do cadastral surveyors need to know about these types of surveys? Like I said before, there's a great possibility you will work on one of these during your career. I think its important to know the history of the type of survey, especially if you work in New Mexico. We have all these different types of surveys.



Why do Cadastral Surveyors need to know about these types of surveys?

- There is a great possibility that you will encounter at least one of these types of surveys sometime during your career.
 - Especially in New Mexico – we have them all!
- Just in case you get bored with dealing with the nice neat “squares” of the rectangular survey system.

We have land grants, Spanish grants, Mexican grants, military reservations, Indian reservations, small holding claims, and private claims.

So if you get bored with the nice neat squares of the rectangular survey system this is what you want to work on, these non-rectangular surveys. So I'd like to go to the overhead again and just give an example.

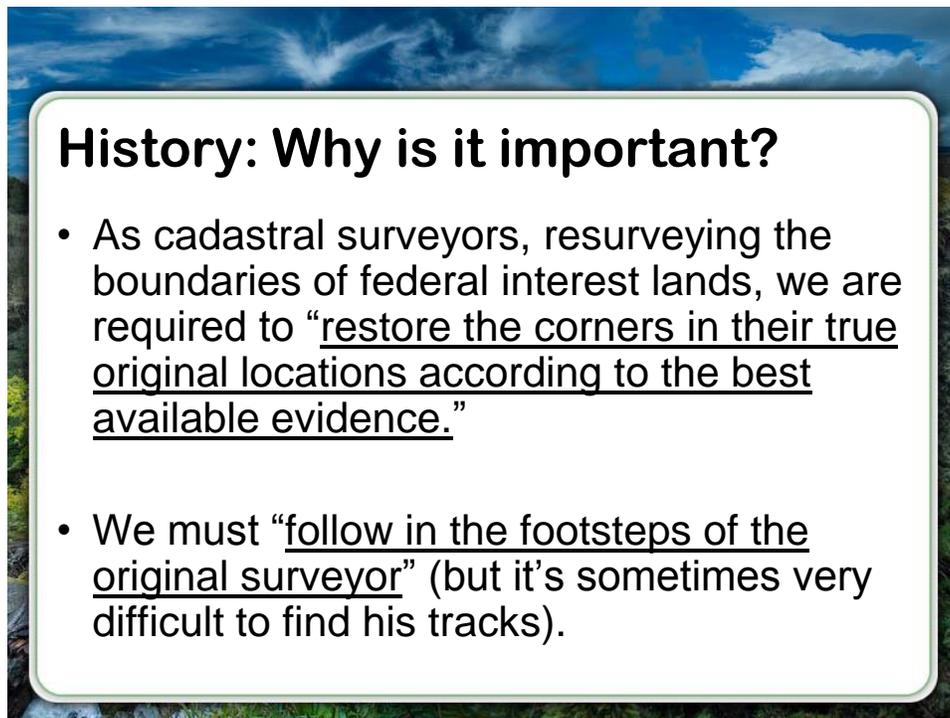
This is a map it's a little hard to see but, this is a map showing just all the the grants that are right between Albuquerque, New Mexico, and Santa Fe. There is probably about 25 or 30 of them.

I have highlighted in yellow the ones that the BLM has recently done surveys relating to. We have the town of Alameda Grant right here, on the elmo. There is the Penticliff National Monument we did a survey on that, and it is inside of that, you'll notice that the white areas are not filled in with these squares. Or the sections of the PLSS rectangular survey system, but the white areas because they were patented as private land the GLO and BLM did not go inside and put the sections in, but fortunately within the Indian pueblos, they are shown here, all these different areas, they extended the public land survey system within those. So that's one of your keys, so if you see a big open area with no sections in it that was patented as a grant in its entirety to private individuals.

History why is it important?

As cadastral surveyors when we are resurveying the boundary of federal interest lands, we are required to restore the corners in their true original locations according to the best available evidence. And that is a statement that is on our plats when we describe a resurvey. We are required to follow in the footsteps of the original surveyor.

I know that's a cliché that we use a lot. It is very important and it is sometimes difficult to follow in those steps to find the tracts from the original surveys.



History: Why is it important?

- As cadastral surveyors, resurveying the boundaries of federal interest lands, we are required to “restore the corners in their true original locations according to the best available evidence.”
- We must “follow in the footsteps of the original surveyor” (but it's sometimes very difficult to find his tracks).

Curtis Brown who wrote some important books about boundary evidence, he states in his book that the federal law, the boundary of the public lands when approved and accepted are unchangeable. That shows the necessity of understanding how the original surveyors set the boundaries. Knowing how and why the surveyor established the line, where he did is the foundation for understanding where obliterated and lost corners should be reestablished.

History: Why is it important?

- Curtis Brown:
 - The Federal law, “the boundaries of the public lands, when approved and accepted, are unchangeable,” indicates the necessity of understanding how the original surveyor set the boundaries.
 - Knowing how and why a surveyor established the lines where he did is the foundation for understanding where obliterated and lost boundaries should be reestablished.

Land Grants

Well why am I especially interested in Spanish land grants? Well the reason why is I live inside Spanish land grant, the town of Alameda grant which was established in 1710 and I can see another one across the Rio Grande, the Sandia Pueblo Grant established in 1748.

Why am I especially interested in Spanish Land Grants?

I live inside a Spanish Land Grant (the Town of Alameda Grant, established 1710) and I can see another one across the Rio Grande (the Sandia Pueblo Grant, established 1748).



Looking at this photograph, this is a picture of the street where I live in Rio Rancho, New Mexico. If you look in the foreground of the picture, it's within the town of Alameda Grant. If you look across the other side where it's undeveloped that is the Sandia Pueblo Grant. Interesting thing about it.

When the Sandia Pueblo Grant was established on the east side of the Rio Grande, they didn't have enough land there to get their full amount to the west, so they came up with an agreement in the documentation that they would be able to graze their cattle, their live stock on the west side of the Rio Grande, forever. Their descendents could do it forever.

And I think it was interesting because I live in the subdivision on the west side and I've never seen any cattle or horses grazing in that area and I think that is because most of our yards are made of rock in Rio Rancho because its pretty dry. I thought that was in interesting thing.

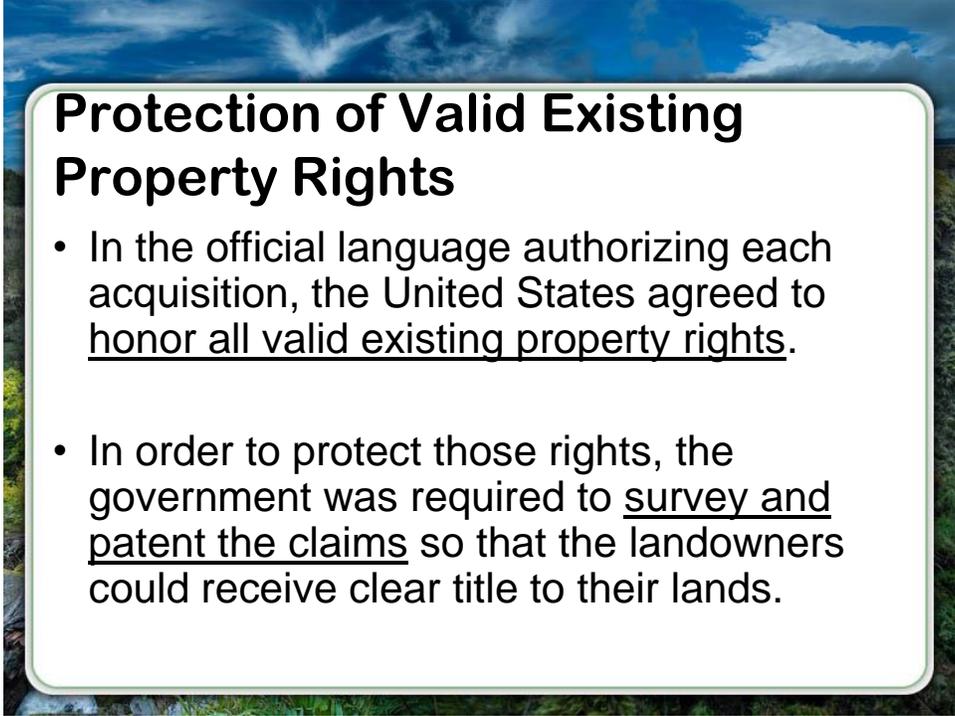
Major Events

We'll talk about the major events related to foreign grants. We have 1803, the Louisiana Purchase from France, 1848 the Treaty of Guadalupe Hidalgo with Mexico.



That was after the Mexican-American War. 1853, the Gadsen Purchase from Mexico, and the 1867 Alaska Purchase from Russia. So we are going to see how these events influence how we would survey, the types of surveys that are related to these foreign grants and these events.

This is probably one of the most important slides I think in this presentation. The protection of valid existing property rights.



Protection of Valid Existing Property Rights

- In the official language authorizing each acquisition, the United States agreed to honor all valid existing property rights.
- In order to protect those rights, the government was required to survey and patent the claims so that the landowners could receive clear title to their lands.

The official language authorizing each acquisition, the United States agreed to honor the valid existing property rights. And I went through and looked at all these legislations, the documentation of these treaties and purchases and all of them talked about honoring these existing property rights and I think that is an important goal we have as surveyors, that we, the way we do our surveys we take into account the property rights, the valid existing property rights, and we protect those. In order to protect those rights the government was required to survey and patent the claims so the land owners could receive clear titles to their lands.

French Grants

French grants we'll talk about. Article 3 of the Louisiana Purchase stated that the inhabitants of the ceded territory shall be maintained and protected in the free enjoyment of their liberty property.

French Grants

- Article 3 of the Louisiana Purchase (April 30, 1803) states:
 - “The inhabitants of the ceded territory ... shall be maintained and protected in the free enjoyment of their liberty, **property**, and Religion which they profess.”
- The Acts of 1806:
 - Called for the survey of private claims within the Louisiana Territory. Settlers were to pay deputy surveyors \$3 per mile.

I bolded property because that's what we are concerned about here as surveyors, and religion which they profess. The Act of 1806, called for the survey of private claims within the Louisiana Purchase, and settlers were set to pay deputy surveyors 3 dollars per mile. Our costs have gone up a little bit since then but that's what it was back in 1806.

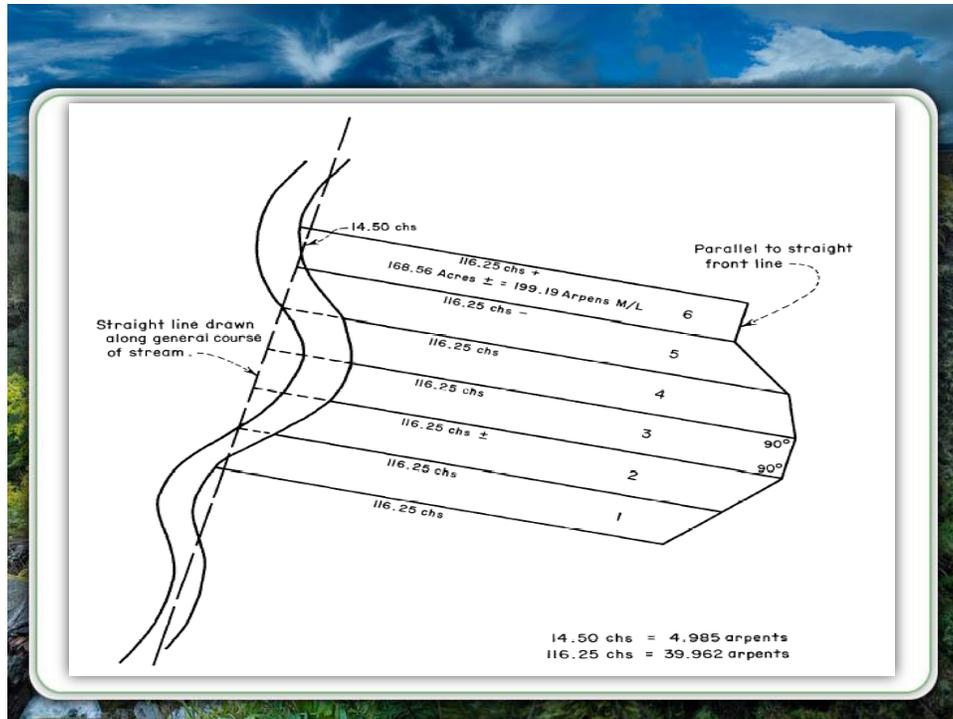
Further, with French Grants there is an Act of 1811 that provided special instructions for the survey of these grants. The grants that bordered on any river, creek, bayou, or water course. Of course most of these grants were along the rivers because that was their transportation and their water for living and for farming.

French Grants

- Act of 1811, Sec. 5:
 - Provided special instructions for the survey of French and Spanish grants “bordering on any river, creek, bayou, or water-course.”
 - Tracts were not to exceed 40 arpents in depth, French measure. French river tracts traditionally contained five arpents river frontage and 40 arpents depth, or 200-square arpents in area.
 - Deputy surveyors were instructed to lay out tracts of 14.50 chains x 116.25 chains = 168.56 acres (See Figure 23, [A History of the Rectangular Survey System](#))

An important thing, the tracts were not to exceed 40 arpents depths French major. We will talk about what an arpent is later.

The French river tracts usually contain 5 **arpents** river frontage and 40-arpents depth. Or 200 square **arpents** in area. Deputy surveyors were instructed to lay out tracks that were 14.5 chains by 116.25 chains, so they were long skinny lots, tracts is what they laid out. In Al White’s History of Rectangular Survey System, he talks about these French Grants.



This is the slide of the typical grants along the river. You can see they are long and skinny. You may run into something like this.

I'd like to go the overhead and just show you the results of these French Grants. This an aerial photo where you can see the river going through and you can see all these long skinny lots extending out from the rivers.

So it's very interesting how these French Grants, how the land patterns developed, based on what the surveyors were instructed to survey, and that was the traditional way of doing it. That way more people had river frontage that way even though they had a smaller amount. But more settlers could have access to the river.

French Grants

- An **arpent** is technically an area measurement, but by common usage it became known as the length of one side of a square arpent.
- Arpents varied in size in different states. In Louisiana:
 - 1 arpent = 0.845 acre
 - 1 side of a square arpent = 191.85 feet = 2.91 chains
- All the “French Tracts” and private land claims within Louisiana townships were given section numbers. (See Figure 24, [A History of the Rectangular Survey System](#))

We'll talk about what arpents are. Arpents are a type of measurement that you might not be familiar with, but it's technically an area measurement.

But with common usage it became known as the length of one side of a square arpent. So arpents vary in size in different states. But in Louisiana where we were talking about the French Grants here, one arpent was about 0.845 acres. One side of a square arpent would be 191.85 feet or 2.91 chains. All the French tracts and private claims within Louisiana townships were given section numbers in some of the townships. I have a figure from Al White's history book.



If you take a look here, it's not something we are used to seeing, but if you look here all these we start, with section 39 up here then we have 40, and 41 and they go all the way through. We're used to seeing townships with 36 sections and these were given section numbers along the river. It is something unique to that area that you might run across. That's something to be aware of.

Russian Grants

Alright I would like to go to the next slide and talk about Russian Grants. In 1867, the U.S. purchased Alaska from Russia for 7.2 million dollars in gold.

Russian Grants

- In 1867, the United States purchased Alaska from Russia for \$7.2 million in gold.
- The Act of March 30, 1867 (15 Stat. 539), Article 2, states that all lands are ceded to the U.S., except “private individual **property.**”
 - Article 2 also says that the churches built by the Russian government “shall remain the **property** of such members of the Greek Oriental Church resident in the territory, as may choose to worship therein.”

I was thinking about that and now days that’s about what the salary of a 2nd string relief pitcher in the major leagues is. But back in 1867 that was a lot of money, 7.2 million. People thought the U.S. was pretty foolish for buying Alaska. But we found out over the years that they were wrong about that. The Act of March 30, 1867, is the legislation that talks about the Russian, the purchase of Russia, or the purchase of Alaska from Russia.

It states that all lands are ceded to the U.S. except private individual property, and there that is again, we talked about it earlier, emphasizing protecting valid existing property. And there it is in the wording of this document.

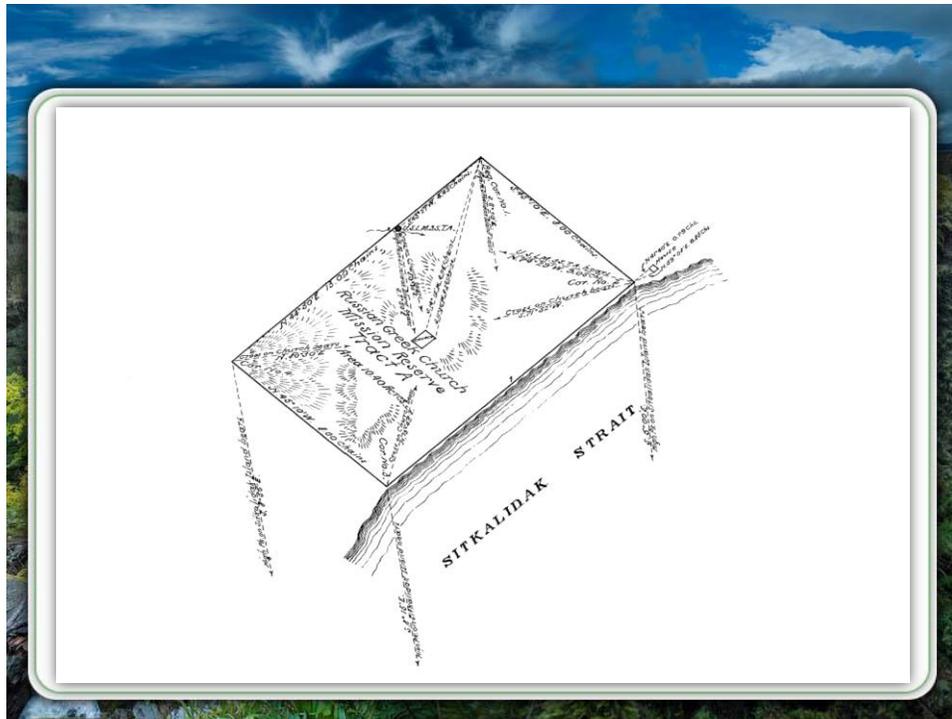


Russian Grants

- In Alaska, the government surveyed valid Russian claims by metes and bounds and identified them as U.S. Surveys.
 - See U.S. Survey No. 474, Russian Greek Church Mission Reserve at Three Saints Bay (now Old Harbor) on Kodiak Island.

Article Two also states that the church is built by the Russian Government “shall remain property of such members of the Greek Oriental Church, residents in the territory may choose to worship therein.”

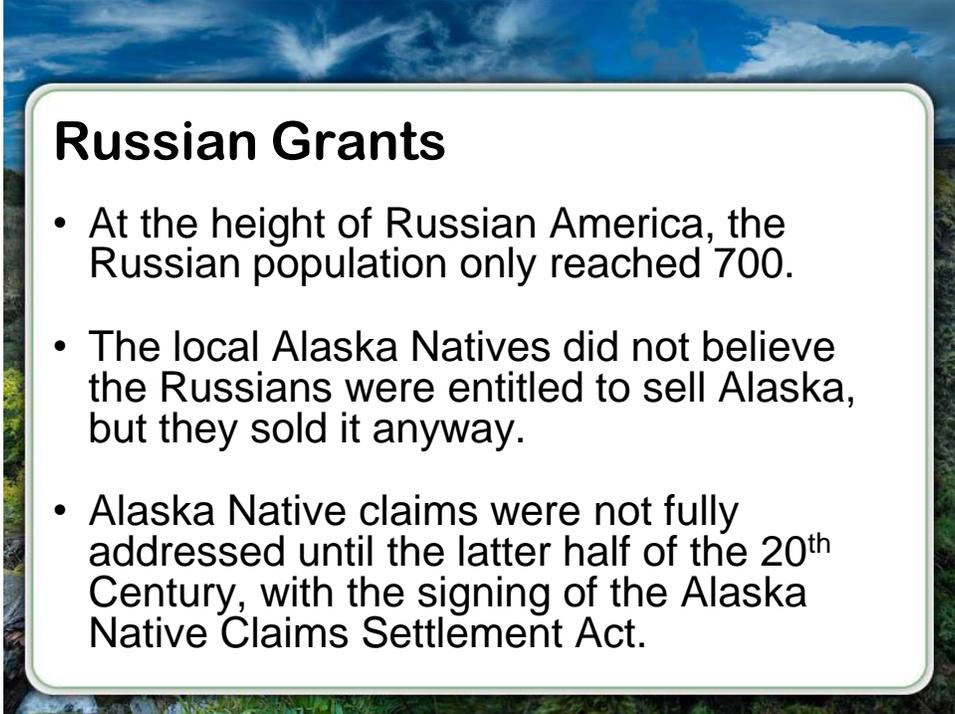
In Alaska, the Government surveyed valid Russian claims by metes and bounds, and identified them as U.S. Surveys. Mike Harmening has spoken earlier. He gave me a copy of one of those U.S. Surveys that shows a Russian Greek Church mission reserve, at Three Saints Bay, or now Old Harbor on Kodiak Island. So here is a copy of that plat.



It's interesting you can see that there are ties to the cross on the mission church which might be one of the things that you would have to do to reestablish the corner. All these corners have a tie up to the cross on top of the church. So I thought that was kind of interesting. So this is one of the examples that I found of the Russian Grants in Alaska.

At the height of the Russian America, the Russian population only reaches 700. So you know the size of Alaska, there were only 700 Russians at that time that they thought they owned it, or they didn't because they sold it to us.

The local Alaska Natives did not believe the Russians were entitled to sell Alaska but they sold it anyway. So Alaska Native claims were not fully addressed until the latter half of the 20th century. With the signing of the Alaska Natives Settlement Claim Act. And you as surveyors in Alaska know all about that. That really got us on board for a lot of surveying activities, because of that.

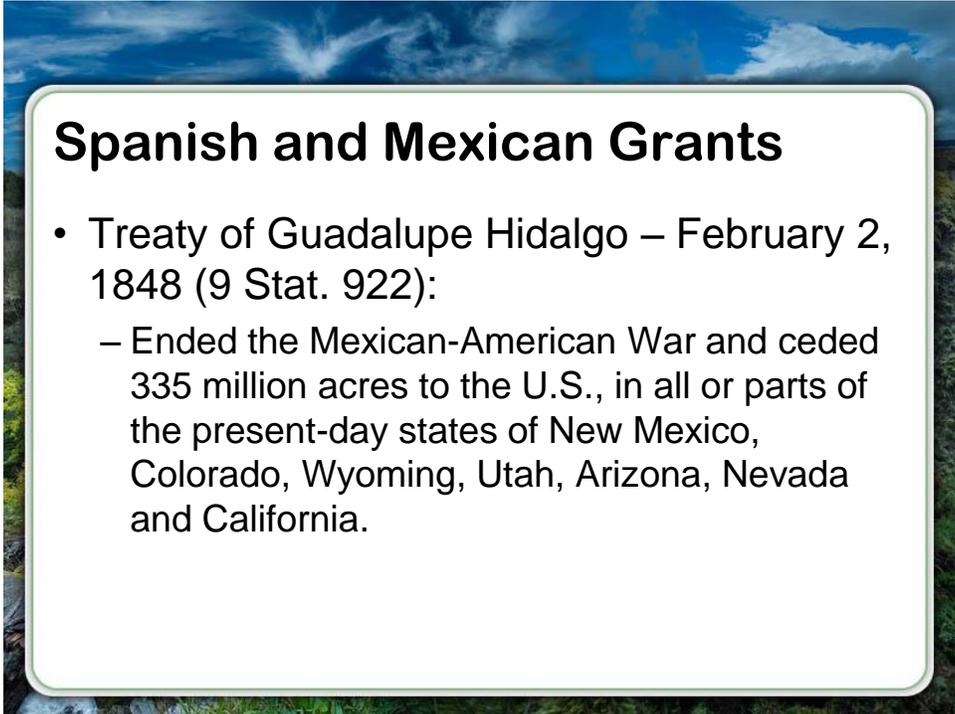


Russian Grants

- At the height of Russian America, the Russian population only reached 700.
- The local Alaska Natives did not believe the Russians were entitled to sell Alaska, but they sold it anyway.
- Alaska Native claims were not fully addressed until the latter half of the 20th Century, with the signing of the Alaska Native Claims Settlement Act.

Spanish and Mexican Grants

Now we will move on to Spanish and Mexican Grants. I have quite a bit about this, because I'm more familiar with this, living in New Mexico.



Spanish and Mexican Grants

- Treaty of Guadalupe Hidalgo – February 2, 1848 (9 Stat. 922):
 - Ended the Mexican-American War and ceded 335 million acres to the U.S., in all or parts of the present-day states of New Mexico, Colorado, Wyoming, Utah, Arizona, Nevada and California.

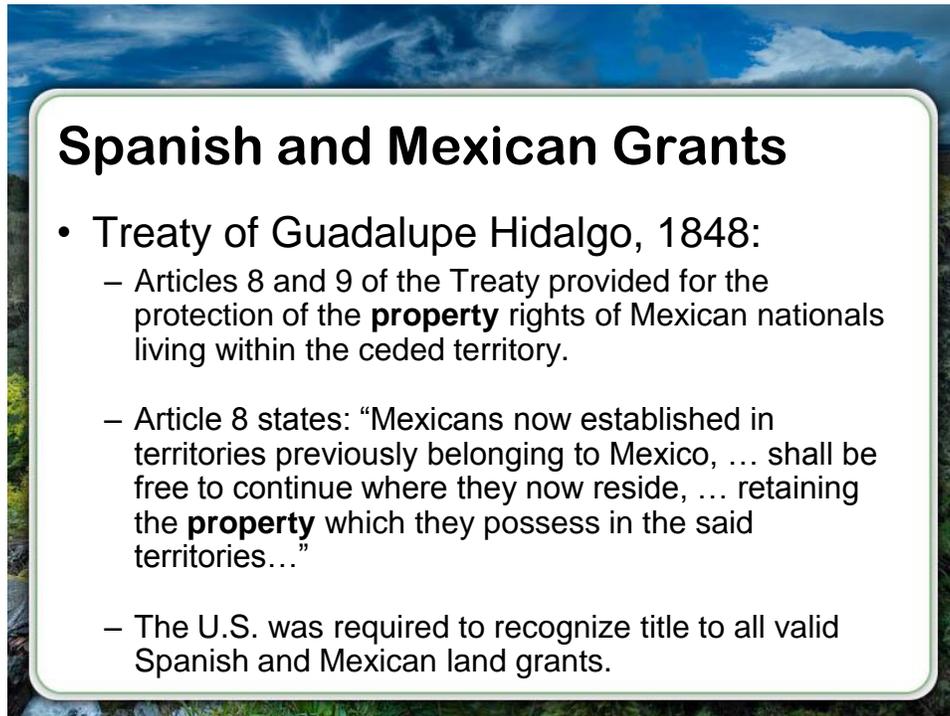
What I would like to talk about first is the Treaty of Guadalupe Hidalgo; it was February 2, 1848. I've provided the statue there so you can look it up yourself, and on all of these it is very interesting to read the actual wording in the documents. This treaty ended the Mexican-American War and ceded 335 million acres to the U.S. and all or parts of the present-day states of New Mexico, Colorado, Wyoming, Utah, Arizona, Nevada, and California.

Well let's look at this map here. It's a very interesting map. It shows all of the territory that belonged to Mexico, before the Mexican War.



As you can see which I found interesting is that everything east of the Rio Grande was actually part of Texas. And that's why I have figured out that's why the people down there in Roswell kind of talk that way, and they say "ya'll" and stuff. That's because it's always been part of Texas over there until it became a part of the state of New Mexico. I'll just point out on this the area the southwestern United States, and that is the part that is ceded to the United States, as a result of the Treaty of Guadalupe Hidalgo. So we're going to talk about what happened in that area.

The Treaty of Guadalupe Hidalgo, that was a town in Mexico, 1848. Articles 8 and 9 of the treaty provided for the protection of the property rights.

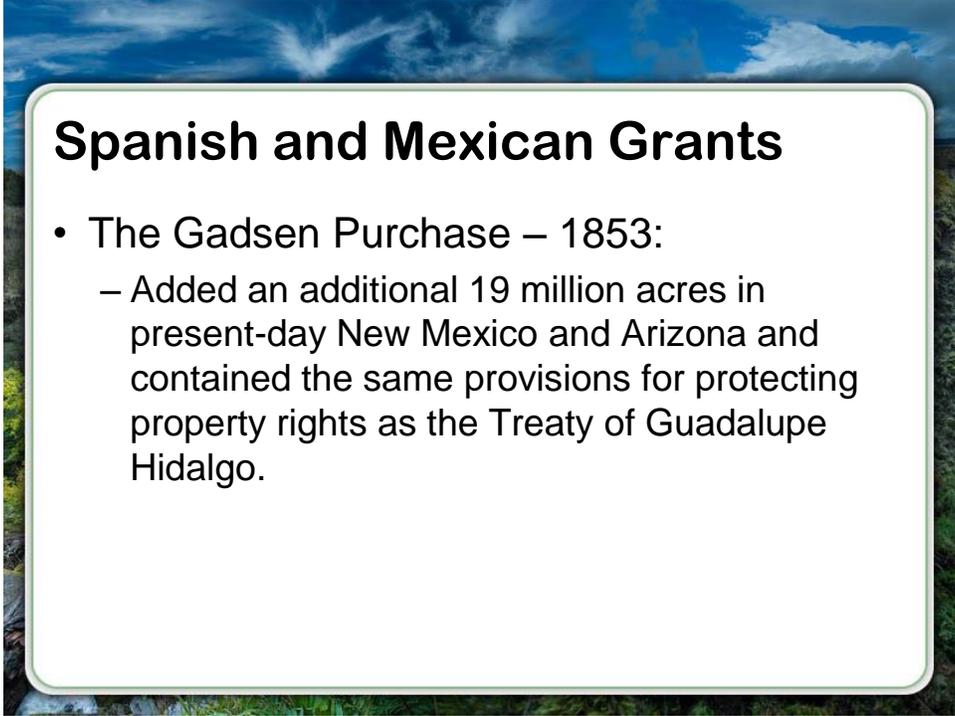


Spanish and Mexican Grants

- Treaty of Guadalupe Hidalgo, 1848:
 - Articles 8 and 9 of the Treaty provided for the protection of the **property** rights of Mexican nationals living within the ceded territory.
 - Article 8 states: “Mexicans now established in territories previously belonging to Mexico, ... shall be free to continue where they now reside, ... retaining the **property** which they possess in the said territories...”
 - The U.S. was required to recognize title to all valid Spanish and Mexican land grants.

There is that word property rights of Mexican Nationals living within the ceded territory. We have seen so far that the wording for the Louisiana Purchase mentioned property rights and the Russian Purchase mentioned property rights and here we have it again in the Treaty of Guadalupe Hidalgo.

Article 8 of that Treaty, states “Mexicans now established in the territories, previously belonging to Mexico, shall be free to continue where they now reside, retaining the property which they possess in the aid territories”. The U.S was required to recognize title to all valid Spanish and Mexican Land Grants. And we will learn more about that.



Spanish and Mexican Grants

- The Gadsden Purchase – 1853:
 - Added an additional 19 million acres in present-day New Mexico and Arizona and contained the same provisions for protecting property rights as the Treaty of Guadalupe Hidalgo.

Also in the Gadsden Purchase which took place in 1853, that added an additional 19 million acres in present day New Mexico and Arizona. That's way down on the southern border there and that had the same provisions for protecting the property rights as the Treaty of Guadalupe Hidalgo.

These are some important dates. It just shows the long history in New Mexico. 1598, Spain began to colonize New Mexico. 1610, Santa Fe was established as the capital. There is still a building called the Palace of Governors, which was the original capital building and it is still standing there.

Spanish and Mexican Grants

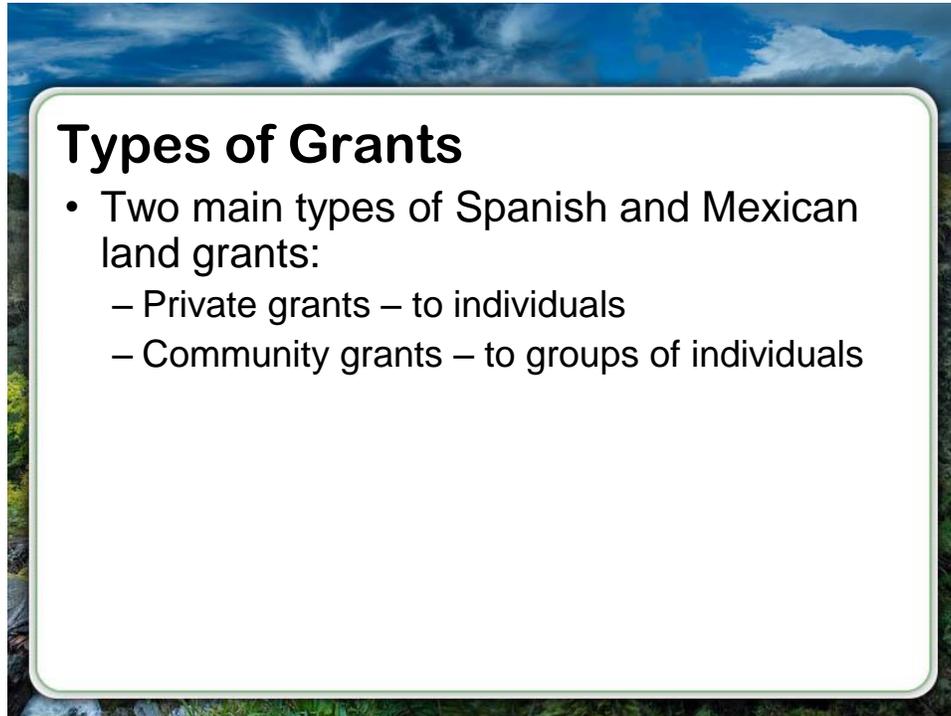
- Timeline:
 - 1598 - Spain begins colonization of New Mexico
 - 1610 – Santa Fe established as capital of New Mexico (oldest in U.S.)
 - 1680 – Pueblo Revolt, Spanish records destroyed, Spanish retreat to El Paso
 - 1684 – First written authority to make Spanish land grants
 - 1692 – Spain reconquers New Mexico, reestablishes capital in Santa Fe
 - 1706 – Albuquerque established
 - 1821 – Mexican independence from Spain
 - 1848 – Treaty of Guadalupe Hidalgo
 - 1853 – Gadsen Purchase

The oldest capital in the United States is in Santa Fe. 1680, there was a Pueblo Revolt, the Spanish had come in and tried to colonize and they had brought priests in and they tried to convert the local Indians. The Pueblos got together and they revolted against the Spanish and drove the Spanish out and many of the Spanish records were destroyed. The Spanish retreated down to El Paso, Texas.

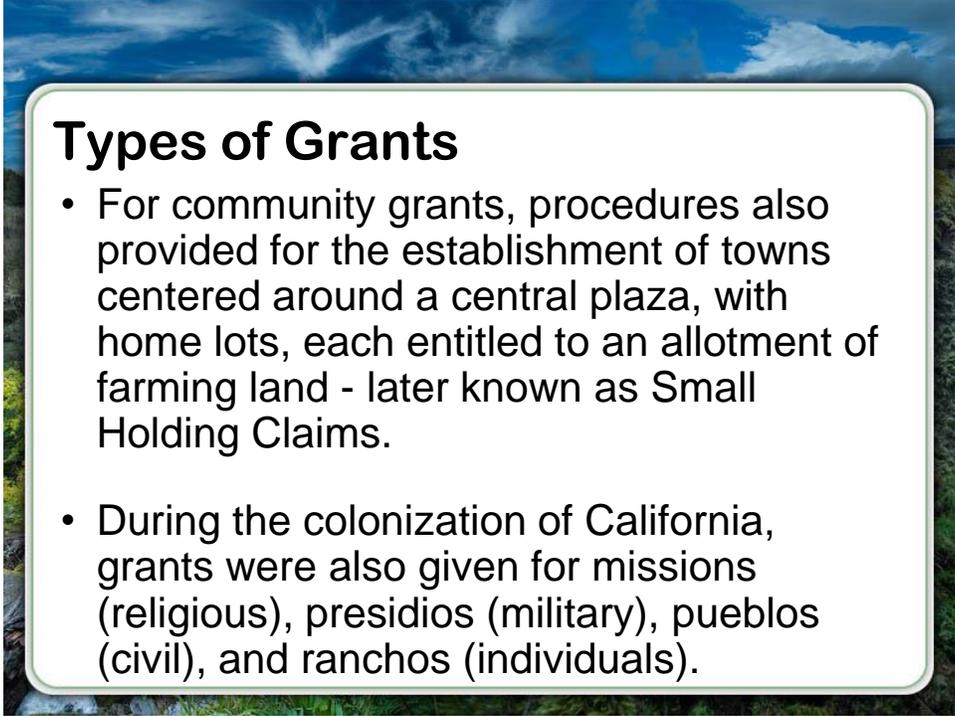
In 1684, there was the first written authority to make Spanish Land Grants. Then 1692, Spain reconquered New Mexico, and they reestablished the capital in Santa Fe. In 1706, Albuquerque was established; they just had their 300th anniversary. 1821, Mexican Independence from Spain. 1848, the Treaty of Guadalupe Hidalgo and then, 1853 the Gadsen Purchase. So a lot of history in New Mexico relating to these land claims.

Types of Grants

We'll move on here to the types of grants. There was two main types of Spanish and Mexican Land Grants.



There was private grants to individuals to some person that might have done something for the King or for the Governor where they would be rewarded with a grant of land. That would be a private grant. Then there are community grants that were granted for groups of individuals that were building a village or getting together to start a town.



Types of Grants

- For community grants, procedures also provided for the establishment of towns centered around a central plaza, with home lots, each entitled to an allotment of farming land - later known as Small Holding Claims.
- During the colonization of California, grants were also given for missions (religious), presidios (military), pueblos (civil), and ranchos (individuals).

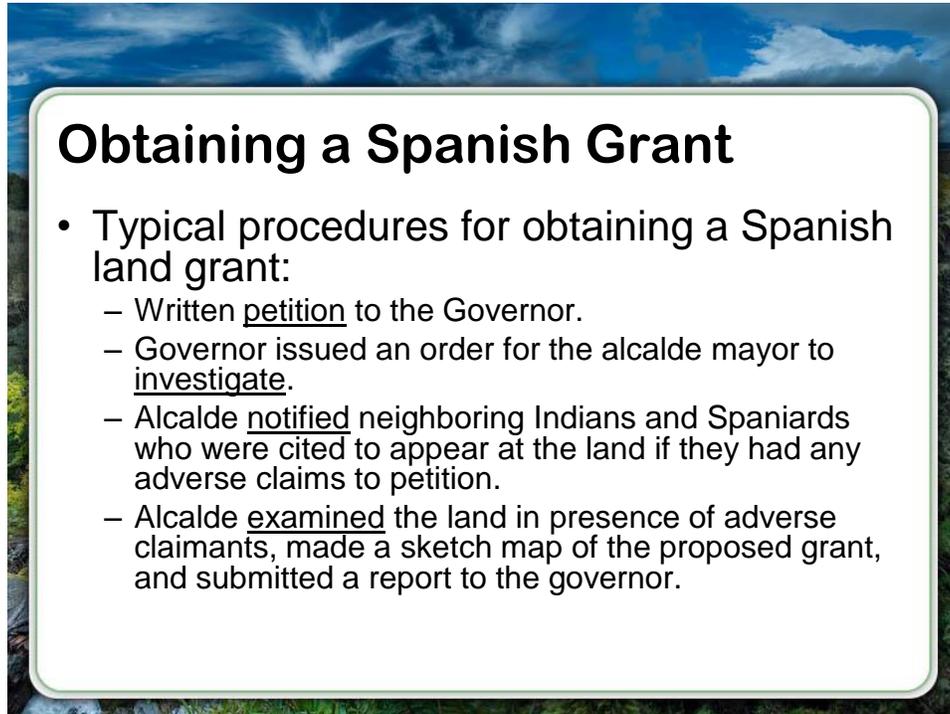
And for community grants there were procedures that provided for establishment of towns centered around a central plaza with home lots and they are each entitled to an allotment of farming and some of these later became known as small holding claims which we'll talk about later.

Then there are community grants that were granted for groups of individuals that were building a village or getting together to start a town. During the colonization of California, grants were also given for Missions, they were religious grants. Presidio's which are military grants.

Then they have Pueblos, which were civil, and Ranchos to those individuals. So there is a lot of that in California and New Mexico and Arizona. So these are the areas that you would run into these types of grants. I think it is very interesting how they went about obtaining a Spanish Grant.

Obtaining a Spanish Grant

Typical procedures were they would have to write a petition to the governor, the governor would issue an order to the Alcalde Minor to investigate, he was kind of like a political leader there.



Obtaining a Spanish Grant

- Typical procedures for obtaining a Spanish land grant:
 - Written petition to the Governor.
 - Governor issued an order for the alcalde mayor to investigate.
 - Alcalde notified neighboring Indians and Spaniards who were cited to appear at the land if they had any adverse claims to petition.
 - Alcalde examined the land in presence of adverse claimants, made a sketch map of the proposed grant, and submitted a report to the governor.

He would investigate it and the Alcalde would notify the neighboring Indians and Spaniards and they were to appear on the land if they had any adverse claims against that petition. Now the Alcalde would examine the land in presence of the adverse claimants and make a sketch map of the proposed grant and submit it to the governor.

I haven't seen any examples of these sketch maps but those would be very interesting to come across and it might be helpful for somebody that may have to reestablish part of that grant.

The governor once he got the application for the grant, would examine the papers and if he was convinced that the lands were vacant, public domain with no conflicting claims a title of possession was prepared it stated the limits of the land grant. Then possession was delivered at a ceremony attended by the Alcalde, two Spanish witnesses, the grantee and the neighboring Indians.

The Alcalde pointed out the boundaries to the grantee. Who, this is interesting, who tore up grass and threw rocks and all that were present then shouted, "Long live the King!" And that signified that the grantee was now an undisputed possession and I thought well this can't be real.

Obtaining a Spanish Grant

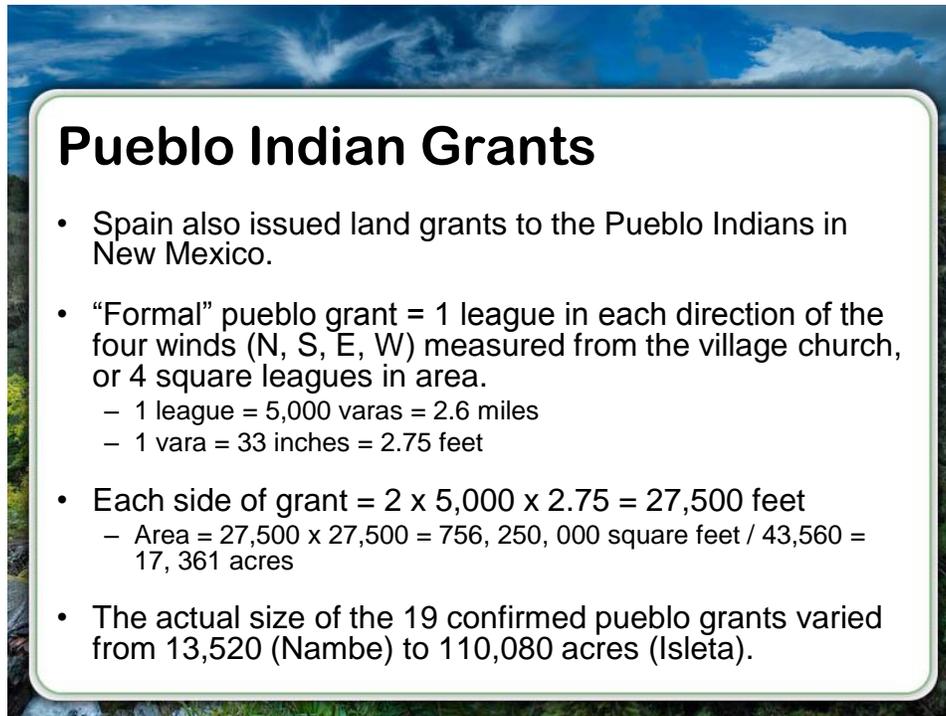
- Governor examined the papers and, if convinced that the lands were vacant public domain with no conflicting claims, a title of possession was prepared stating the limits of the land grant.
- Possession was delivered at a ceremony attended by the alcalde, two Spanish witnesses, the grantee and the neighboring Indians. The alcalde pointed out the boundaries to the grantee who **tore up grass and threw rocks**. All present then shouted, “**Long live the King!**” thus signifying that the grantee was now in undisputed possession.
- After living and laboring on the land four years, the grantee obtained title from the King of Spain.

Well I looked at some of the wording from some of the actual documents they had been translated from Spanish and that is exactly what they said; everybody tore up grass, threw rocks, and shouted, “Long live the King!” I think back now and if this was now a days, people would probably throw rocks at the surveyor and I don’t know if they would shout, “long live the president.” Anyway that’s pretty interesting.

After they had lived and labored on the land for four years the grantee obtained title from the King of Spain. So a lot of this was going on back in the 1600s and the 1700s. Mostly the 1700s and we’ll find out how that played out as the United States took possession of this area.

Pueblo Indian Grants

We also want to talk about Pueblo Indian Grants. The Pueblo Indians were living in New Mexico and they were not migratory Indians they didn't travel around.



Pueblo Indian Grants

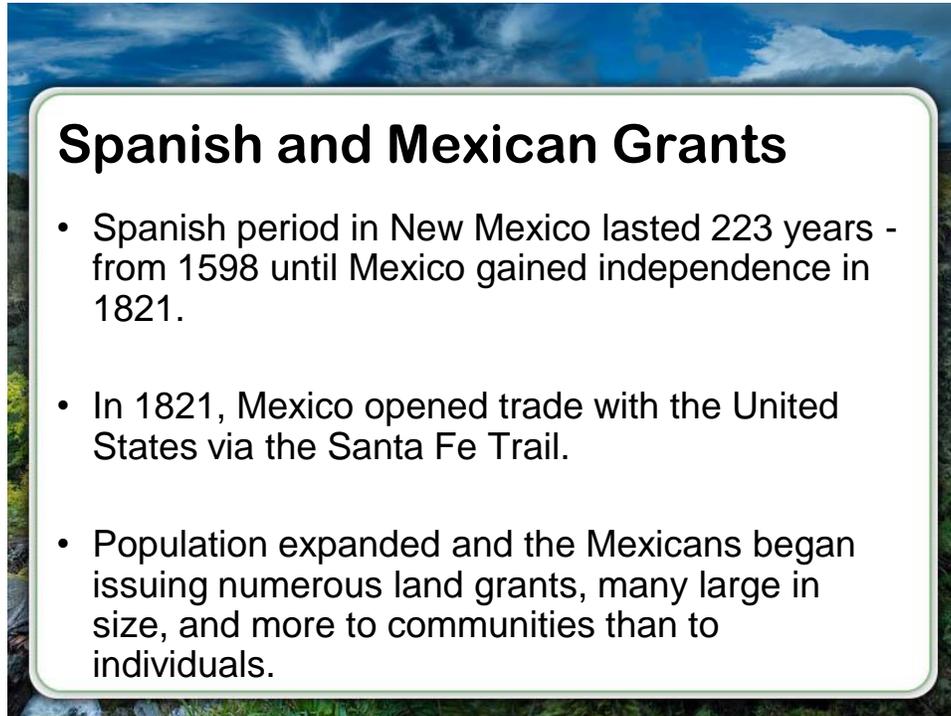
- Spain also issued land grants to the Pueblo Indians in New Mexico.
- “Formal” pueblo grant = 1 league in each direction of the four winds (N, S, E, W) measured from the village church, or 4 square leagues in area.
 - 1 league = 5,000 varas = 2.6 miles
 - 1 vara = 33 inches = 2.75 feet
- Each side of grant = $2 \times 5,000 \times 2.75 = 27,500$ feet
 - Area = $27,500 \times 27,500 = 756,250,000$ square feet / $43,560 = 17,361$ acres
- The actual size of the 19 confirmed pueblo grants varied from 13,520 (Nambe) to 110,080 acres (Isleta).

Nomadic, I guess the word is. They lived in villages they were very advanced. They had their own irrigation system, they called them acacia's now over there. So, Spain decided they would give these formal grants to the Pueblo Indians that lived there. A formal grant, Pueblo Grant, pueblo means village in Spanish, would be one league in each direction of the four winds; north, south, east, west. Measured from the village church or Four Square Leagues.

I've worked it out on the slide here. The size of the vara, a league is about 2.6 miles. So each side of the grant would measure out to a league in each direction but anyway it ends up being a formal pueblo grant would be about 17,361 acres. Well the actual size of the nineteen confirmed pueblo grants in New Mexico varied from about 13,520 at Nambe to 110,080 acres at Isleta. Some of the reasons for this were that they might not be feasible for them to get their grant in all four directions because there might be owners that somebody else might have owned land in the west, north, south, or east and that's what happened in the Sandia Grant which we talked about a little bit earlier.

Spanish and Mexican Grants

The Spanish period in New Mexico lasted 223 years from 1598 until Mexico gained independence in 1821.

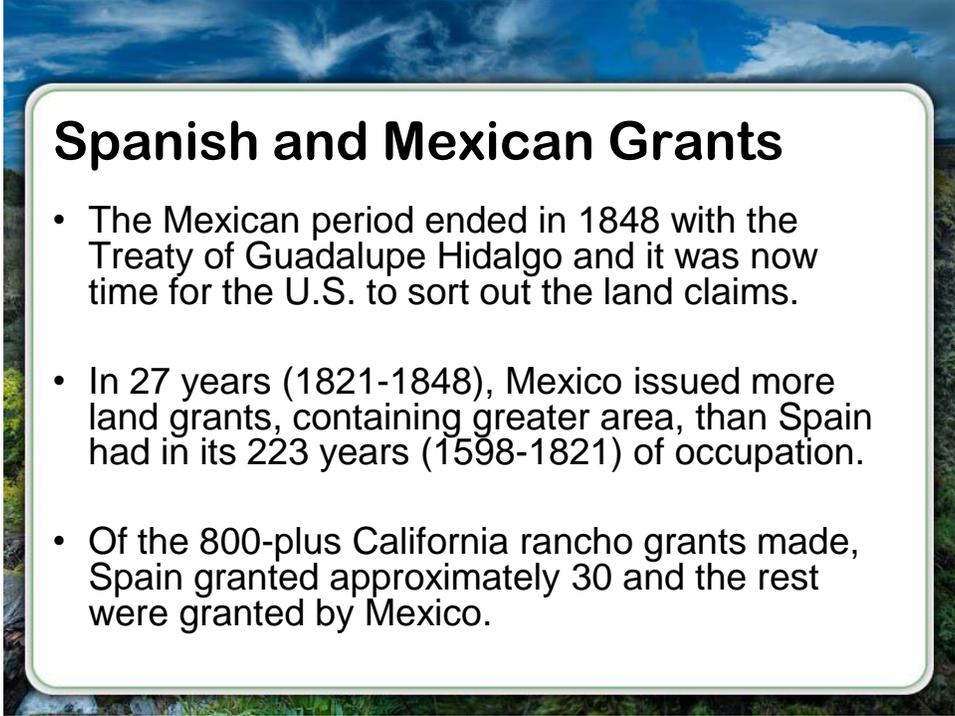


Spanish and Mexican Grants

- Spanish period in New Mexico lasted 223 years - from 1598 until Mexico gained independence in 1821.
- In 1821, Mexico opened trade with the United States via the Santa Fe Trail.
- Population expanded and the Mexicans began issuing numerous land grants, many large in size, and more to communities than to individuals.

In 1821, Mexico opened up trade with the United States by the Santa Fe Trail and that's when things really started opening up down in New Mexico and the southwest.

The population started expanding and the Mexicans began to issue numerous land grants to develop the land. Many of those grants were very large and most of them were to communities rather than individuals.



Spanish and Mexican Grants

- The Mexican period ended in 1848 with the Treaty of Guadalupe Hidalgo and it was now time for the U.S. to sort out the land claims.
- In 27 years (1821-1848), Mexico issued more land grants, containing greater area, than Spain had in its 223 years (1598-1821) of occupation.
- Of the 800-plus California rancho grants made, Spain granted approximately 30 and the rest were granted by Mexico.

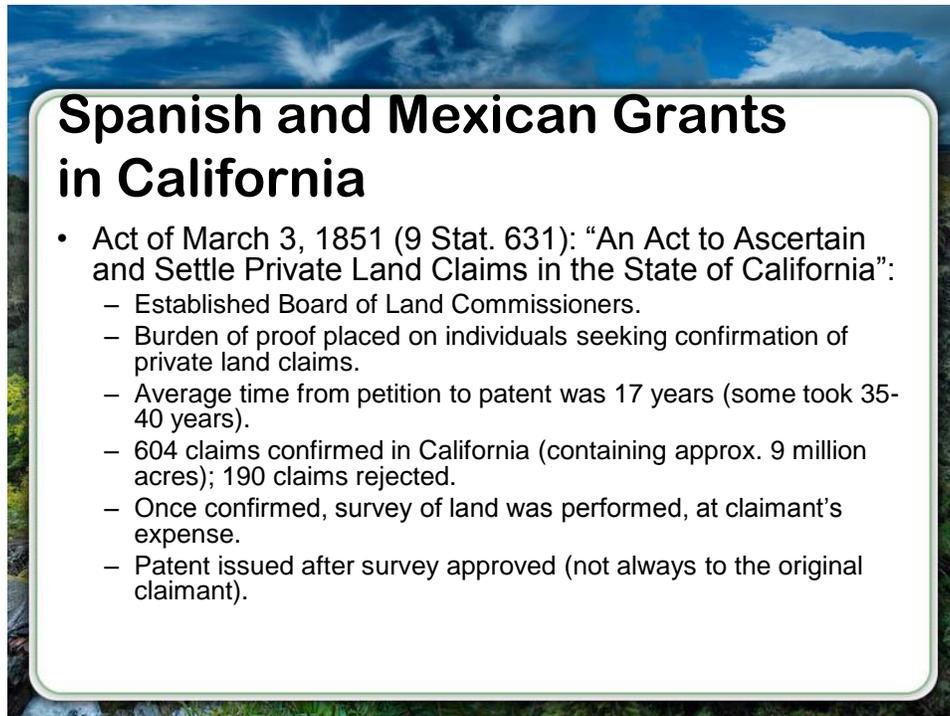
The Mexican period ended in 1848 with the Treaty of Guadalupe Hidalgo as we talked about. And it was time then for the U.S. to sort out the land claims because they said they would honor existing property rights.

In summary, in 27 years, Mexico was in possession of New Mexico and that area of the southwest. They issued more land grants containing greater area than Spain had issued in its 223 years, since 1598, since they had occupied it.

Of the 800 plus California Rancho Grants made, Spain granted approximately 30 and the rest were granted by Mexico. So I found that pretty interesting.

Spanish and Mexican Grants in California

They were pretty good in California they knew they had to get on this right away, in 1848 was the Treaty.



Spanish and Mexican Grants in California

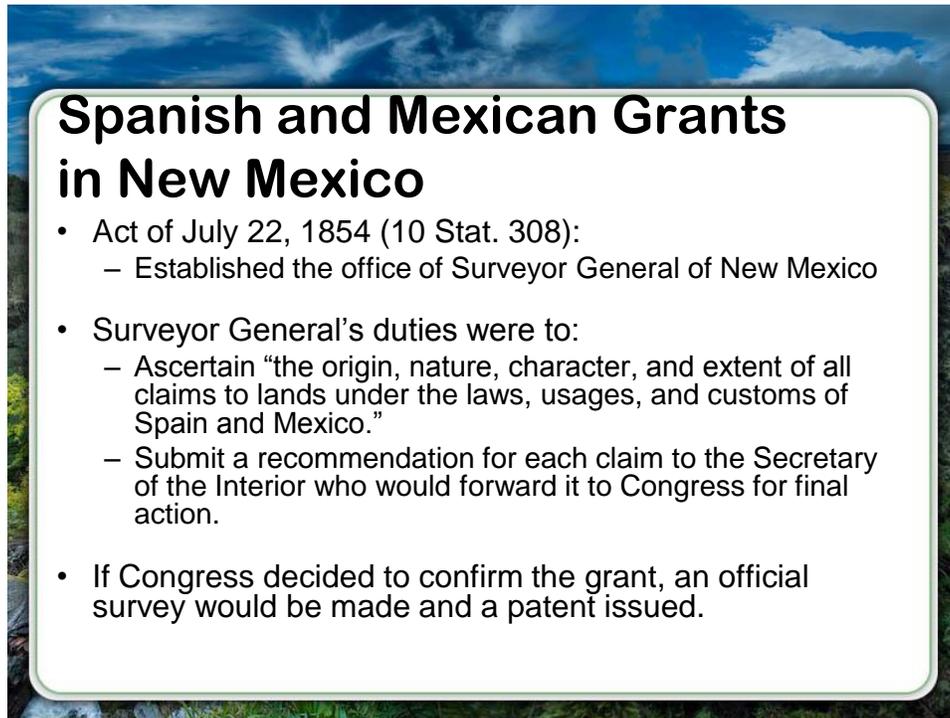
- Act of March 3, 1851 (9 Stat. 631): “An Act to Ascertain and Settle Private Land Claims in the State of California”:
 - Established Board of Land Commissioners.
 - Burden of proof placed on individuals seeking confirmation of private land claims.
 - Average time from petition to patent was 17 years (some took 35-40 years).
 - 604 claims confirmed in California (containing approx. 9 million acres); 190 claims rejected.
 - Once confirmed, survey of land was performed, at claimant’s expense.
 - Patent issued after survey approved (not always to the original claimant).

1851 they came up with an Act to settle private land claims in the state of California. They established a board of land commissioners. The burden of proof was placed on the individual seeking confirmation for their land claim. The average time from petition to patent was 17 years and some took 35 to 40 years to get through. There were 604 claims confirmed in California and they contained 9,000,000 acres. 190 claims were rejected.

Once confirmed, the survey of the land was performed at the claimant’s expense and a patent was issued after the survey was approved but it wasn’t always issued to the original claimant because it took so many years to get a lot of them through.

Spanish and Mexican Grants In New Mexico

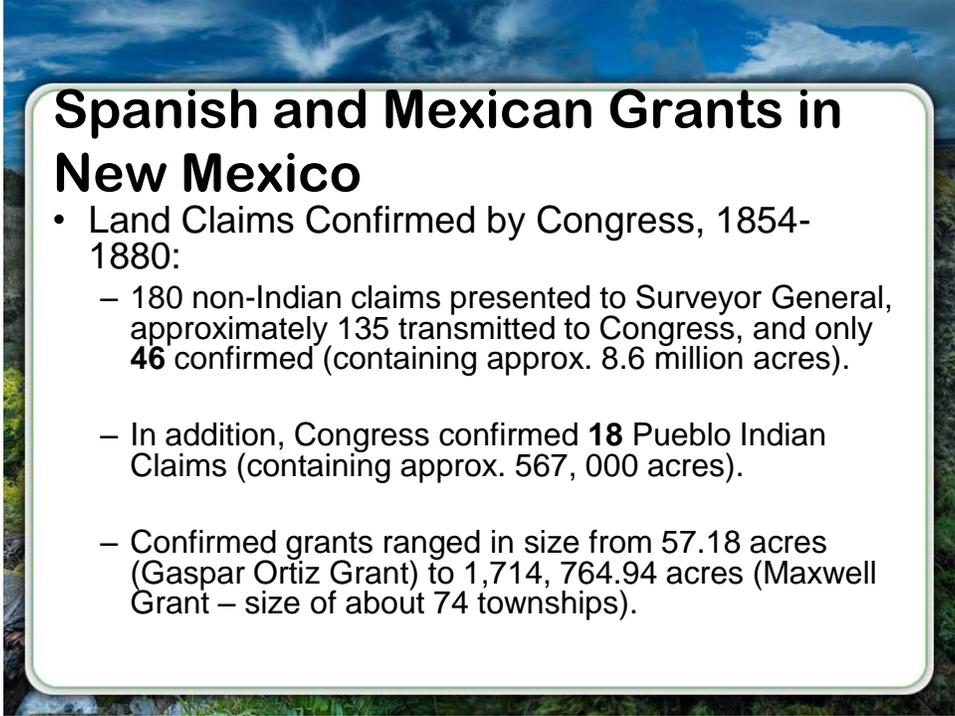
They finally had an Act in 1854 that established the Office of the Surveyor General of New Mexico. And he had quite a few duties but among his duties were to ascertain the origin nature character in extent of all claims to land under the law, usages, and customs of Spain and Mexico.



Spanish and Mexican Grants in New Mexico

- Act of July 22, 1854 (10 Stat. 308):
 - Established the office of Surveyor General of New Mexico
- Surveyor General's duties were to:
 - Ascertain “the origin, nature, character, and extent of all claims to lands under the laws, usages, and customs of Spain and Mexico.”
 - Submit a recommendation for each claim to the Secretary of the Interior who would forward it to Congress for final action.
- If Congress decided to confirm the grant, an official survey would be made and a patent issued.

So he was to sort out these land claims that were made to the Mexicans and the Spanish before it became part of the United States. He was to submit a recommendation for each claim to the Secretary of Interior who would forward it to Congress for final action. If Congress decided to confirm the grant, an official survey would be made and a patent would be issued.



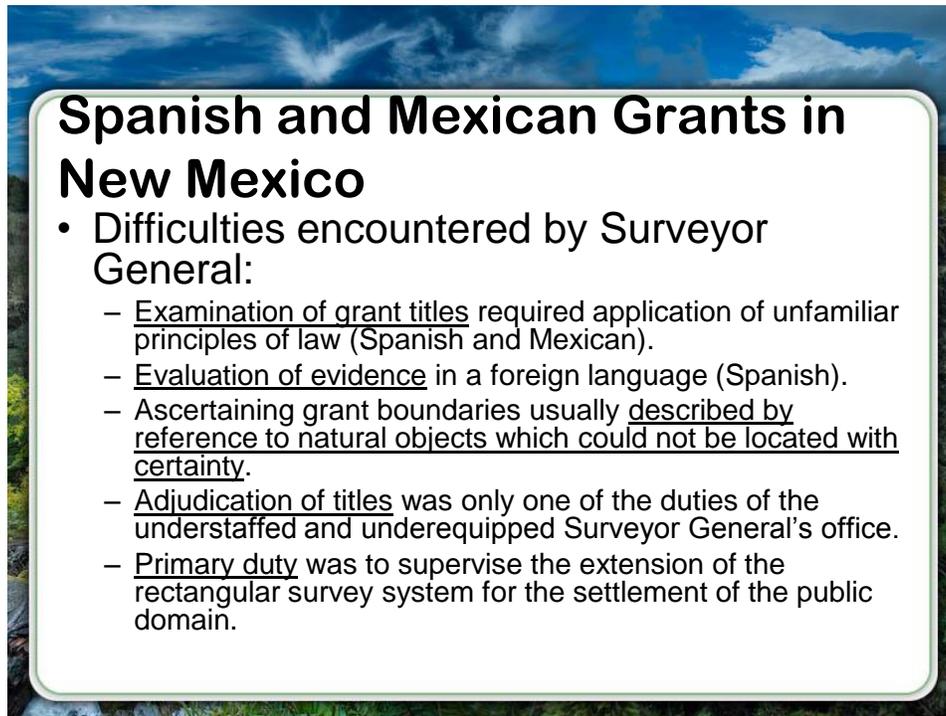
Spanish and Mexican Grants in New Mexico

- Land Claims Confirmed by Congress, 1854-1880:
 - 180 non-Indian claims presented to Surveyor General, approximately 135 transmitted to Congress, and only **46** confirmed (containing approx. 8.6 million acres).
 - In addition, Congress confirmed **18** Pueblo Indian Claims (containing approx. 567, 000 acres).
 - Confirmed grants ranged in size from 57.18 acres (Gaspar Ortiz Grant) to 1,714, 764.94 acres (Maxwell Grant – size of about 74 townships).

There was the land claims, Congress confirmed the Spanish and Mexican Land Grants between 1854 up to 1880. There was 180 non-Indian claims presented to the Surveyor General. Approximately 135 made it to Congress and only 46 of them got confirmed. They contained approximately 8.6 million acres. Additionally, Congress confirmed 18 Pueblo Grants containing approximately 567,000 acres. The grants that were confirmed by Congress ranged in size from 57.18 acres all the way up to 1,714,764.94 acres and that was the Maxwell Grant. To put that in perspective, I figured out the size of an average township and figured that is about 74 townships so that's a very large grant and we'll find out that how this came about.

Difficulties

Difficulties that the Surveyor General encountered relating to these grants because he had to examine the grant titles that followed unfamiliar principles of law. Mexican laws. That is how these grants were originally granted under. He had to evaluate evidence that was in a foreign language which was Spanish. He had to ascertain the grant boundaries that were usually described by reference to natural objects which could not be located with certainty.



Spanish and Mexican Grants in New Mexico

- Difficulties encountered by Surveyor General:
 - Examination of grant titles required application of unfamiliar principles of law (Spanish and Mexican).
 - Evaluation of evidence in a foreign language (Spanish).
 - Ascertaining grant boundaries usually described by reference to natural objects which could not be located with certainty.
 - Adjudication of titles was only one of the duties of the understaffed and under-equipped Surveyor General's office.
 - Primary duty was to supervise the extension of the rectangular survey system for the settlement of the public domain.

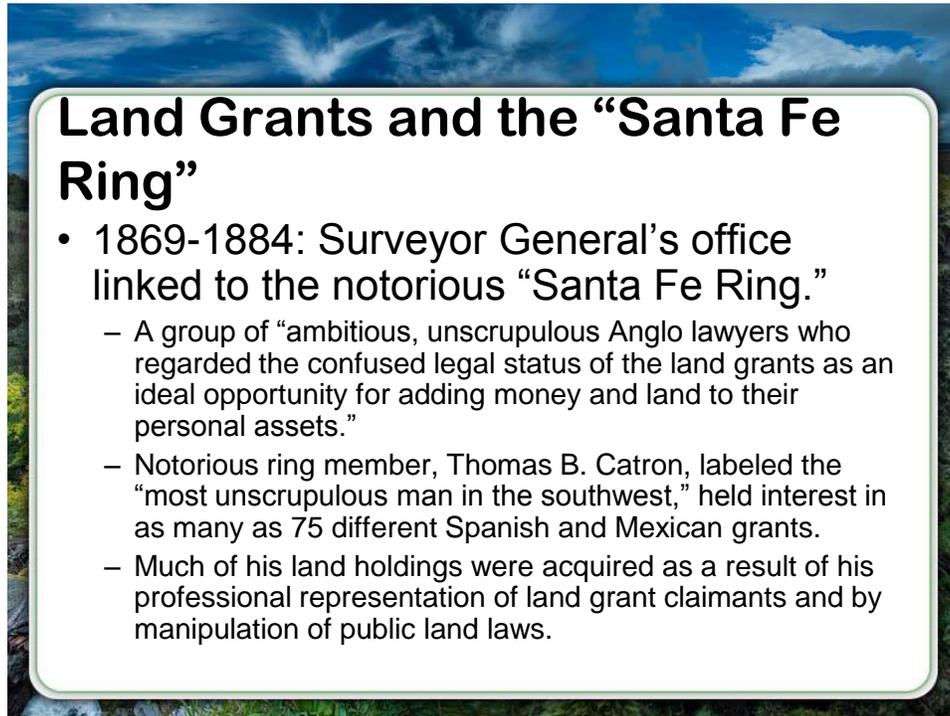
The Spanish and this statement right here is very important because it has been the source of many controversies over the years. Probably the last couple hundred years because they were described by these natural objects and nobody could figure out which exact objects they were talking about.

Another thing the Surveyor General had to do was adjudicate the titles and that was only one of the duties of the understaffed, and under-equipped Surveyor Generals office had to do. That sounds familiar, under-budget, under-staffed, not enough time that was the same back in the 1850s. The primary duty of the Surveyor General was to extend the rectangular survey system over the public domain so that settlers could come into New Mexico and settle the state or the territory.

Land Grants and the Santé Fe Ring

There are some reasons why they stopped having Congress confirm these grants.

1869 to 1884, the Surveyor General's Office was linked to a notorious group of individuals identified as a Santa Fe Ring.



Land Grants and the “Santa Fe Ring”

- 1869-1884: Surveyor General's office linked to the notorious “Santa Fe Ring.”
 - A group of “ambitious, unscrupulous Anglo lawyers who regarded the confused legal status of the land grants as an ideal opportunity for adding money and land to their personal assets.”
 - Notorious ring member, Thomas B. Catron, labeled the “most unscrupulous man in the southwest,” held interest in as many as 75 different Spanish and Mexican grants.
 - Much of his land holdings were acquired as a result of his professional representation of land grant claimants and by manipulation of public land laws.

You have probably heard of the Benson Syndicate that was a group that took advantage of the land laws of the west.

But we also have the Santa Fe Ring which was a group of unscrupulous Anglo lawyers or Americans from the east that came there and they regarded the confused legal status of the land grants as an ideal opportunity for adding money and land to their personal assets.

One of the most notorious members of the ring was Thomas B. Catron. He was a very prominent person in New Mexico history. He has a county named after him but he was labeled from some of the sources I read, he was labeled as the most unscrupulous man in the southwest. He was an attorney, that doesn't mean all attorneys are unscrupulous, but he was an unscrupulous attorney. They said he held interest in as many as 75 different Spanish and Mexican Grants.

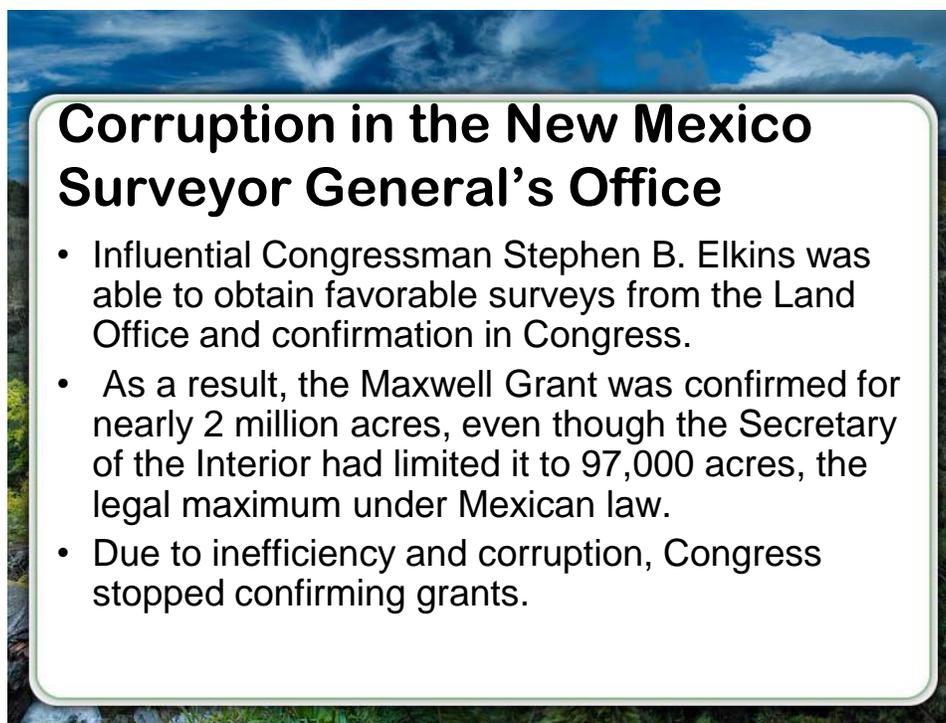
Much of his holdings were acquired as a result of his professional representation of the land grant claimants and by the manipulation of the public land laws. What I mean by that he would represent somebody, a poor person that was trying to get claim to a land grant and when they couldn't pay him, well he would just take their land as payment. Another thing I heard in this time period, I read, and some of the sources was that there would be unsuspected Spanish

speaking people and some of the Americans would come in there and they would give them a handful of silver coins and they would say sign this, put your mark on this document here.

Well, little did they know they were deeding away the rights to their land, the title to their land. So there were cases when some American settlers came in and gained title to lands by these methods that were not exactly on the up and up.

Corruption

There was corruption in the New Mexico Surveyor General's Office. There was an influential congressman, Steven B. Elkins, which I heard was a law school student classmate of Mr. Catron who we talked about before.



Corruption in the New Mexico Surveyor General's Office

- Influential Congressman Stephen B. Elkins was able to obtain favorable surveys from the Land Office and confirmation in Congress.
- As a result, the Maxwell Grant was confirmed for nearly 2 million acres, even though the Secretary of the Interior had limited it to 97,000 acres, the legal maximum under Mexican law.
- Due to inefficiency and corruption, Congress stopped confirming grants.

That he was able to obtain favorable surveys from the land office in confirmation in Congress. So there was a lot of influence that could be put on Congress to approve these land claims.

As a result of that, the Maxwell Grant was confirmed for nearly 2,000,000 acres, that's up in northern New Mexico, Northeastern New Mexico. And even though the Secretary of Interior had said that it should be limited to 97,000 acres which was the legal maximum under Mexican law, Congress went ahead and confirmed it for this very large amount. Due to this inefficiency and corruption, Congress stopped confirming the grants, not too long after that Santa Fe Ring was in power.

Moving on there became a new president in 1891. His name was President Harrison and they established the Act of March 3, 1891, which established the court of private land claims.

Now this consisted of 5 non-partisan judges who had examined and confirmed the claims. There was stricter criteria for confirmation. Grants that were issued by lesser Mexican officials were rejected. So back when the Mexicans were in power for those 27 years or so, a lot of people went around granting land.



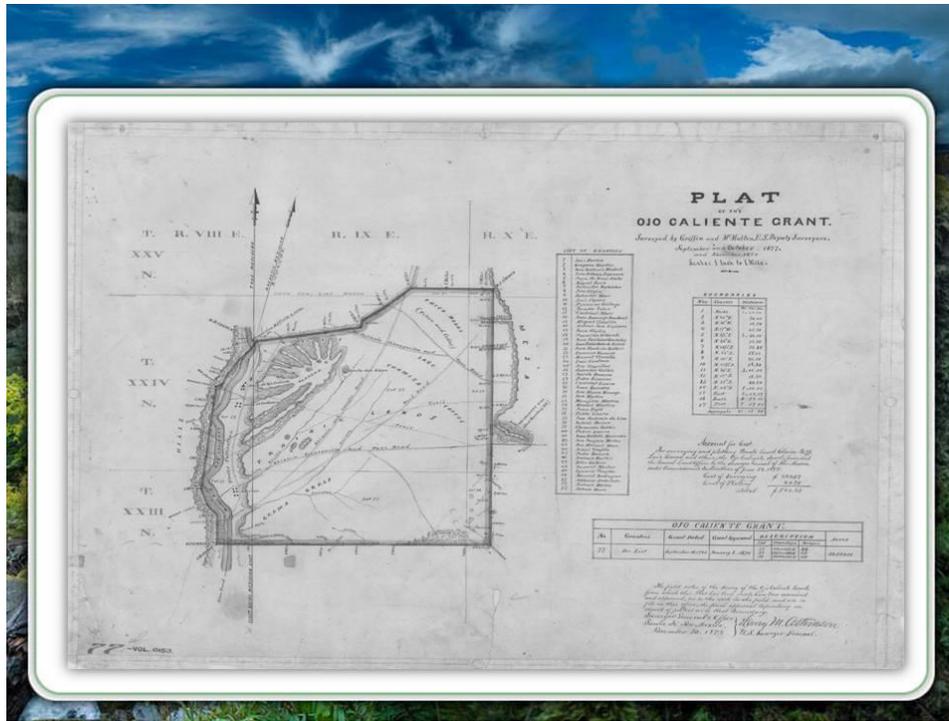
Court of Private Land Claims

- Established by Act of March 3, 1891 (26 Stat. 854)
- 5 non-partisan judges, examined and confirmed claims.
- Stricter criteria for confirmation.
- Grants issued by lesser Mexican officials were rejected.
- Court confirmed **82 claims** (approx. 2 million acres)
 - Smallest: 200 acres
 - Largest: 261,000 acres

It would be like me saying “I grant you that land over there”. Well if you didn’t have the power to do it then that wasn’t a valid claim. So what they decided to do was they would only honor the claims that had been issued by the governor of that time that was in the Mexican territory.

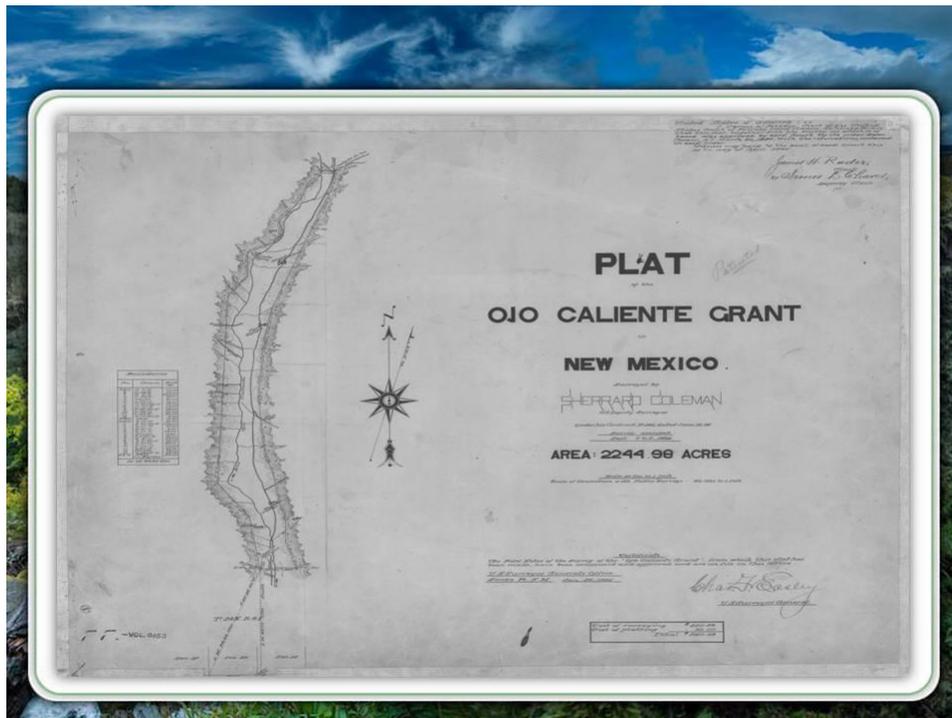
Moving on, the court confirmed 82 claims over their time of existence for approximately 2,000,000 acres. The smallest was 200 acres and the largest being 261,000 acres. This is an example this plat here was done in about the 1870’s when they were still confirming the grants by Congress.

It was never confirmed at that time and then a little later in the 1890’s you can see that, and this slide here was about 30 some thousand acres.



But what actually got confirmed the Ojo Caliente Grant was about 2,044 acres. That is because when the court of private land claims examined this, they realized that the claim was only describing the area along the river, not the area on this entire area that is shown on this plat here.

So the official final plat, I'll go back to this slide, is the one here for only 2,000 acres.

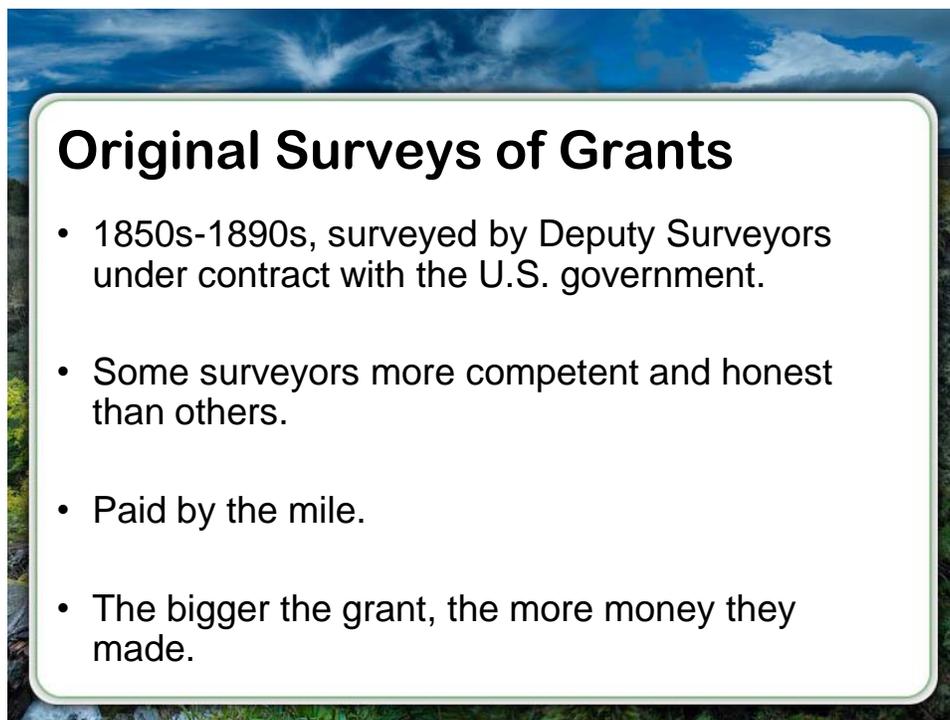


If you look up and up in the right hand corner of this plat here you'll see this part right here that is the approval statement by the court of private land claims. If its one that had been confirmed, it will have it up in that corner there. So if you see a plat like the previous one that shows this big area but it doesn't have that confirmation on it then you'll know is wasn't the final plat of that grant.

Alright just something to keep in mind when looking at these grant plats is a lot of times the earlier grants that were confirmed by Congress they would contain larger area, the criteria was looser, for getting the grants approved so you'll find that the ones that were approved by the court of private land claims maybe smaller. But they took a lot of effort to try and make sure that they put the grants where they were supposed to be based on the wording in the original documents from Spain or Mexico.

Original Surveys of Grants

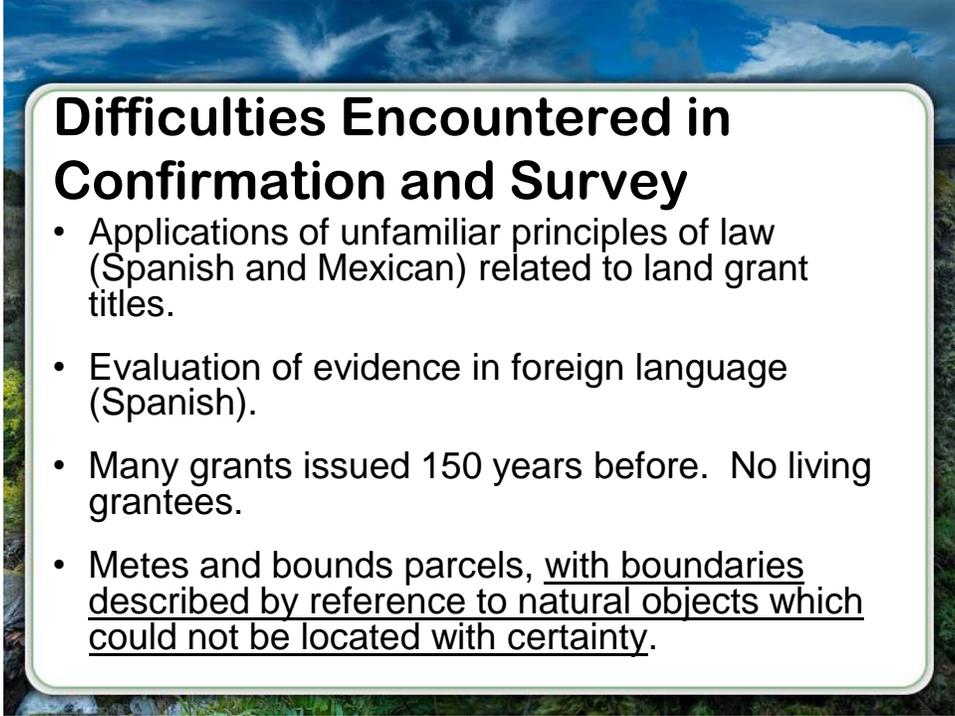
Well I'd like to talk about the original surveys of the grants. The U.S. government surveys took place in the 1850s to the 1890s most of them.



Original Surveys of Grants

- 1850s-1890s, surveyed by Deputy Surveyors under contract with the U.S. government.
- Some surveyors more competent and honest than others.
- Paid by the mile.
- The bigger the grant, the more money they made.

They were surveyed by Deputy Surveyors under contract with the U.S. Government. Some surveyors were more competent and honest than others just like now a days. They were paid by the mile, so the bigger the grant the more money they made. Now some of the difficulties that were encountered in confirmation and survey, was the application of the unfamiliar principles of law.



Difficulties Encountered in Confirmation and Survey

- Applications of unfamiliar principles of law (Spanish and Mexican) related to land grant titles.
- Evaluation of evidence in foreign language (Spanish).
- Many grants issued 150 years before. No living grantees.
- Metes and bounds parcels, with boundaries described by reference to natural objects which could not be located with certainty.

Spanish-Mexican law related to the grants evaluation of evidence in a foreign language. Many of the grants were issued 150 years before so there weren't any living grantee's to show the surveyors where the boundaries were. These metes and bounds parcels had boundaries that were described by reference to natural objects which could not be located with certainty.

That's an important thing to remember because a lot of controversy came up over the years because of this fact.

Uncertain Boundary Descriptions

- "... on the north the Pueblo Quemado; on the south an arroyo of aqua sarca (clear water) ... on the west the lands of Juan Martin; and on the east the mountain range." (Cundiyo Grant, 1743)
- "... on the north, the ruins of an old pueblo, ... being the northerly of the two in the area; on the east the Rio Grande; on the south a small hill which forms the boundary of the lands of Luis Garcia; on the west, the prairies and hills for entrance and exits." (Town of Alameda Grant, 1710)
- "... on the east, the sierra madre called Sandia." or "... on (toward) the main ridge called Sandia." (Sandia Pueblo Grant, 1748)
- Sandia Pueblo Grant east boundary has been in dispute for over 250 years.

These are just some of the uncertain boundary descriptions that I would like to talk about. On the north, this is the first one it's for the Cundidya Grant. It says on the north the Pueblo Quemado. On the south, the arroyo of Aqua Sarca which is clear water. On the west the lands of Juan Martin. On the east, the mountain range. Well that's a pretty ambiguous one there, the mountain range because we will find that there are a lot of different way that we can interpret where the mountain range is, where it starts.

Another one with the town of Alameda Grant from 1710, talks about on the north the ruins of an old pueblo, being the northerly of the two in the area if that helps narrow it down a little. On the east the Rio Grande, on the south a small hill which forms the boundary of the lands of Luis Garcia. On the west, the prairies and hills for entrance and exits. Well that's pretty vague description because I live right by there and there are lots of prairies and hills you could call in that area. So it would have been really difficult for the original surveyor to figure out where that boundary should go.

Then finally, we talk about on the east the Sierra Madre called Sandia or on toward the main ridge called Sandia and that's from the Sandia Pueblo Grant from 1748. The Sandia Pueblo Grant east boundary because of that vague description and has been in dispute for over 250 years and I'll talk a little bit about that. But first I would like to go to the over head here.

Right now I would like do a little exercise just to help you get a feel for dealing with these uncertain boundary calls or boundary descriptions. On the overhead I have just a little sketch of the land claim of Juan Valdez in the middle with his house and field. But let's just say this description says on the east, the mountains, well we have two different ranges of mountains. On the south the river, but there are two different rivers. On the west the hills and on the north the lands of Luis Garcia. Well that would be a hard one to lay out.

But just thinking about it if I was the one saying that this is my land claim or I was the one trying to convince the surveyor what to survey, especially because he gets paid by the mile, he would say I interpret it to mean this, and he would draw a picture. I would probably, and most of us should say the farthest river, I would go to the farthest mountain range, and I would go right up to the front door of this adjacent landowner and to the farthest hills. So you think about that and I believe that is what happened a lot when these claims were being, when they went out to survey the claims, the claimants would say that's what they meant. They meant that far mountain range and they meant that far river and up to my neighbors door step and they meant that hill way over there. That's how a lot of these grants ended up where they did.

I would like to point out the area that has been a major dispute regarding the Sandia Pueblo Grant. If you look at this photograph, it was taken from the subdivision I live in out in Rio Rancho, looking east over to the Sandia Pueblo Grant and that is the undeveloped area across the river there, right in here.

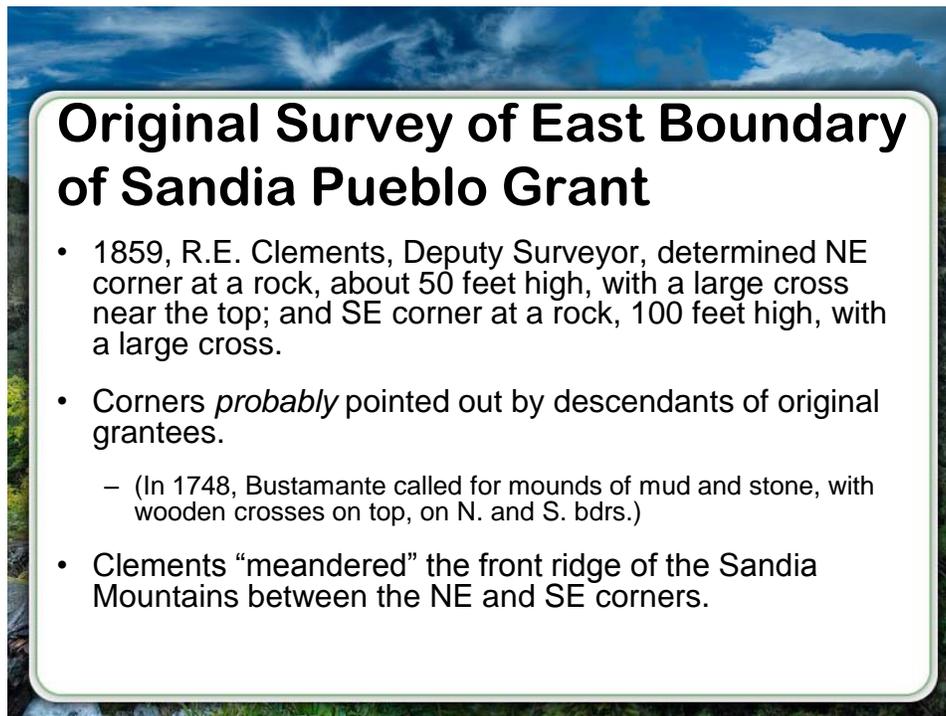


This is the river here, the Rio Grande down where the trees are. If you'll look across the undeveloped area is the Sandia Pueblo land. But the area that was in dispute, if you have been to Albuquerque, this is the Sandia Crest, the tallest mountain on the left, and that's where the tram goes up to and there's a bunch of radio and TV towers up there and it is a beautiful area. I have hiked the top a couple times. I took the tram down though. The problem was that the description called for the Sandia's, well when the surveyor went out there he was pointed out some rocks on the southeast and northeast corner with a big rock with a cross on it and these were probably decedents of the original grantees and said this is where the boundary goes.

Then he proceeded to meander along this ridge here, which is the front ridge. When your looking at the mountains you can't really tell but in between on the other side of that ridge which I pointed out there is a valley there and some high end subdivisions with multi-million, very expensive homes. There's lots of people living in that area. Well the Sandia's, they contend that their land was supposed to go up to this ridge here which is the highest ridge in the crest of the Sandia's. That is what has been in dispute for all of these years. What happened was they filed a lawsuit in I think 1994 then finally in 2003 there was legislation that was passed that protected this area in between.

This area in here the west face of the Sandia's. It made it so that forever in perpetuity could be used by the Sandia Pueblo for traditional uses and for religious ceremonies. There were quite a few stipulations from those people in those very expensive homes that they could stay there, those subdivisions could stay there. But that area would never be further developed. It would always be considered land that could still be used by the public but also had stipulations that it would forever be used by the Sandia Pueblo. Those of that pueblo. One of the stipulations that I found that was interesting says that no gaming or gambling could take place in this area so that meant that they couldn't build a casino on the side of the cliffs there I guess and the wilderness area. I thought that was kind of interesting. They wanted to make sure that nothing like that happened.

The original survey of the east boundary of the Sandia Pueblo Grant took place in 1859.

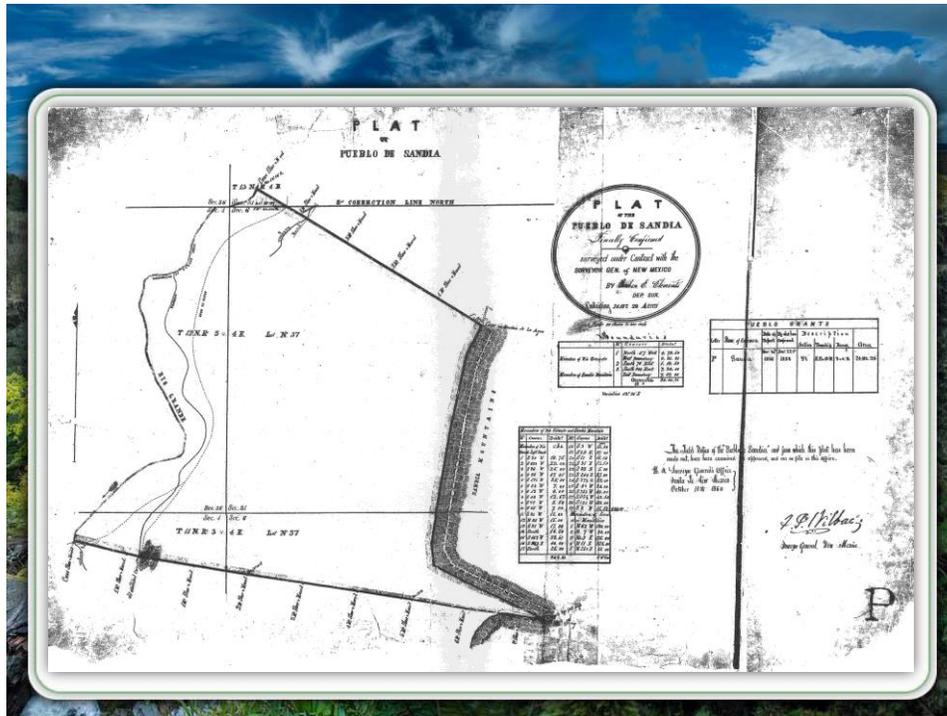


The surveyor was R.E. Clements, he was a Deputy Surveyor. If you remember in 1748 was the year that the grant was confirmed by Spain to the Sandia Pueblo.

So it was over 100 years later that the surveyor was out there trying to figure out where the boundaries went based on the pretty vague description. He determined the northeast corner at a rock about 50 feet high with a large cross near the top.

At the southeast corner another rock 100 feet high with another large cross. If you look in the original field notes you'll find this description to these.

These corners were probably pointed out by decedents of the original grantees. It's not known for sure of course but none of the living people that were there when the grant was confirmed in 1748 by Spain were still around. In 1748, there was a Spanish General, Bustamante. In his description, he called for mounds of mud and stone with wood crosses on top on the north and south boundaries. He didn't say where they were at the corners of the property and he didn't say where they were exactly. So 100 years later a mound of mud and stone, there was no evidence found by the surveyor in 1859.



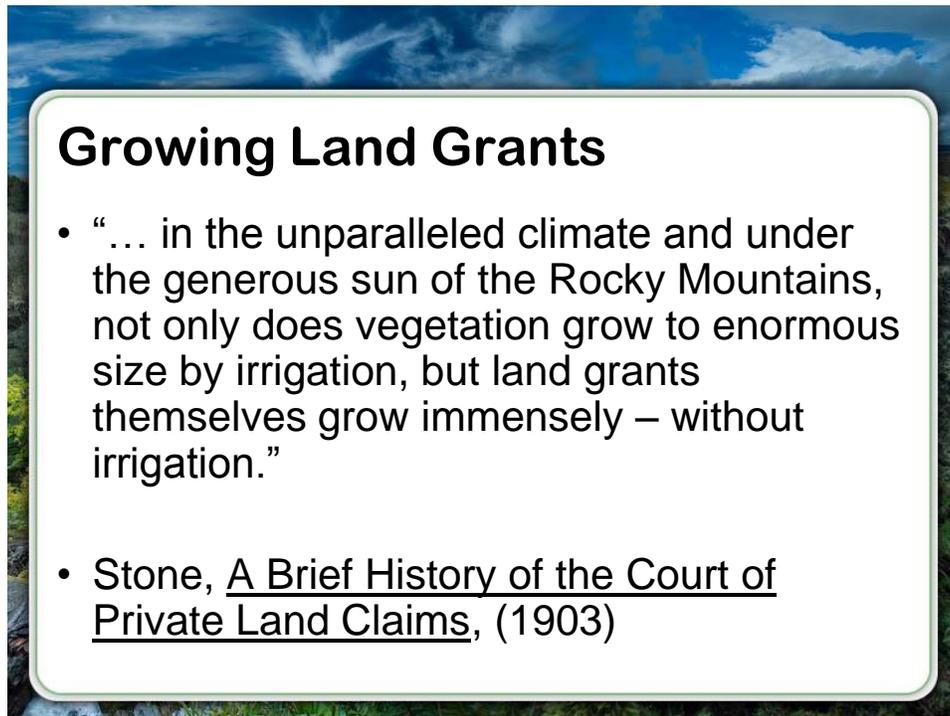
Now after Clements found the northeast and the southeast corners he meandered the front ridge of the Sandia Mountains, which I showed on that previous photograph between the northeast and southeast corners. This is his final plat approved in 1859.

Showing the east boundary here, I'll use my marker here. That area is the area the first ridge, the front ridge that he meandered that he surveyed along.

But this area over in here, in fact its about 10,000 acres that was in dispute. Right along here is the main ridge of the Sandia's and that's what the legislation addressed. So it was a pretty

interesting case and it is still kind of going on. The Pueblo is requesting a survey by BLM of that area to get an official survey that shows that area that is being preserved.

Just in conclusion about the growing land grants. I thought this was a pretty good quote, “In the unparallel climate and under the generous sun of the rocky mountains, not only does vegetation grow to enormous size by irrigation. But land grants themselves grow immensely without irrigation.”



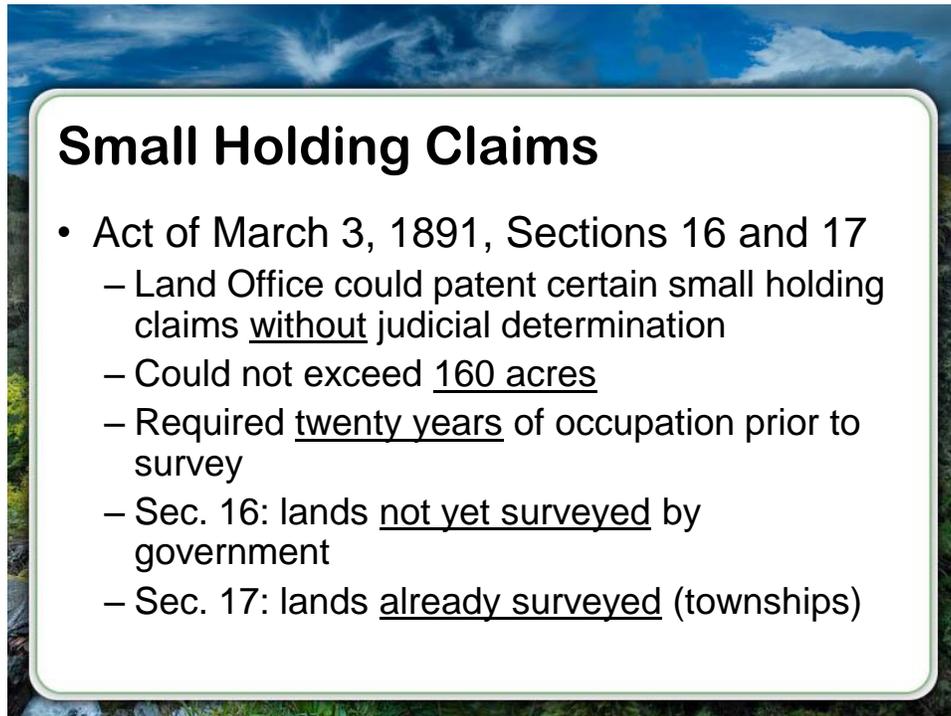
That was from a book about a brief history of the court of private land claims. So that concludes my section on the land grants, and after this we will be talking about small holding claims.

Small Holding Claims

Well now I would like to talk about small holding claims. Not if you have ever worked in New Mexico you will be familiar with these types of surveys. Because they are all up and down the Rio Grande Valley. I have also heard they are in other states, I haven't run across any in other states but I believe they are. But what this involves is the act of March 3, 1891, especially section 16 and 17 of that Act.

Talk about these small holding claims, these were claims where people were living usually along the rivers but they were irregular in shape so they did not fit the aliquot part descriptions. Like they couldn't be described under the Homestead Act so they created a special Act for small holding claims. What would happen here is the land office would patent certain small holding claims without judicial determination. They couldn't exceed 160 acres and they required that

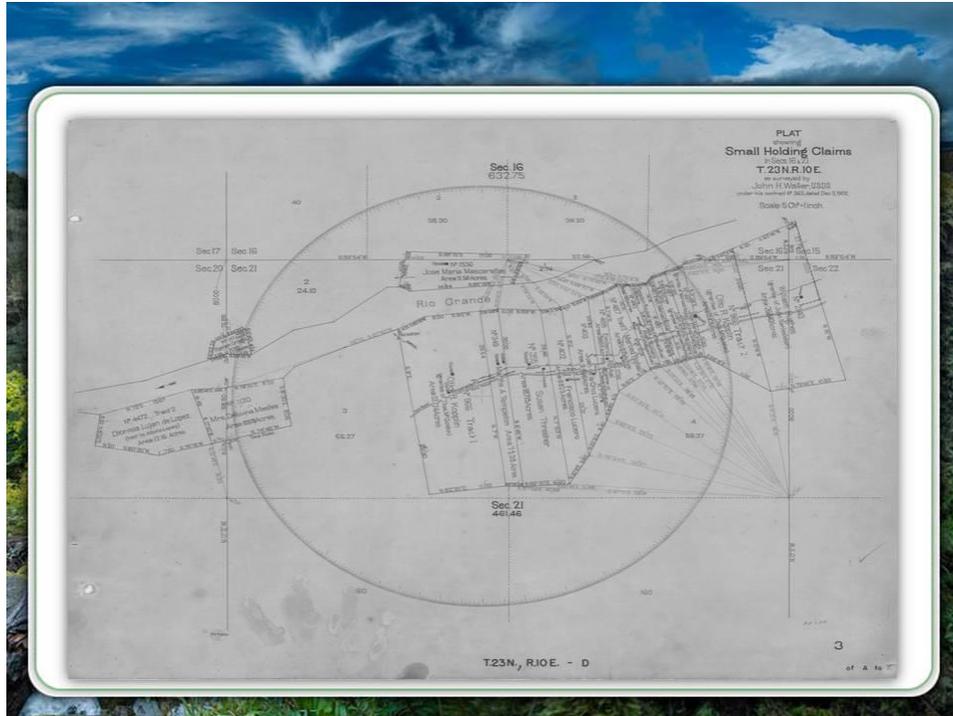
there had to be 20 years of occupation prior to the survey. In section 16 of that Act, it talks about lands that were not yet surveyed by the government.



Small Holding Claims

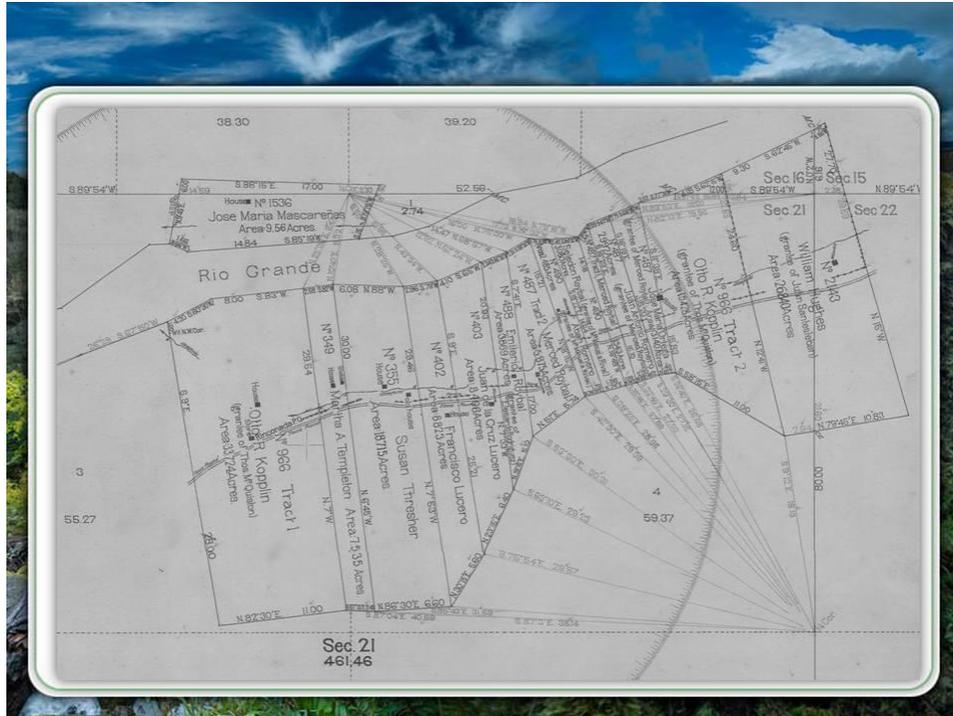
- Act of March 3, 1891, Sections 16 and 17
 - Land Office could patent certain small holding claims without judicial determination
 - Could not exceed 160 acres
 - Required twenty years of occupation prior to survey
 - Sec. 16: lands not yet surveyed by government
 - Sec. 17: lands already surveyed (townships)

Section 17 talks about lands that were already surveyed where the townships were already surveyed. So it would be very interesting for you to actually look up these Acts. You can usually find them on the internet. If you know the dates of the act and the names of the Act.



This is showing what they looked like, as you can see they are kind of similar to the French Grants, where they are kind of long and skinny along the river where they made it so more people could actually have river access this way. There isn't that much water in New Mexico so they were clustered along the Rio Grande. That's where the best farm land was and that's where there was water.

I will take a closer view of this most of the time it will have the names of the settlers and most of the time they were Spanish names because that's who had been living there for a long time.

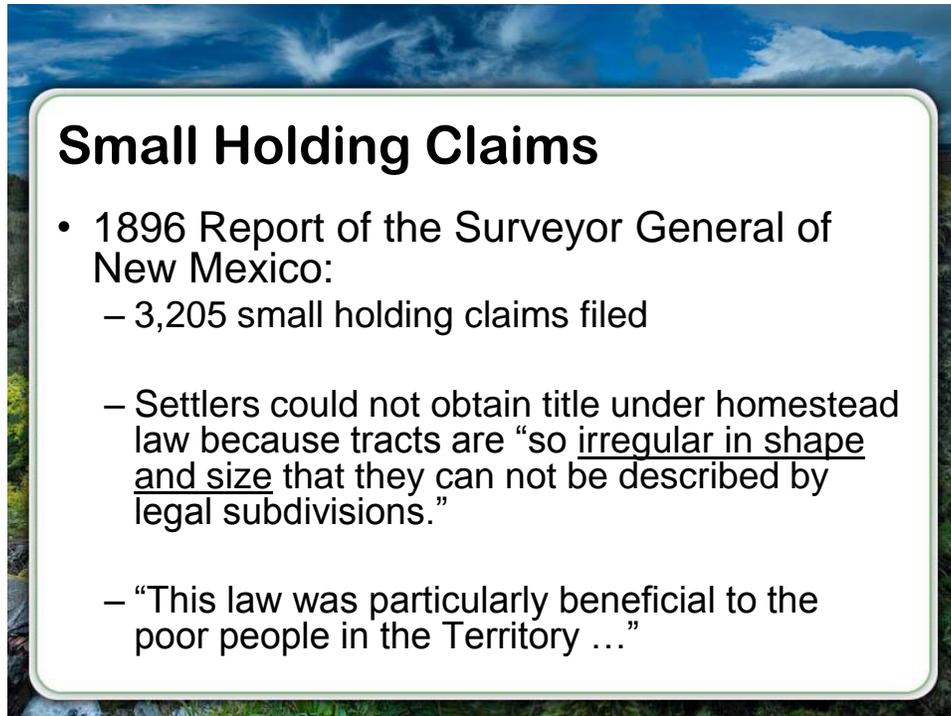


If you'll notice these were a little bit later after some of the non-Spanish people had come in and there are actually names, some what we would call Anglo names. I think there was a Templeton and Coplin and those different types of names but most of them are Spanish names. Because those were the original settlers. Small holding claims, what I will talk about is what the Deputy Surveyors duties were.

Small Holding Claims

- Deputy surveyor:
 - ascertained whether a claimant had been in “continuous adverse actual bona fide possession, residing thereon as his home, of any tract of land or in connection therewith of other lands,” for twenty years preceding the survey.
- Surveyed in 1890s and early 1900s, as “separate legal subdivisions” within townships.
- Land Office investigated surveys and proofs and issued patents.

They had to ascertain whether the claimant had been in continuous adverse actual bona fide possession residing there as their home on these tracts of land for 20 years preceding the survey. They were surveyed in the 1890's or early 1900's, as separate legal subdivisions within the townships. They were not part of the rectangular survey system, they were totally separate. The land office investigated the survey and the proofs and they issued patents on these. From an 1896 report of the Surveyor General of New Mexico, there were 3,205 small holding claims filed that year.



Small Holding Claims

- 1896 Report of the Surveyor General of New Mexico:
 - 3,205 small holding claims filed
 - Settlers could not obtain title under homestead law because tracts are “so irregular in shape and size that they can not be described by legal subdivisions.”
 - “This law was particularly beneficial to the poor people in the Territory ...”

The settlers could not obtain title under the Homestead Law, as I previously mentioned because the tracts were so irregular in shape and size that they could not be described by legal subdivisions I this report in this law; that this was particularly beneficial to the poor people in the territory. I would like to talk about a set of special instructions I found.

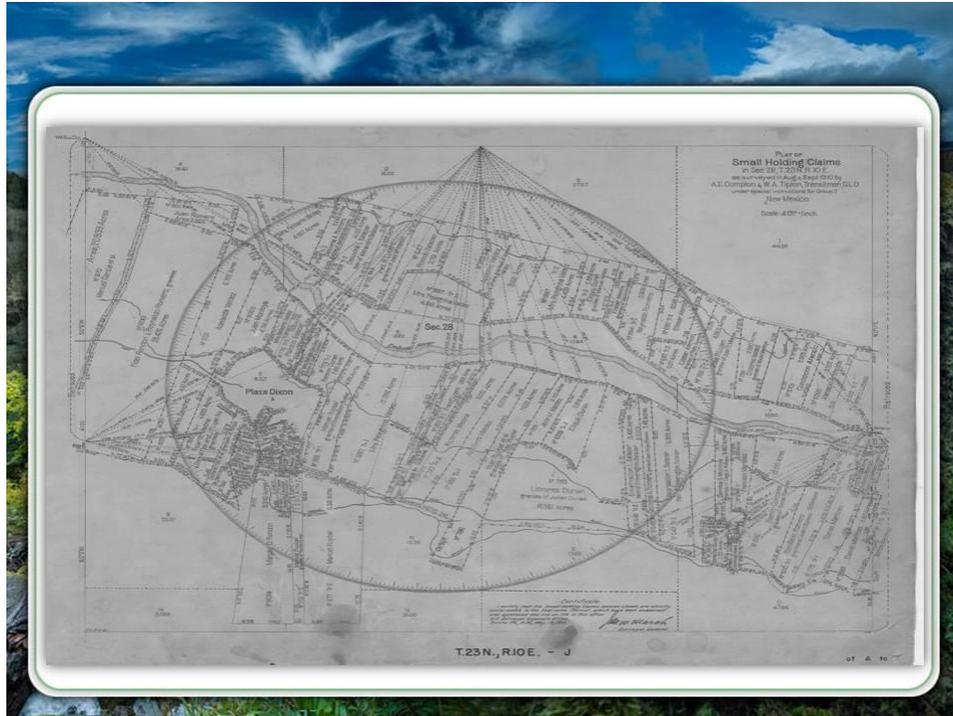
Small Holding Claims

- 1910 Special Instructions for Group No. 2, New Mexico:
 - Surveyor required to post notices, in English and Spanish, in at least three conspicuous places in each township, citing settlers to submit proofs of their rights to their respective tracts of land.
 - For “a claim lying entirely within a section, TWO CORNERS OF THE CLAIM will be connected by course and distance with the nearest available public land corner.”

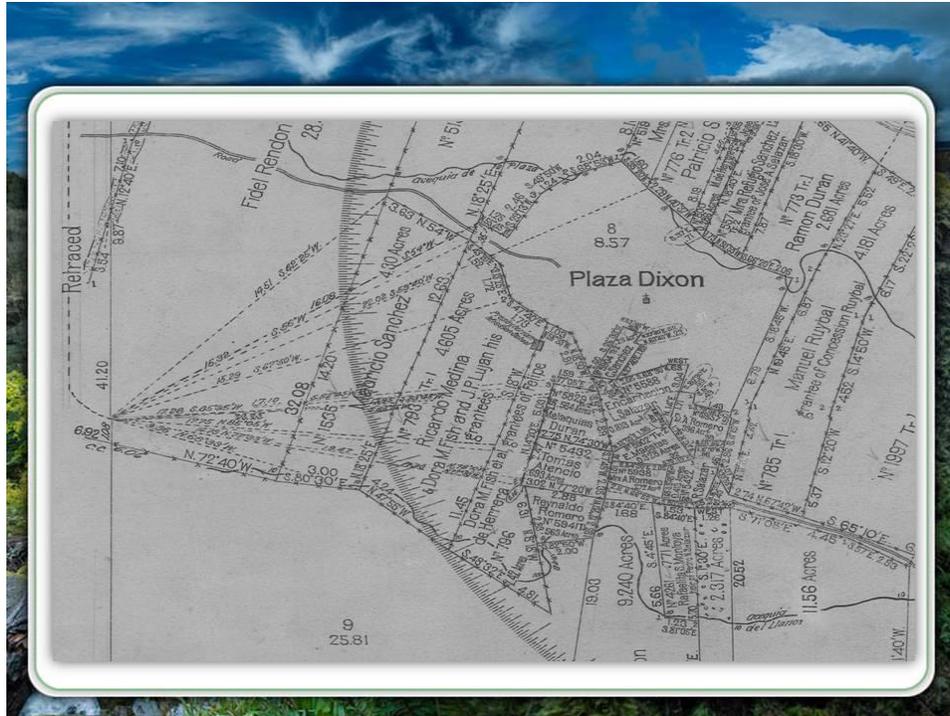
They were from a 1910 survey that is when they started having government surveyors. Instead of a contract, it was special instructions, so you can see it was a very early group number. Group number two, New Mexico. Now we are up in the thousands for group numbers.

But what it said is that the surveyor was required to post notices in English and Spanish in at least three conspicuous places in each township citing settlers to submit proof of their rights to their respected tracts of land. So they had to go out there and publicize what they were doing so people could come in and pull out their paper work and say I've been living here this is my proof. I have been living here for 20 years. I don't know about you but I have a hard time hanging on to receipts and that would be a tough thing.

Another thing they stated in the special instructions was that for a claim lying entirely within two sections, two corners of the claim will be connected by course and distance with the nearest available public land corner. So this is an area where this happened and you can see it makes for a very busy plat.



You can see all the lines. There are two lines going to each small holding claim from the nearest public lands surveying corners. I will show on my diagram here. I would like to show you a plat here that shows numerous small holding claims. This along the Nembudo River near Dixon, New Mexico. This shows how busy these plats can get. It makes it kind of hard to interpret sometimes. This one has the two ties to each small holding claim to the nearest public land survey corner.

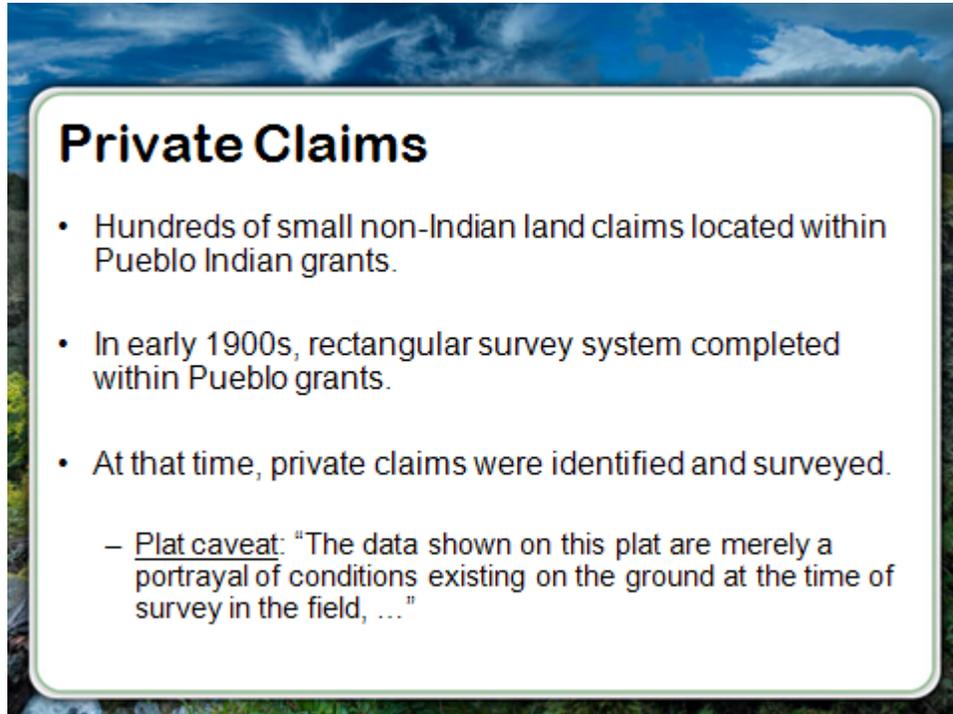


Now if you look on the diagram we have, but right up here on the North is a quarter corner which has numerous ties to it. Over on the west side of the section there is another one and that shows all the ties.

The next slide shows in even more detail. This is the plaza area near Dixon and there are some very small holding claims as you can see. And over on this side is the tie to the quarter corner.

Private Claims

What I would like to talk about now are private claims. Private claims, if you're not familiar with them, these are within the Indian Pueblo Grants.



Private Claims

- Hundreds of small non-Indian land claims located within Pueblo Indian grants.
- In early 1900s, rectangular survey system completed within Pueblo grants.
- At that time, private claims were identified and surveyed.
 - Plat caveat: "The data shown on this plat are merely a portrayal of conditions existing on the ground at the time of survey in the field, ..."

There are hundreds of these small non-Indian land claims that were located within the Pueblo Indian Grants. It could be either because the people did not know where the boundaries of the grants were or they didn't care. But there had been people living there for many years and of course they took the areas along the rivers and the farming areas mostly.

In the early 1900s, the rectangular survey system was extended inside the pueblo grants. At that time they had to figure out how to segregate all these private claims. At that time they were identified and surveyed. Most of them were in the early 1900's and they did a very good job of surveying them. You will find that the measurements are really good. But one thing that you find out when we go back to resurvey them, sometimes the General Land Office monuments will still be there but they will be under three or four feet of sand. Our surveyors have dug down and have actually found those monuments under the sand.

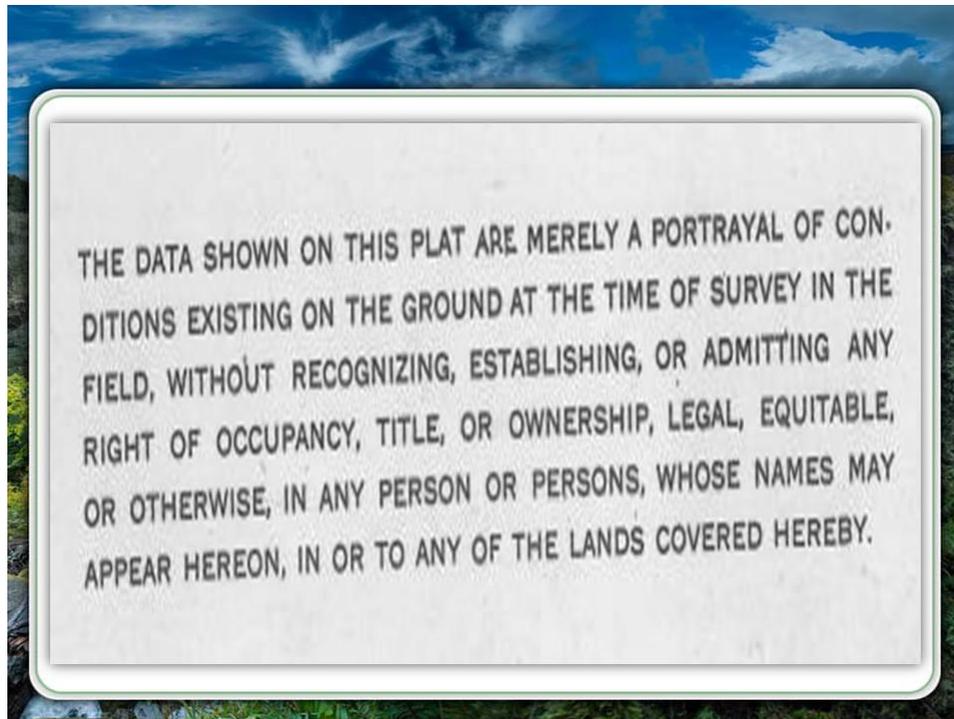
So as they surveyed these they had these caveats that they had to put on the plats and they, I'll show that on the screen.

But it says the data shown on this plat are merely a portrayal of the conditions existing on the ground at the time of the survey in the field. So they weren't making any adjudications because nobody had to adjudicate it yet as to the title of these private claims. At that point they were just trying to sort out where everybody was located.



So we'll move on and this is a plat. This shows an area of private claims within the Sandia Pueblo Grant which is in Section 7. You can see they are irregular in shape and they follow this is going along and irrigation ditch. Acacia they call them. What they did is they surveyed the lines of occupation. And then they gave them private claim numbers and different people would have different, they might have several tracts of these but then at that time they would be assigned a claim number. And private claim corners on each tract so then we will find out later that there came a time when they had to adjudicate these and we will find out how that came about.

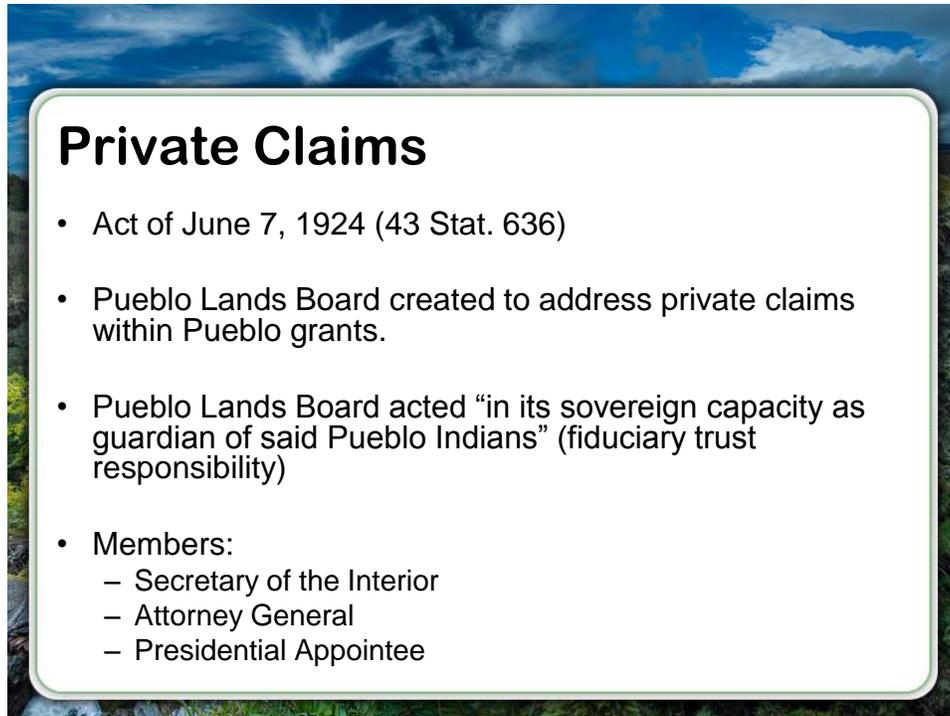
But right now I have a close up on the screen of that statement.



I'm sure some lawyers got together and said this is what we need to say to cover ourselves, but they put this when they did the private claims and surveys, it was just showing the conditions on the ground at the time of the survey. They go on to say without recognizing established or admitting any right of occupancy, title, or ownership, legal, equitable or otherwise and any person or persons whose names may appear hereon, in or to any of the lands covered hereby. That sounds like some lawyer speak but it was covering the surveyors that right now it was just showing the conditions on the ground.

So we will move on and find out that once they got these private survey claims surveyed, they need to figure out who owned them and whether they were actually valid claims for the non-Indians, or the non-Indians were on Indian land illegally.

So they created an Act of June 7, 1924, you can look it up if you want. The Pueblo Lands Board was created to address private claims within the Pueblo Grants. This Pueblo Lands Board acted in its sovereign capacity as a guardian of said Pueblo Indians. That sounds like the word they use now days, they call it the fiduciary trust responsibility.

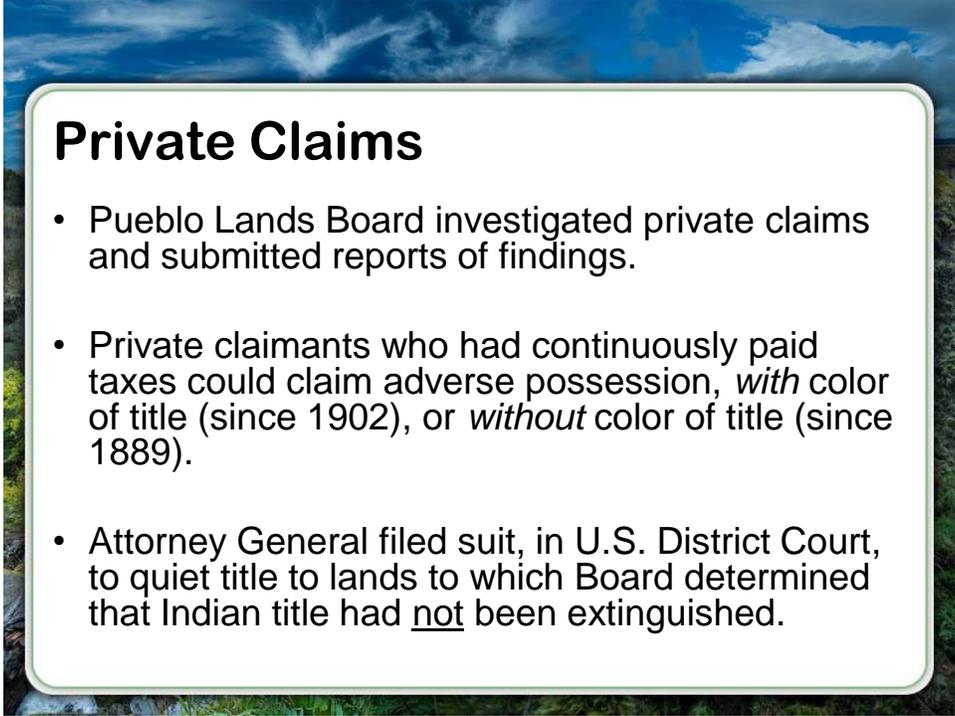


Private Claims

- Act of June 7, 1924 (43 Stat. 636)
- Pueblo Lands Board created to address private claims within Pueblo grants.
- Pueblo Lands Board acted “in its sovereign capacity as guardian of said Pueblo Indians” (fiduciary trust responsibility)
- Members:
 - Secretary of the Interior
 - Attorney General
 - Presidential Appointee

The Pueblo Lands Board had a responsibility to protect the rights of the Pueblo Indians so that’s why they went through this process to determine whether the claims were valid or not. The members, it was a pretty high-powered board. They had the Secretary of Interior was one of the members, and the Attorney General and a presidential appointee.

What they did is they investigated the private claims and they submitted reports of findings. They did reports on all of the Pueblos within New Mexico. Any private claimants who had continuously paid taxes could claim adverse possession with color of title since 1902 or without color of title since 1889.



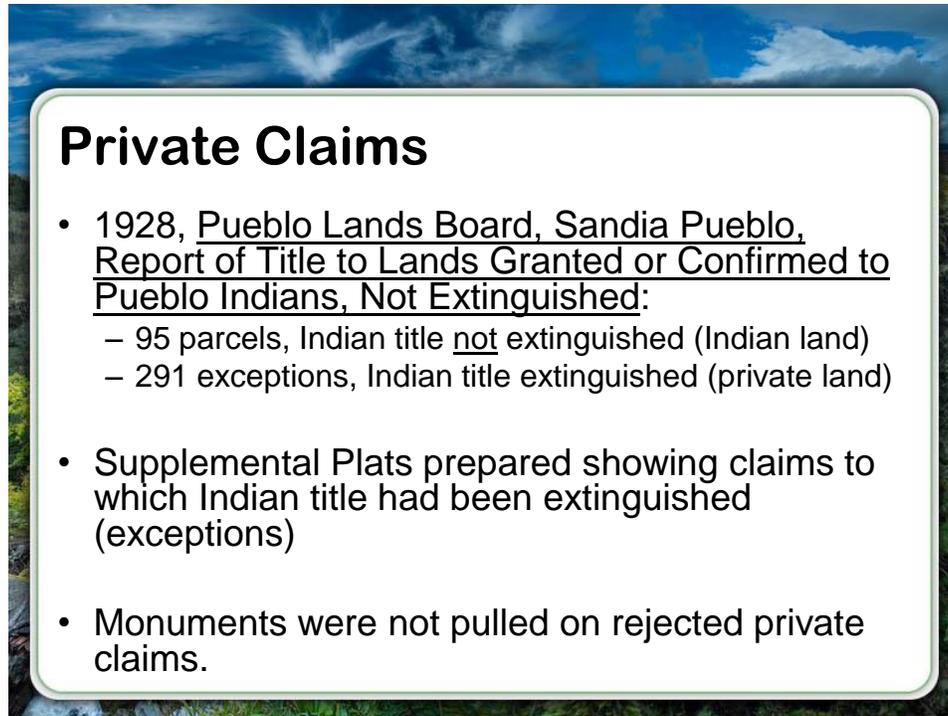
Private Claims

- Pueblo Lands Board investigated private claims and submitted reports of findings.
- Private claimants who had continuously paid taxes could claim adverse possession, *with* color of title (since 1902), or *without* color of title (since 1889).
- Attorney General filed suit, in U.S. District Court, to quiet title to lands to which Board determined that Indian title had not been extinguished.

So this was in 1924 when this Act came about and so you can see that they had to show that they lived there for a while. Some of them actually lived there validly. The Indians had actually granted, I read in some cases, certain areas that the settlers could live that were within the Pueblo Grants. Then others just had moved in but they had not shown that they had a valid claim under this Act.

The Attorney General then filed suit in U.S. District Court to quiet title to lands which the board determined that the land title had not been extinguished. What that means by saying what had not been extinguished, that meant it was still Indian lands. So that quieted the title, the Indians knew it was their property. Those private claims that were surveyed were actually rejected because they were no longer private claims, they were not valid under this Act.

Just for example, in 1928 the Pueblo Lands Board submitted a report on the Sandia Pueblo and they entitled that report of title to lands granted or confirmed to Pueblo Indians not extinguished. I always had to kind of think about that wording, not extinguished. So it's saying yeah their rights were not extinguished so they still own what they had claimed.



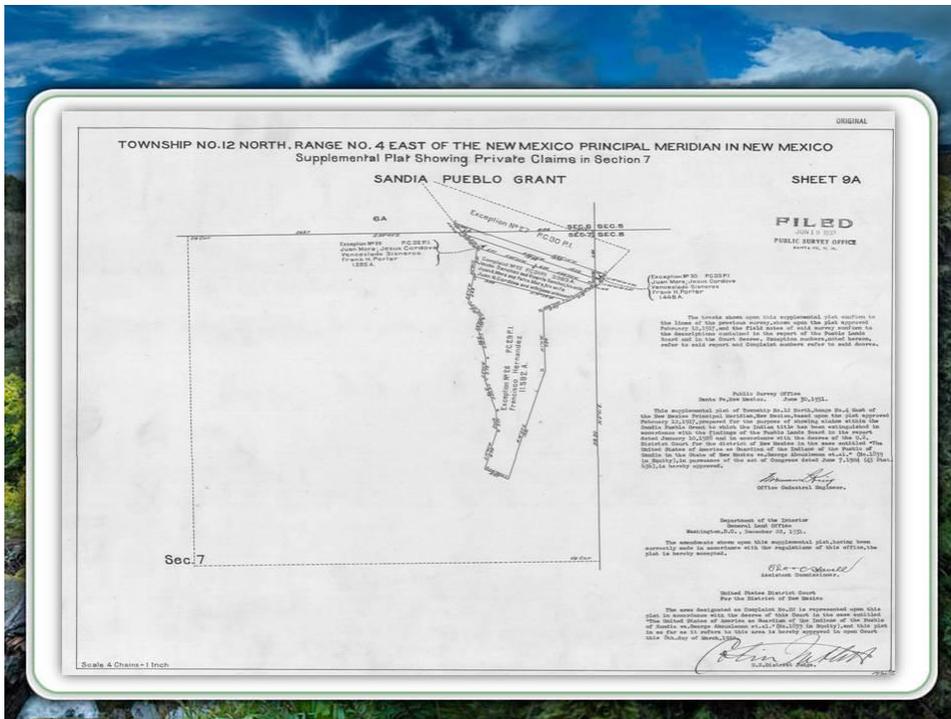
Private Claims

- 1928, Pueblo Lands Board, Sandia Pueblo, Report of Title to Lands Granted or Confirmed to Pueblo Indians, Not Extinguished:
 - 95 parcels, Indian title not extinguished (Indian land)
 - 291 exceptions, Indian title extinguished (private land)
- Supplemental Plats prepared showing claims to which Indian title had been extinguished (exceptions)
- Monuments were not pulled on rejected private claims.

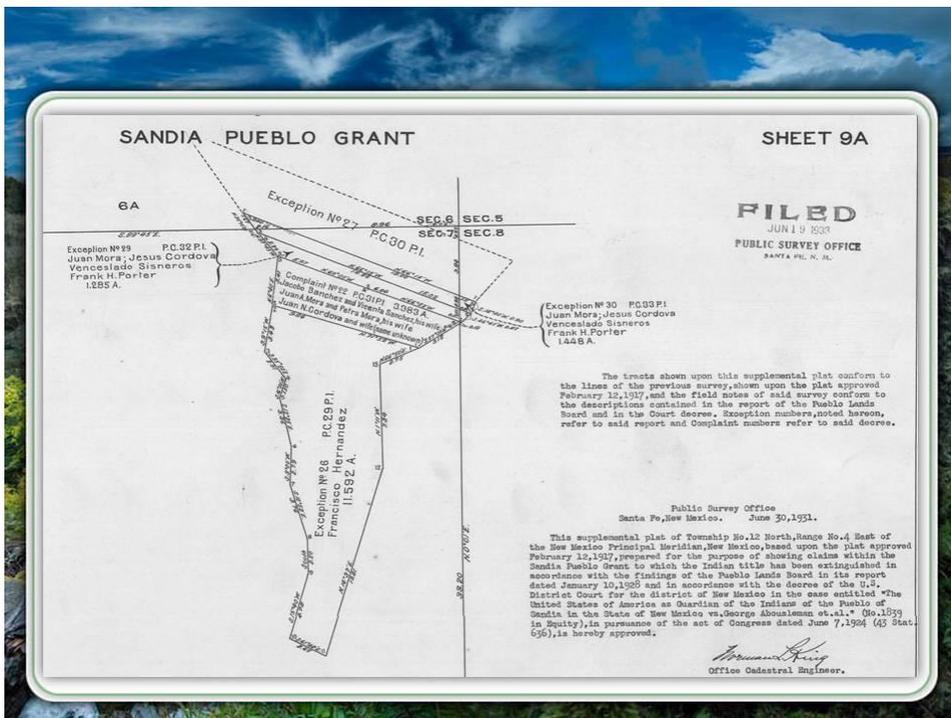
So in that report there was 95 parcels where Indian title had not been extinguished so it was still Indian land even though it had been surveyed in the early 1900s, it was actually Indian land. But there were 291 exceptions and a lot of times I found that these were around like the town of Burnaleo, contains many private claims that were not extinct and became private land, and then around the town of Espanola also.

But what they did was they would prepare supplemental plats that showed the claims to its Indian title had been extinguished. What that meant, if it was extinguished, it was no longer Indian title. It became an exception which meant it was private land and then the owners of those private claims which had exceptions and they assigned exception numbers, they could then get title or patent from the Government. One problem is the monuments were not pulled on the rejected private claims so some people would still use those private claim corners and there could be confusion and people could say this is my property even though their rights had been taken away by the Pueblo Lands Board ruling.

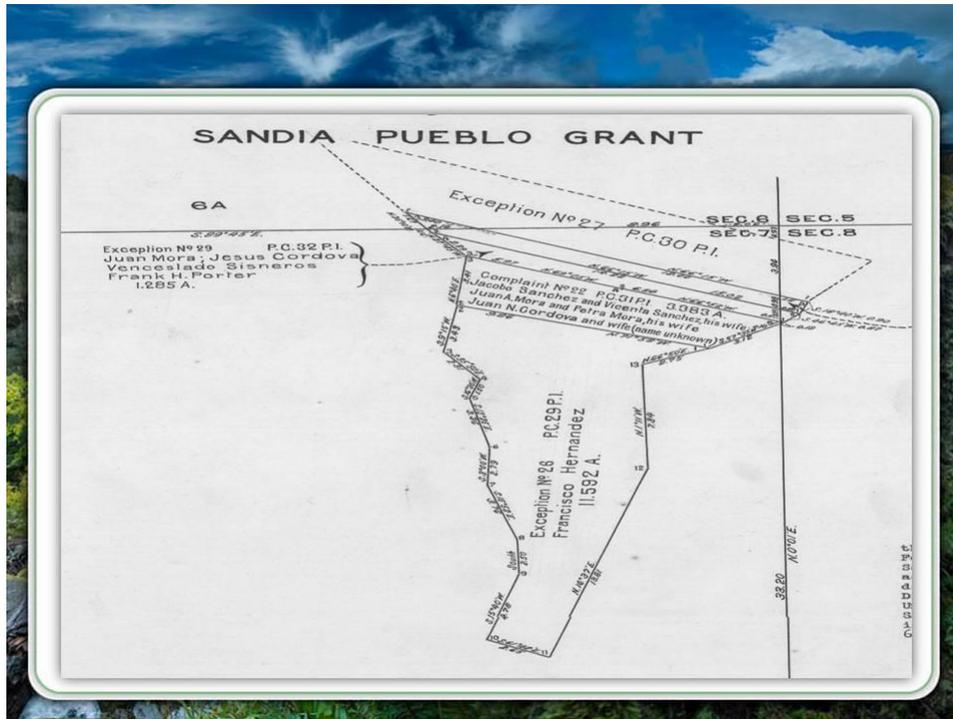
So they would prepare supplemental plats which would show which private claims that they would put on their exception numbers and I will show an example of that.



This is that same plat we saw earlier where they did the original survey. They didn't change the survey but they added annotations to it and I will take the next slide where they will show the exception numbers.



Also there would be those, if people protested against the rulings of the Pueblo Lands Board and they were able to convince the District Court then they would be given complaint numbers and they would be able to patent their lands also.



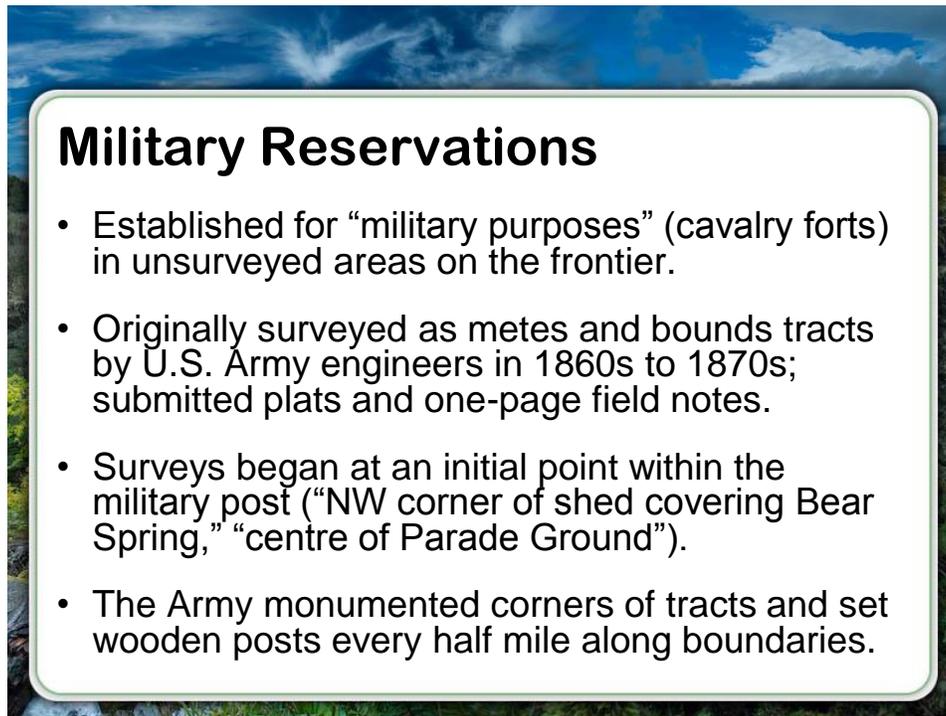
Here's an example and I'll circle it on here. We have the complaint number; I believe it says exception number 27. Then here, this one is actually a complaint because at first the Pueblo Lands Board had ruled that the Indian title had not been extinguished. They were able to appeal to the court and get that ruling overruled. So anytime, you see these type of plats where they have exception numbers on them or they have complaint numbers, that means that that has become private land.

Now you have to be careful because within the Pueblos, the Indians have purchased a lot of these private claims that had exceptions on them and they now are Indian land. So you have to be aware of that.

Land Grants, Small Holding Claims, and Reservations, Part 2

Military Reservations

Well now I would like to talk about military reservations. Basically they were established for military purposes.



Military Reservations

- Established for “military purposes” (cavalry forts) in unsurveyed areas on the frontier.
- Originally surveyed as metes and bounds tracts by U.S. Army engineers in 1860s to 1870s; submitted plats and one-page field notes.
- Surveys began at an initial point within the military post (“NW corner of shed covering Bear Spring,” “centre of Parade Ground”).
- The Army monumented corners of tracts and set wooden posts every half mile along boundaries.

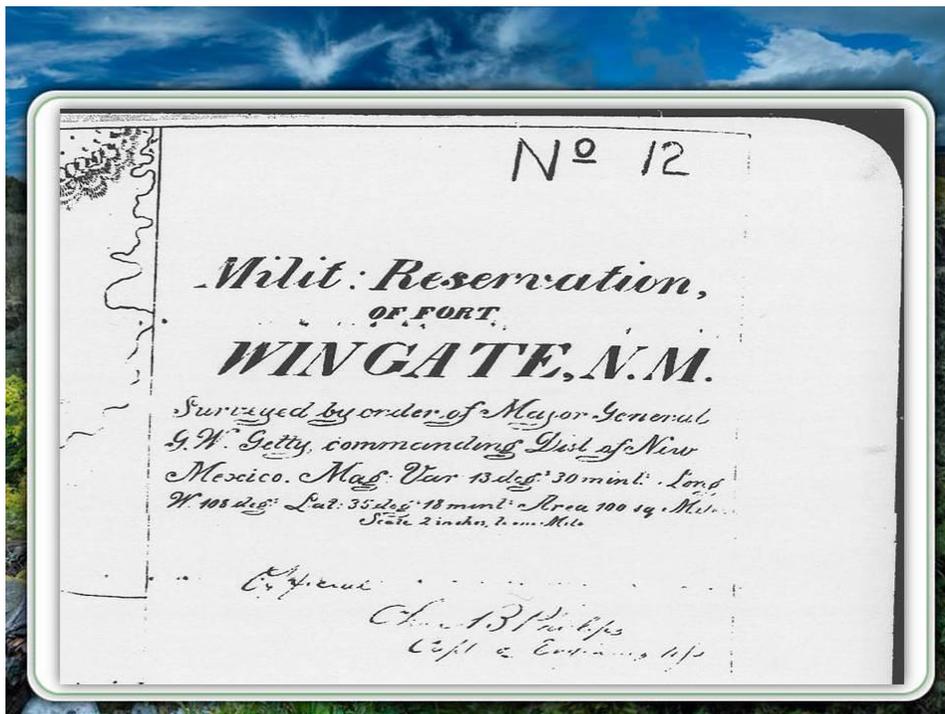
Mainly as cavalry forts to protect the settlers coming west of the wagon trains usually in unsurveyed areas on the frontier. Originally they were surveyed as metes and bounds tracts by the U.S. Army engineers in the 1860s to the 1870s. They submitted plats and what I’ve seen they would just put a one-page field notes. They were pretty basic and most of the time, what I saw they made them square so they didn’t have a lot of detail in their description.

The surveys usually began at an initial point within the military post such as a northwest corner of a shed covering Bear Spring. The Centre of Parade ground or it could be the flag pole. When I was a co-op student I worked out in Nebraska. We were trying to re establish the Ft. Carney Reservation out there. We were trying to find out if anybody knew where the old flag pole used to be. So that’s an important thing to know that was usually a point they tied to which was the initial point of their survey. The Army would monument corners of the tract and they would set wooden posts every half mile along the boundaries.

We’ll show a plat of the actual Ft. Wingate in New Mexico.

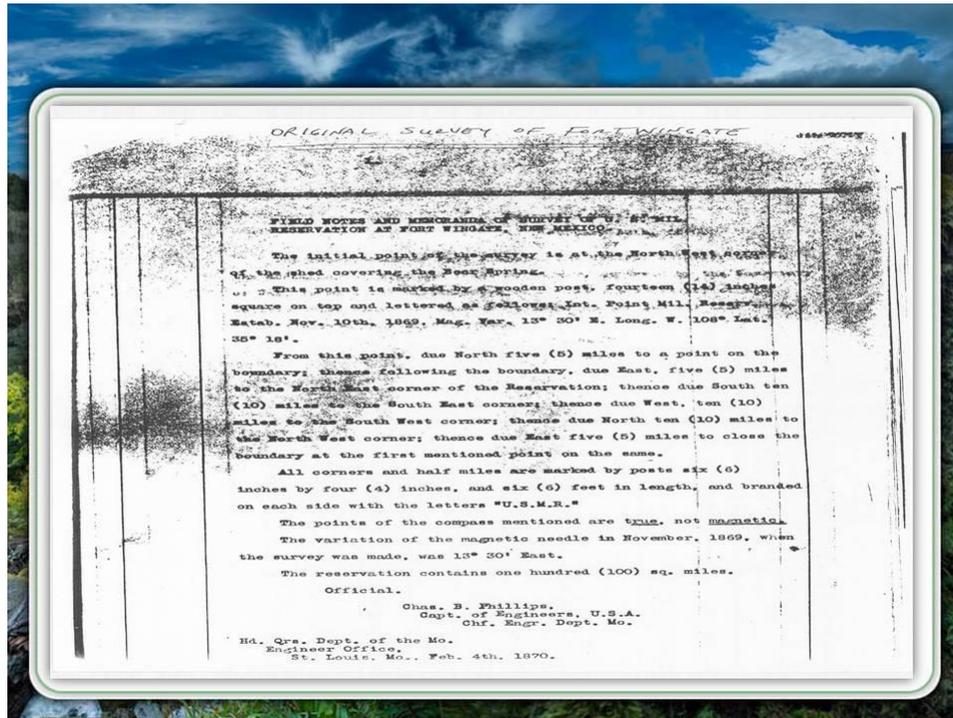


They really had a lot of topo. I always wondered how they did this without Aerial photos but I guess they were pretty good. There is not a lot of survey information but there is a lot of topography. If you look on the right hand side of this map, there is a detail of the area around the fort or the actual part that has the buildings and everything. But this is an example of what the plats are like. This is a blow up of the title of the plat it says military reservation of Ft. Wingate, New Mexico.

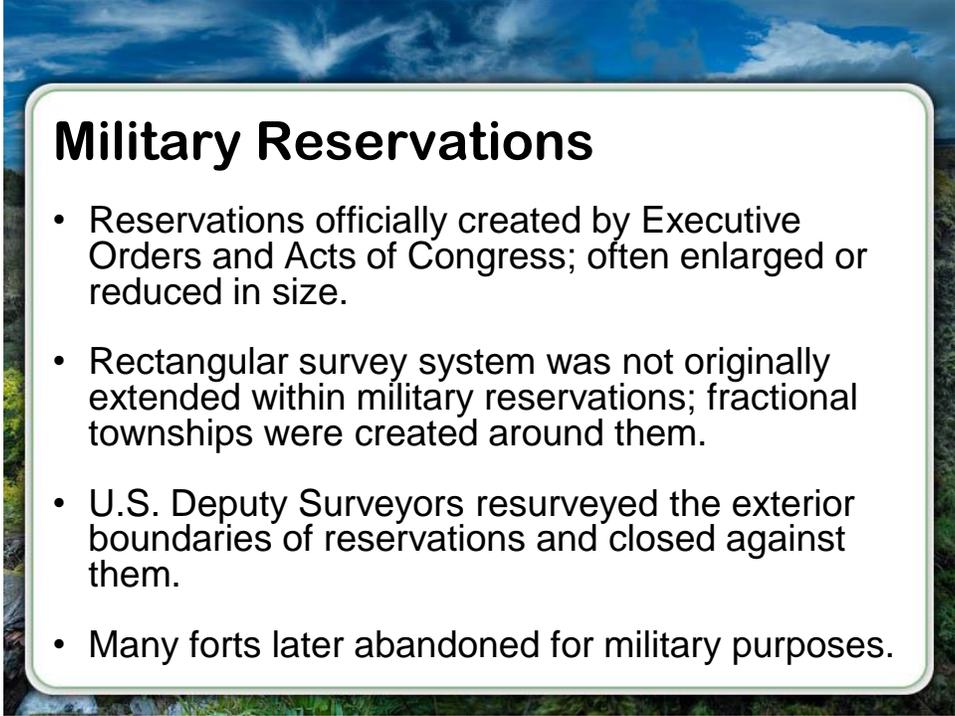


It was surveyed by the order of a certain general and it does tell you what the magnetic variation was that they used. I'm assuming that they surveyed with a compass back then. Then it says who it was surveyed by, it was by Captain Phillips who was a Captain in the Army Engineers.

So let's move on. This is about all they have for field notes.



It's kind of hard to see on the screen but they would talk about initial point which was on the northwest corner of the shed covering the Bear Spring. Then they would go north 5 miles to the north boundary and then they would go east 5 miles and then go south 10 miles and they would go around that property. In this case it was 100 square miles, it was 10 miles by 10 miles. We will find out that that particular reservation was expanded another 30 square miles, so it was 130 square miles. So that's how they basically did it. I will talk about a little bit more about them. Reservations, military reservations were officially created by Executive Orders, Acts of Congress and they were often enlarged or reduced in size.



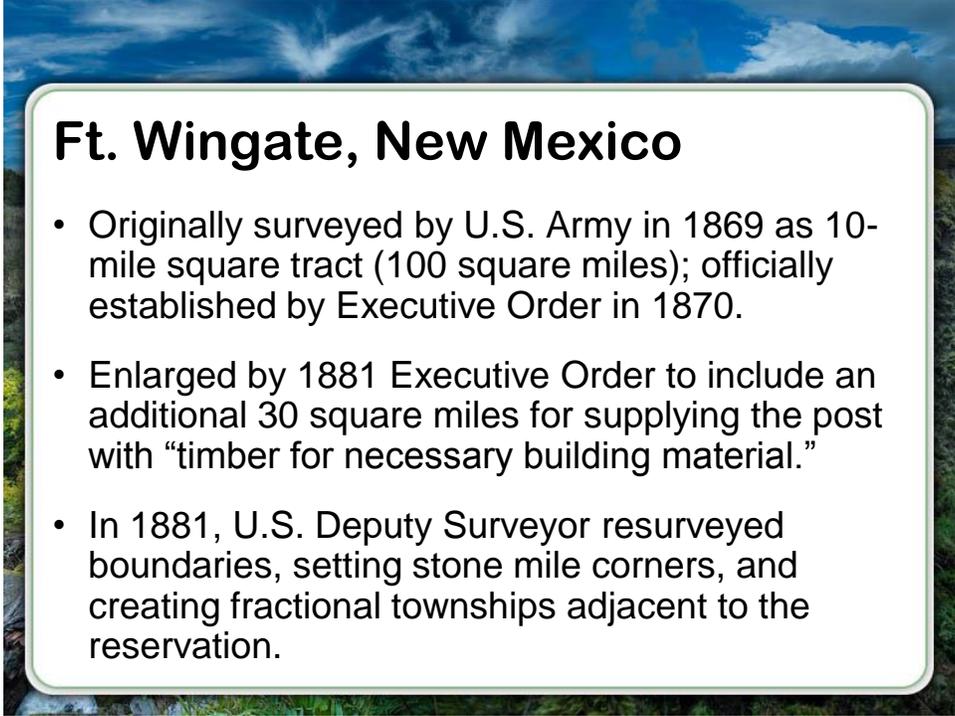
Military Reservations

- Reservations officially created by Executive Orders and Acts of Congress; often enlarged or reduced in size.
- Rectangular survey system was not originally extended within military reservations; fractional townships were created around them.
- U.S. Deputy Surveyors resurveyed the exterior boundaries of reservations and closed against them.
- Many forts later abandoned for military purposes.

The rectangular survey system was not originally extended within the military reservations so this created fractional townships around the exteriors of them. They would run lines of the townships and sections up to the boundary and they would not further break them down in size. I guess the Army did not have a reason for that to happen. The U.S. Deputy Surveyors resurveyed the exteriors of the boundaries of the reservations, and then they closed against them.

Many of these forts were later abandoned for military purposes and that's where we would come in. They would want to complete the rectangular survey system within the grant and that is what happened in the case of Ft. Wingate. That land was actually divided up between, it's going to be divided up between the Navajo and the Zuni tribes.

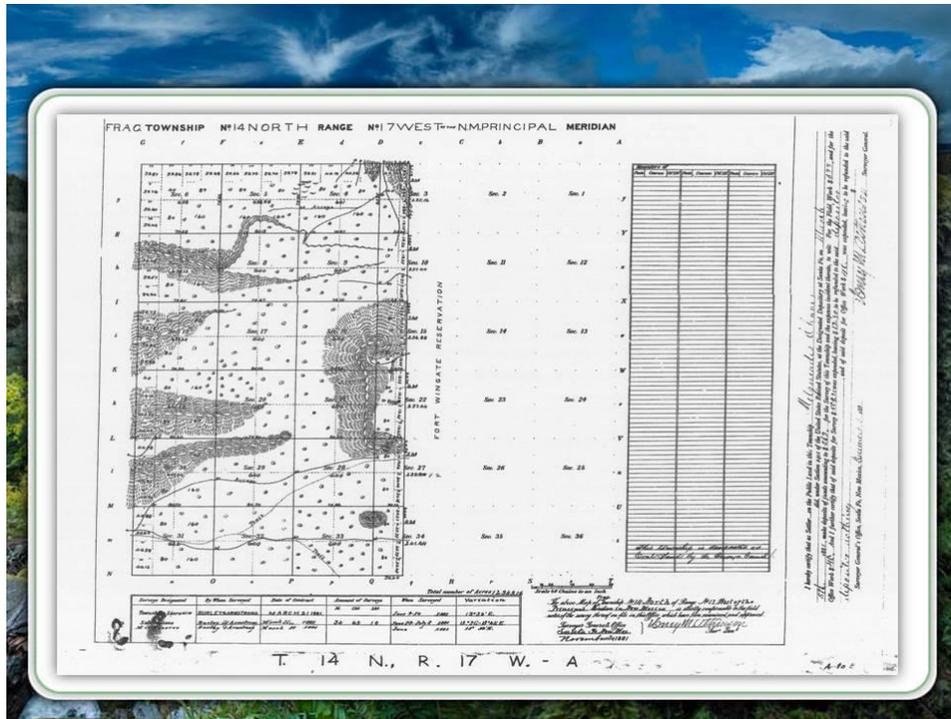
So it's kind of interesting. I got a little bit more history of Ft. Wingate which is one I am familiar with because I was the reviewer on the platting and the field notes for this area where we did completion surveys. I will get into that a little bit more.



Ft. Wingate, New Mexico

- Originally surveyed by U.S. Army in 1869 as 10-mile square tract (100 square miles); officially established by Executive Order in 1870.
- Enlarged by 1881 Executive Order to include an additional 30 square miles for supplying the post with “timber for necessary building material.”
- In 1881, U.S. Deputy Surveyor resurveyed boundaries, setting stone mile corners, and creating fractional townships adjacent to the reservation.

Ft. Wingate was originally surveyed by the U.S. Army in 1869 as a ten mile square tract and then under an Executive Order. Then it was established in 1870. Then they had another Executive Order in 1881 that added another 30 square miles to the south end of it. Timber, so they could have timber for necessary building materials so they expanded their fort. In 1881, the U.S. Deputy Surveyor re-surveyed the boundaries and he set mile corners around the outside and he created fractional townships adjacent to the reservation.



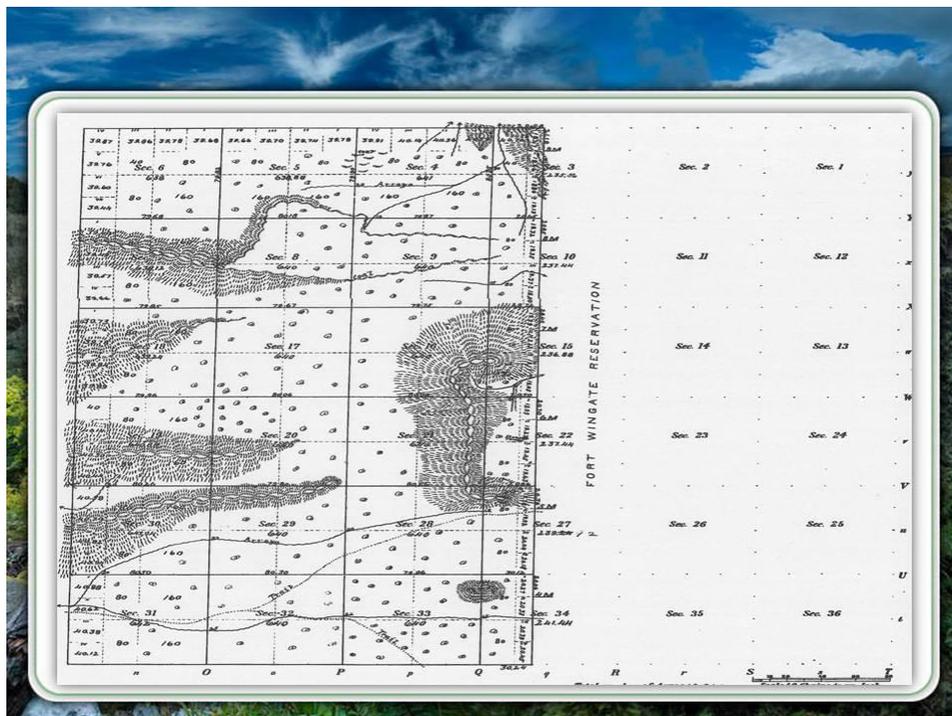
So here's a copy of that plat. As you can see the part on the right, this is the old reservation, Ft. Wingate. This is the boundary here and he re-established the mile corners and then he closed in like this and he lotted against the boundaries so this was still just one big parcel on the inside.

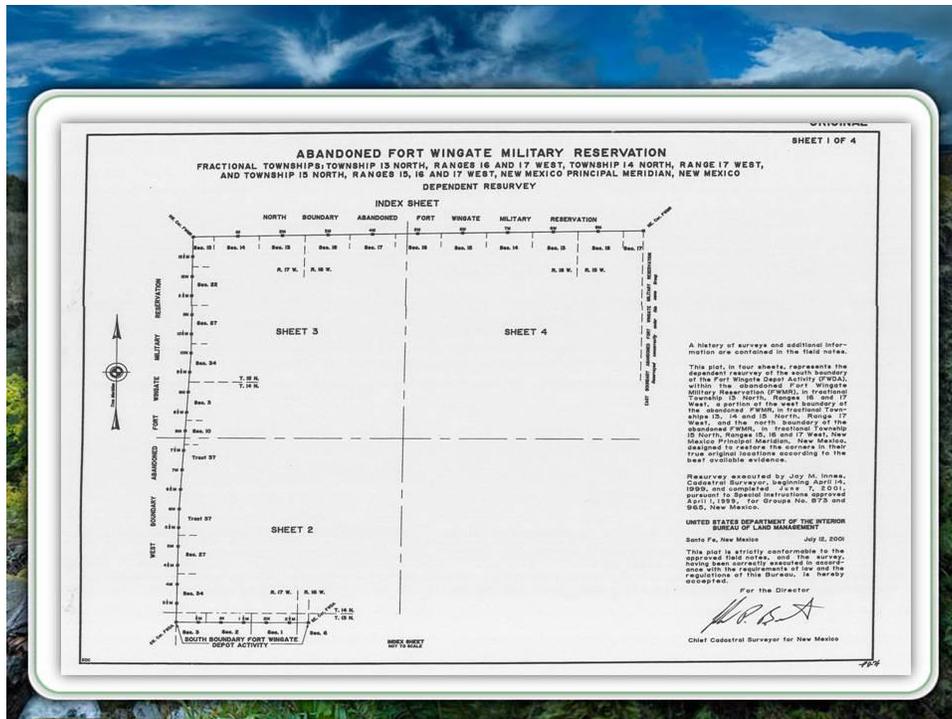
Just like to give a little history on Ft. Wingate. It is located just a few miles east of Gallop, New Mexico. If you are driving down I-40 if you look to the south you can see the bunkers up on the hillside. They are still there where they used to store the ammunition. It became an important ordinance depot during the World Wars, it was what I call an ammo dump. One time it was said to obtain the worlds largest supply of dynamite.

Ft. Wingate, New Mexico

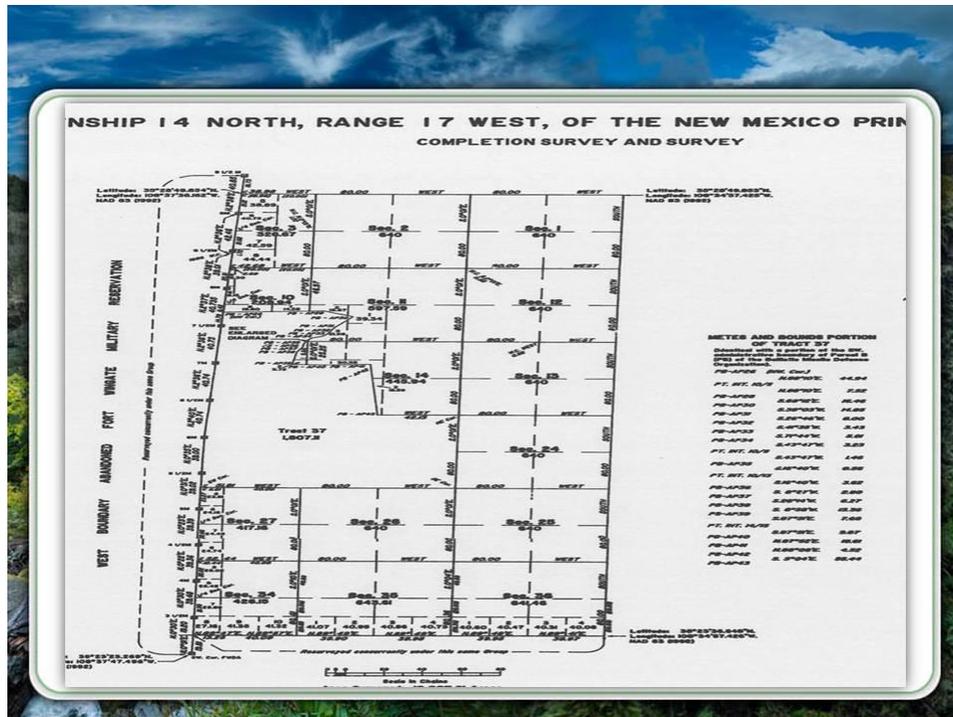
- Became important ordnance depot (“ammo dump”) during World Wars. At one time, said to have contained the world’s largest supply of dynamite.
- In 1956-57, BLM resurveyed W. boundary and found certain mile corner stones with “marks of a different character than those previously found,” but accepted them as the true corners.
- 1999-2001, BLM resurveyed boundaries and completed the rectangular survey system within the abandoned fort.

Well in 1956 to 1957 the BLM resurveyed the west boundary and found certain mile corners with marks of a different character than those previously found, but accepted them as the true corners.





Then we completed the townships inside that area. This shows one of the townships that was completed. The idea of a completion survey is to come up with the most regular sections you can and that is what was done. They created regular sections on the east part of the township and then they closed to the west. You can see there is a large tract which was called Tract 37. That was an area that the Army was keeping for their purposes. That's this area here I will show it on the thing, it's in the middle. That is the Tract 37.



Indian Reservations

Next I would like to talk about Indian reservations. This is a big issue for BLM Cadastral Survey. As we carry out our trust responsibilities these days and a lot of that involves surveying the boundaries of Indian reservation.

Indian Reservations

- Established by Treaties or Acts of Congress.
- Many reservations were later enlarged, reduced or amended by Executive Orders.
- Early treaty boundary descriptions were usually vague in nature and described by geographic features, such as rivers, mountain ranges, meridians or parallels of latitude.
- Most western reservations surveyed in the 1860s to 1880s.

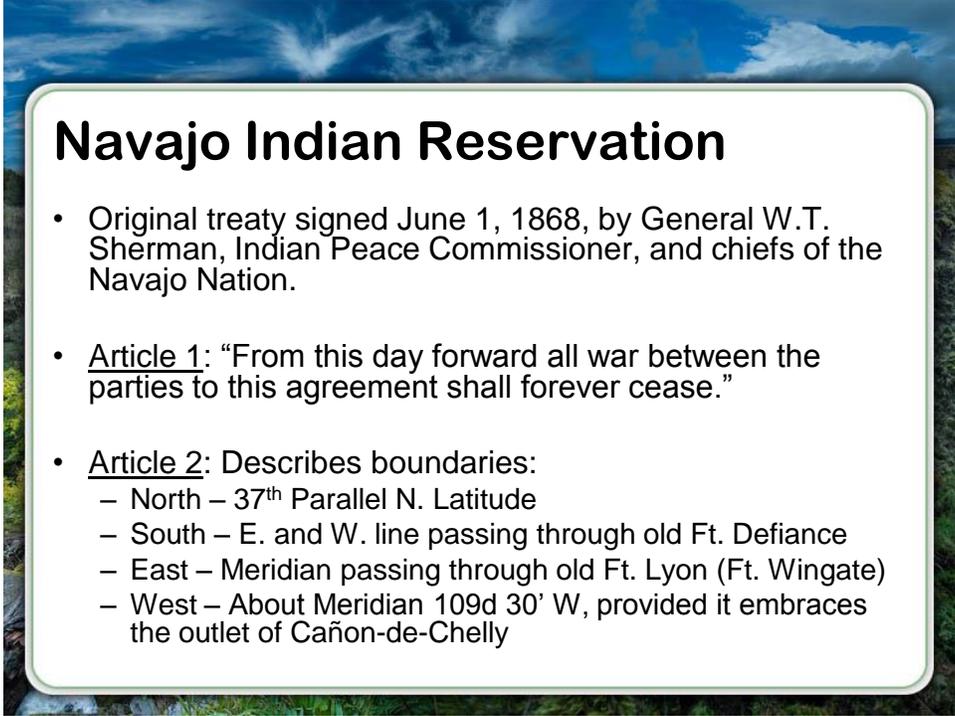
Most Indian reservations, pretty much all of them were established by Treaties or Acts of Congress.

Many reservations were later enlarged, reduced, or amended by Executive Orders. The early treaty boundary descriptions were usually vague in nature and described by geographic features such as rivers, mountain ranges, meridians or parallels of latitude.

It sounds kind of familiar because that is kind of how the old Spanish-Mexican land grants were described. It was difficult especially when they referred to a geographic feature to exactly pinpoint that on the ground. So that was the task of the early surveyors of the Indian reservations. Now most of the western reservations were surveyed in the 1860s to the 1880s. Now I would like to go to the overhead and show where out authority for surveying Indian reservations comes from within BLM Cadastral Survey. So if we go to the elmo, we will take a look at that.

I was able to find this on the internet by looking up U.S. Code 25 and I will zoom in a little here, and try to center it a little bit. If you can read that I will just read that, it says survey of reservations whenever it becomes necessary so survey any Indian or any other reservation, any lands the same shall be surveyed under the direction and control of the Bureau of Land Management and as nearly as may be in conformity to the rules and regulations to which other public lands are surveyed. So there is where out authority to survey these boundaries comes from.

That's why I think it is important when doing Indian reservation boundaries that it be done under a federal authority. Like I said it started out being surveyed by that GLO, they surveyed the boundaries under contract originally after that in about 1910 they started with government surveyors and that has carried on today. So I go to the next slide here. A specific example of Indian reservation boundary is the Navajo Reservation.



Navajo Indian Reservation

- Original treaty signed June 1, 1868, by General W.T. Sherman, Indian Peace Commissioner, and chiefs of the Navajo Nation.
- Article 1: “From this day forward all war between the parties to this agreement shall forever cease.”
- Article 2: Describes boundaries:
 - North – 37th Parallel N. Latitude
 - South – E. and W. line passing through old Ft. Defiance
 - East – Meridian passing through old Ft. Lyon (Ft. Wingate)
 - West – About Meridian 109d 30' W, provided it embraces the outlet of Cañon-de-Chelly

It is the largest reservation in the United States. It goes into Utah, New Mexico and Arizona. It's a very big area. The original treaty was signed June 1, 1868 by General W.T. Sherman, Indian Peace Commissioner and the chiefs of the Navajo Nation. I thought that was interesting because, I don't associate W.T. Sherman with being a peace commissioner. I'm more familiar with his march to sea and the Sherman tank. It is kind of interesting that he is serving in the capacity of the Peace Commissioner.

So I will go on to read about it Article One of the treaty says that from this day forward all war between the parties to this agreement, shall forever cease. In Article Two describes the boundaries on the north was the 37th Parallel N. Latitude. The south was the east and west line passing through Ft. Defiance. The east was a meridian passing through Ft. Lyon, which is Ft. Wingate that we spoke about earlier. The west says about meridian 109°30'W provided embraces the outlet of Canon-de-Chelly. So it would have been a difficult thing to lay that out because some of the descriptions were a little bit vague and had to be figured out on the ground.

And that is what happened when the original surveyor came in, E.N. Darling was his name. I will proceed to the next slide. This is continuing on about the articles that are within the treaty.

1868 Navajo Treaty

- Article 5: Allowed for individual allotments of farm land within the reservation, not to exceed 160 acres. Allowed for the President to order a survey of the reservation.
- Article 9: Allowed for the construction of “railroads, wagon-roads, mail stations, or other works of utility or necessity” across the reservation, but the Government must pay the tribe damages assessed by three disinterested commissioners appointed by the President (including one tribal member).
- Also, tribe agreed “That they will never capture or carry off from the settlements women or children.”

Article Five allowed for individual allotments of farm land within the reservation, not to exceed 160 acres. It allowed for the President to order a survey of the reservation. In Article Nine allowed for the construction of railroads, wagon-roads, mail stations, or other works of utility or necessity. And you know it doesn't mention interstates but that came later. But they were allowed to cross reservations but the government had to pay the tribe damages.

I think it is interesting because it says it was based on the damages would be assessed by 3 disinterested commissioners appointed by the President including one tribal member. So they allowed the tribal member to help decide what the payment would be for these things that crossed the land on the reservation. Also an interesting note the tribe agreed that they would never capture or carry off from the settlement women or children. So that is the Navajo treaty. I will continue on.

The original survey of the Navajo Reservation as I said was surveyed by E.N. Darling U.S. Surveyor and Astronomer in 1869.

Original Survey of Navajo Reservation

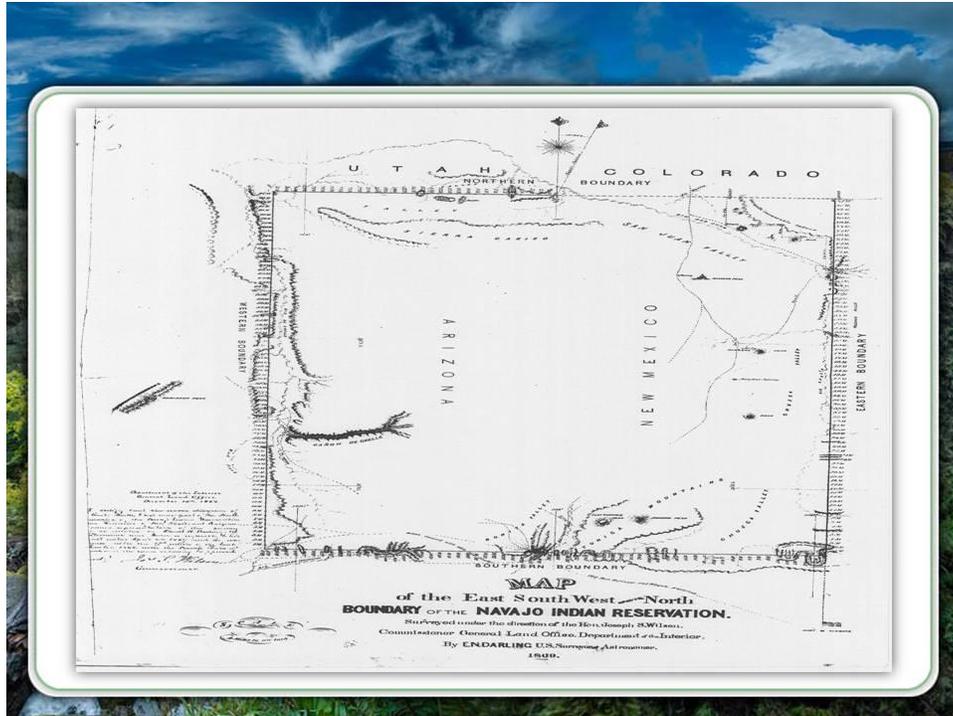
- Surveyed by E.N. Darling, U.S. Surveyor and Astronomer, in 1869.
- SE corner established as the Initial Point for the Navajo (Special) Meridian, which still controls one township in Arizona, but none in New Mexico. (See Initial Points by Al White)
- Corners set every mile were marked as “mile corners,” but corners between them were referred to as “ $\frac{1}{4}$ cors.”
 - “North on 64th mile along Sec. 13; 40.00 chs. Sandstone, ... for $\frac{1}{4}$ cor.; 80 chs. Sandstone, ... marked 64M with 2 notches, pits.”

He established the southeast corner as the initial point for the Navajo to sometimes called the special meridian and it still controls one township in Arizona, but none in New Mexico.

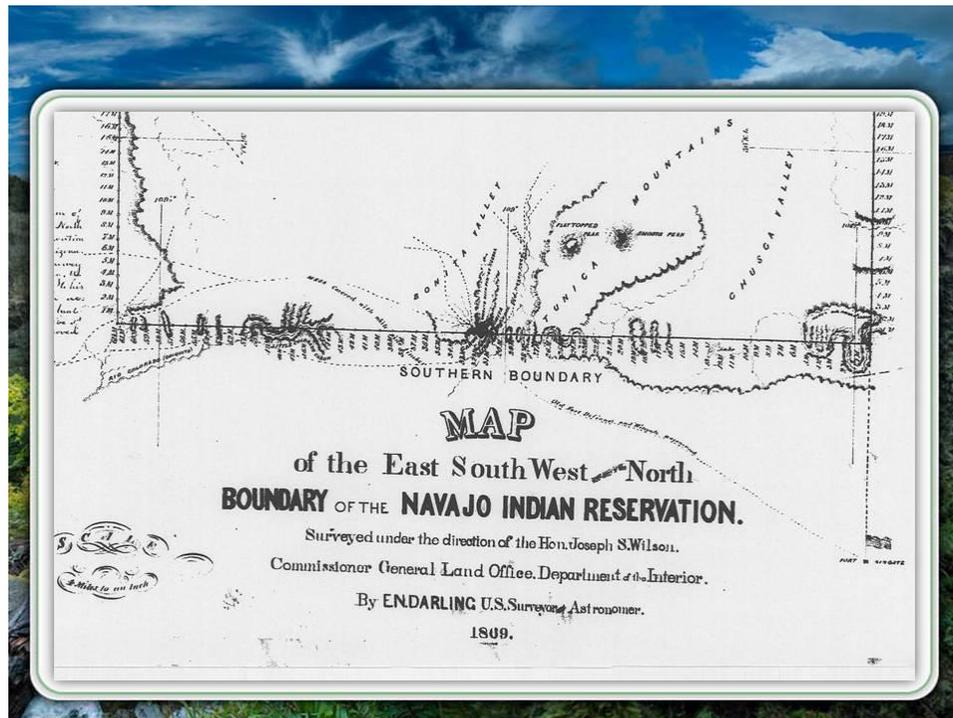
You can see Al White's the Initial Points book to learn more about this. But what was decided when they were extending the surveys in New Mexico they continued on with the New Mexico principle meridian which we kind of when over the top of the old Navajo meridian. They also did the same in Arizona with the Gila Salt River meridian. So there is not much left of the townships of the Navajo meridian, but the initial point was found not that long ago and it was the initial point for the original surveys of the reservation.

When E.N. Darling surveyed the reservation around the exteriors of it, he set a mile corner. Every mile he set mile corners, but he was also making these corners of the rectangular system, so the corners that were in between these mile corners exterior he called them quarter corners. I have an excerpt from the field notes that says on North on the 64th mile along Section 1; 40 chains sandstone for $\frac{1}{4}$ corner; then 80 chains sandstone, marked 64M 3 with 2 notches and pits. So its kind of a mixture of marking corners with the mile marker number on them, and then also the half mile markers he marked as quarter corners because they were supposed to also serve as a quarter corners for the rectangular survey system.

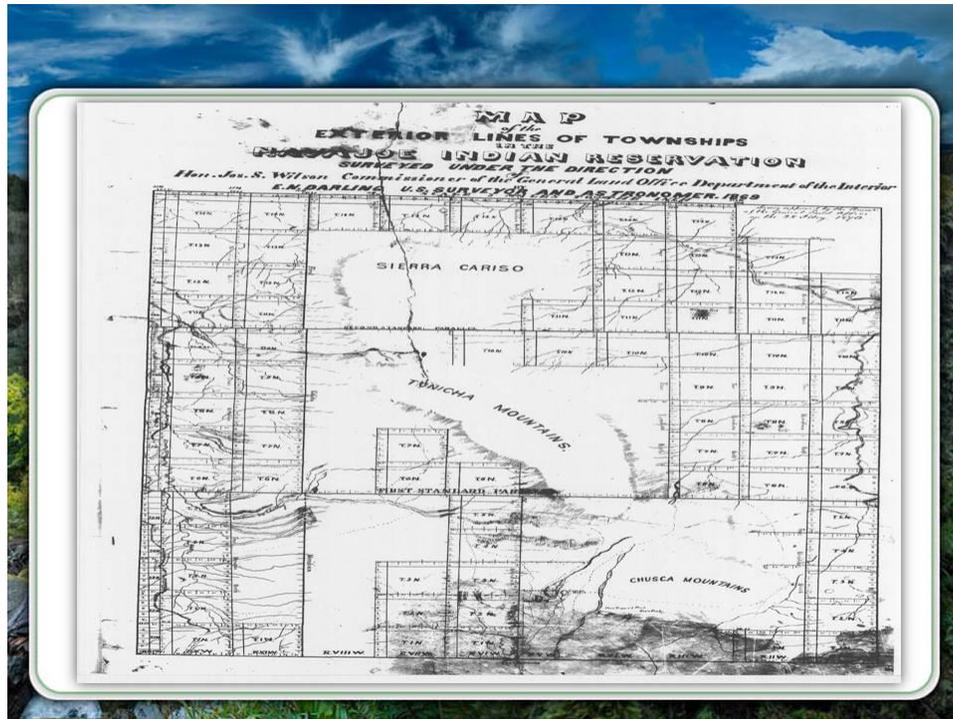
This is a plat, the original plat and I was researching for this class and I looked through the records we have in Santa Fe at the BLM and I found this original map it is done in 1869, something like that.



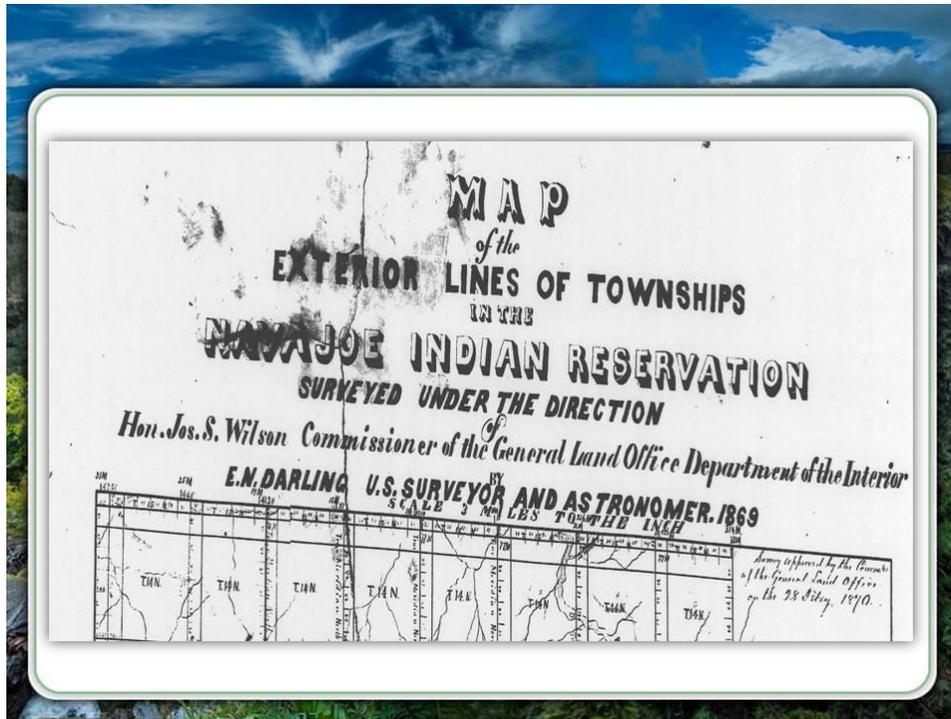
And it was a big old map it wasn't one that was easy to scan or anything. But it shows the exteriors of the boundary that was done by Darling; I got a close up here this is the title, it was actually 1869 that's right, so it says it was the map of the east, south, west, and north boundaries and it shows how it goes through certain topographic features like Ft. Wingate and Ft. Defiance and it also shows it going to Canon-de-Chelly.



Ok we will more on here. Then in the same area I found the original, it's a pretty big map its about 4 feet tall and 2 feet wide. I found this in our records.



This is where Darling went in and surveyed the exteriors of the township boundaries within the reservation. Now a lot of those since they haven't been utilized over the years, because they extended the New Mexico Principle Meridian townships and the ones from Arizona also over this area, but these are the ones that Darling established back in the late 1800s. This is kind of interesting, this is the title, it says map of the exterior lines of townships of the Navajoe Indian Reservation I don't see it spelled that often.

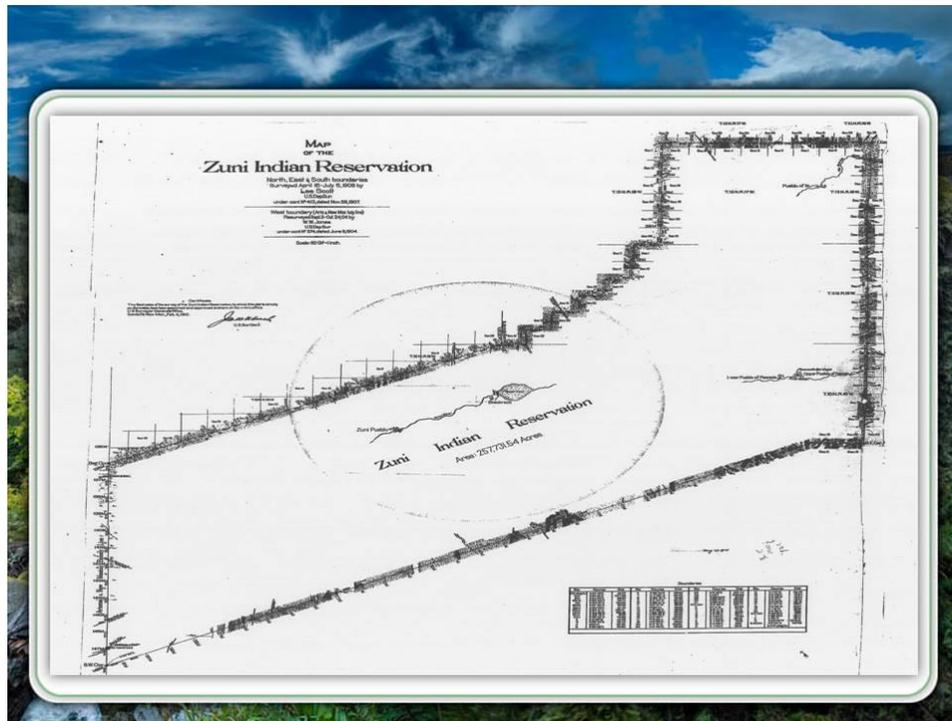


But it makes it look like Navajoe instead of Navajo. But it was surveyed by E.N. Darling U.S. Surveyor and Astronomer in 1869 also. Speaking of Indian reservation boundaries, I thought a good example was the Zuni Indian Reservation.

Zuni Indian Reservation

- Boundaries amended by May 1, 1883 Executive Order
- Boundaries are a combination of metes and bounds and rectangular survey system lines.
- West boundary is a portion of the New Mexico-Arizona state boundary.

The boundaries were amended by May 1st 1883 by Executive Order and the boundaries are a combination of metes and bounds and the rectangular survey system lines. And the west boundary is the portion of the New Mexico/Arizona state boundary.



So this one has an interesting plat. You can see where a lot of it is straight and some is stair stepping up through the rectangular. If you look in here it is stair stepping through the section lines but as you look along here it is all metes and bounds type diagonal type survey.

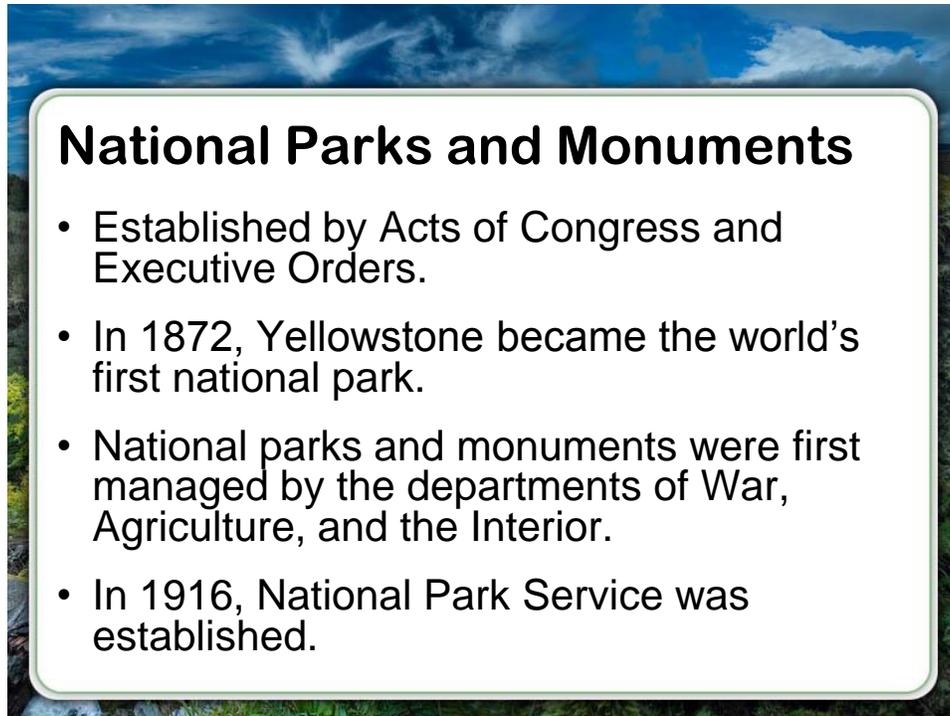
Later another Executive Order in the Zuni Reservation also added this area up in here which was rectangular survey. I was in my job now, I was fortunate to be able to do a field investigation of the west boundary of the Zuni Reservation that there was a controversy with a fence because on the west side there was Navajo lands and east side of the Arizona State boundary. The New Mexico boundary was the Zuni boundary.

So we went out there and we said well here is the fence and here is where the boundary is and I convinced the tribal leaders that the fence had not been built on the boundary like it was suppose to be and one thing that I found that was interesting, we went along the boundary and we were finding found all the mile markers and they had been resurveyed I think back in the 90s by the Arizona State Office and we found some corners that were actually tree monuments.

Where the mile corner fell exactly in the middle of a big Juniper tree. And we found the tree probably now about four feet in diameter and could see the scribe marks from 1875 when it was done and it was pretty interesting, coming all those miles from the 4 corners south, that two of the corners happened to hit in the middle of these trees and that is something you may run across on doing these boundaries.

National Parks and Monuments

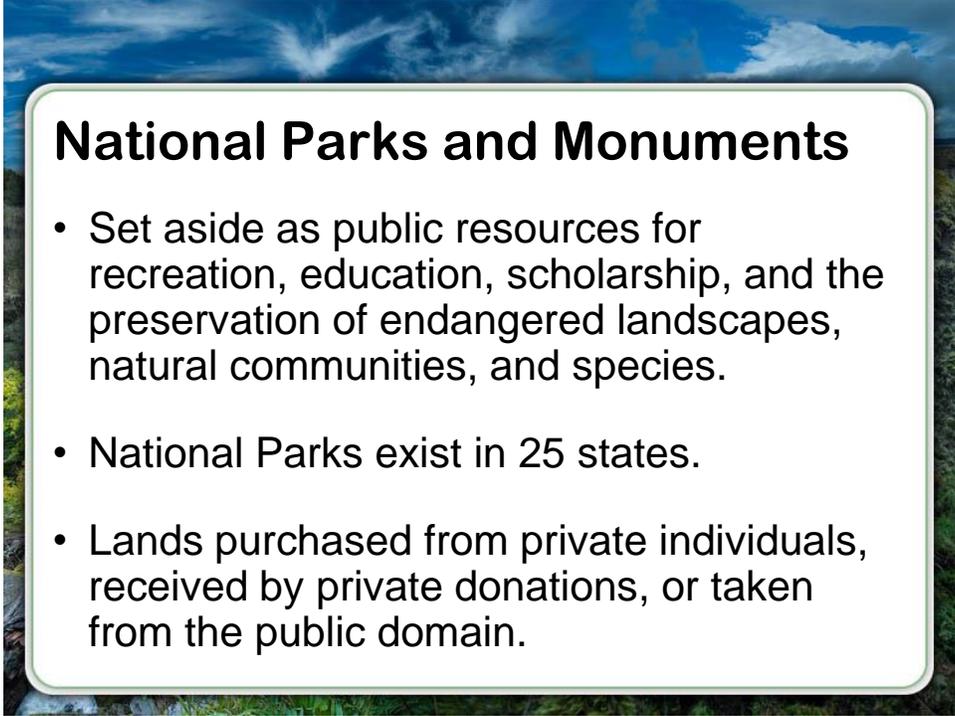
These types of surveys were established by Acts of Congress and Executive Orders in 1872.



National Parks and Monuments

- Established by Acts of Congress and Executive Orders.
- In 1872, Yellowstone became the world's first national park.
- National parks and monuments were first managed by the departments of War, Agriculture, and the Interior.
- In 1916, National Park Service was established.

Yellow stone became the world's first National Parks and Monuments. These were first managed by the Departments of War, Agriculture, and finally Department of the Interior. And in 1916, the National Parks Service was established. These areas were set aside as public resources for recreation, education, and scholarships and the preservation of endangered landscapes, natural communities and species. I think I found that out of a website.

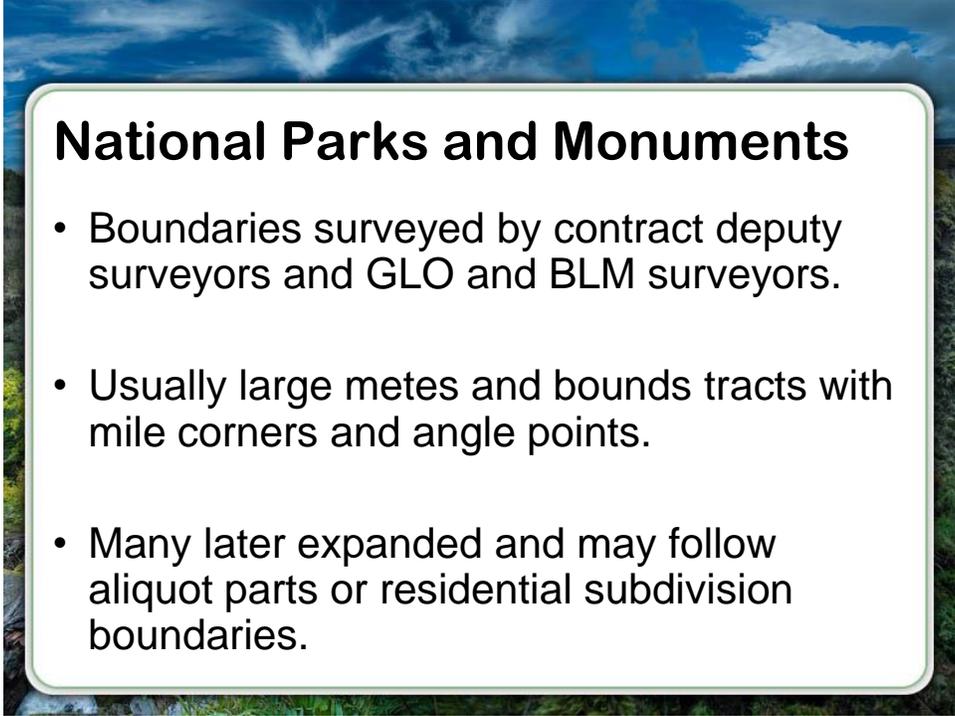


National Parks and Monuments

- Set aside as public resources for recreation, education, scholarship, and the preservation of endangered landscapes, natural communities, and species.
- National Parks exist in 25 states.
- Lands purchased from private individuals, received by private donations, or taken from the public domain.

The National Parks Service exist in 25 states and there are a lot of National Monuments in other states besides.

A lot of times the land was purchased by private individuals or received by private donations. Or taken from the public domain. And the boundaries were surveyed by contract Deputy Surveyors and GLO/BLM surveyors. I was fortunate I worked on portions of Mount McKinley or Denali National Park up in Alaska in the early 80s. So that was interesting project that we did part of that boundary. But usually the tracts were large metes and bounds tracts that have mile corners and angle points.



National Parks and Monuments

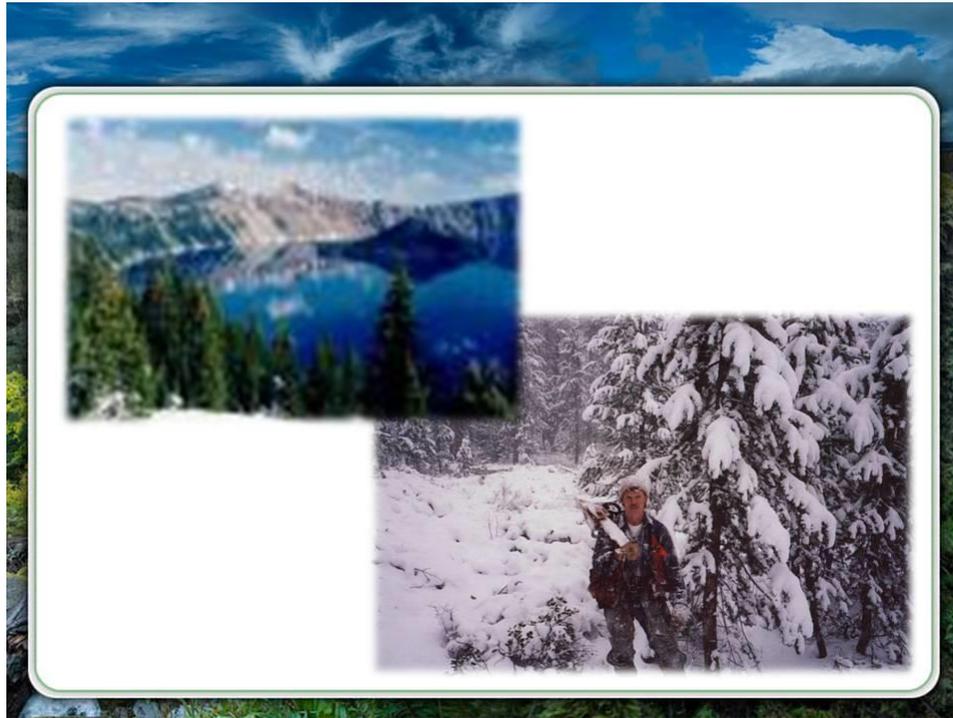
- Boundaries surveyed by contract deputy surveyors and GLO and BLM surveyors.
- Usually large metes and bounds tracts with mile corners and angle points.
- Many later expanded and may follow aliquot parts or residential subdivision boundaries.

Many of these parks were later expanded and may follow aliquot parts or residential subdivisions boundaries.

In Albuquerque they have been, they created the Petroglyph National Monument which as these areas with all these Indian Petroglyph, on the rocks and it happens that this is right in the west side of Albuquerque where there are a lot of houses and everything, residential subdivisions.

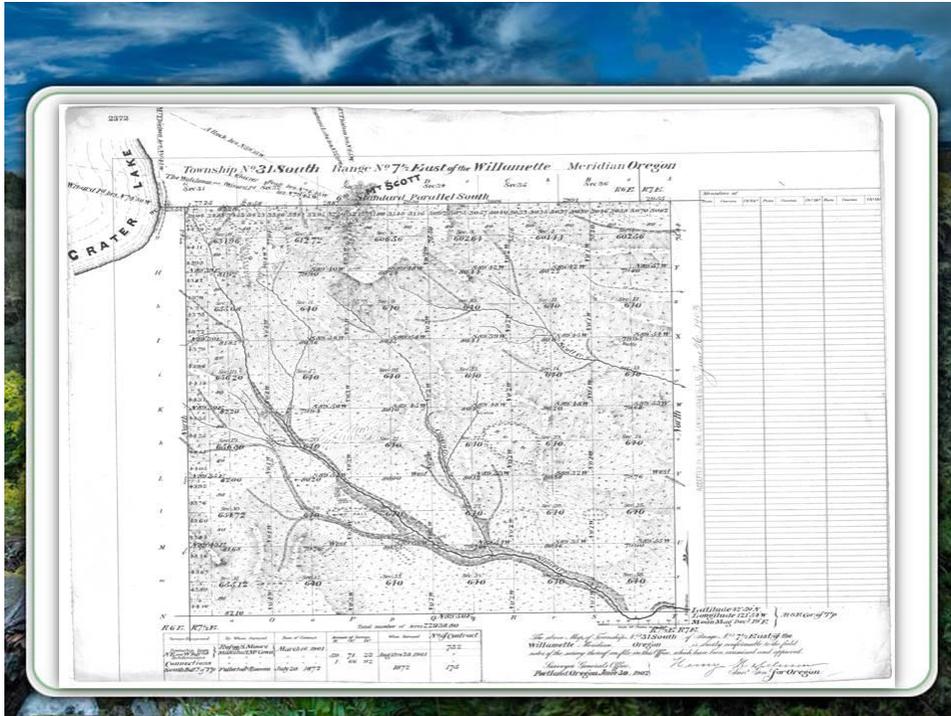
So the boundaries of this National Monument actually follow along people's backyards. But in that area where the monument is, is a big open area. So if you are in Albuquerque, you can look to the west and you can see these, there are like three volcanic peaks sticking up and a big open area that would be the Petroglyph National Monument.

I just wanted to show you this is national parks survey, if you look on the top of the screen you can see nice little postcard view of Crater Lake up in Oregon.

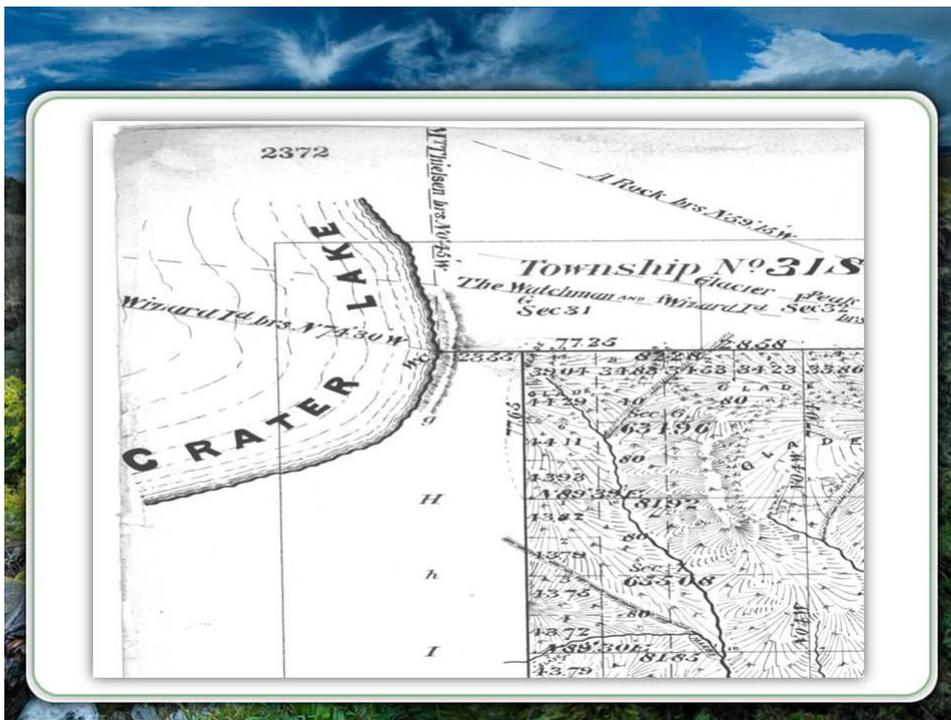


If you look at the bottom picture that is the surveyor view of the boundary. That is one of the surveyors out of the Oregon State Office. They were working under some challenging conditions here. But the surveyors are used to that sort of thing; they always see the interesting side of the National Parks when they are working on the boundaries.

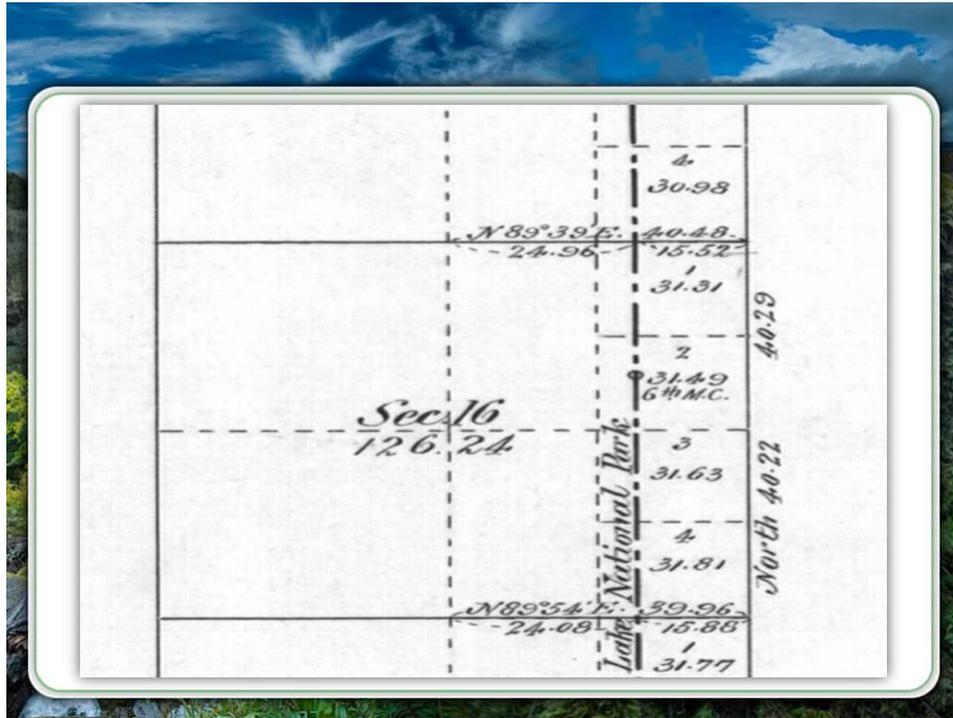
So I will move on here. This is a plat that was prepared of the rectangular survey system. If you look in the upper left corner you can see this is Crater Lake itself.



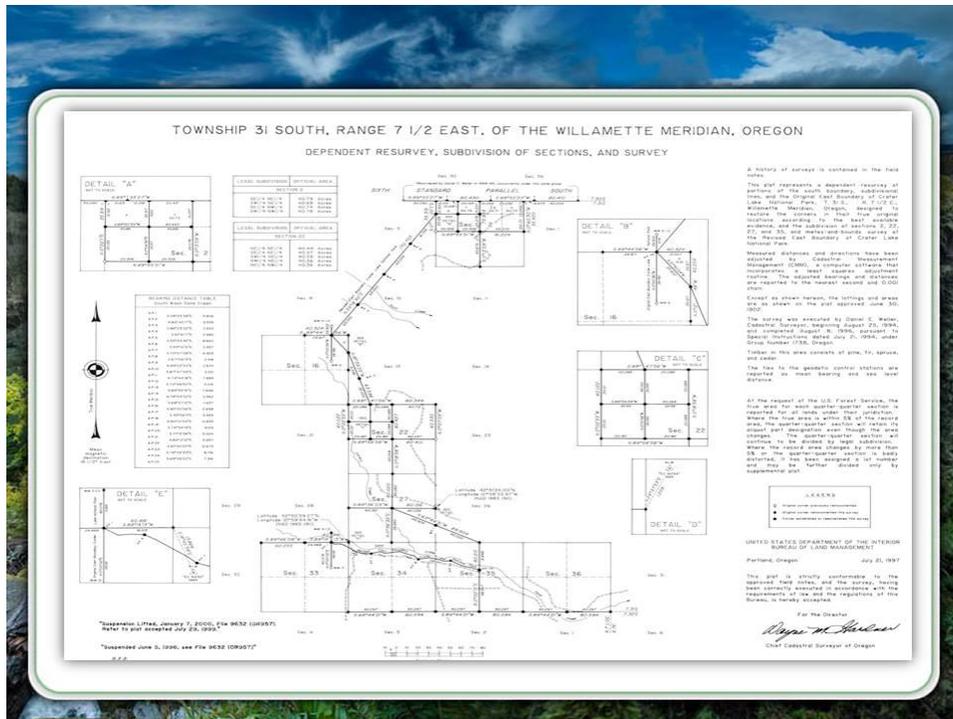
Over here is Mount Scott, which is on the upper level of Crater Lake. Crater Lake is like a big volcano that collapsed and the middle is filled in with a beautiful deep lake. So this is what it was like before they created the National Park in here and I will move on to the next slide I will go ahead and click that off.



Now I would like to show you a plat that shows what its like when the east boundary of Crater Lake National Park came into the same township that we just talked about.



This is the park boundary coming through here, you notice right here, we have the 6th MC which is the 6th mile corner. This is the intersection with the north boundary of Section 16. You'll notice that this plat shows lotting up against the boundary from the east going to the west. That is the area outside of the park, and you will notice that this is the area they reported as a new acreage here for Section 16. They didn't lot inside the park, they didn't need to, but they lotted on the part that is on the outside of the park.



Then we will see what happens when the BLM came in for resurvey of this same area to expand the boundaries of the park. And on this slide we will see, we can go to that slide here, we'll see this is the same area that we showed on the other slide right in here. That's in Section 16. This is where it intersected the old boundary and they decided to expand the boundary, so they had the BLM survey this diagonal line, and they did a mixture of metes and bounds and aliquot parts or rectangular.

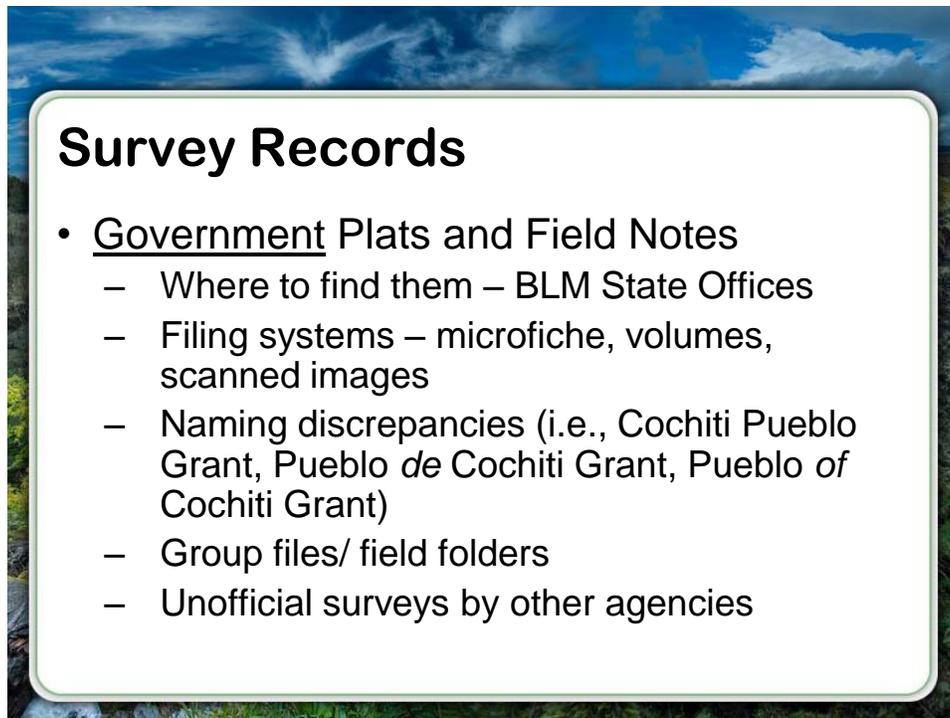
Looks like they came up here to a 16th, and I am not sure if the boundary follows the rectangular up in this area. So we can see that it also went from that intersection point and expanded out into here and down like this. So that shows that these boundaries are changing, and the BLM may be called on to survey certain description that was called for by some sort of legislations.

One thing you have to be aware of a lot of times when they do describe boundaries in legislation, they base it all on a map that somebody had a magic markers and drew on the map then they digitized it, give you bearings and distance, and they say they want the surveyor to go out and lay it out. That magic marker they used might have been on the ground, might be 200 or 300 feet wide, so you have to be aware of that. Try to figure out what the intentions of that description was.

Survey Records

Now I want to talk about survey records we talked a lot about history of the different types of non-rectangular surveys that we have would encounter out there.

We have the grants and small holding claims, private claims, military reservations and Indian reservations and the national parks. But now I would like to talk about survey records. And how we can find those to do resurveys of these certain types of surveys we will encounter.



A place to find government plats and field notes of course the steward of that type of record is the BLM cadastral survey and in each state office, you can find copies of those there are different filing systems we have micro fiche, sometimes they are in townships, filed by townships, we have volumes. Original volumes and we have scanned images. This is something that is just coming online. Some states have the capability, and some don't.

Most states that are trying to get their plats scanned first and then are going to deal with field notes, because that is much more labor intensive job, because most of the field notes are already in bound volumes. And they have to be taken out of those bound volumes to be scanned in most cases. But it will be a great resource for people, they can get on their computer if they have internet access and look up the scanned images, without having to go the BLM and get it off a microfiche.

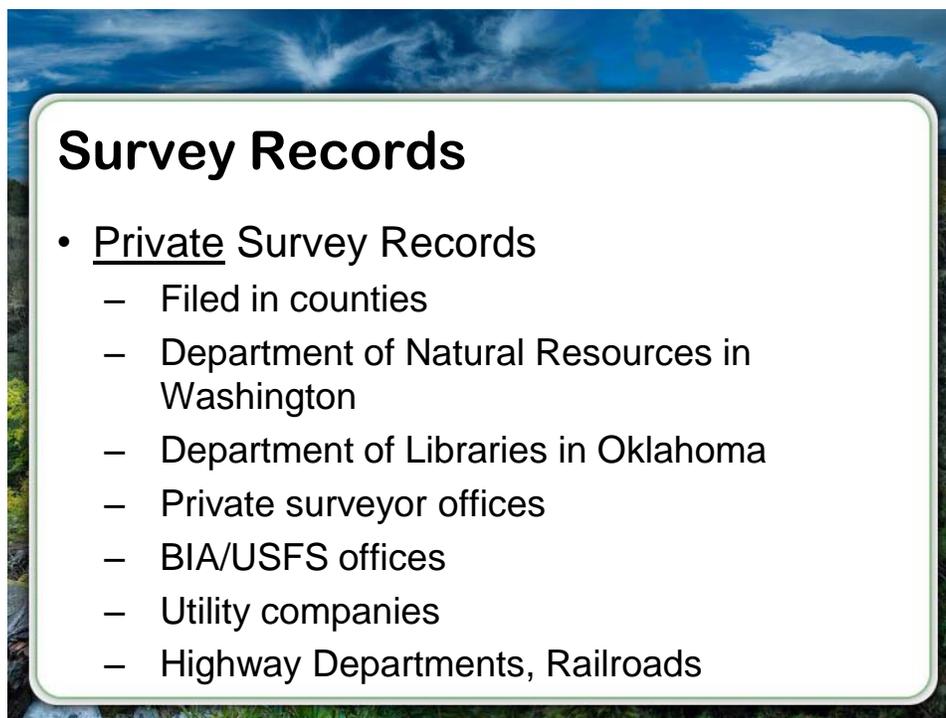
So going back to that slide there you know something's you have to watch out for when your looking for things in the BLM records is the naming discrepancies within grants especially they have so may grants in New Mexico but sometimes they name then different things on different

plats. Like sometimes I have seen Cochiti de Pueblo Grants, I have it seen Pueblo De Cochiti Grants and Pueblo of Cochiti Grant, and its all the same grant you have to be aware if your looking in the C's or the P's for that grants. And the main thing is, if you talk to the people at the State Office they can be very helpful. There's people with a lot of experience there.

Another source of information for government records, you can get copies of group files and sometimes they get sent to archives, but they are suppose to be kept as a permanent record of that survey project. Sometimes there are field information in field folders that might be available. But you would have to get with your state office to talk to them about getting any records that might help you. But there are unofficial surveys by other agencies.

We call them unofficial because they are not necessarily a federal authority survey unless they are done by the Bureau of Land Management. So other agencies like the Forest Service or the BIA. Or Bureau of Reclamation, these types of agencies may have survey records where they have actually surveyed some of these type of claims that we have been talking about.

Talking about survey records, private survey records.



Survey Records

- Private Survey Records
 - Filed in counties
 - Department of Natural Resources in Washington
 - Department of Libraries in Oklahoma
 - Private surveyor offices
 - BIA/USFS offices
 - Utility companies
 - Highway Departments, Railroads

You know most of them are filed in the counties. Different states have different laws. Different states have had recordation laws for a lot longer.

We were fortunate when I worked in Oregon that they had a recordation office since 1947, so you could go into the counties and you could find records dating back pretty far. Some states have only had recordation laws for about 15 years or so.

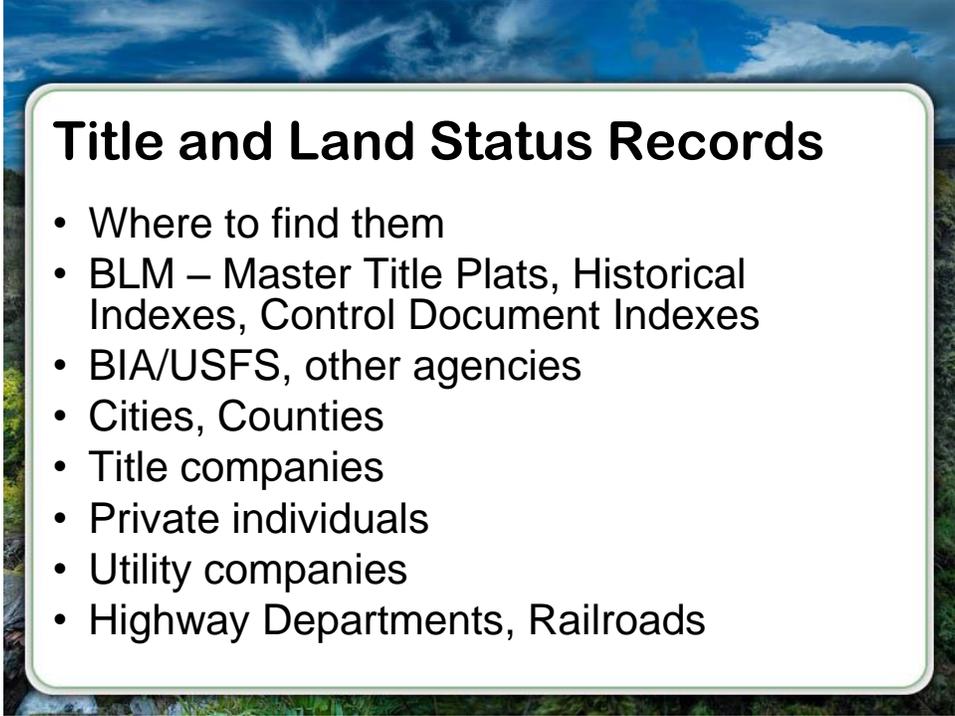
It's a little bit more difficult to get records if they went filed in the county, you would have to do a lot more searching around. But some of the sources in Washington they file all their private surveys in the Department of Natural Resources, and in Oklahoma they have corner recovery cards that are all filed with the Department of Libraries. And another source would be private survey offices, especially when states haven't had recordation laws that long they may have to contact the private surveyors or their families heirs.

And we have run into a few problems where the people, the survivors the descendants of a surveyor may have lots of records but they are starting to realize how valuable they are and they want pretty big bucks to get copies. So that why its good to have a recordation law where it is public record, and you don't have to buy it from somebody.

Other sources that may have private survey records are the BIA. They have a lot of private survey information for the parcels that are surveyed related to Indian lands. And then we have the Forest Service offices at the National Forest Level or at the regional office. They should have information that you can use. Utility companies have a lot of surveying information, it may be a survey of their right-of-way or there easement, but it may have ties to corners found corners that you are looking for on a grant, or a private claims or small holding claims.

And also highway departments and railroads you can get information on those and a lot of times they will have ties to original corners and it may be really good information in helping you in a resurvey. Title and land status records, where can you find them. BLM contains the government records they have things that that always to the point where the land went out of the public domain. So they have the master tile plats, historical master plats thats how the patent and configurations for each township.

And they have historical indexes that tells you what the names of the patent you can have the dates and you can figure out what land was patented, the control document indexes have these are on microfiche and a lot of this has been put in computers now a days. So if you contact your BLM public room, you know customer help they can help you with this figure out who owns what out there.



Title and Land Status Records

- Where to find them
- BLM – Master Title Plats, Historical Indexes, Control Document Indexes
- BIA/USFS, other agencies
- Cities, Counties
- Title companies
- Private individuals
- Utility companies
- Highway Departments, Railroads

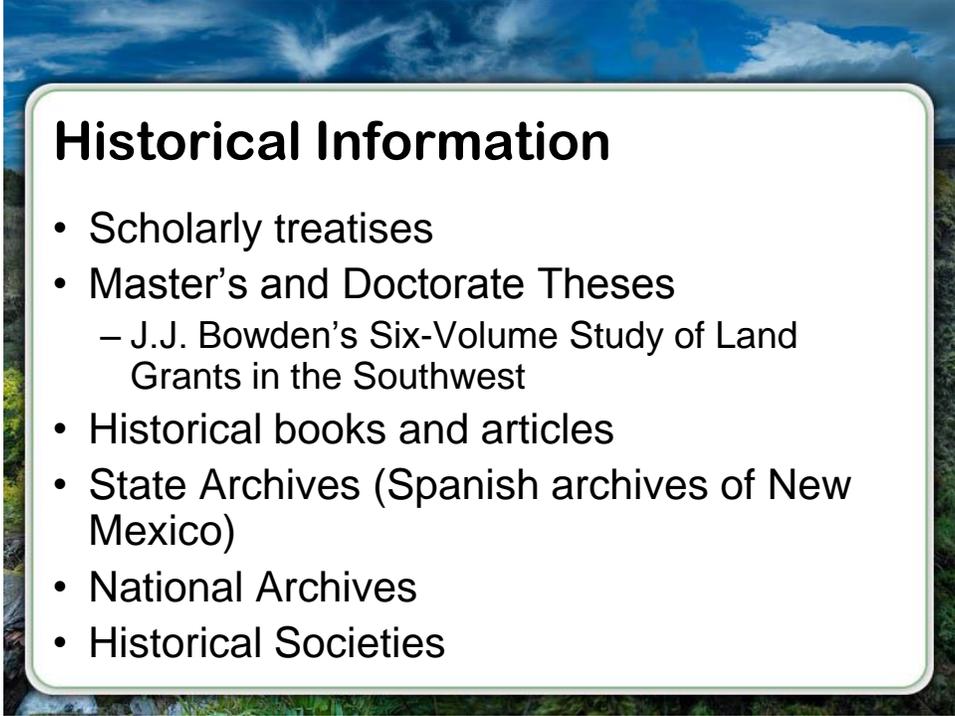
The BIA is a great source related to Indian reservations and Indian trust lands. They have a system called the Trust Assets Accounting Management System. It is being developed now but they can look a certain parcel up to find out if its in trust or not.

They can look up the documents. They have most of the documents on microfiche. So you can get in the information, the boundaries, the Executive Orders, anything that is related to the Indian lands or within jurisdiction of that particular office.

The Forest Service would have their title and land status records.

Other agencies have their own, cities, counties, title companies and private individual's, utilities, highway, railroad records, and these are all sources. Just for your own benefit or if you are working with somebody else studying this, you might share it with each other, different sources. When I taught this class live, we sat down and had groups that brainstormed just all the sources where they may have found information that could help them in their resurvey.

Different places they had gone to gather this information. It may be something that somebody had found information somewhere, and you may not be aware of it. So I think that will be helpful. I will continue on here, historical information talked about history in this course that I have been talking about.



Historical Information

- Scholarly treatises
- Master's and Doctorate Theses
 - J.J. Bowden's Six-Volume Study of Land Grants in the Southwest
- Historical books and articles
- State Archives (Spanish archives of New Mexico)
- National Archives
- Historical Societies

One of the sources especially about grants I call them scholarly treatises, a lot of the information was from a masters and doctorate theses, by a man named JJ Bowden. It was a six volume study of land grants in the southwest.

So I got a lot of valuable information learning the history of these grants. You can also find information in historical books and articles in state archives. They have a Spanish archives in New Mexico.

You may have to find certain translations of things so you can figure things out. There are the National Archives that you get historical information from and then there are local historical societies.

Short List of Helpful Websites

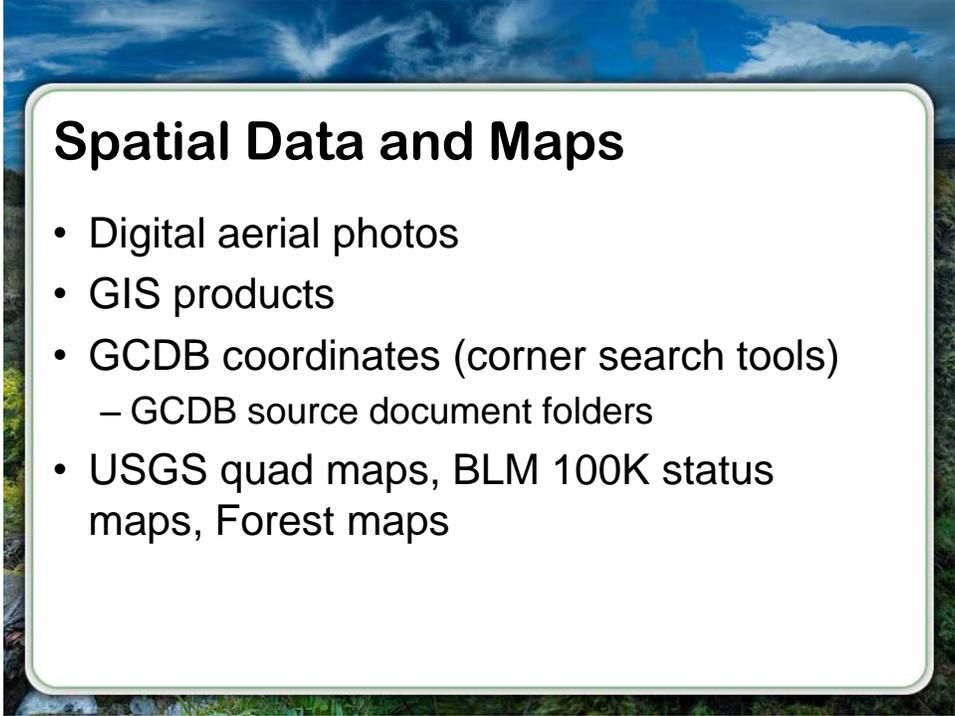
- www.Google.com – search for anything
- www.blm.gov/cadastral – Cadastral Survey
- www.law.cornell.edu/uscode
 - U.S. Code Title 25: Indians
 - U.S. Code Title 43: Public Lands
- <http://digital.library.okstate.edu/Kappler>
 - Indian Affairs: Laws and Treaties
- <http://avalon.law.yale.edu/>– historical documents
- <http://loc.gov> – Library of Congress, Acts of Congress, Public Laws, etc.
- <http://memory.loc.gov/ammem/amlaw> – Indian Land Cessions

I did a lot of research on the Internet to find out about these different Indian treaties and these Acts of Congress and the Treaty of Guadalupe Hidalgo and I was able to find that on the Internet.

This list could be helpful to you. You can Google and search for about anything. There are a lot of search engines out there BLM cadastral survey (www.blm.gov/cadastral), that can get you headed in the right direction it can tell you where a state office is located for that area you are working in and how you can contact people there.

Another good thing I found is this Cornell Law School had all the codes on the internet, there was U.S. Code Title 25 deals with Indian issues, then we have U.S. Code Title 43 and others deal with public lands. Another thing I found was Oklahoma State University has a website that has this stuff from Mr. Kappler, it was a compilation of Indian Affairs, laws and Treaties.

Also Yale education law web Avalon had a lot of historical documents about treaties and that sort of thing. We have the Library of Congress which has all of the Acts of Congress, Public Laws and everything.



Spatial Data and Maps

- Digital aerial photos
- GIS products
- GCDB coordinates (corner search tools)
 - GCDB source document folders
- USGS quad maps, BLM 100K status maps, Forest maps

Finally we have this memory.loc.gov this has, and you can read these off of your information provided, but you have Indian land sessions are all in this website. So that is a really good way to do a lot of research especially if you wanted to know the Acts that pertained to certain surveys that can give you the historical perspective that you might need when doing your resurvey. Because most of you are probably using GPS out there nowadays, spatial data is very important, you can get digital aerial photos in most states.

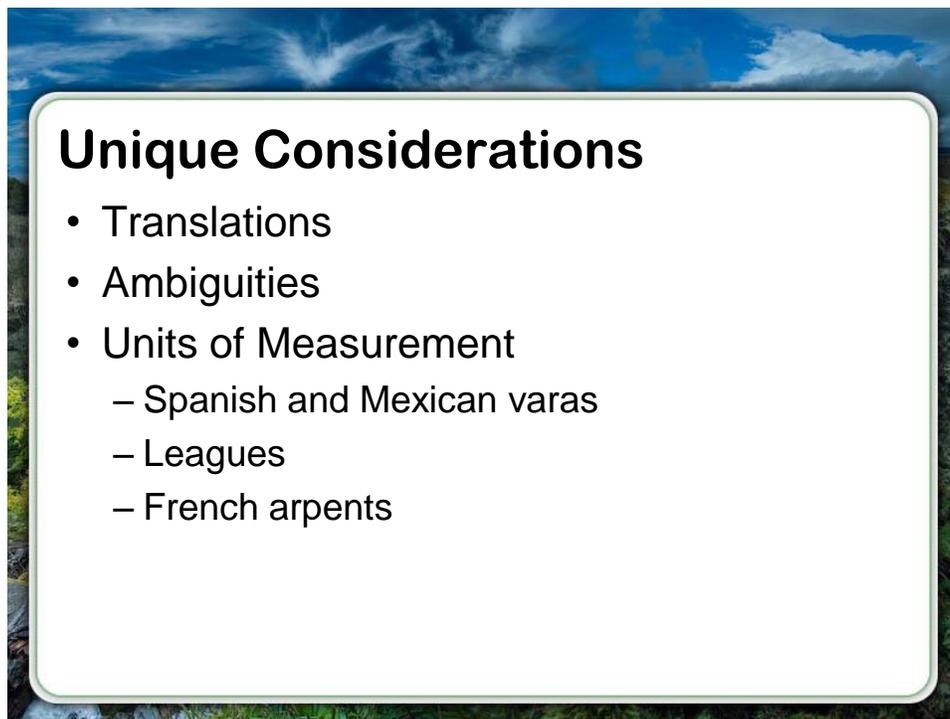
New Mexico has the entire state scanned I mean has digital ortho photos in color. They are one meter resolution and they were done in 2005. They cover the whole state they have been helpful you know you cant zoom in because of the resolution real close, but they help when you are looking at the overlaying what you have done in your resurvey or field investigation.

To look at things on the ground because you will be able to see the houses, and you can see fence lines and roads and that sort of thing. You can also get GIS products from the BLM offices are very helpful on that. They can provide different things like aerial photos and ownership layers and different things that can be put into a GIS.

Then you have the GCDB coordinates and hopefully you are familiar with the Geographic Coordinate Database where the BLM took all the plats from all the surveys across the country and they put them in a digital form they entered them in and computed them latitudes and longitudes so these will be very good information for corner search. I have used them myself and you can out them into your GPS and you can look for those coordinates. One thing good about the GCDB is that they will provide reliability code and you can get that out of the information, so you can see how big of a circle you are looking in because the GCDB is based on the latest available survey information. If it is really old survey information you might have a lot bigger circle there and a lot bigger area to search in.

Another thing is that if you go to your GCDB state office, they have source document folders where they have all the folders that they used, where they compiled all the data and all the plat information they used to calculate the coordinates. That is available, and it can be useful source of information. Of course then you have the USGS quad maps. You have the BLM 1-100K status maps which have ownership layers on them and colors. Then you have Forest maps that can really be helpful on getting around out there.

There is a lot of unique considerations you have to take into account for when doing a non-rectangular survey especially with the Spanish and Mexican Grants.



You have the translations issues, you have there may be deeds that have been parts of grants that may have been sold out and you may have to survey out around and those may have been done quite a while ago and they are in Spanish so you will have to get a translations of that.

You have to watch out for ambiguities in the translations. You may find a document where one part is translated one way, and the other is translated another way. You also have the ambiguities of where they are talking about different ridgelines or different rivers or anything like that. All these uncertain boundary calls, you have to take into account.

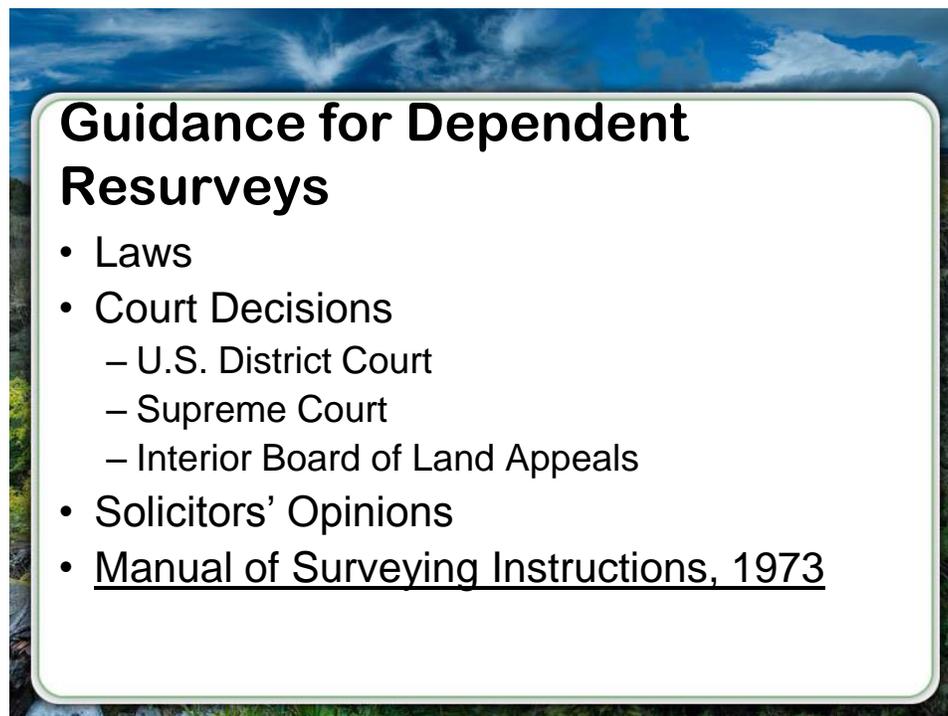
Another major issue is the units of measurement especially in the grants. We have the Spanish and Mexican varas and we find out that different areas of the country had different standards for how far, you know what size of a varas was and the length of a vara and you also have the leagues which was another Spanish measurement. Then you have the French arpents. So I would like to have a table here.

Let's take a look at this table, you can find these types of tables in lots of surveying books. This particular one has quite a bit of information. It talks about the chains, miles, varas, arpents and it has measurements for feet and vara in feet and inches and different states with the standard was on those areas. One thing I found that was a barley corn was $\frac{1}{3}$ of an inch. Glad we don't have to measure in barley corns. But I will go ahead and zoom in a little bit, on this table here. You can see the top of it for your information this tells a lot the measurements between chains and feet and miles and I will slowly move up to the bottom part. And the bottom part talks about the arpents, in different areas it talks about toises which I am not familiar with too much, and the sides of square arpents in different areas.

So anyway these types of tables we really need to take into consideration when we go out there and try to lay out one of these descriptions and try to do the resurvey because you have to know what the standard of measurement was for that type of vara or that type of arpent you are in.

Dependent Resurveys

So moving on, I like to talk about dependent resurveys. I am sure most of the courses you have already taken have a lot of information about dependent resurveys. But going over it, we need to base it on laws on court decisions and that can be of the U.S. District Court, Supreme Court of Interior Board of Land appeals, we call that the IBLA.

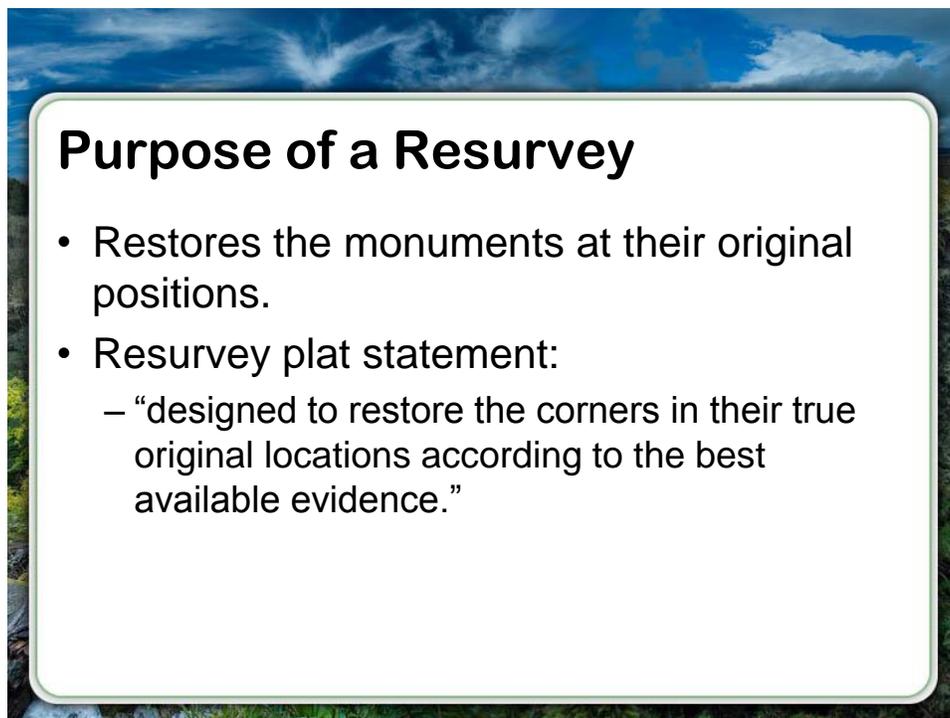


We get a lot of guidance from that if our survey is protested and the IBLA will do a study of it, and they will come out with the ruling and then we will use that as precedent for the way we perform our surveys in the future.

We also have Solicitor's opinions. Those are government attorneys. They can give information, they usually will cite some laws and court decisions that will help you in guiding you in your resurvey. Of course we have the Manual of Surveying Instruction in 1973. There is suppose to be a new one coming out eventually, but the 1973 Manual is what we go by now. And it is based on all these things above. All these laws and court decisions and that sort of thing. They cite them in the Manual, so lets move on.

Purpose of a Resurvey

What the purpose of a resurvey is, you have heard most of this. But it so restore the monuments at their original positions.



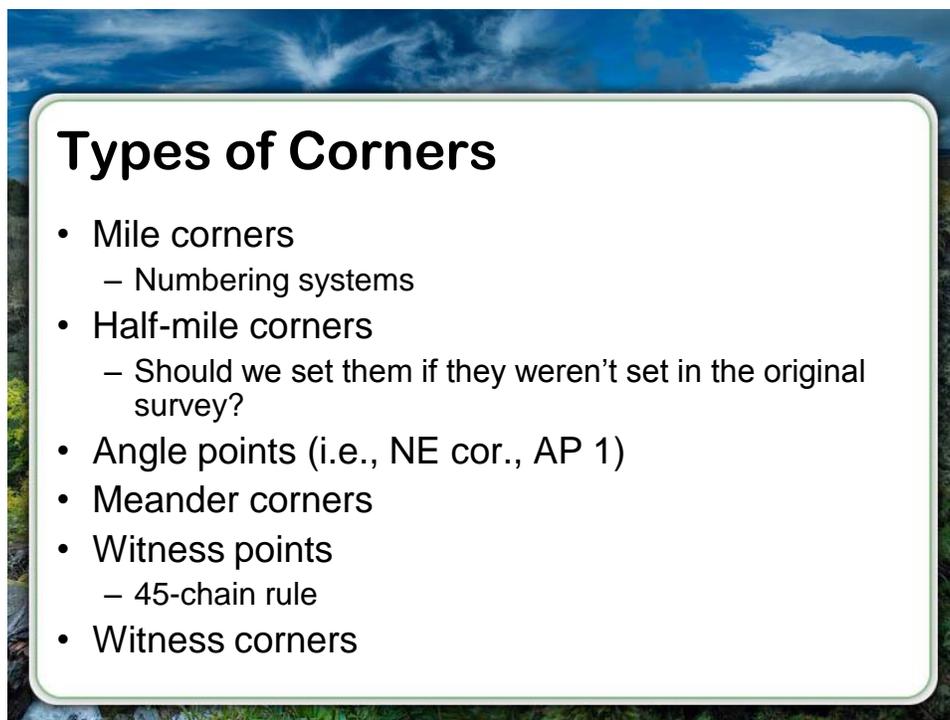
And our resurvey plats have a statement that is designed to restore the corners in their true original locations according to the best available evidence.

So it is our job out there to find out, to figure what the best available evidence is to get the corner back in its best location according to the original record. So let's move on.

Types of Corners

We will talk about the different types of corners you will run into, in these resurveys that you might be doing. Mile corners is one that you will see a lot on grant boundaries, Indian reservations boundaries, and on national park boundaries.

You have to be aware of the numbering system. Because the one mile corner, you know they have what they normally do is for the south boundary, they would have the 1 mile corner on the south boundary, the two mile, three mile, until they get to the next corner on the reservation. Then they have the one mile on the west boundary but that lends itself, unless it is irregularly shaped parcel. Then the mile corners might go continuously around the parcel. So you have to be aware of that.



Now half mile corners, sometimes they are set and sometimes they weren't. So you have to look at the survey records, the fields notes, they may not show up on the plat but the field notes would have them for sure and you have to be aware where they were set. Another question is if they weren't set in the original survey when the BLM resurveys, should we put them in? In a lot of things, I think it is a good idea in a lot of cases because one of our rules in the Manual of Surveying Instructions is not to have a line that is longer than 45 chains long which is over half a mile without a monument marking that line.

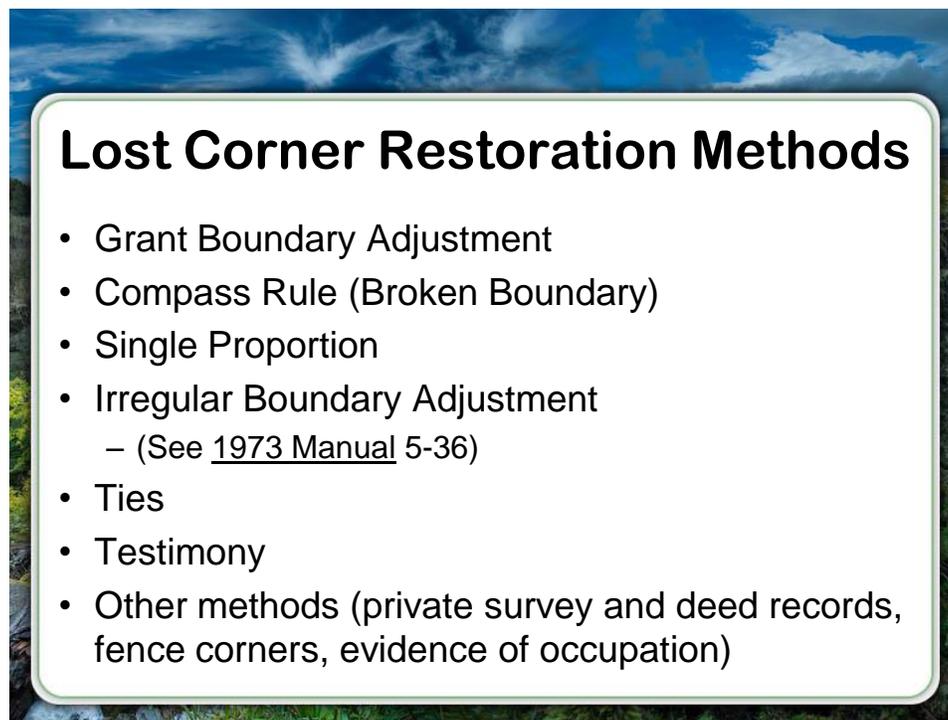
Some of the other things you might run into, the angle points that are on the boundaries they could be called the northeast corner, southeast corner or a lot of times they will have AP numbers, AP1 through whatever, they might just call them corner number. Then you have to be aware of meander corners which are usually riparian boundaries. I have seen a lot of that things

marked MC on boundaries that are not any where water. But that can also stand for mile corners. In the original survey like of the mountains, meandering the east boundary of the Sandia Pueblo Grants they said they were meandering the mountains. We usually associate with water boundaries, but it can be sometimes a word used on other types of boundaries.

As I talked about before, witness points. That is a consideration if we want to do the best service we can when we are restoring those boundaries. I think we need to have monuments, not in any further apart than 45 chains. If that is the case, we can put witness points on the line to hold the line there so people can see where it is. Then they can build fences to it or whatever that is an important thing. Also take into consideration witness corners. Some witness corners are online some witness corners are set offline; there are different rules in the Manual of Surveying Instructions that relate to each type of witness corner. That is something you should look into in the Manual.

Lost Corner Restoration Methods

Lost corner restorations methods a lot of this is probably, something's that you have dealt with in other types of surveys.



These things are all found in the Manual and believe it or not the grant boundary adjustment can be used to reestablish corners on the grant boundary. And the thing about the grant boundary adjustment method is it preserves the angles so it preserves the shape of the parcels that you are working on. We also have the compass rule or broken boundary adjustment. It is found in the Manual.

When I worked on the surveying a lot the small holding claim boundaries we had a program called the Rio Grande Occupancy Resolution Project,, where they had surveyed all these small holding claims along the Rio Grande. But it turned out that there was a lot of public domain and that was in between, little slivers and the BLM didn't want to manage these land but so what we were doing is going in and surveying out these little pieces that were between the small holding claims, and then they would able to offer them for color of title to the people that lived nearby that wanted to claim that area. Or sell them at market value. So they could consolidate their holdings and the BLM wasn't stuck with an unmanageable small little parcel.

But when we did that a lot of times we had to restore the boundaries of small holding claims. What we would if we had a missing corner we would try doing it restoring the lost corner with the grant boundary adjustment do then we would also try it with a broken boundary or compass rule adjustment,. Then we would compare where that corner position came to the existing condition on the ground. If we had one method that came closer was a fence corner or lines of occupation then that's the one we would usually adopt. You have to take all this into consideration.

The other features that you may use, lost corner restoration method would be the single proportion. If you have a straight line and the half mile corner is missing between the mile corner that would definitely be a single proportion type of restoration. You may have a long straight line between mile corners with several mile corners missing; this may be another situation where you might use single proportion. You also have the irregular boundary adjustment. That is in Section 5-36 of the 73 Manual that deals with lines where there is a bearing break, and you need to preserve that bearing break along the line. So that might be something a bearing break at a corner. You might need to consider. You can also restore corners by ties and sometimes that might be the best available evidence of the tie, to put a corner back in.

You have testimony of long time local landowners, of those that are familiar with the survey that can help you. In the BLM we can do affidavits, we get the affidavits signed by the person we talked to and that actually becomes a part of the official field notes. So that is another method.

There are other methods; you can use private survey and deed records methods. Sometimes the fence corner might be the best available evidence, you have evidence of occupations these are the things you need to consider. The more evidence you can find points toward a certain method of restorations that is what you should end up using. And like I said, the jist of all these surveys is to protect the valid exisiting property rights that are out there. So what ever method you use, you don't want it to be one that is going to cut in to the bona fide rights of the landowners out there.

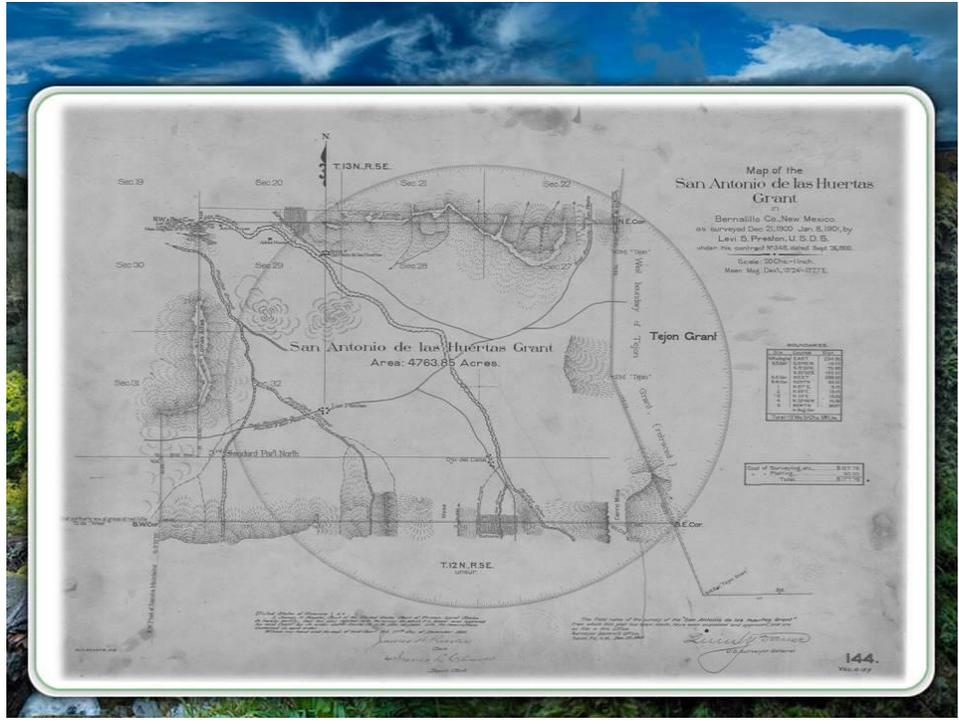
Ok there is certain thing you may run into when you are out there. The gap and overlap issues, one that we recently ran into in New Mexico was a survey at the Crest of Montezuma over by the Sandia Mountains.

Gap and Overlap Issues

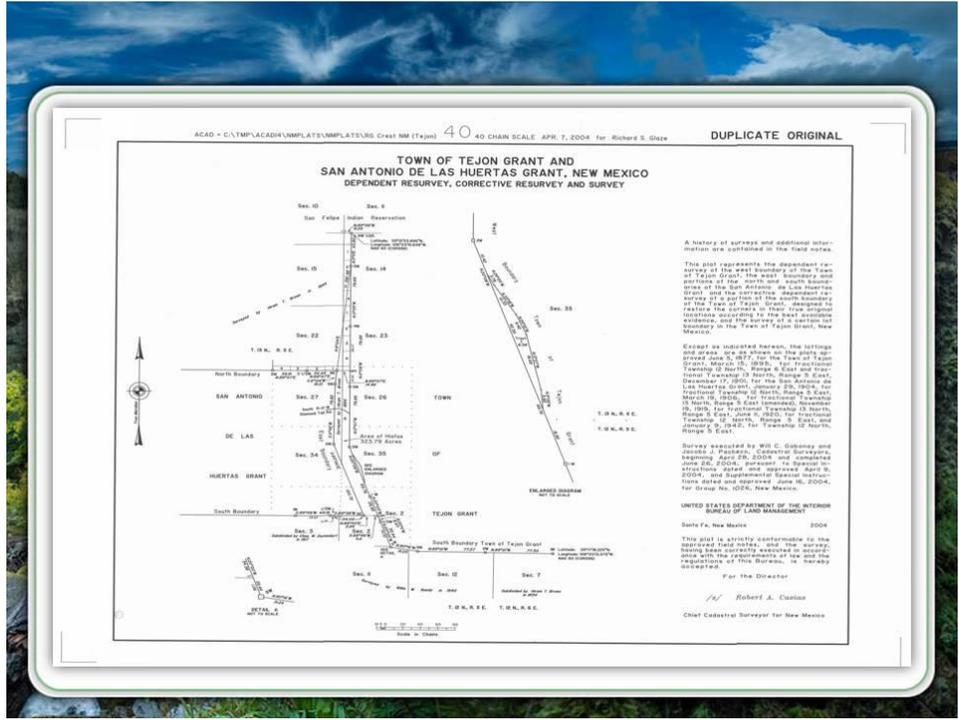
- “Crest of Montezuma” survey
 - Gap between Town of Tejon Grant - San Antonio de las Huertas Grant
 - Case Law:
 - U.S. v. Weyerhaeuser Co., 392 F. 2d 448 (1967)
 - U.S. v. Macmillan, 331 F. Supp. 435 (1971)
 - (See Casebook, pages C1-1 - C1-3)

But it ended up being a gap between two grants, the Town of Tejon Grant and the San Antonio de las Huertas Grant. If you look in the case book, with this pages C1-1 through C1-3 it has a great section about a gap between surveys, and it has the court cases that were used in that situation.

This is a plat the Town of Tejon Grant, I will circle it on the diagram was right over here that was originally surveyed in the 1800s and it had its west boundaries surveyed and this one with the big long name here San Antonio de las Huertas Grant was surveyed in the 1900s. It was suppose to have a common boundary. The east boundary of the de las Huertas Grant was suppose to be common with the west boundary of the Town of Tejon Grant. Well what we found out when BLM was tasked to do a resurvey we will go to the next slide here.

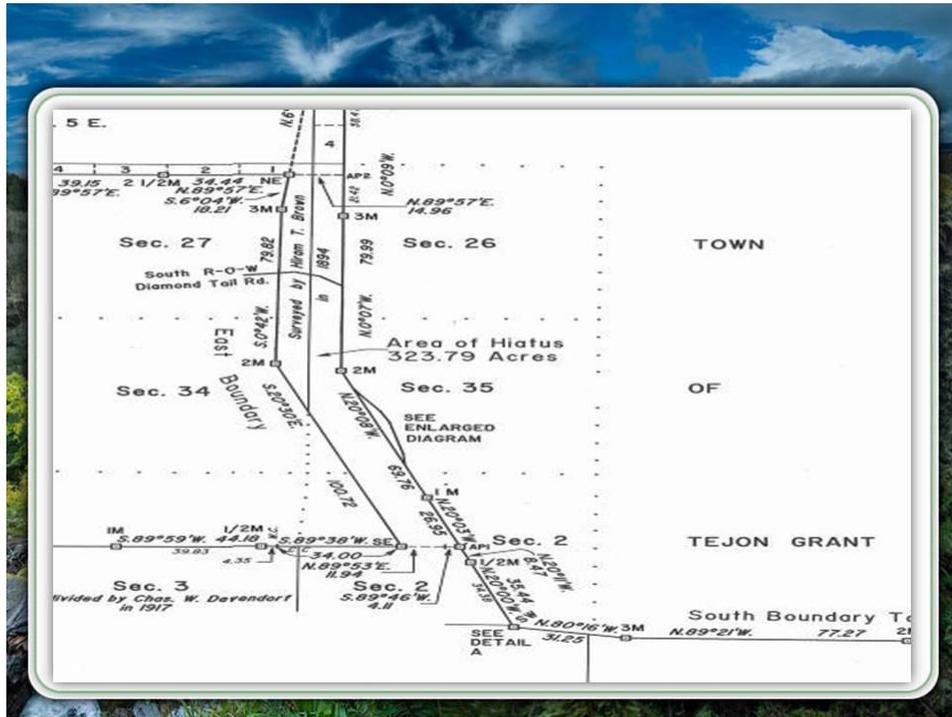


And we will look at that and find out that the BLM actually found two separate monumented boundaries. One for the west boundary of the Tejon Grant and we will move to the next slide. We have a preliminary plat and I do have a copy of the approved plat and I will put it on the overhead later. But here's what we found and you cant see it too well. I'll move to the next slide is there was actually a gap between the two grants and that would be this area right in here.



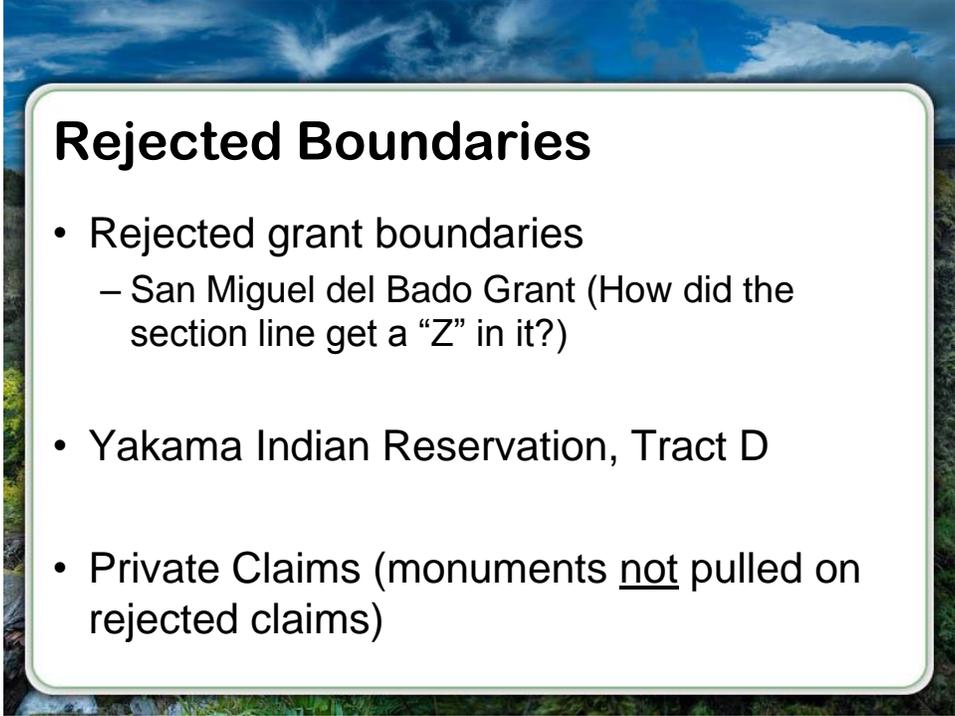
It is about 15 chains wide in places and I think its about 324 acres of land right in here between those two monumented boundaries that was never part of either grant according to survey.

Moving on, I do have on the overhead, I'll have to see it up, it's a copy of the plat that the BLM ended coming up with. We have an area on this. Now I will try to zoom in a little. If you look closely, you can see what the BLM ended up doing.



The area between the grants, they made it into tracts. They have a Tract 37, 38 and 39. That was how they dealt with that.

It turned out this was an area that one of the Pueblos had acquired and then they traded it to the BLM in a land exchange and this is going to be kind of like a wilderness area. Hiking area right in there but I thought that was interesting.



Rejected Boundaries

- Rejected grant boundaries
 - San Miguel del Bado Grant (How did the section line get a “Z” in it?)
- Yakama Indian Reservation, Tract D
- Private Claims (monuments not pulled on rejected claims)

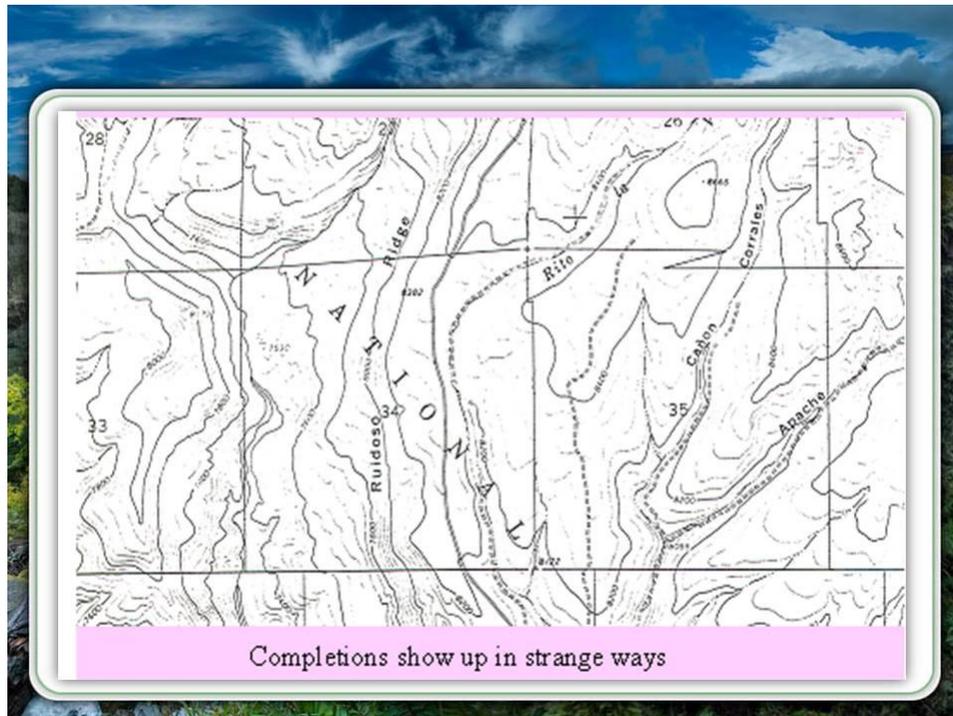
You may run across this situation where you will find a gap between grants or a gap between surveys where there is supposed to have a common line. I think one of the best things you can do is contact your BLM State Office and talk to the surveyors there who may have dealt with this type of situation so they can help you on how to proceed.

In fact, this grant was first pointed out by private surveyors who had discovered it and were wondering how to deal with it. There's other situations that you might run across one of which might be rejected boundaries. It might not always be considered a rejected boundary or it may just be a suspended boundary.

Now one of the interesting examples and I'll show you a little bit more on that was called the San Miguel de Bado Grant. It ended up with a “Z” section line. Its kind of interesting and I will show you how that or what that looked like in a minute.

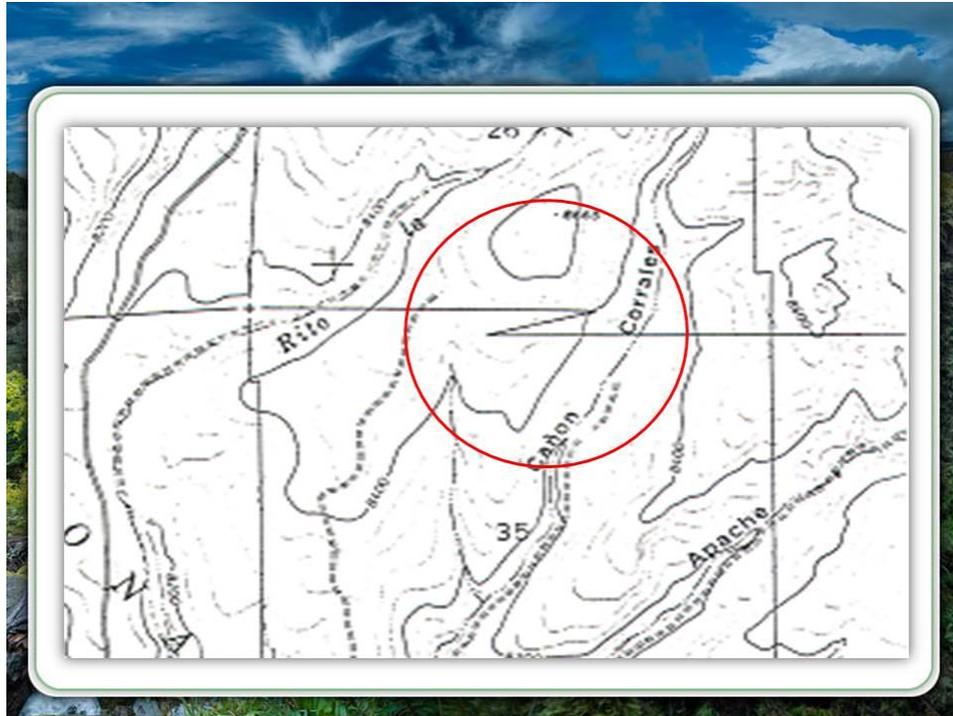
One of the other situations that's out there is the Yakima Indian Reservation. I was talking to Ron Scherler and he was telling me about it and how they went out to survey the reservation boundaries. What happened was there was supposed to be a map that showed the boundaries but that map was lost so they ended up following the description and their interpretation of the boundary was it followed a certain area.

Then years later the actual map of the reservation was found and I believe it was found in the archives and at that point, they realized that the boundary was supposed to be a much larger area so rather than just out and out rejection the old boundary they superseded it. Because other surveys had closed up against that boundary and used it so they ended up putting in a new boundary at a larger distance, out making a bigger area so that is why I refer to the Yakima Indian Reservation as a Tract D. Some other tracts involved in this case.



Another thing about rejected boundaries is the private claims that I talked about, the monuments were not pulled on rejected claims. Like the surveyors who surveyed in the early 1900s then came back in the late 1920s and pull them monuments. After they found out whether they are actually a monument of a valid claim or they are just a monument of a claim that has been rejected. So moving on, I talked to you about the Z in the section line. This was pointed out to me by Dennis Mouland he is familiar with it. If you look right here, you can see right here at the north boundary. The boundary of Section 35 it comes along like this and all of a sudden goes back like that.

Well how do you think that happened? I will show you on the overhead. I'll show you a picture of the plat.

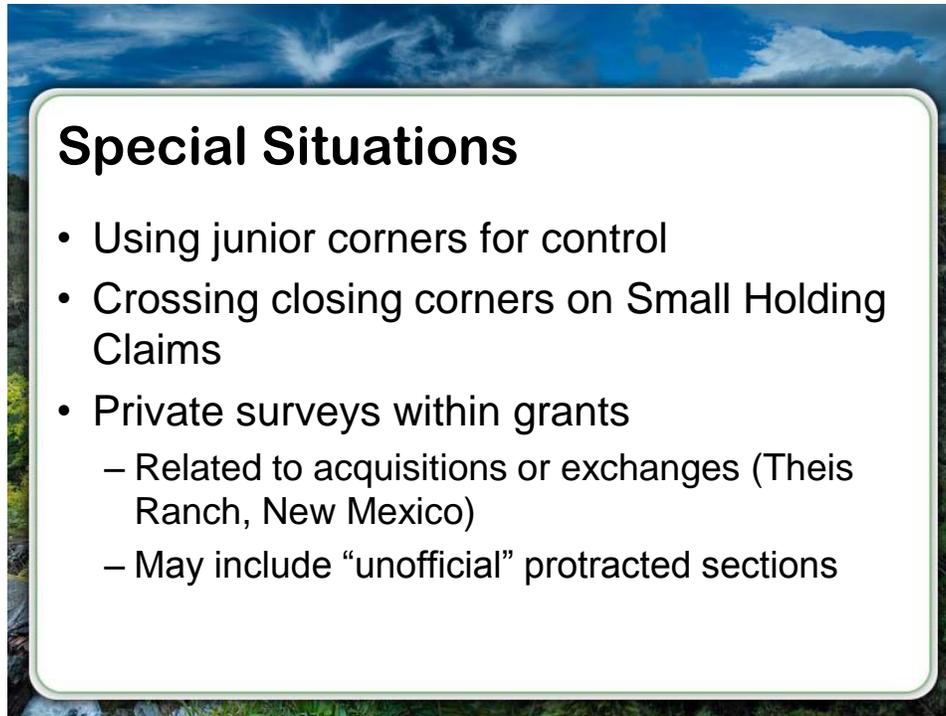


I just wanted to show you on this plat how that Z in the section line came about. It is pretty interesting when they completed the rectangular survey system from the south, they lotted up against this boundary of the San Miguel del Bado Grant and so this here is the section line between sections 26 and 35 so you have a little part of section 26 that's right in there which is on the south side of this grant boundary.

Then the completions came in from the north side or it could have been the other way around, but they came in and they were doing the section line between sections 26 and 35. And they lotted against it here's a little part of Section 35. This grant boundary from the north so what happened was when the grant boundary line was erased, you have this "Z" in the section line right across like that. And so you know you take away the grant line and that's what you got, and that is part of the section line. And so that is an interesting thing you may run into out there.

So will go ahead and move on. And turn this off and moving on some more special situations you may run into while your out there is dealing with, you may have instances where you may have to use junior corners for control.

This is another case where you might want to contact you BLM state office, cadastral survey. There are things in the Manual of Surveying Instructions that say if there is so much obliteration of senior corners that the junior corner like a closing corner or something might be the best way evidence of the original line.



So that’s something that has to be taken into consideration. Another thing that has to be considered that is kind of a unique situation is crossing closing corners (CCC) that are on small holding claims. These are more like points of intersection, they are suppose to be on a section line and they are also suppose to be on line in the small holding claim the boundary so that is something you have to consider there.

Another thing that you run into a lot is private surveys within grants. Because it was private land, they could survey it any way they wanted to. But then later on if the government found there would be a federal interest there like Pueblo has brought up the land like a ranch or something. The deed might be based on the private surveys inside the grants. According to the government, all the GLO and BLM records they stop once the exterior boundaries of those grants were surveyed and then it was patented from then on it was private land so the government doesn’t have an interest. But we may have to go back in there to and survey something that has been acquired by something or some entity that makes it a federal interest.

We have private surveys within the grants and some of these may be related to acquisitions or exchanges. One example is called the Theis Ranch in New Mexico. It was acquired by the Hickory Apache Tribe and it was surveyed. There was several large ranches in northern New Mexico that fell inside the Tiamia Randa Grant, but then they were surveyed out because they ended up becoming trust lands.

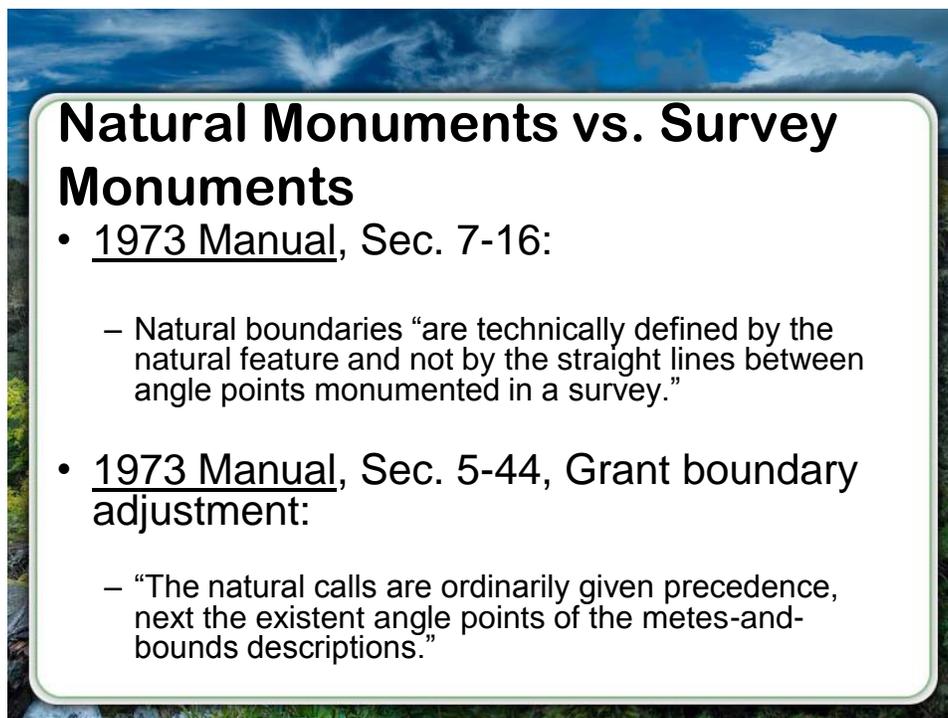
Another thing you have to watch out for inside of grants, there might be unofficial tracts and sections. Now the reason I call them unofficial is they are never surveyed by the U.S. government because the U.S. government public land survey system rectangular surveys were not extended into the grants.

Once the grants were patented, they were private lands. So the private land owners could divide that land up any way they wanted. But because for tax purposes and different reasons, the counties local people have protracted sections inside the grants. And the one problem with that is one entity might say I'm protracting in sections coming from one direction and somebody else might come from another direction and you may not have the same protracted section. I call them that a lot of times, or projected sections, or sometimes I call them fake sections because they were never really official government sections.

They are things that are mentioned a lot of times in deeds within grants and sometimes monuments were set. They are supposed to be making these corners. So when we run across them we don't call them official corners the public land survey system, but we will describe what they are if they are a locally recognized corner, a section corner we will have to call for that in our resurvey information or make sure we describe it.

Another thing to consider in these types of surveys especially in grants. Natural monuments versus survey monuments.

The 1973 Manual, Section 7-16 says "Natural boundaries are technically defined by the natural feature and not by the straight lines between angle points monumented in a survey."



Natural Monuments vs. Survey Monuments

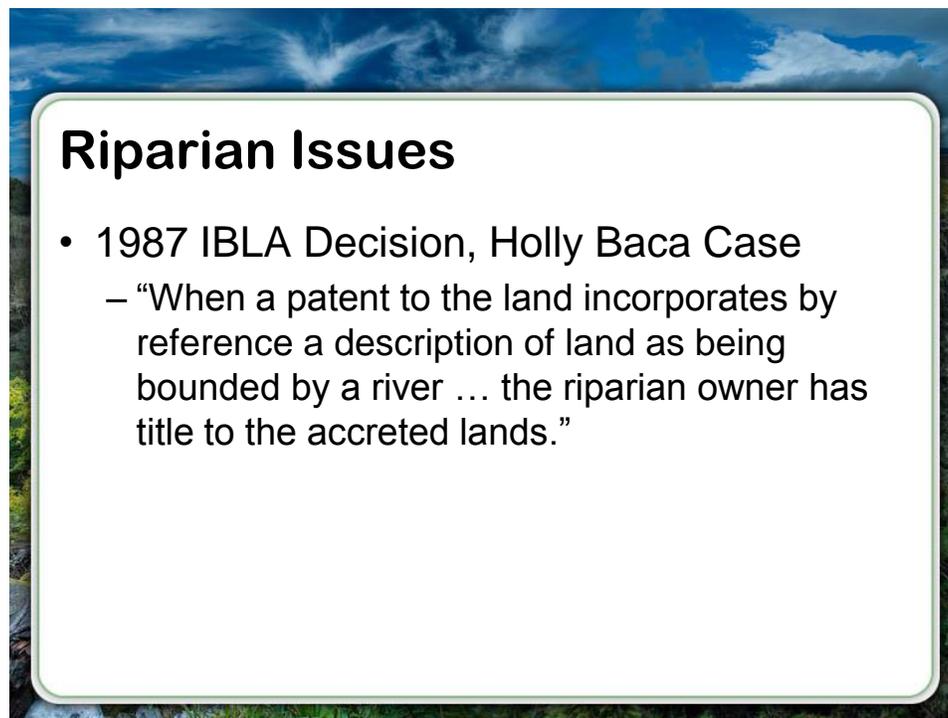
- 1973 Manual, Sec. 7-16:
 - Natural boundaries “are technically defined by the natural feature and not by the straight lines between angle points monumented in a survey.”
- 1973 Manual, Sec. 5-44, Grant boundary adjustment:
 - “The natural calls are ordinarily given precedence, next the existent angle points of the metes-and-bounds descriptions.”

So the ridge, the actual physical ridge top is with all its undulations and meandering. Meandering is the actual boundary according to this description here.

Another thing when it talks about the Grant Boundary Adjustment in Section 5-44 of the Manual it says, “The natural calls are ordinarily given precedence, next the existent angle points of the metes-and-bounds descriptions.”

Riparian Issues

Riparian issues – especially with the types of claims along the rivers, private claims and small holding claims – we weren’t sure about that because there hadn’t been a precedent set in New Mexico until 1987.



There was an IBLA decision, Interior Board of Land Appeals Decisions in the Holy Baca case and what that ruling said is “When a patent to the land incorporates by reference a description of land as being bounded by a river...the riparian owner has title to the accreted lands.” So that’s what we have been following since 1987.

We came up with these policies in New Mexico and this is the policy that will follow until there is another contradicting IBLA decision or a different precedent set for a different type of survey. We think it’s the same for private holding claims, private claims within grants, but there hasn’t been a challenge to the IBLA for one of the surveys for that, that I know of.

Riparian Issues

- New Mexico Cadastral Survey policy concerning Small Holding Claims and similar grants:
 - “All claims **with boundary calls in the original field notes** to a river bank or a related component of the river, e.g., gravel bars, water, or bed, will be considered **riparian**.”
 - “**With no river related calls**, even though the claim was originally located in the vicinity of a river and a portion of the boundary approximately traversed the water’s edge, the claim boundary is considered **fixed**.”

What we do follow is we say, “All claims with boundary calls in the original field notes to a river bank or a related component of the river, e.g., gravel bars, water, or bed, will be considered riparian.”

So if the notes in the original survey mention that its along the bank of the river or along the water edge or anything like that we consider it riparian when we deal with the accretions. If they have riparian rights then they are entitled to the accretions. Then if the there is “With no river related ca;;s, even though the claim was originally located in the vicinity of a river and a portion of the boundary approximately traversed the water’s edge, the claim boundary is considered fixed.” So it might not say anything about the river, so that is the key.

Whether the record notes mention the river or not. So moving on we have an example here. This is called the Holly Baca Case and I will show you the plat here.

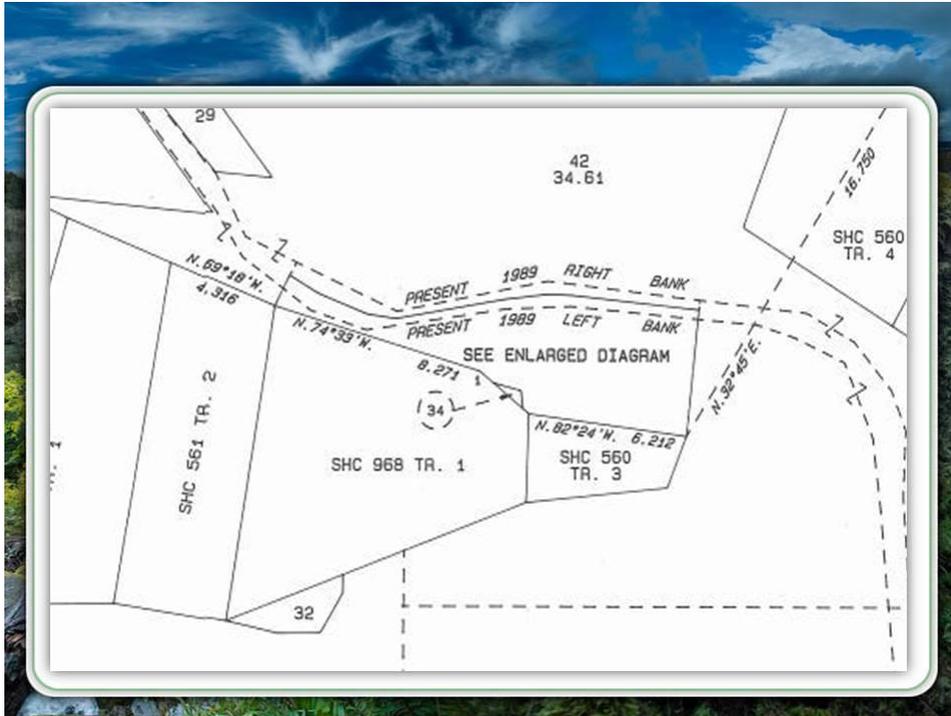
This is another area of small holding claims along the river here. Its this area here I will draw it on my light source, light pencil right in here we were surveying in front of these small holding claims and of course the actual river that flows through here it goes through like this there was, or maybe it goes the other way, there were accretions to where tie river bank was at the time of survey.



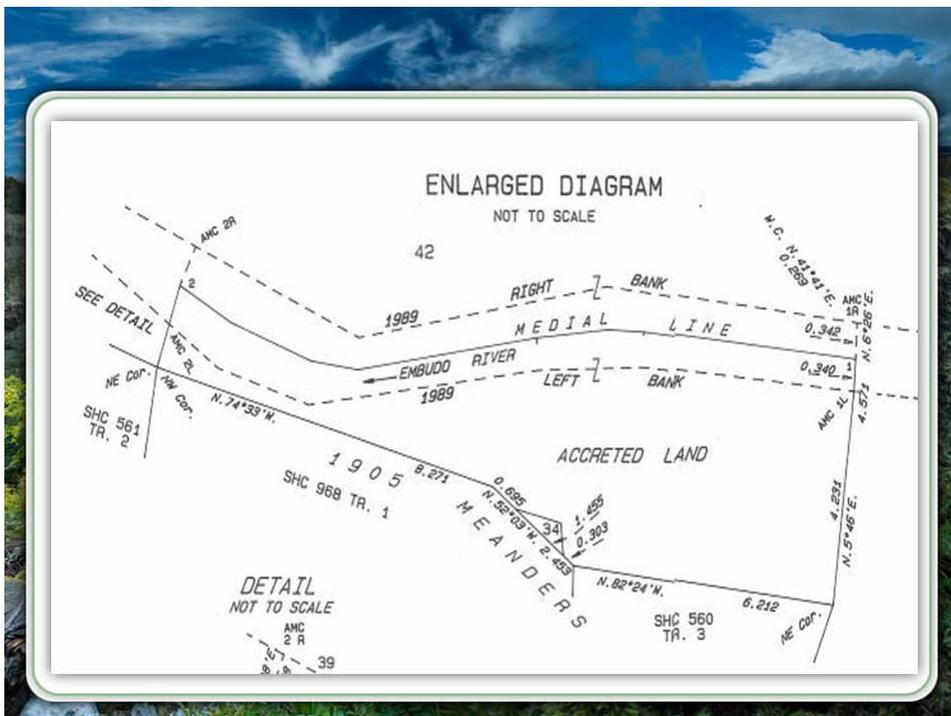
This is that same area just a blow up its along the Embudo River and the old government survey as you can see had put a lot number, they lotted this area in here.



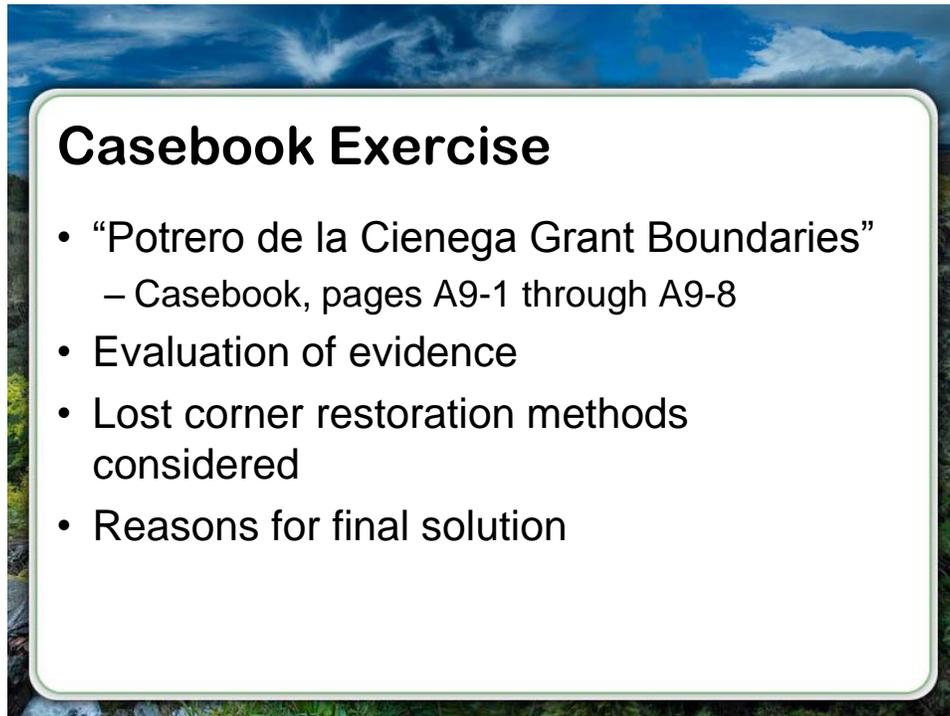
According to the Holly Baca case because the original survey along these lines, right along in here actually called for the river bank then that, those owners were entitled to any accretion out to the center of the river so they would be this area in here the accreted area. We will see what



This shows the accreted lands here right up in here attached and it actually we surveyed on out to the medial lines and non navigable river, so all this land in here because of the Holly Baca case was attached to that riparian owner that small holding claim.



Alright I will move on and I'm getting close to the end of my training here. There is a **casebook exercise** (hopefully you all have access) the BLM Cadastral Survey Casebook.



Casebook Exercise

- “Potrero de la Cienega Grant Boundaries”
 - Casebook, pages A9-1 through A9-8
- Evaluation of evidence
- Lost corner restoration methods considered
- Reasons for final solution

There is one case in there that talks about grants called the Potrero de la Cienega Grant Boundaries, and that is in California. It is a very good case it talks about all the evaluation of the evidence, it talks about the lost corner restorations methods considered, and gives reasons for a final solution. Just like I discussed earlier they show examples of trying to restore the corners using the grant boundary method and then they show it using the broken boundary method. They show it accepting different evidence.

Finally, they arrived at a certain solution and it ended up being a grant boundary, because it kept the shape of the original grant and its adjustments encompassed some of the features that were originally part of the grant. So I would highly recommend that you go into the casebook and read through that one. When we had the live classes that I taught, we have taken the time to actually go through it in groups and discussed that.

So I would like to put one more thing up on the overhead and it'll just take me a second to get that going. I thought this was interesting, remember that. This is a letter from remember R.E. Clements who was the surveyor of the east boundary of the Sandia Grant, well this is the same surveyor. And just to show you that you know you think the rough in field sometimes there may be cases where it might be rough enough you may want to cancel your contract. I guess I will read this to you in case you can't see it that well. This is July 10, 1859. It says under our contract of May 31st, we proceeded to the Canadian Fork of the Arkansas River to execute the surveys contracted for on the 3rd Inst Comanche Indians came to our camp.

They took all our men prisoners and possessed themselves of all our provisions, clothes, etc. After having held a consultation whether they should take our lives also, they determined to liberate our party on condition that we would leave the country in one hour, and not return to do any more work. This promise we were compelled to make in order to save our lives. We deemed it to be extremely dangerous at that the present time to continue working at the place required by our contract, and therefore, respectfully request that you will allow us to relinquish the portion of it which has not yet been completed. Very respectfully, R.E. Clements. And that was written to the Surveyor General of New Mexico.

That's just something in closing. An interesting sidelight. Just the conditions as surveyors we are out on the ground every day, a lot of us are working on these complex issues, in the office or analyzing the plat, or dealing with title issues. But there are sometimes we might think we have it bad but sometimes there are things out in the field that we just have to deal with and that is what I thought was a good example of this letter from the 1859 surveyor.

So with that I would like to thank you for allowing me to teach you and I hope you learned something from this and just keep studying there are so many sources of information that you can find on the internet, in the BLM casebook, and just good luck out there and thank you.

Indian Allotment Surveys

Introduction

Hello everyone. Dennis Mouland here once again, in the non-rectangular survey course, this time zooming in to another particular element, as we have been doing these different modules, this one on Indian Allotment Surveys, that are on national forest system lands.



A real, kind of strange oddity, this one is, and so that's what we are going to be doing. I brought in a subject matter expert here, from the California States Office, Mr. Tom Tauchus. How are you doing Tom?

Tell us about yourself. Did you go to school? Yes, I went to school in Michigan, at Michigan Technological University and I graduated in 1976 with a Bachelor of Science in forestry. And then shortly afterward, I got a job with a private land surveyor in Michigan, in a rural part of the state, and decided that that would be my career.

That's interesting, you know, there are a number of foresters actually, now that I think about it, that have gone into surveying. Did you take a surveying class in forestry school, I was curious. Yeah, we did. Actually, Michigan Tech had focused in quite a bit on surveying in their forestry program.

Well, that's cool. You went back to school a little bit more after that, didn't you? Yeah, I went back because the state of Michigan required, at that time they required a degree in land surveying before you become a LS, and then while I was there, for some reason, the state allowed me to

take the LSIT and I passed that, and that no longer required a full degree. And so then I applied for a job in California with BLM and I got the job and that's where I went. So after that time, you've been with California State Office BLM since then, right. Right, I've been there ever since. What kind of jobs did you do there?

Well, from 1980 to 1991, I was a cadastral surveyor, either on a travel crew or in several field stations. And then in 1991, I became a unit chief down there in the desert district of California. And that was in Ridgecrest. Ridgecrest. Right it was in Ridgecrest. The district office is in San Bernardino but the most of the surveys were centered around the Ridgecrest area, so that's where they decided to put the office.

I'm just curious, you know, Ridgecrest, out there in the desert, there's a big, is it naval base or lake? China Lake were you doing a lot of stuff for the military? What kind of surveys were you doing there? Actually, I really didn't do anything for the military, out there, the previous unit chief, he did you know, supervise the surveys out on China Lake. So, this was mostly just BLM surveys that you were doing for the Bureau. Yeah, for the most part. A little bit for the Park Service. Actually a little bit for the state of California too, they gave us money to survey on the Joshua Tree, oh, not Joshua Tree, down farther south there.

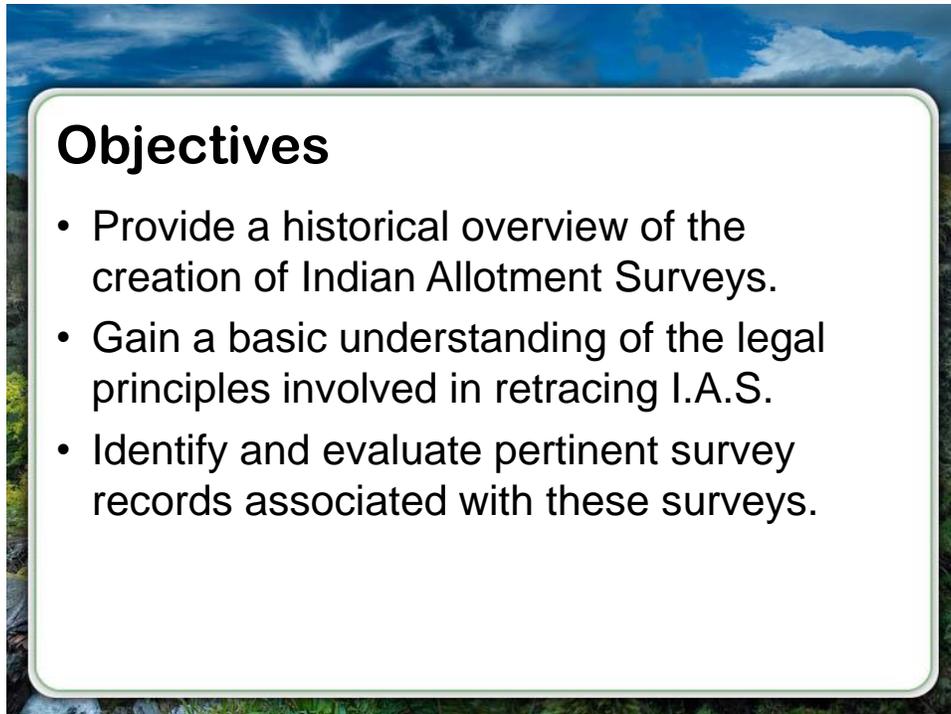
So then, you moved on to Sacramento eventually or somewhere around there, right? I went to Sacramento and in 1998 and I was the survey records and special instructions lead and I did that until 2006 when I became a BILS at that time. And a BILS to remind everybody, that's the Bureau's Indian Lands Surveyor and you have been doing that, let's see, 2 or 3 years now, in a BILS position, and what's that job like? What do you do in there?

It's a pretty interesting, it's way different than a lot of the BLM stuff that we get exposed to because a lot of their lands come out of fee lands, so they, you got all those quirks that we don't really get a lot of exposure to. We get some, but it's just much more intense. So, the tribes are acquiring a lot of land and wanting to do fee to trust thing, that's what mostly occupying your time.

Right, well that and working with their GIS folks. And that's a regional office for the BIA. There in Sacramento. That pacific region. Right, and is there a LTRO there? Yes, there is. So you got all the records you need. Right there, that's pretty good. Cause I know some of the guys with the LTRO's in a different place. Right, and BLM and BIA are all located in the same office. LTRO right there. Right, wow, that's pretty nice. So I got all the records, everything that they have available. Good, well Tom is involved with the CFedS program now and we are glad to have him here to talk about this. Now, let's set some objectives before we get any further.

Objectives

Here's what we want to do in this course. We want to provide you with a historical overview of the creation of these Indian Allotment Surveys. Want to gain a basic understanding of the legal principles involved in retracing Indian Allotment Surveys, or I.A.S. as we call it. And we want to learn to identify and evaluate pertinent survey records associated with these surveys. And as most of you will recall, these are the same, or relatively the same objectives that we've used, in almost every module of this course.



Objectives

- Provide a historical overview of the creation of Indian Allotment Surveys.
- Gain a basic understanding of the legal principles involved in retracing I.A.S.
- Identify and evaluate pertinent survey records associated with these surveys.

That's because, again the way we structured the course, we have the common elements and metes and bounds stuff up front, and then we start to look at each of these things individually. So, that's why the objectives are relatively the same. Well, and hey, if you've been surveying for any length of time, you know it's all the same. What's the history of this, how did they happen, what was done, what was different about them, and what kind of records and evidence and information is left for us to use when we go out there to do a retracement. Those will be our objectives for the day.

Well, Tom, how did the, how did these come about? You know, I think maybe one of the things I think I will mention is that we had been filming and putting this course together, and I just happened to be talking to Tom, and he asked a question, if we were covering these, I had never even heard of them. And so you know, that's why he got stuck having to come here and tape it. Because I've never heard of these particular surveys, and so Tom, you know, all my experience, when we talk about an Indian Allotment or an Indian Allotment Survey, it was always an aliquot part, you know, just a subdivision of a section that might have been a three mile method section or something, but it was still an aliquot part.

But, these are different. How did these come about? Well, as you know, there in 1887, they had the General Allotment Act, and then later on some of those lands were pulled out of the public, well, not out of the public domain, they were withdrawn for the Forest Service to manage. And I believe at that time they pretty much stopped entry onto those lands. But they realized that there were people that were living out there, that had been living out there, and they needed to provide for them and first they passed the homestead.

The Forest Homestead Entry Act, in 1906, but that didn't provide anything for the Native Americans that were living out there, and shortly afterwards they realized they needed to change that. In 1909 they passed the Forest Allotment Act to allow the Native Americans to homestead basically, on the national forest. Now, I'm going to assume that these being Indians, that they were getting trust patents when they went to patent.

Yes, that's initially that's what they got. And I believe the wording on those patents were that for 25 years, they would be held in trust by the United States for that individual. And then at time, after that time period had passed, they could petition the United States to get fee title to them. So, it wasn't an automatic thing, they had to take action to get a fee patent.

But, did a lot of those go to fee patent? Yeah, quite a few of them did. But now that the time has passed, a lot of those fee patents, they are still held by Native Americans and they are petitioning to bring them back into the trust in that. So, a few of them are started coming back.

Would you say that the majority of these people were already occupying the land that these allotment surveys were done for? Well, I don't think so. I think initially they were I think in the beginning. They were mainly, they were already out there living and you know, then they were allowed to homestead them, but the later there was, some kind of court case that somebody brought up that they couldn't be, they had to be there at the time of the act. And then I believe the IBLA said no, they didn't have to be there, they could come afterwards and look for land that was suitable for agricultural purposes and basically, doing the Indian homestead.

So then yeah, it's kind of a mixture when I think about it, that you folks taking the course, you know, some of these like the small holding claims and the private land claims, and even some of the DLC's were occupied first. And so we have a little bit of that. So you may have some of these surveys where you do have structures and cabins that were actually tied in at the time of the survey. Whereas, then it seemed that it transformed over to more of the, like the HES law, entered, where they went out and entered the land, you know, started that process. Now, do you know, did they have to go to the same qualifications process that the HES people did?

You know, I really don't know if they did. They had to go through some sort of process; supposedly it's similar to what the HES process was. And also, it seems that the, when the HES's were done, as you folks have already learned in this course, the Forest Service went out and did what we called listing surveys. To make a list of the land that was available for this because the 1906 Act, the Forest Homestead Entry Act, it said that any lands that were more suitable for agriculture than for growing trees in the forestry, would be qualified and so they went out, and as you all recall, they surveyed those and actually monumented them, called them listing surveys,

listing corners and that sort of thing. Do we have something, anything like that, with these, to the survey process? Yes, I believe they did. The field notes indicate that when they actually came out to do the survey for GLO, at the time, they were accepting the positions of these corners, yeah, corners that were set by these Forest Service employees, and that. So they were, they were separating the agricultural land from what was the timbered land.

So it seems that the Forest Service did those, those surveys, those initial surveys if you will, and then when they actually came out to do a patent survey, was that always GLO or was that Forest Service, you know, they had done some HES's or was it a mixture? Well, it looks like it was a mixture. but it's, they didn't really. The field notes they looked at, at least the ones in California, they don't really say the Forest employees but it seems like the same people that were doing the HES's were also doing the Indian Allotment Surveys so I kind of assuming some of them were forest employees.

And it was all the same vintage timeframe, you know, all of that going on. Well, that's a pretty interesting. Because folks, that's what you see here, and that's what I had learned from talking to Tom when we first discussed this. There was these non-rectangular entities out there, on national forest land, that are trust land, or at least started out as trust land, potentially, or coming back as trust land, you are saying, so you know, that adds a whole another dimension. Now the examples we have here are all from northern California, Klamath National Forest, I think, but is there, do you know if there are any of these in other states?

I don't really know, I've talked to a few other people around the country, they say wow, like I kind of heard of them, but they don't give you a positive answer that they do exist. At least as these metes and bounds surveys that we are talking about. I know that, you know in my years, seventeen or eighteen years with the Forest Service, I never saw them. Now I was well I can't say, I was on three national forests so I know those pretty well, pretty sure we didn't have any in there, but there could have been some others on the adjoining forest. But you know, one of the things folks that really strikes me is; I've been surveying 37 years and all of a sudden, I hear about something I never knew existed, you know, and you've dealt with it in California, and I guess the point is, when any of you go out and you are doing surveys, I bet you, you may not find these, but you will find something else.

I guarantee there's other stuff that's unique, that you know to somewhere, or just some, one little area where Congress just passed some special act or allowed something. This one really taught me a lesson that there's all kinds of other stuff out there. Obviously as you do your records research, you are going to come across and recognize it, and it's probably going to be dealt with the same way as most of these metes and bounds things but, bottom line is, you research the records, you are going to find all kinds of things out there, so. So what, so what actually do you think brought this about? You are saying these people were occupying some of it, they wanted them to be able to homestead on the national forest, but get trust patents, why do you suppose they were metes and bounds, not just aliquot parts?

You know, I think initially, well the act itself I think provided for both allotments on surveyed land and on un-surveyed land. Probably a lot of the surveyed land, or the national forests were already surveyed and in fact, this one was actually surveyed as well. In this part of California, the

Benson Syndicate was a pretty prominent. The surveys there are very bad. By the time these allotment surveys came about, they already knew the surveys were in bad condition or fraudulent I should say, not really bad condition, and they had to do something different in order to issue these patents, couldn't just use the aliquot part because they would have a difficult, actually describing them and be accurate.

This kind of makes sense, because this was 1909 right, when this particular act came. So what that means is that see, well maybe we ought to give these folks a little background. This being a non-rectangular course, we haven't, we are not paying attention to the public land system per se, but Tom mentioned the Benson Syndicate and that's a major issue, especially in northern California although there are issues with that in a number of the other western states. Can you give us just a little background on John Benson and what he was up to?

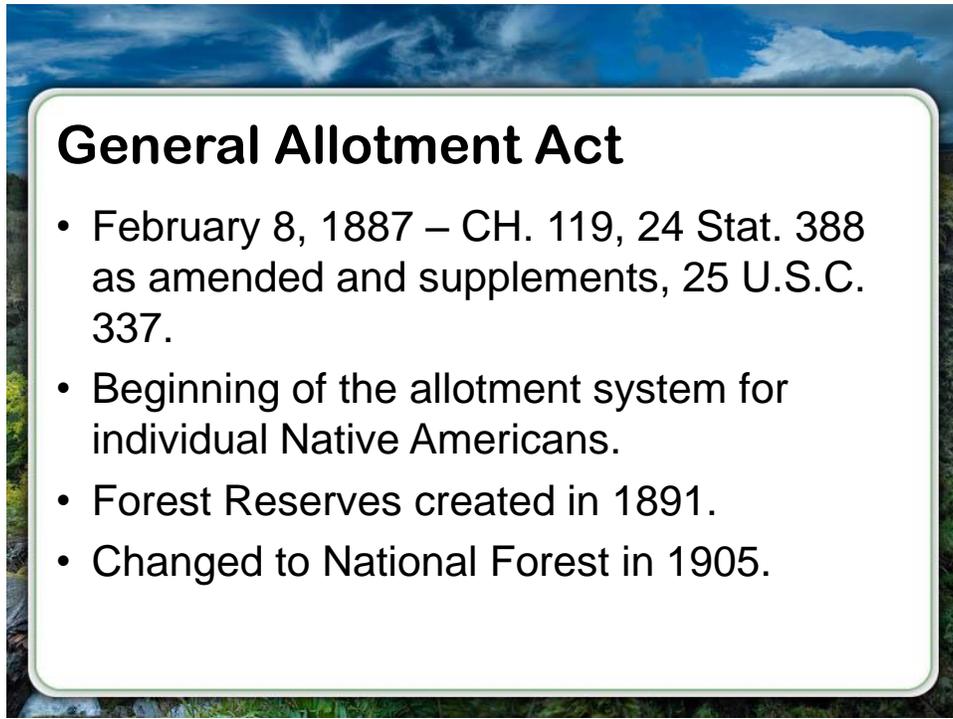
Yeah, you know, he was, it was basically a land scam, I believe is what it was. He was trying to gain control of the land. He would get all these surveys to go and he was using you know, sometimes he was using real people, sometimes there were fictitious people that they made up and they would go out and do these surveys. And a lot of times they would send people out there and they would actually kind of do enough work to get a lay of the land, sometimes maybe set up top of a mountain, get a lay of the land and be able to draw a plat and these from the office point of view, made sense in that, they looked good, nice and rectangular, all the notes looked great, you know, submitted these surveys.

So, he was basically a contract deputy surveyor but he was just collecting, just making up the notes so that, like you say, maybe just set a couple corners near the road or something. And just the rest of it was faked in. So, obviously the government started patenting land off of that, you know, using a rectangular and all that.

And then we start realizing how little we know, where the corners are, what's going on. So, for you folks you know, Benson had family members involved, Tom said they made up people to do these contracts, I actually, you know, they actually did other these things too, they were getting patents to land under false names and false finds, a lot of things, scamming the land off us and I believe it was the John Benson group, which we call the Benson Syndicate is really why, what was it, 1915 or so, when GLO went to the direct system and we quit contracting, right?

So, you know, that was a big part of why the GLO and later the BLM came along and did the majority of cadastral surveys in house, because the contract system had not gone well. And John Benson was probably the principle problem with that. Yeah. And probably one thing that's very interesting about it too. That Benson himself actually both Benson, John Benson and I forget the brothers name, but they actually did quite a few surveys themselves, and when they did surveys themselves, I retraced a few of the brothers work, and they actually did very good work. They were signing the surveys themselves, so they knew surveying, they knew how to survey and that, and that's why I think they were able to put together a very good set of field notes and plats for review.

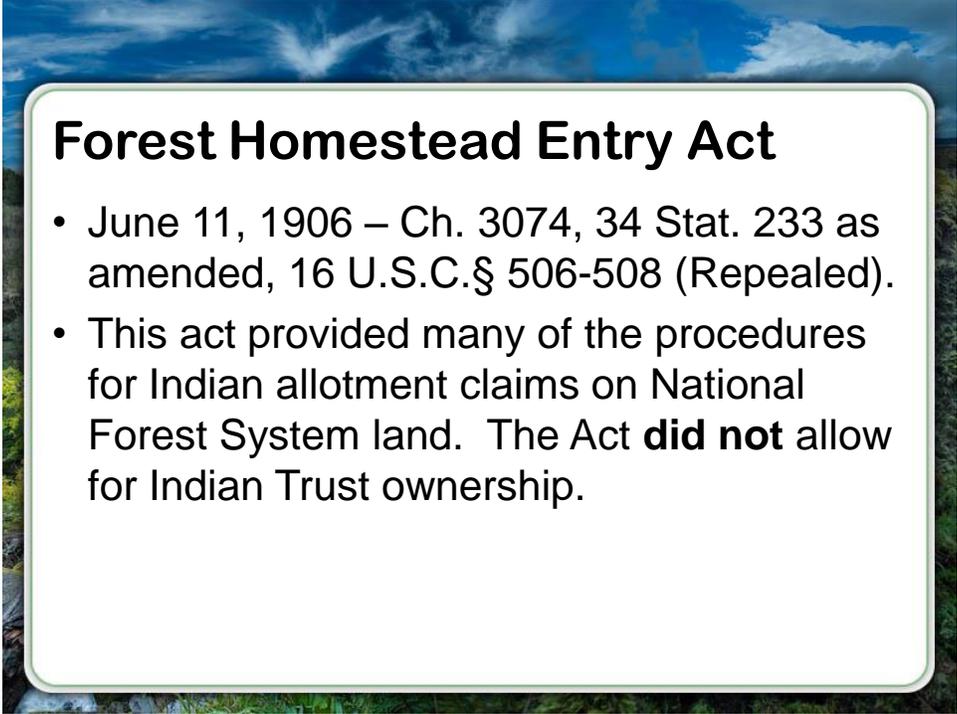
Well, so let's take a look at that law then that created this. So, let's look at this slide here Tom, this gives us a little bit about the legislative history and go ahead and explain this. Well, this is the General Allotment Act that allowed allotments on public domain.



General Allotment Act

- February 8, 1887 – CH. 119, 24 Stat. 388 as amended and supplements, 25 U.S.C. 337.
- Beginning of the allotment system for individual Native Americans.
- Forest Reserves created in 1891.
- Changed to National Forest in 1905.

I believe outside the reservation, it may have even been in the reservation, I'm not really sure about that. And it was in 1887 and it preceded the creation of a Forest Reserves, which was in 1881, and later changed to national forest in 1905 and in that time, when they created those systems, they were withdrawn and then there was no entry allowed out you know, for homestead on the national forest. Okay, and then we had the forest homestead act, right?

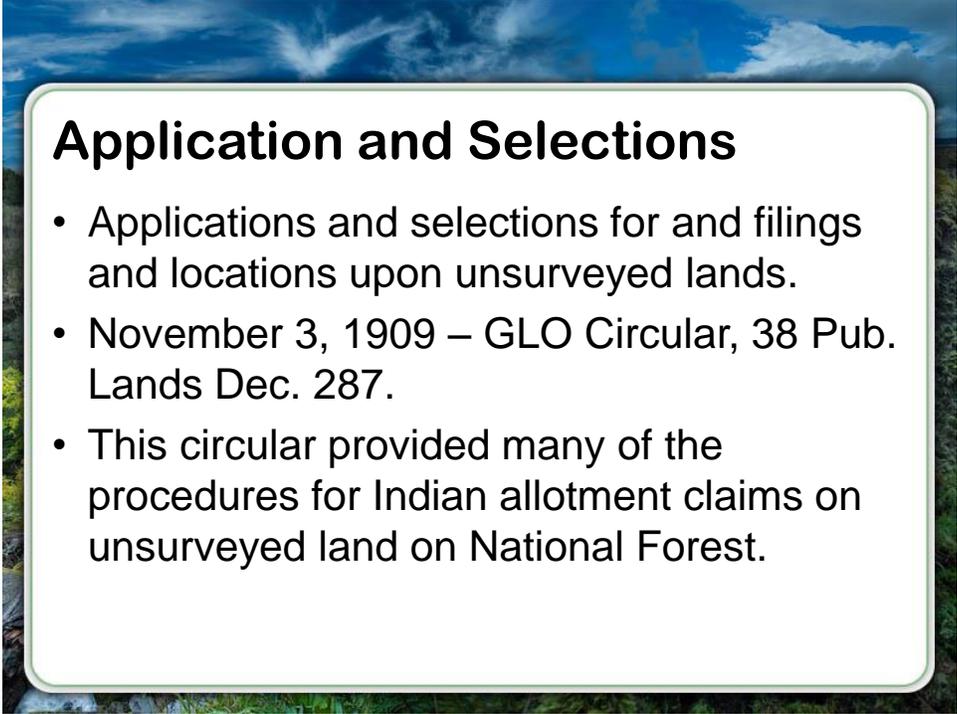


Forest Homestead Entry Act

- June 11, 1906 – Ch. 3074, 34 Stat. 233 as amended, 16 U.S.C. § 506-508 (Repealed).
- This act provided many of the procedures for Indian allotment claims on National Forest System land. The Act **did not** allow for Indian Trust ownership.

Right, they decided they were, I don't know, if they just, what the background is to it, why they decided they were going to allow homestead, but the, in 1906 they passed a law that allowed homestead entry, but this act did not provide for trust patents. Okay, so really the order of things here, they had an allotment act, they could probably go into what was probably going to become a national forest, which it was at that time, then they created the national forest to then in 1905 it became the Forest Service, so it seems pretty quick in 1906 they made, they had this entry act, but it didn't provide for the Indians so that means something else had to happen for Indians to be able to homestead on the national forest.

Right, well before that, they had some land that they were homesteading that were on unsurveyed lands and they needed a way to identify those lands, and they had to go to a metes and bounds system for those and that's the circular came out for GLO that provided for that.

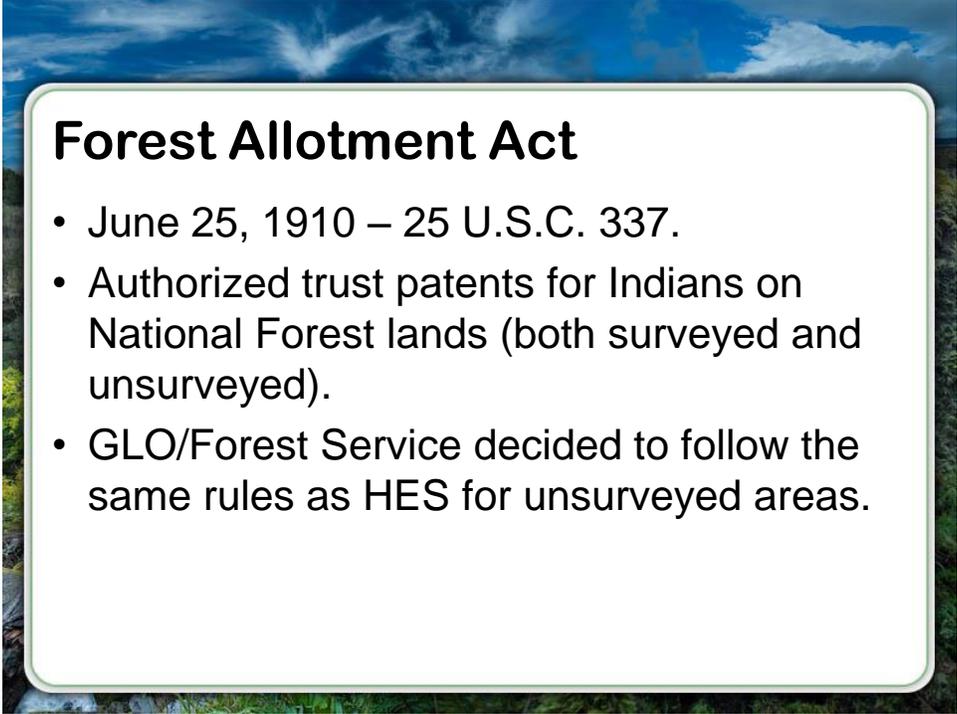


Application and Selections

- Applications and selections for and filings and locations upon unsurveyed lands.
- November 3, 1909 – GLO Circular, 38 Pub. Lands Dec. 287.
- This circular provided many of the procedures for Indian allotment claims on unsurveyed land on National Forest.

So, this slide shows the citation for that 1909 action, and that's what basically brought Indian trust possibility into the HES system, and it allowed for it also on un-surveyed land. Okay, so then, in 1909, what's this about? This is a GLO circular that was issued giving instructions to the surveyors or to the GLO on how the procedurally they are going to process, the HES claims on un-surveyed land on national forest. So, that's really how we got all the metes and bounds part of the HES in there.

And so, but that did not allow for trust, you know, specifically, so then, then what happened? Later on they realized the United States government realized that the Native Americans were living out on the national forest and they had no mechanism to get a trust patent. So, they had to come up with a law kind of, a lot of correspondence back and forth between the Department of Interior and committees and all that, and they crafted this law in 1910 that authorized for trust patents for Indians on national forest lands.

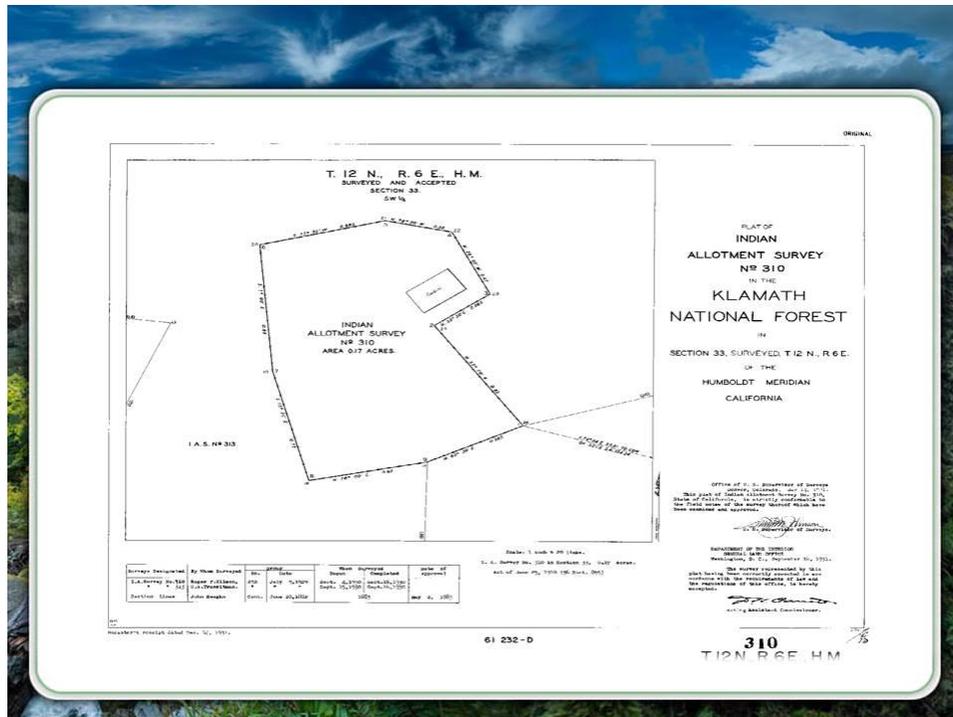


Forest Allotment Act

- June 25, 1910 – 25 U.S.C. 337.
- Authorized trust patents for Indians on National Forest lands (both surveyed and unsurveyed).
- GLO/Forest Service decided to follow the same rules as HES for unsurveyed areas.

And it covered both surveyed and non-surveyed land and at that time or shortly thereafter the GLO and Forest Service were going to follow this GLO circular that preceded in the previous slide. So, really it ends up, what we end up with is kind of a hybrid of this HES law and this tagalong thing and some decisions by GLO to do the same way. Correct. Right.

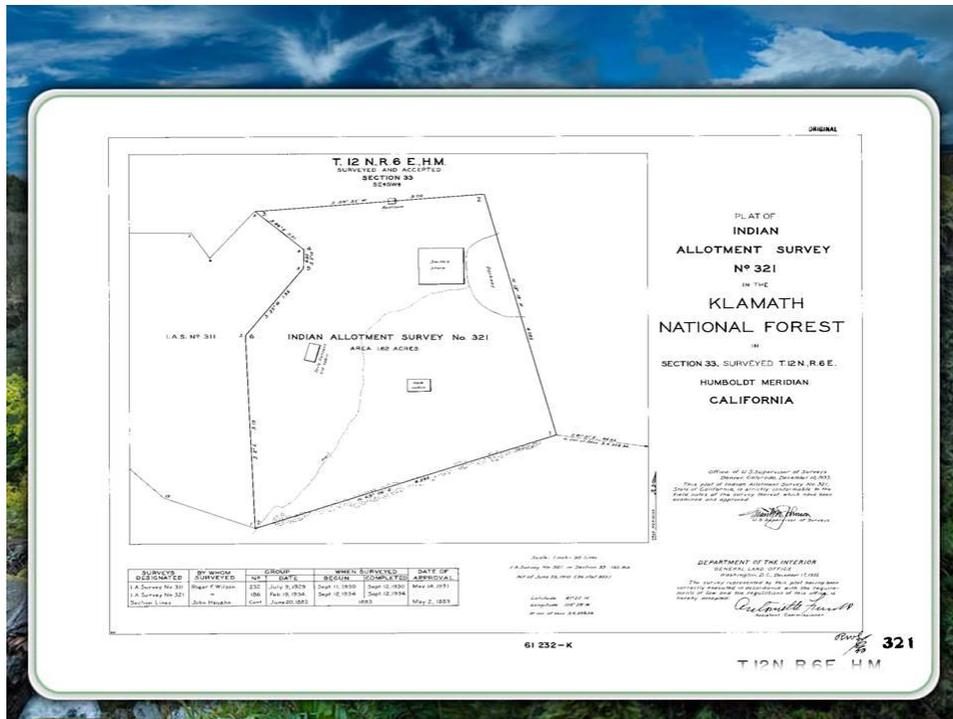
Well, let's take a look at some of those plats, and just get an idea of what it is that we are looking at. It's relatively small, obviously metes and bounds pretty small.



They were never very big, because at least in this area here, a lot of what was identified as agricultural land. There's not a lot of big areas, you know, meadows or anything like that, that would be suitable for agricultural. But they didn't all have to be identified at this time as well, they could come back later on, or at least it was determined that later on the Native Americans could come back and enter onto the land and obtain an allotment, just like a homestead entry. What struck me is that they are, you know, most of the HES's that I've seen over the years, are right at the max, 160 acre max, you know. And I've seen so many of these that are less than an acre or just two or three acres, you know. Right, right. It's much smaller.

And so this one here, just another one that just several plats here that we are showing you can see, it appears they at least did some tying in of a few cultural things, you know, that existed at the time of the survey. Right, and they probably you know, the forest employees would go out there and probably go round and identify where the allotment would be for each individual that was living out there and I believe the rule is still in place, because I did one back in the 80's, an allotment, and the Forest Service had already gone out and negotiated with the landowners on just to decide how the parcels were going to look and where the structures were to make sure they were on the correct allotment.

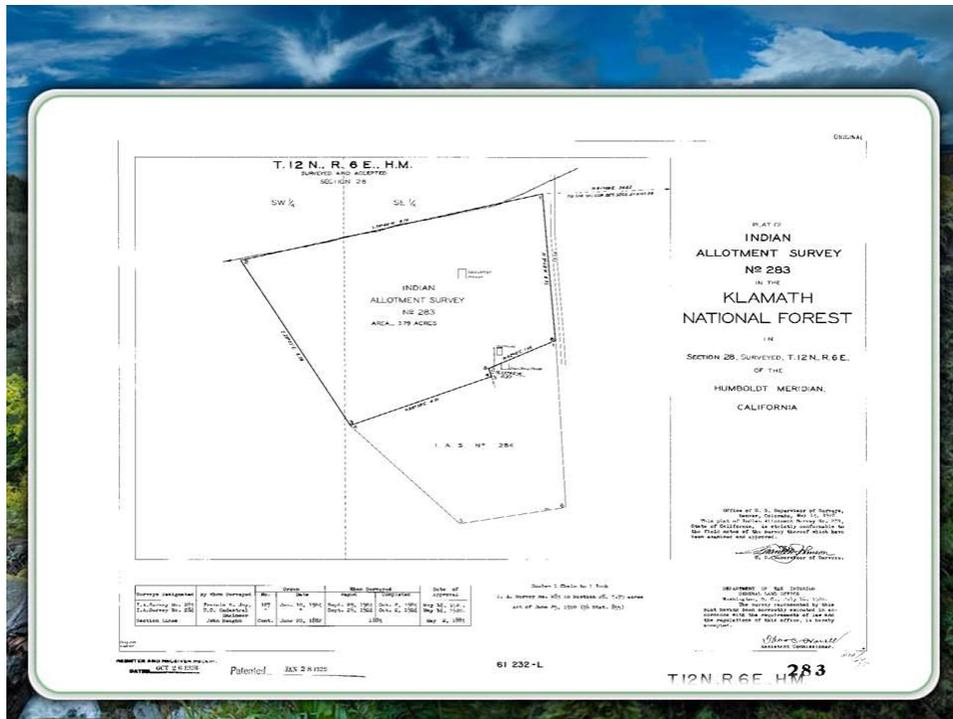
So, this one here, I can't read that, is that three point seven some acres there, it's just a metes and bounds, obviously these are, you have a lot of these connected together, you know, are they like up valley bottoms or that sort of thing.



Yeah, most of these are along the Klamath River corridor, and that, they're, most of them are very close to the river, maybe I don't remember seeing any of them up by the creeks or anything like that, seems like they are pretty much along the river and that and then you notice here the you know, this structures and that, that they need to add, identified on there, and these weren't necessarily tied in, actually they probably did tie them in but it never made it to the field notes, it was probably a general call to that.

So, that's not necessarily evidence, like in a mineral survey where they tied down all that stuff specifically to a corner. Unless for some reason, some of the field notes, they do make an accurate tie, the ones that I've seen, they haven't done that. But they did tie to other things around there because they were given instructions, you know, this was going to be in, this was going to be out and so on. And did they have to, I'm assuming same as the HES where they had to tie into a rectangular corner or tie into some other survey of record or USLM or something like that.

Right, they would. In this case here, like we mentioned earlier, the Benson Syndicate was in the area, there are PLSS corners out there and if they were near an area, there's enough corners around the river corridor there, they were able to tie to a PLSS corner.

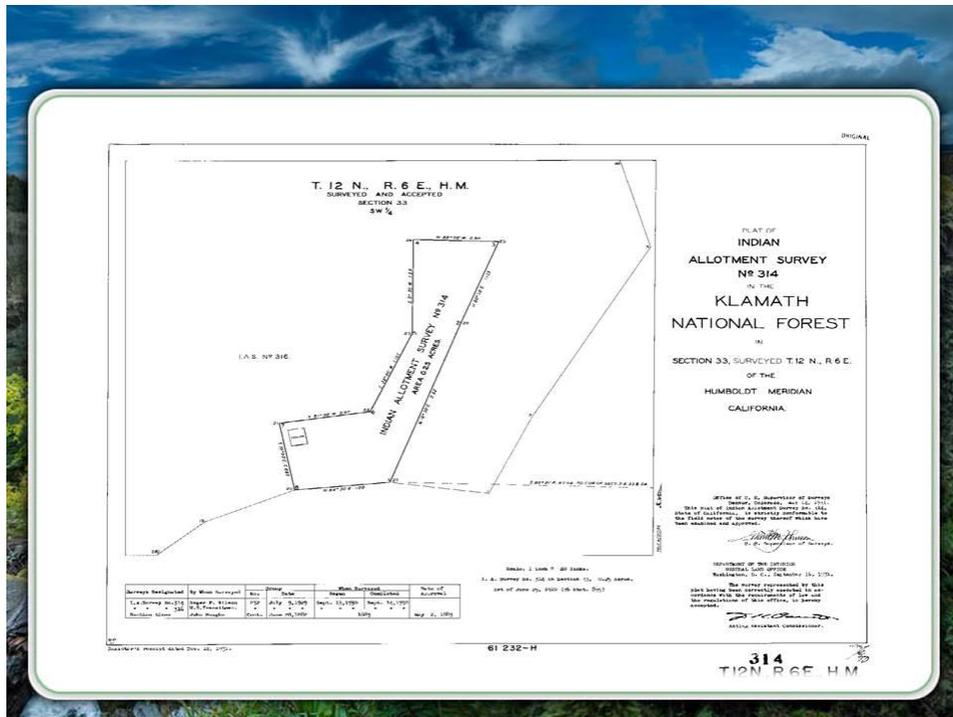


You got one more here, I notice almost every one of these that we're looking at are squeezed in other Indian Allotment Surveys, so that's something for us to remember folks is that these don't seem to always be isolated, kind of like we discussed some of these other non-rectangular surveys that after you consider what you want to do on the restoration of a lost corner.

Right, these are going to be a little, little bit different, just like an HES like there's a multiple HES's together, you don't, you can't necessarily survey one independent of the other, you've got to look at all the evidence that, if it's missing, fortunately these surveys were done by surveyors that were very meticulous in that way, monumented their corners that and the most of them are recovered. Even if they're not there, usually there's some of evidence there and if you dig down and take a measurement off of a closer corner or a nearby corner, and then dig down and you'll find some kind of evidence.

Memorial or some kind of evidence. So, they are kind of like, we said that in this course for the HES's, some of the best monumented or documented surveys out there for retracement, it's pretty rare to have a lost corner on those, there's always some kind of evidence. It sounds like these were done, sounds like it's meticulously, at least in the, in the field side. I think the percentage of recovery was very high on these surveys and just like the HES's, very high.

There's another one. This a just a model plat, what's going on here?



Well, in here, if you notice in that, in this area here, the HES or the Indian Allotment Survey they must have had, the heirs inherited a property and they needed to do a split, and you can see that they created a IAS, A and B, out there for the two different individuals. And this being a supplemental plat, but it appears they just did that on paper, right, there wasn't a survey that divided that?



Yeah, they probably went out and did some preliminary work in order to create the you know, the line work and all that. And didn't know where the buildings were. Right, but they needed to know what they were, somebody went out there. So, that's a case where you might be retracing 321B and it's internal corners, where it separated between A and B, and have never been set, actually been monumented. Correct, at this time.

Well, you know, sometimes I know, I've seen supplemental plats at least the 20's anyway, where they would actually go out and do some preliminary type work and set monuments and all that, call it a supplemental plat. In this case here, I'm not certain that this is the case, but there would be a set of field notes that went along with that, if that were the case. Yeah, now that you mention it, I remember some HES's up here in northern Arizona, where they called it a supplemental plat, but they ended up monumenting stuff, they subdivided a section on a supplemental plat, cause the HES was part aliquot and part not, and I was always surprised that it was a supplemental plat. So, that's a lesson there, maybe the word supplemental plat doesn't necessarily mean there isn't some evidence that was established on the ground. So, something to give you an idea what the intent of the parties was when they split that up.

Well, okay. This is a supplemental plat so, what's up with that? Well, this is, if you notice, this is the split of the parcel of the survey that we looked at earlier and for whatever reason they decided that it needed to be split, it could be inherited and they needed to split it between the heirs and that and let's zoom that up there. And that, and you can see here, you can see they split that parcel up to 321B and 321A but they didn't, they may, they probably didn't do a survey on that, on this one, they probably went out and did some preliminary work on it, but I can imagine where sometimes in supplemental plats in this part of the GLO or maybe earlier, and earlier, they would actually go out and do survey work and set monuments and call it a supplemental plat, and actually like I said, set monuments like that and create a set of, there would be a set of field notes that go along with that at that point.

So, there may be field notes even though it's called a supplemental plat. Although I notice on this one they, it looks like they dashed that line between those two, so maybe they were telling us they didn't survey it, per se, but we got bearings and distances there, so if we were to be retracing that, if you were hired to do 321B say, you may or may not have official government monuments at those three corners. You would on the controlling exterior so that's all part of the research, figuring all that out. Right, very interesting.

Yeah, I've seen similar stuff on old supplemental plats that did have field work on them, so that makes sense. Now, this one here, you had mentioned that these that we are looking at are up on the Klamath River, well here's one that actually is on the Klamath River. Right. And it does appear to be riparian in that and it's unusual and usually there up, you know, higher up the river, but mainly because a lot of this land like this along the river would have been mineral in nature and I don't think they would allow that for agricultural purposes, so in this case, they determined that it was more suited for agricultural purposes.

And you know, it's just like these other non-rectangular surveys that we've looked at, when you have up against a water body, that you notice they didn't set or look at the plat again, they didn't set monuments along the river's edge so that's usually our sign that we got some riparian rights,

that it wasn't intended to be a fixed and limiting boundary. So, there you go folks. These things can have recreant rights, there could be macerations added on to this and all sorts of things. So, just like everything else, I guess, it can be as complicated as possible. So, what we would do now is take a look at a particular one of these and this is a Benson plat, I guess, right?

Right, this is of the syndicate, the is this part of California, the surveys were, like I said earlier, were very, well, fraudulent. They mainly followed along the river corridors or along the creeks and that and that's where you would find a corners. Once in a while you would get off the river and you'd find some that are better, but it was very rare. This would happen and they knew this earlier on. In this case here, cause right after the surveys were all approved, they realized that the surveys were fraudulent, they must of had an examiner go out there and find out the monumentation was missing and they suspended the, I believe it was a hundred townships in this area. But at that time, that stopped all entry and all that and whatever the government wanted to do and they decided they wanted to reinstate that land so that it could be entered upon at that time. And they used plats to do patents, well, fee patents at this time, and that, and they were based on the aliquot parts.

I noticed on that plat, blew it up here just a little bit, there is notification that they suspended and then canceled that survey. And then later on they, when these Indian Allotment Surveys were going on, they was also an investigation going on and they were going through looking for all the corners that they could find on the PLSS, and they found very few and the time that I spent up in this area, from 81 to 86, we never did find another PLSS corner that hadn't already been found. There just out there and the surveyor that came after me, he went up another drainage he did find a string of about six corners that hadn't been found before, but that's very far and few in between.

What is this that we see in this circle there? Well, this is a notation that they put on the original survey, or at least this is a copy of the original survey, they were destroyed, the originals were destroyed, in the earthquake in 1906. But they did put the notations on the plats about the suspensions and the cancellations and here it's hard to read here, but you can see the writing here, that was the original suspension that they did shortly after the surveys were approved. They already knew that the surveys were very bad, they in that they probably were fraudulent, but somebody in their wisdom decided that they wanted to not go out there and redo the surveys and then allowed for entry based on these, these plats and it was just, a very short time after that they reinstated the plat.

So they reinstated primarily so they could issue patents on it. And a suspension is different than a cancellation. A suspension just prevents the government from doing any action on the, on the area that the surveys covered. And a cancellation means it's gone. It's gone. Officially gone. So, we have two more notes there then.

So apparently, we took further action later, right? Right, in the 1930's they went through and they did an investigation and they located as many corners as they could find and they didn't find very many. And later on the Forest Service came up with a directive I guess it would be, internally to the Forest Service, that they were going to post all the private boundaries on the national forest and so then we had to come in and do these surveys, or they asked BLM to come

in and do these surveys. So this is much more recent. I get it. And so, is that what these other two are? So in here, suspension right here, in 1980, suspended the plat again and it prevented any other actions, withdrawals, suspensions, or any kind of entry that they may do mining, anything that probably precluded from happening out there. And then they apparently decided to cancel it. We went ahead and did the survey, and we knew we were planning to survey all the private land that was in there, and we did that and since they're were very few corners out there, we had to do an independent resurvey method to protect the private interest that were out there, and we did track surveys on those.

On those fee patents that were out there. And then, and then after we were done, after we did, you know, ended up protecting the private land that was out there, then we went ahead and cancelled and created the documents and then we used them. That's when you cancelled. Cancellation occurred. Okay, that makes sense. So, there's quite a bit of history here in this township is to things coming and going. Now, within this then, we had, this 316, this Indian Allotment Survey 316, it was one of the parcels that came along after, well, they had reinstated the plat, but then they did a metes and bounds, cause they had nothing to tie to.

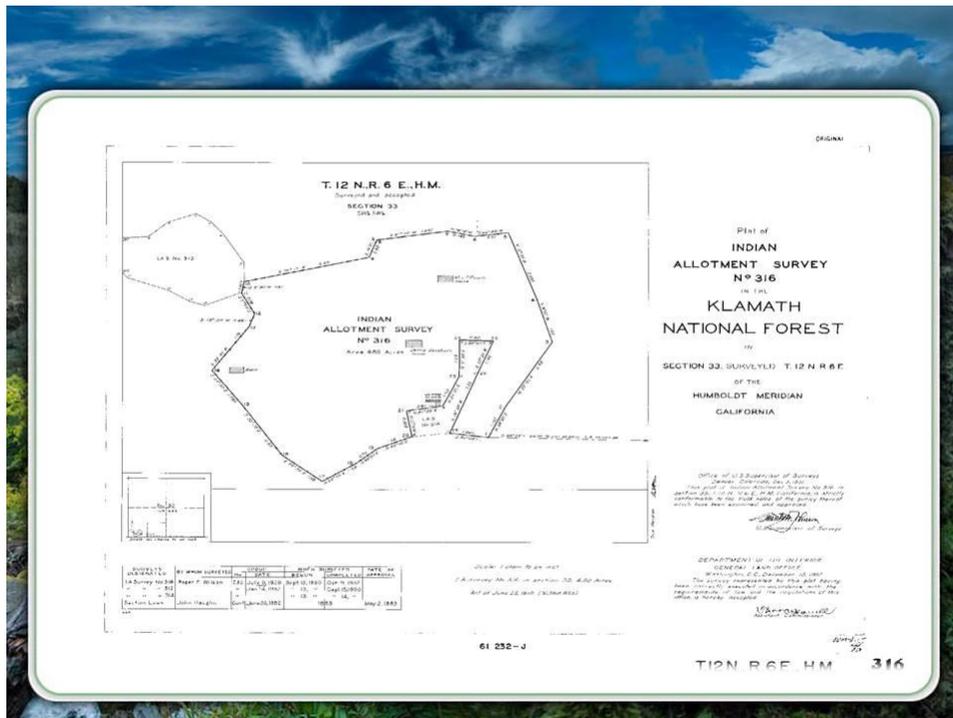
They already knew that they had problems out there, that they, it would be impractical to do a patent, trust, or homestead by the PLSS system and that they did these metes and bounds surveys. Now, if I was a private surveyor now, you know today, and got hired to survey this allotment, there's quite a bit of history I'm going to find. I'm going to find the original survey that got suspended, got reinstated, got suspended again. But in the meantime, this survey, this metes and bounds survey had been done, which wasn't included in that suspension process. Now, based on what you said a few minutes ago, there's even been an independent survey that has gone on, and so I'm going to guess it retraced this too, maybe tracked it, I don't know, but it found those corners, right?

No, we wouldn't have created tracks on these, they would have remained as they are for this. I noticed that on this one, a notation on the bottom of the plat here. That's the citation for the law that provided the authority to go out and do these surveys and eventually, you know, issue trust patents on that. I got you. So, yeah that's that 1910 act that we spoke about earlier. So, very interesting and it's amazing to me to find such small, little, metes and bounds surveys out there, that's just a, but like you say, you've had good recovery on them so, good surveys to retrace just like HES's are fun to retrace cause there's so much evidence, so well done, so well documented. Now, what we need to do is take a look at a set of notes then, on one of these, just to get an idea on that side of the record too, right?

As you can see here, the, this is the cover page for a set of field notes for an Indian Allotment Survey and as you can see, it looks just like any other set of field notes. It explains you know, what the survey is, or what it represents, who did the survey, where it's located, and the dates of the special instructions and what days of the surveys here down lower, below that. And these are regular BLM record, right, in the public room? Yes, these are in the BLM office, and you can get them either at the state office, or you should be able to get them at the local office, BLM office as well, if they got the equipment to reproduce them.

Okay, well the front sheet looks just like any other survey, so let's go take a look inside. This is the first page within the field notes and it kind of explains the main instruments that were used and the you know, how they went about doing the survey and all that, and right at the very beginning here, they, it explains the survey, what the authority, you know, from the general land office and some other pertinent details, who it went to, they allottee that is, and what the number the survey was going to be.

And then later on, you know, then it gets started into the survey itself and that and the you can see that the markings are exactly the, are very similar to anything you would see on a GLO survey or a BLM survey. You know, that they used, a set a brass cap, and they marked it with the lines of the survey and how they looked in the township and range and the date or the day of the year, and then you see that they also added the bearing's tree here and it's a pepperwood, six inches in diameter, bears north, 33 degrees east, 18 links distance, marked AP 1 IAS 316BT and the second one, a pepperwood, 10 inches in diameter, bears south, 42 degrees east, 7 links distance, marked AP 1 IAS 316 BT.



Well those are the same kind of markings, exactly the same, you know, what I expect on any non-rectangular survey as far as how the bearing trees are marked. Then you notice here that two just below that, they give a tie to the section corner that does exist in the area to give it some location in that since it was there. And then later on, you notice they are going along and in this case here. You would, they were calling out the topographic features you can see here where it says edge of timber bears northeast and southwest at 90 links, but of course that would be a movable type of feature, it may not be there today, with timber cutting and things like that.

But obviously they were really following normal conventions of survey under GLO, you know, the kind of information that shows up in the, in the notes. Hey, just out of curiosity, what's a

pepperwood? You know, I really don't know. I've never heard of that one. Maybe it was something that was locally there right at the location, maybe they planted it, I don't know. But I, I just don't really know. Okay, and here's another page and then it, you know, they're going along the line there and they are calling out features and all that, and if you notice on this one here, at 2.53 chains here, they find the original, the original Forest Service location corner, which is also a pepperwood. So, it must have been the trees that were in the area that grew locally. And it's 20 inches in diameter, it's got a blaze on the west side, and he re-blazes it, and puts AP 3 IAS 316.

So, we got a tree monument there. That was in the location and they have made the survey, the actual AP is a tree monument there too. Right, and normally today, we would have set an RM reference monument to that tree just to give a permanent monument to that situation. And we continue on down, in that and this next one where he sets a, sets another iron pipe, he places a rock mark X and deposits it along side the monument which is you know, it wasn't abnormal for these guys. I'm used to these types of surveys, I've seen it before, but they didn't always call it out, but in this case they called it out.

So, it's actually the original, it's the stone that the Forest Service had set to mark the limits of where these sort of things could be, right? And he decided to use that, he put an X on it because it was unmarked, I guess it said, he put an X on it and it's kind of an accessory or a memorial on that, a brass cap, right? And then we go on further down here, let's see if we can get it in that.

I see there is a call for, along another adjoiner there, line 4-5 of number 316. As they would come along the, if they came along another Indian Allotment Survey or whatever adjoiner was next to them, if it happened to be an HES, that would be unlikely, they would call out the adjoining IAS. Three graves there, what's that about? Down at the bottom there. In this case here, the three graves they were, apparently they were instructed to make sure they were outside this particular Indian Allotment for whatever reason. He would have to go into the supplemental records that are either with the Forest Service, probably with the Forest Service, as to why those grave sites are not to be inside this particular allotment.

What else we got? Well, we got another page here. And it's pretty much the same thing, you can see the same, they are calling out the different features and all that, calling out bearing trees, marking the monuments, you know, the particular Indian Allotment, and that's about it on here, just calling out those things. Just to give you more of an idea, that they are just another set of field notes that you would normally see. That's good info there too, you know, cause talking about a fence being there in this, like that corner there, 18 I guess it is, AP 18 at the bottom, it's at an angle in the fence, for some reason that brass cap had been pulled, that might be some good evidence if you can prove that it's been there that long.

Right. And a lot of times these surveys like that, I think they took very good care of their boundaries and that and the new good chance you will find a lot of that fencing still in place or at least remnants of it. And then in the final pages of the notes, is it just like what we are used to seeing, the closures and descriptions, where he had been. Yes. Here he's, you can see, he is doing the calculations to come up with the area, and it would be a little bit different than an PLSS situation where he's got to do latitudes and departures in order to calculate that acreage on,

in that, where on the PLSS, on the rectangular system, it's much easier to do because they are squares, and then if you notice at the very bottom here, the, they also do the general description of the land just like you would see in any other set of field notes. In that, he talks about the vegetation and the river, where the river at that, or where the, yeah, he's talking about that it's above the Klamath River, and the vegetation and what's it's been used for in this case, you know, they got an orchard, you know, that they've been maintaining on this particular piece of property.

Sounds like a nice place, apple and plum trees and whatever a pepperwood tree is. And then, I assume the last pages are what we are used to as far as signatures and all that stuff. Yeah. Yes, you know, of course there's the page with the crew members that are on there, but we don't have a copy of that here, sometimes we have a surveyor, they would hire a local people, either the people that are trying to get that particular allotment or homestead, and they would actually be on the crew, they would have intimate knowledge of the monuments that were set, and they would probably gain some ownership in that situation where they would be more protected of their boundaries and all that.

I've see that where the HES and even minerals too, where a guy was involved in the survey, so yeah, they got some personal knowledge and investment in that. Right. And then, of course on this page here, you can see you know, where the a, you know, the surveyor's giving his certificate, signing the certificate, that he did his job and where it was located in signing it and at the bottom of it, you know, it's showing the approval of the survey by the supervisor of surveys here. So, these records are, as we said earlier, in the public record, in the public room, it's part of BLM's record. If I was going out to do a survey out there, because as we know and of course this course just teaches us over and over again, that records are what it's all about. Where all would I be looking for records on something like this, that had got a trust patent on it. Or maybe something's happened since but it started out with a trust patent.

Correct, you know, there is other records that are available for these surveys, that are more supportive in how they came about, or how the Forest Service went about identifying the area and all that, so you would find records in the Forest Service, possibly in the supervisors office there for the forest. We found some of them for the homestead entry surveys, you know, on the Klamath National Forest, in that office. Most of the time I imagine, these are records that have been sent off to the archives and that's where you would pick up that case file or that patent file, whatever, however the Forest Service you know, coded them and that, and as well the Indian Service at that time, the BIA wasn't around probably at that time I believe, and they, I imagine they would actually be in the BIA office or in the LTRO or some of these records would be, again that agency would have sent their records off to archive. And the same thing with the GLO and BLM, you may have case files, not likely, because whatever supporting documentation we would have had would have gone to archives except for maybe the group file. That may be located locally, you could check there first or if they weren't there we could quickly get those records from the archives or the record center that they were sent to.

Now, these being Indian Trust land, there's a real possibly that you have a lot of other types of activities that occurred since it went to patent that are only in the LTRO, they wouldn't show up in a county. Say there's an easement across there, or some other lien or something against it,

right? In the one case, if fact it was in the same township there, we had just recently done a survey just within the last few years, where the state highway had crossed the allotment, you know, and they had to get an easement from BIA on that, and of course the allottee had to be involved in it, and that would show in the LTRO.

So, it's like a lot of these Indian trust lands that, you know, you aren't quite sure where the records might be, or duplicated sometimes, the best thing is that you searched all of those possibilities recognizing at least the original survey and anything the government, federal government did since then as far as BLM would be in the BLM's records but there could be all kinds of things affected that could be in fact, you know, you think about it folks, the thing started out as an Indian trust patent, so the LTRO takes over the records there, and then maybe 50 years later, it became a fee patent and it's taxable, now it's in the county record system, but then it could have been reacquired, you know, and going back in to trust, so there could be quite a patchwork of what agency and where you would go to get that, get the full chain of title on it.

In fact, you know, thinking about what I just mentioned there, about the, you know, the state highway going through there, the highway department would be possibly another situation or you know, or if there's an easement going across there from, you know, the electric company or something like that, maybe another source of documents where they would have tied in, you know, some of the corners in that.

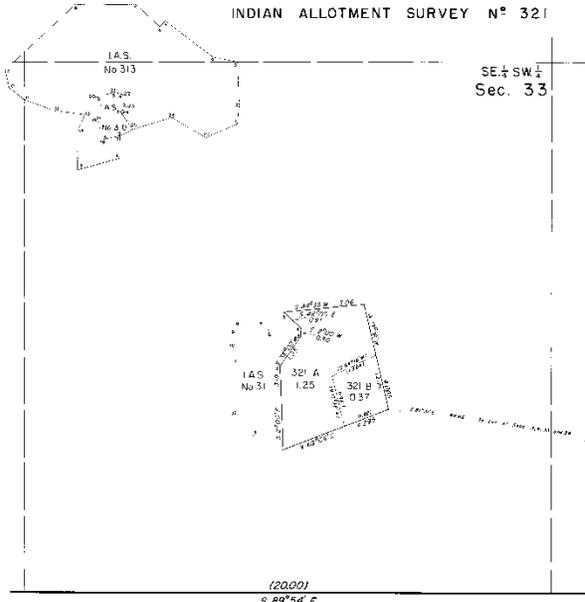
Now you've retraced a few of these, so yeah, in your opinion they are pretty good surveys, they are monumented, records good and so you've said you have had some pretty good recovery rates on these. Yes. These types of surveys are usually pretty good, their surveyors, in this case there was Roger Wilson, another case was a gentleman named Joy and both of those, you know, individual were very good surveyors and they did their monumentation's very well and it was just a very high recovery rate on those surveys. They sound like fun, sound like I should do one so I could find out what a pepperwood tree is. Who knows what that's about. Well, to bring this discussion to a conclusion you know, what we've tried to do, is just see a little bit of the historical background and legally and all and the kinds of laws and regulations that brought us here, and understand how these were created, why, and we've talked a little bit here about retracing, especially on the records side, and as you can see, these have the same considerations that any of the non-rectangular surveys had, that we've been discussing. So, Tom, appreciate you coming down and sharing this information with us. I was glad to. And so that will bring this one to a close and we will see you on the next module.

Indian Allotment Plats

ORIGINAL

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
SUPPLEMENTAL PLAT

INDIAN ALLOTMENT SURVEY N° 321



SE. 1/4 SW. 1/4
Sec. 33



This plat, showing a modified A
 & B from a recent survey No. 321, is
 Section 33, Humboldt Meridian, Range 6
 East, Township 12 North, California. It
 is based upon the original survey No. 321,
 and the plat approved May 11, 1884.

UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 Washington, D. C. - February 19, 1914.

This plat, showing a modified A
 & B from a recent survey No. 321, is
 based upon the original survey No. 321,
 and the plat approved May 11, 1884.

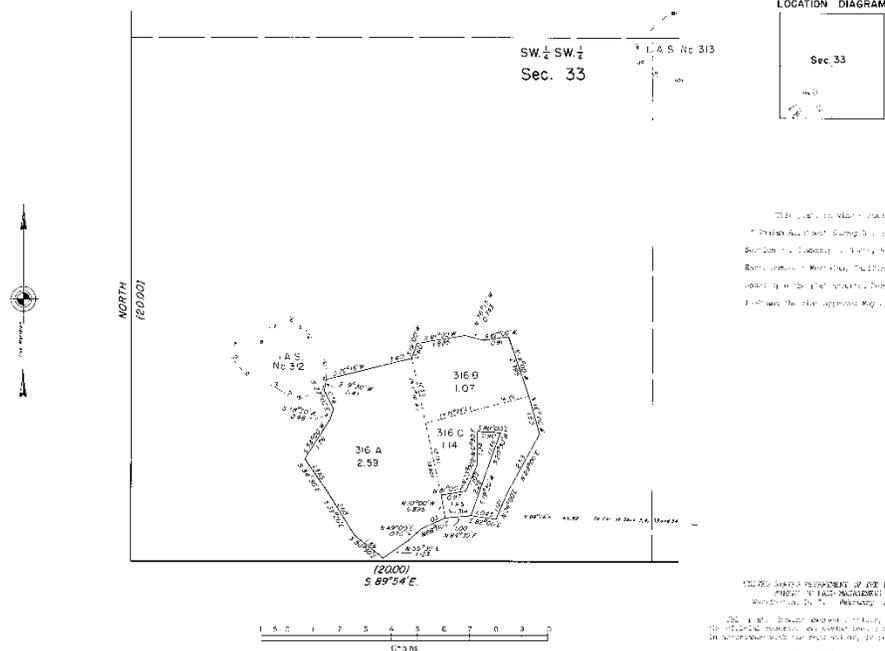
For the Director
Andrew Clement
 Acting Chief of the Bureau of Land Management

61 232-A

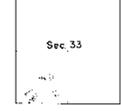
T. 12 N., R. 6 E., H. M.

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
SUPPLEMENTAL PLAT

INDIAN ALLOTMENT SURVEY N^o 316



LOCATION DIAGRAM



THIS PLAT IS A SUPPLEMENTAL PLAT TO THE
INDIAN ALLOTMENT SURVEY N^o 316 IN THE
SECTION 33, TOWNSHIP 12 NORTH, RANGE 6 EAST,
OF THE HUMBOLDT MERIDIAN, CALIFORNIA, AS
APPROVED BY THE COMMISSIONER OF THE
GENERAL LAND OFFICE, DEPARTMENT OF THE
INTERIOR, WASHINGTON, D. C., ON

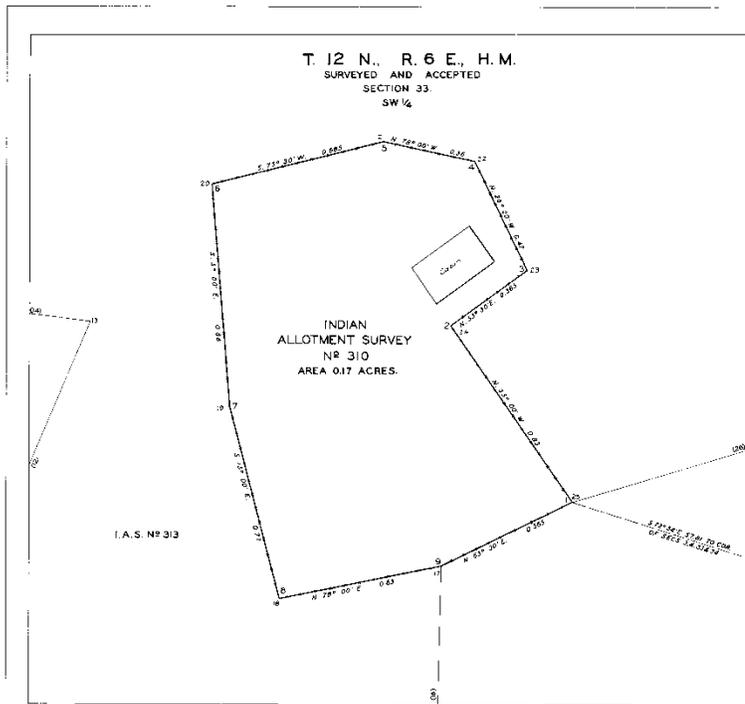
THESE LOTS ARE RESERVED BY THE UNITED STATES
FOR THE INDIAN ALLOTMENT SURVEY N^o 316
SECTION 33, TOWNSHIP 12 NORTH, RANGE 6 EAST,
OF THE HUMBOLDT MERIDIAN, CALIFORNIA.

BY THE SURVEYOR GENERAL OF THE UNITED STATES
DEPARTMENT OF THE INTERIOR

[Signature]
SURVEYOR GENERAL OF THE UNITED STATES

61 232-B

T.12N,R6E,H.M.



PART OF
INDIAN
ALLOTMENT SURVEY
NO 310
 IN THE
KLAMATH
NATIONAL FOREST
 IN
 SECTION 33, SURVEYED, T. 12 N., R. 6 E
 OF THE
HUMBOLDT MERIDIAN
 CALIFORNIA.

Office of U. S. Supervisor of Surveys
 Denver, Colorado, May 25, 1905.
 This plat of Indian allotment Survey No. 310,
 State of California, is strictly conformable to
 the field notes of the survey thereof which have
 been examined and approved.

Wm. H. Frank
 U. S. Supervisor of Surveys.

DEPARTMENT OF THE INTERIOR
 ORDNANCE LAND OFFICE
 Washington, D. C., September 16, 1905.

The survey represented by this
 plat having been correctly examined in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

Wm. H. Frank
 ACTING ASSISTANT COMMISSIONER.

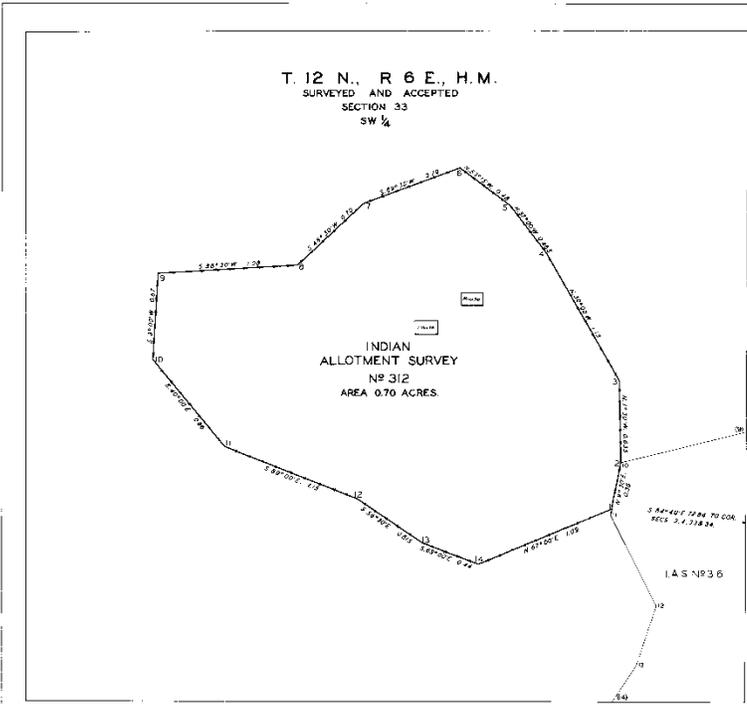
Scale: 1 inch = 20 links.
 I. A. Survey No. 310 in Section 33, Cont. Acres.
 Act of June 25, 1900 (36 Stat. 856)

Survey designated	By whom surveyed	When begun		When completed		Date of approval
		No.	Date	No.	Date	
I. A. Survey No. 310	Roger F. Gilman,	238	July 9, 1903	Sept. 4, 1903	Sept. 16, 1903	May 2, 1905
" " " 313	John Trevelyan.	"	"	Sept. 10, 1903	Sept. 16, 1903	
Section lines	John Reagin	Cont.	June 20, 1902	1903		

Wm. H. Frank
 Assistant Commissioner
 September 16, 1905

61 232-D

310
T. 12 N., R. 6 E., H. M.



PLAT OF
 INDIAN
 ALLOTMENT SURVEY
 No 312
 IN THE
 KLAMATH
 NATIONAL FOREST
 IN
 SECTION 33 SURVEYED T. 12 N. R. 6 E.
 OF THE
 HUMBOLDT MERIDIAN
 CALIFORNIA.

Office of U. S. Supervisor of Surveys
 Denver, Colorado, May 20, 1931.
 This plat of Indian Allotment Survey No. 312,
 State of California, is correctly conformable to
 the field notes of the survey thereof which have
 been examined and approved.

W. H. H. H.
 U. S. Supervisor of Surveys.

DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND OFFICE
 WASHINGTON, D. C., September 16, 1931.

The survey represented by this
 plat having been correctly checked in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

W. H. H. H.
 Acting Assistant Commissioner.

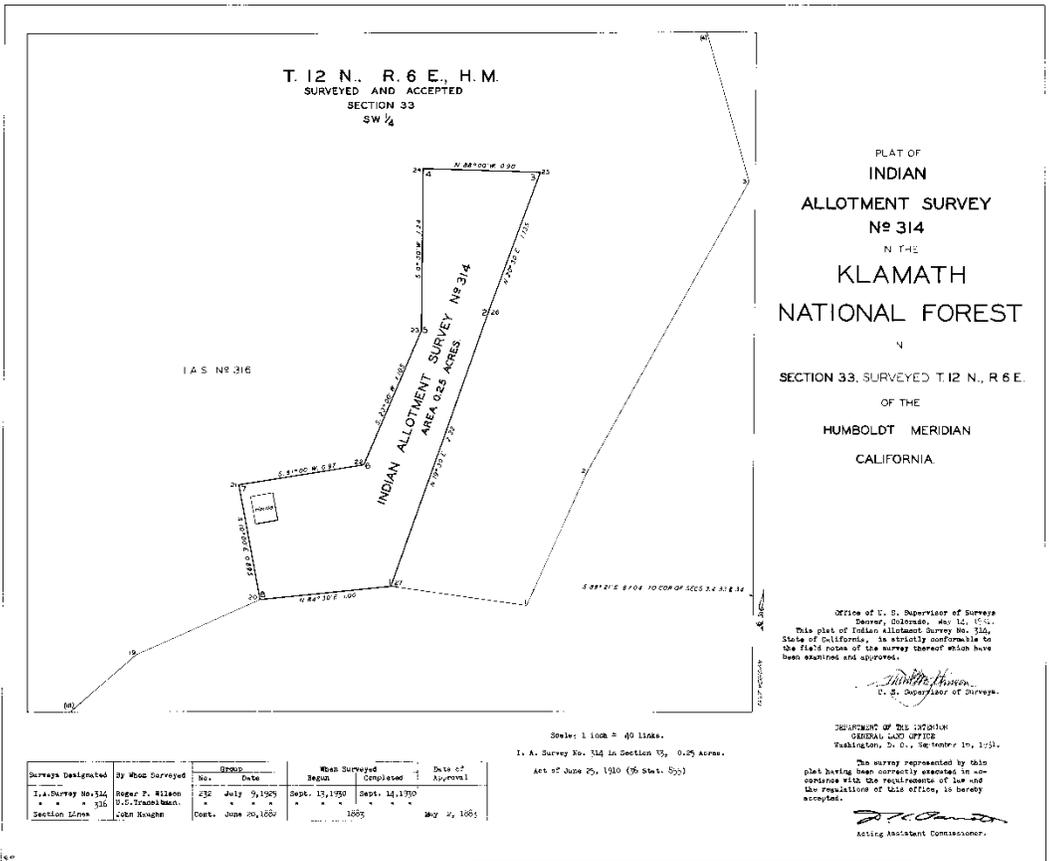
Surveys Designated by Whom Surveyed	No.	Date	When Surveyed		Date of Approval
			Began	Completed	
I. A. Survey No. 312	Roger F. Wilson	23'	July 2, 1929	Sept. 15, 1930	Sept. 15, 1930
" " " 316	W. S. Christian	"	"	Sept. 15, 1930	Sept. 15, 1930
Section Lines	John Hough	Cont.	June 20, 1882	1885	July 2, 1925

Scale: 1 inch = 40 links.
 I. A. Survey No. 312 in Section 33, 0.70 Acres.
 Act of June 25, 1910 (36 Stat. 855)

Register's receipt dated Dec. 14, 1931.

61 232 - F

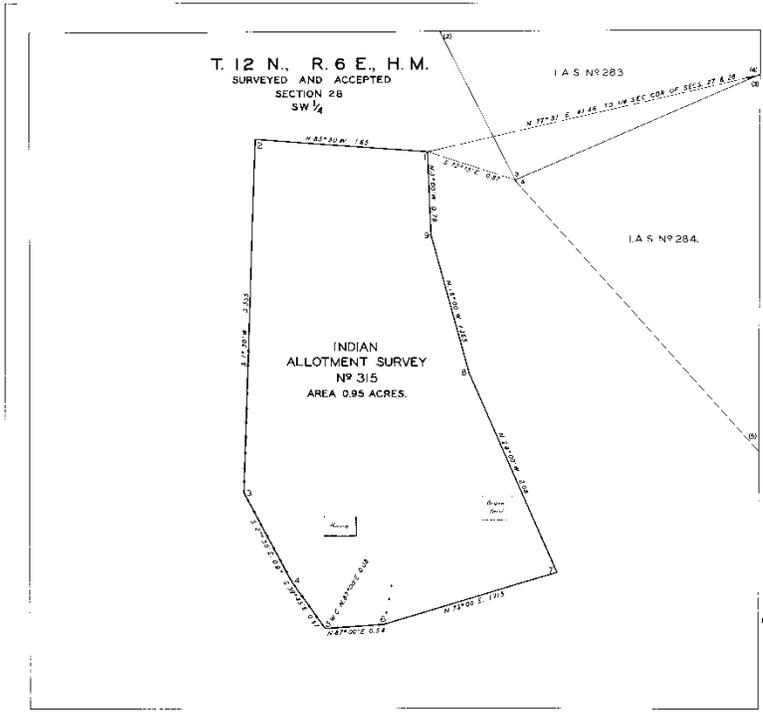
312
 T. 12 N., R. 6 E., H. M.



Register's receipt dated Dec. 24, 1914.

61 232-H

314
T. 12 N., R. 6 E., H. M.



PLAT OF
 INDIAN
 ALLOTMENT SURVEY
 No. 315
 IN THE
 KLAMATH
 NATIONAL FOREST
 IN
 SECTION 28 SURVEYED T. 12 N., R. 6 E.
 OF THE
 HUMBOLDT MERIDIAN
 CALIFORNIA.

Office of U. S. Supervisor of Surveys
 Denver, Colorado, May 22, 1915.
 This plat of Indian Allotment Survey No. 315,
 State of California, is strictly conformable to
 the field notes of the survey thereof which have
 been examined and approved.

Walter H. Hinson
 U. S. Supervisor of Surveys.

MINISTER OF THE CROWN
 GENERAL LAND OFFICE
 Washington, D. C., September 10, 1915.

The survey represented by this
 plat having been correctly executed in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

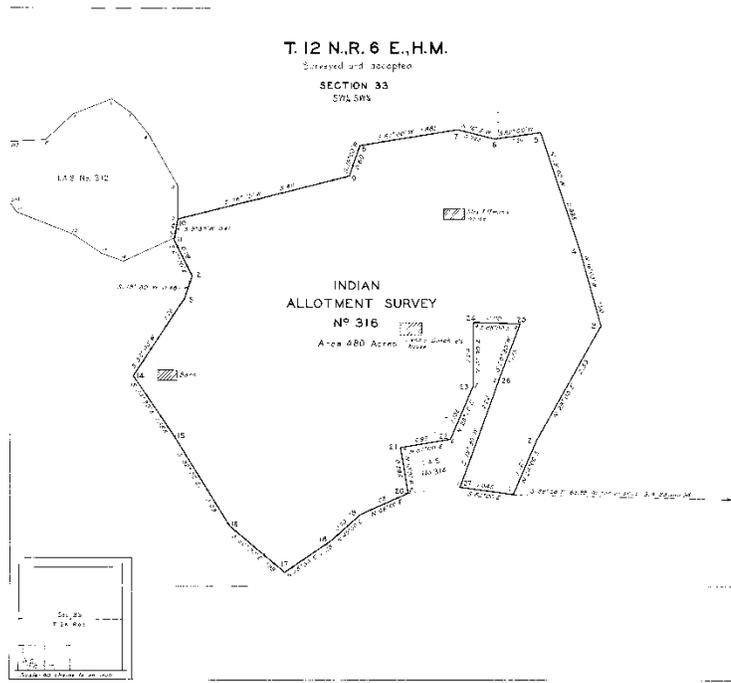
W. H. Hinson
 Acting Assistant Commissioner.

Survey Designated by Above Surveys	No.	Date	When Surveyed			Date of Approval
			Began	Completed		
I. A. Survey No. 115	157	July 2, 1908	Sept. 10, 1908	Sept. 13, 1908		
I. A. Survey No. 283	157	July 10, 1908	Sept. 23, 1908	Oct. 2, 1908	May 14, 1908	
I. A. Survey No. 284	157	" " "	" " "	" " "	" " "	
Section Lines	Cont.	June 14, 1882	1882		May 2, 1885	

I. A. Survey No. 315 in Section 28, 0.95 Acres.
 Act of June 25, 1910 (36 Stat. 555)

Endorsement received October 20, 1915.

315
 T. 12 N., R. 6 E., H. M.



Plat of
INDIAN
ALLOTMENT SURVEY
No 316
 IN THE
KLAMATH
NATIONAL FOREST
 IN
SECTION 33, SURVEYED T. 12 N. R. 6 E.
 OF THE
HUMBOLDT MERIDIAN
CALIFORNIA

Office of U.S.G. Bureau of Survey
 Denver, Colorado, July 1, 1903
 This is an Indian Allotment Survey No. 316 in
 Section 33, T. 12 N., R. 6 E., H.M. California a survey
 conformable to the field notes of the survey thereof
 which have been examined and approved.
Wm. H. Johnson
 U.S.G. Bureau of Survey

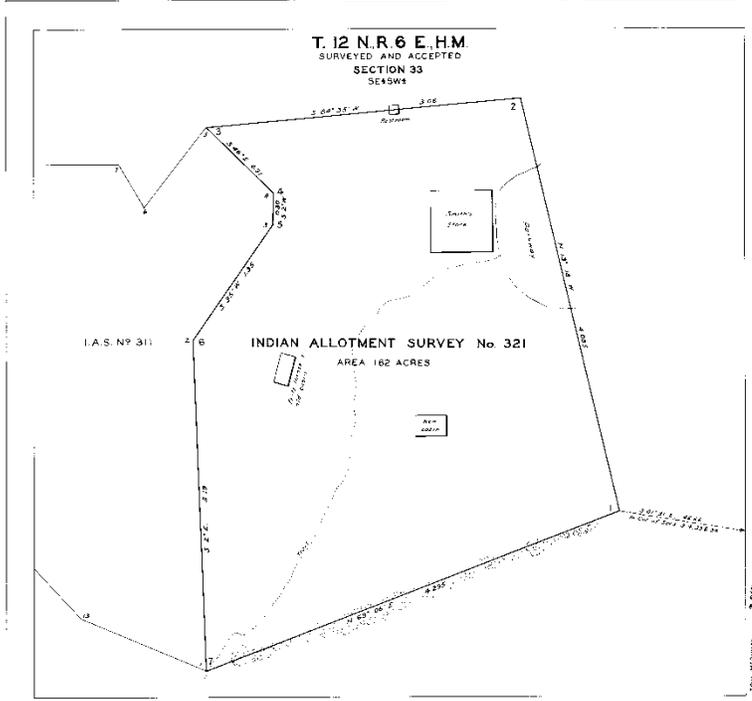
SURVEYS DESIGNATED	BY WHOM SURVEYED	DATE	WHEN COMPLETED	DATE APPROVED
L.A. Survey No. 312	Roger F. Wilson	Jan 14, 1902	Sept 3, 1902	Jul 9, 1902
" " " 313	" " "	" " "	" " "	" " "
" " " 314	" " "	" " "	" " "	" " "
Section Lines	John Laughlin	Sept. 1902	1902	May 2, 1903

316 1/4 Section 33
 1/4 Section 33 in sec 33, T. 12 N. R. 6 E.
 Act of June 22, 1902 (41 Stat. 855)

DEPARTMENT OF THE INTERIOR
 GENERAL LAND OFFICE
 Washington, D.C. November 15, 1902
 The survey designated by this plat having
 been examined in accordance with the
 requirements of law and the regulations of the
 office is hereby approved.
Wm. H. Johnson
 Assistant Secretary

61 232-J

Wm. H. Johnson
T. 12 N., R. 6 E., H.M. 316



PLAT OF
 INDIAN
 ALLOTMENT SURVEY
 No 321
 IN THE
 KLAMATH
 NATIONAL FOREST
 IN
 SECTION 33, SURVEYED T. 12 N., R. 6 E.,
 HUMBOLDT MERIDIAN
 CALIFORNIA

Office of U.S. Supervisor of Surveys
 Denver, Colorado, December 16, 1935.
 This plat of Indian Allotment Survey No. 321,
 State of California, is strictly conformable with
 field notes of the survey master which have been
 examined and approved.

Walter P. Smith
 U.S. Supervisor of Surveys

DEPARTMENT OF THE INTERIOR
 GENERAL LAND OFFICE
 Washington, D. C., December 17, 1935

The Survey represented is: This plat having been
 carefully examined in accordance with the require-
 ments of law and the regulations of this office, is
 hereby approved.

Walter P. Smith
 Assistant Commissioner

SURVEYS DESIGNATED	BY WHOM SURVEYED	No	GROUP		WHEN SURVEYED	DATE OF APPROVAL
			DATE	BEGUN		
A Survey No. 311	Roger T. Wilson	232	July 9, 1928	Sept 11, 1930	Sept 12, 1930	May 14, 1931
I.A. Survey No. 321	"	186	Feb 19, 1934	Sept 2, 1934	Sept 12, 1934	
Section Lines	John H. Haight	Cent.	June 22, 1852		1852	May 7, 1853

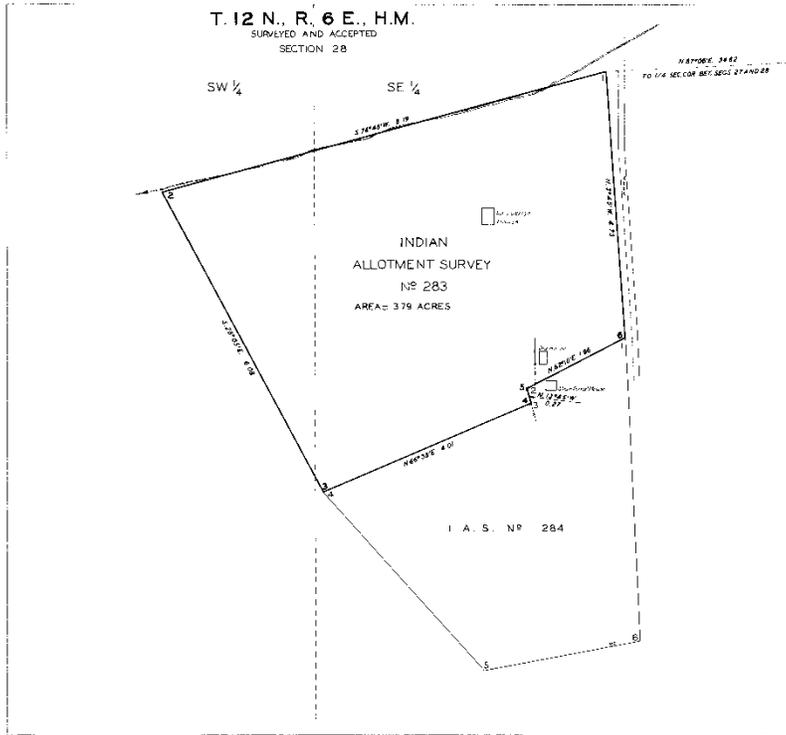
Scale 1 inch = 40 acres
 I.A. Survey No. 321 in Section 33, 162 Ac.
 Plat of June 16, 1935 (U.S. District Map)

Latitude 41° 27' N.
 Longitude 123° 29' W.
 Area of area 81,334.84

61 232 - K

W.P.S. 321

T. 12 N., R. 6 E., H.M.



PLAT OF
INDIAN
ALLOTMENT SURVEY
NO. 283
 IN THE
KLAMATH
NATIONAL FOREST

IN
 SECTION 28, SURVEYED, T. 12 N., R. 6 E.,
 OF THE
 HUMBOLDT MERIDIAN,
 CALIFORNIA

Office of U. S. Supervisor of Surveys,
 Denver, Colorado, May 16, 1907.
 This plat of Indian Allotment Survey No. 283,
 State of California, is strictly conformable to
 the field notes of the survey thereof which have
 been examined and approved.

Samuel D. Brown
 U. S. Supervisor of Surveys.

Surveys Designated	By Whom Surveyed	No.	When Surveyed		Date of Approval
			Begin	Completed	
I. A. Survey No. 283	Francis E. Jay, U.S. District Engineer	177	Jan. 10, 1904	Sept. 29, 1904	Oct. 2, 1904
I. A. Survey No. 284	John Neighbour	Cont.	June 20, 1902	1905	May 2, 1905

Scale - 1 Chain to 1 Inch
 I. A. Survey No. 283 in Section 28, T. 12 N. Secs
 Act of June 25, 1910 (36 Stat. 355)

DEPARTMENT OF THE INTERIOR
 GENERAL LAND OFFICE
 Washington, D. C., May 26, 1907.
 The survey represented by this
 plat having been correctly executed in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

Samuel D. Brown
 Assistant Commissioner.

Original
 Filed

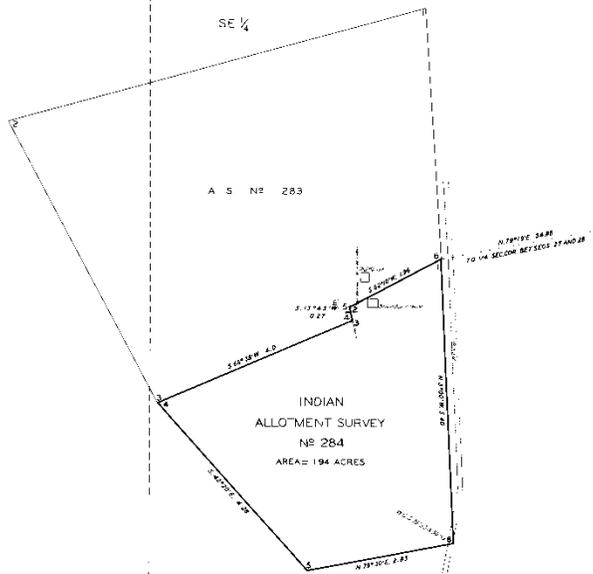
REGISTER AND RECEIVED FROM THE
 DATE OCT 20 1907

Patented JAN 28 1928

61 232-L

T. 12 N., R. 6 E., H.M. **283**

T. 12 N., R. 6 E., H.M.
 SURVEYED AND ACCEPTED
 SECTION 28



PLAT OF
 INDIAN
 ALLOTMENT SURVEY
 No 284
 IN THE
 KLAMATH
 NATIONAL FOREST
 IN
 SECTION 28, SURVEYED, T. 12 N., R. 6 E.,
 OF THE
 HUMBOLDT MERIDIAN,
 CALIFORNIA

Office of U. S. Supervisor of Surveys,
 Denver, Colorado, Dec. 24, 1922.
 This plat of Indian Allotment Survey No. 284,
 State of California, is strictly conformable to
 the field notes of the survey thereof which have
 been examined and approved.
Wm. C. Howell
 U. S. Supervisor of Surveys.

Surveys Designated	By Whom Surveyed	Acres	When Surveyed		Date of Approval
			Begin	Completed	
I. A. Survey No. 284	Frederic S. Jay, U.S. Cadastre Engineer	327	Jan. 10, 1924	Sept. 25, 1924	May 24, 1925
Section Lines	John Reardon		June 20, 1923	1924	May 2, 1927

Scale - 1 Chain to 1 Inch
 I. A. Survey No. 200 in Section 20, 1.94 acres
 Act of June 25, 1910 (16 Stat. 692)

REPORT OF THE DISTRICT
 CADASTRAL LAND OFFICE,
 Washington, D. C., July 21, 1925.
 The survey represented by this
 plat having been correctly executed in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

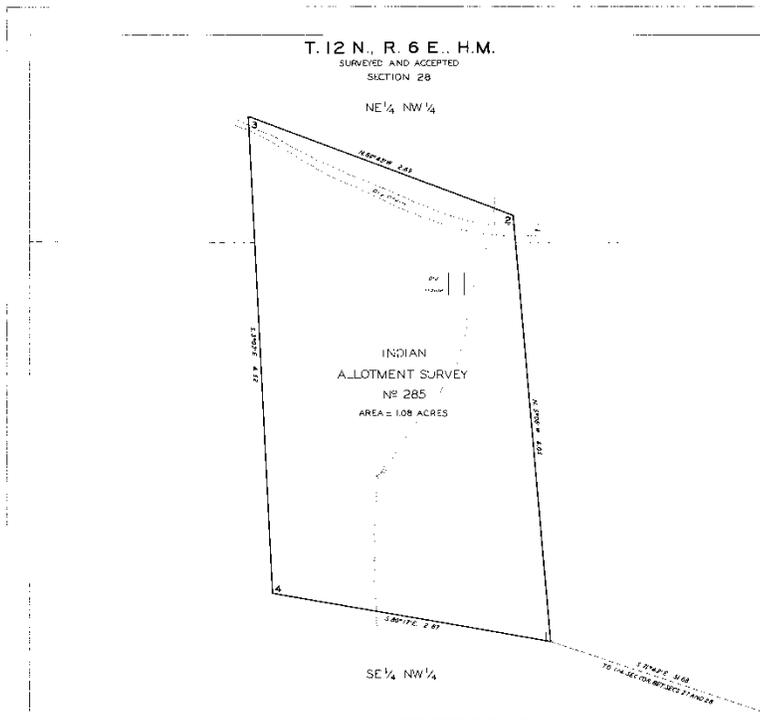
REGISTER AND RECEIVE PROCEEDS
 DATE: OCT. 24 1922

Patented JAN 28 1922

61-232-M

Wm. C. Howell
 Assistant Commissioner

284
 T. 12 N., R. 6 E., H.M.



PLAT OF
INDIAN
ALLOTMENT SURVEY
№ 285
 IN THE
KLAMATH
NATIONAL FOREST
 IN
 SECTION 28, SURVEYED, T. 12 N. R. 6 E.
 OF THE
HUMBOLDT MERIDIAN,
CALIFORNIA

Office of U. S. Supervisor of Surveys,
 Denver, Colorado, May 16, 1928.
 This plat of Indian Allotment Survey No. 285,
 State of California, is entirely conformable to
 the field notes of the survey thereof which have
 been examined and approved.

Wm. C. Howell
 U. S. Supervisor of Surveys.

Surveys Designated	By Whom Surveyed	No.	Group		When Surveyed		Date of Approval
			No.	Date	Begin	Completed	
I. A. Survey No. 285	Francis E. Joy, J. O. Chalkley, J. H. Reed	107	Jan. 10, 1924	Sept. 29, 1924	Oct. 3, 1924	May 14, 1925	
Section Lines	John Reed	Cont.	June 20, 1926		1926	May 2, 1928	

Scale: 50 Links to 1 Inch
 I. A. Survey No. 285, in Section 28, 1.08 acres
 Act of June 21, 1910 (36 Stat. 855)

DEPARTMENT OF THE INTERIOR
 GENERAL LAND OFFICE
 Washington, D. C., May 16, 1928.
 The survey represented by this
 plat having been correctly executed in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

Wm. C. Howell
 Assistant Commissioner.

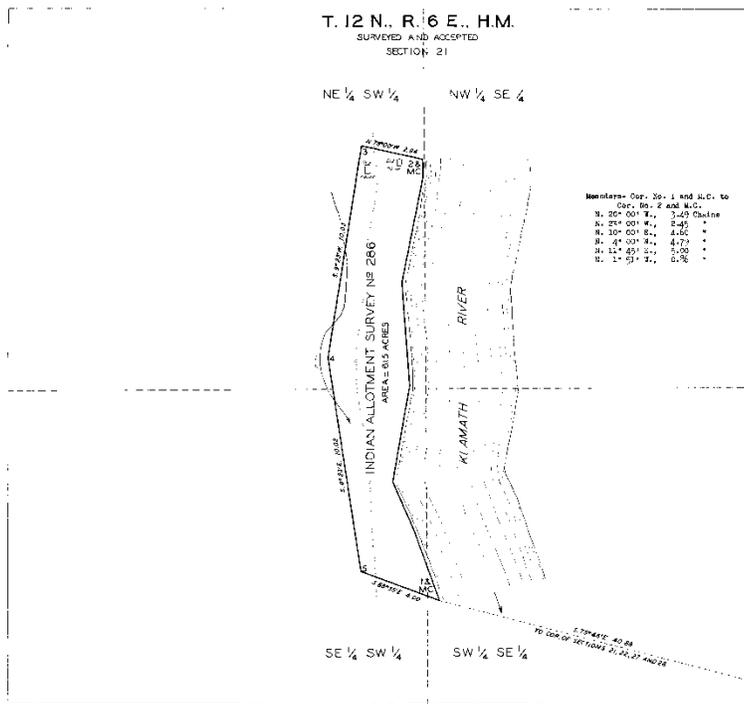
61-232-N

REGISTER AND RECEIVER PRICE:
 DATE: OCT. 23 1928

Patented JAN 28 1929

61 232 - N

T. 12 N., R. 6 E., H.M. **285**



PLAT OF
INDIAN
ALLOTMENT SURVEY
NO 286
 IN THE
KLAMATH
NATIONAL FOREST
 IN
SECTION 21, SURVEYED, T. 12 N. R. 6 E.
 OF THE
HUMBOLDT MERIDIAN,
CALIFORNIA

Measure: Cor. No. 1 and S.C. to
 1000. By 2 and M.C.
 N. 20° 00' E., 3.49 Chains
 S. 20° 00' W., 2.45 *
 N. 10° 00' E., 4.85 *
 S. 90° 00' E., 4.73 *
 S. 11° 45' E., 5.08 *
 N. 1° 00' E., 5.08 *

Office of U. S. Supervisor of Surveys,
 Denver, Colorado, May 14, 1923.
 This plat of Indian Allotment Survey No. 286,
 State of California, is strictly conformable to
 the field notes of the survey thereof which have
 been examined and approved.

John W. Johnson
 U. S. Commissioner of Surveys.

Survey Designated	By Whom Surveyed	No.	Group	Area Surveyed	Date of
				Began	Completed
I.A. Survey No. 286	Francis J. May, U.S. Engineer	127	Jun. 30, 1902	Oct. 9, 1902	Oct. 11, 1902
Section Lines	John Houghton, Engineer	cont.	June 20, 1873	1887	May 2, 1887

Scale- 2 1/2" Chain to 1 inch
 I. A. Survey No. 286 to Section 21, 615 acres
 act of June 25, 1910 (6 Stat. 855)

DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND OFFICE
 Washington, D. C., July 16, 1923.
 The survey represented by this
 plat having been correctly executed in ac-
 cordance with the requirements of law and
 the regulations of this office, is hereby
 accepted.

John C. Johnson
 ASSISTANT COMMISSIONER.

REGISTER AND RECEIVE RECEIPT
 DATE: OCT. 28 1923

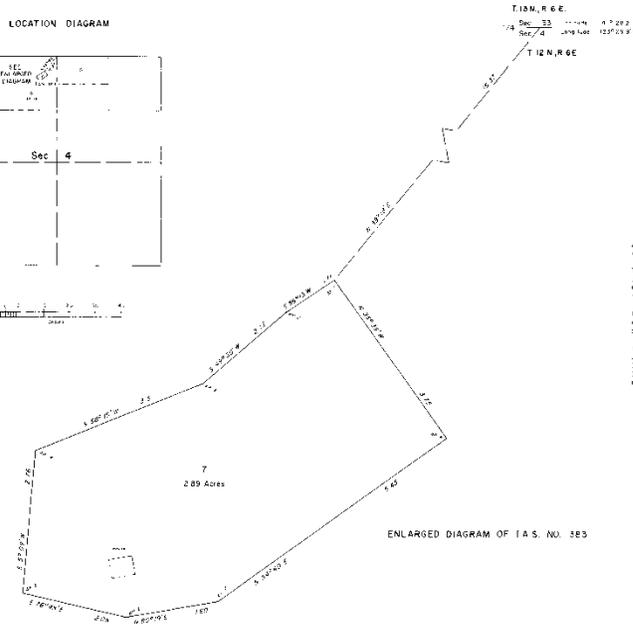
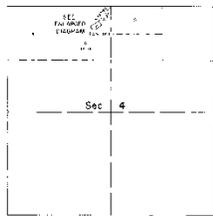
Patented JAN 28 1923

61 232 - 0

286
T. 12 N., R. 6 E., H.M.

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA
SURVEY OF INDIAN ALLOTMENT NO 383, SECTION 4

LOCATION DIAGRAM



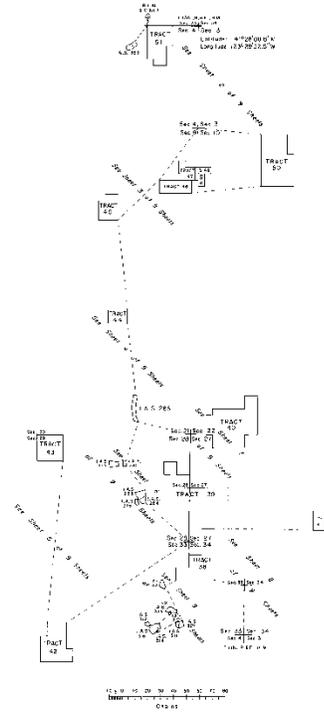
ENLARGED DIAGRAM OF I. A. S. NO. 383



A history of prior surveys is given in the field note book.
This plat represents the survey of Indian allotment No. 383 in sec. 4, T. 12 N., R. 6 E., Humboldt Meridian, Co. Cal., showing distances and bearings to the corners within the corner boundary lines.
Except as indicated, the bearings and distances are as shown on the survey plat approved May 21, 1883, and supplemental plat approved November 11, 1885.
The survey of Indian allotment No. 383 was executed by John H. Sweeney, Assistant Surveyor, on July 20, 1882, pursuant to Special Instruction No. 1000, April 20, 1875, which provides for the survey under Group No. 383, California.

SECTION 4, TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
ENLARGED DIAGRAM OF INDIAN ALLOTMENT NO. 383.
APPROVED MAY 21, 1883, AND SUPPLEMENTAL PLAT APPROVED NOVEMBER 11, 1885.
This plat is hereby approved, in the approved form shown, and the survey is hereby declared correct and conforming with the provisions of law and the conditions of this statute, in which it is approved.
For the Registrar
Clark F. Sumner
Registrar of Land and Mines

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
DEPENDENT RESURVEY, AND SURVEY OF TRACTS 38 THROUGH 51



A history of survey is obtained in the field notes.

Tract 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, and 51, are a continuation of a portion of the Humboldt Meridian. This dependent resurvey and placement, is designed to correct the errors in the original survey, and to place the same in accordance with the best available evidence. This was done in accordance with the laws and orders of the State of California.

The areas of the Indian Allotments are as shown on the official maps.

The tract boundaries shown herein represent the position and form of said tracts under the original conditions as referred to in the original survey, apart from such units and areas as have been acquired in the best available evidence of the 1851 Resurvey.

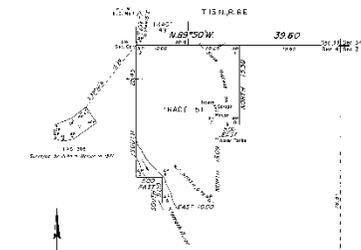
Survey executed by James H. Smith and Robert W. Brown, District Surveyors, beginning August 25, 1903, and completed October 21, 1903, pursuant to Special Instructions issued March 21, 1870, by General Wm. W. Gwin.

UNITED STATES DEPARTMENT OF THE INTERIOR
GENERAL SURVEY MANAGEMENT

Governmental Geologist
This plan is hereby approved as the approved field notes and the survey, having been previously executed in accordance with the requirements of law and the regulations of this Bureau, is hereby authorized.

For the Director
December 10, 1904
W. H. Wood
Chief Geological Surveyor

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
DEPENDENT RESURVEY, AND SURVEY OF TRACTS 38 THROUGH 51



TRACT 50
TRACT 50 is a portion of the original section 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

TRACT 51
TRACT 51 is a portion of the original section 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Reference made to sheet 1 for survey information.

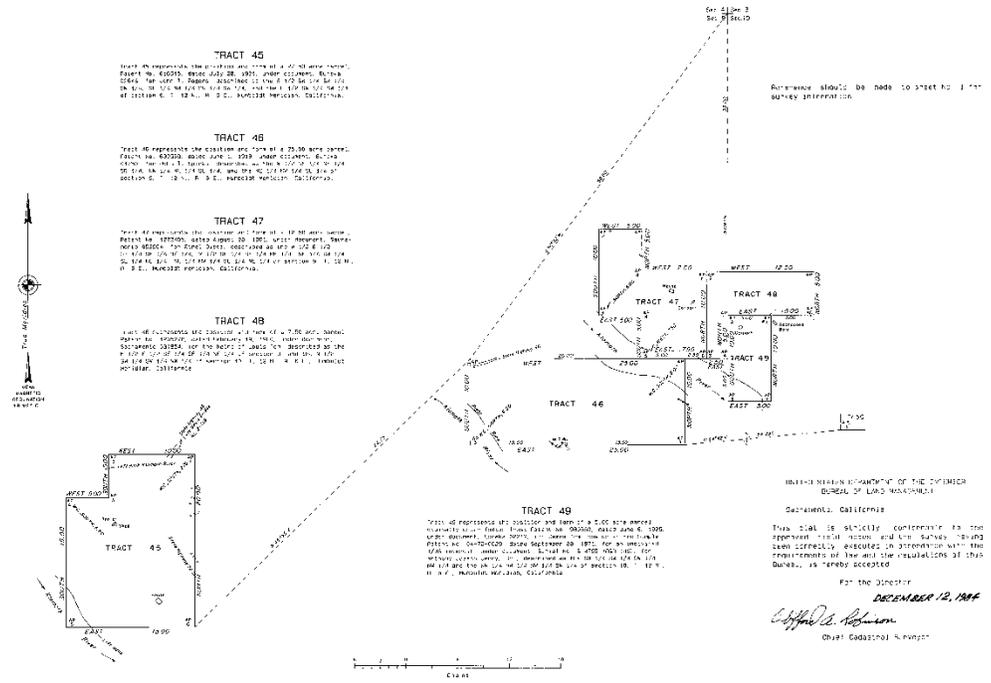
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SACRAMENTO, CALIFORNIA
THIS DEED IS HEREBY RETURNED TO THE
RECORDS PUBLIC OFFICE, AND THE SAME, BEING
CORRECTLY EXAMINED IN ACCORDANCE WITH THE
REQUIREMENTS OF LAW AND THE REGULATIONS OF THIS
BUREAU, IS HEREBY APPROVED.
BY THE DIRECTOR
DECEMBER 12, 1984
Clifford A. Robinson
CLIFFORD A. ROBINSON, DIRECTOR



61 232-T

T. 12 N., R. 6 E., H.M.

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
DEPENDENT RESURVEY, AND SURVEY OF TRACTS 38 THROUGH 51



TRACT 45
TRACT 45 represents the eastern portion of a 27.40 acre parcel, except the 0.0000 acre parcel of 0.0000 acre situated in the NW 1/4 of Sec. 12, T. 12 N., R. 6 E., Humboldt Meridian, California.

TRACT 46
TRACT 46 represents the eastern portion of a 25.50 acre parcel, except the 0.0000 acre parcel of 0.0000 acre situated in the NW 1/4 of Sec. 12, T. 12 N., R. 6 E., Humboldt Meridian, California.

TRACT 47
TRACT 47 represents the eastern portion of a 17.00 acre parcel, except the 0.0000 acre parcel of 0.0000 acre situated in the NW 1/4 of Sec. 12, T. 12 N., R. 6 E., Humboldt Meridian, California.

TRACT 48
TRACT 48 represents the eastern portion of a 17.00 acre parcel, except the 0.0000 acre parcel of 0.0000 acre situated in the NW 1/4 of Sec. 12, T. 12 N., R. 6 E., Humboldt Meridian, California.

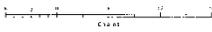
TRACT 49
TRACT 49 represents the eastern portion of a 17.00 acre parcel, except the 0.0000 acre parcel of 0.0000 acre situated in the NW 1/4 of Sec. 12, T. 12 N., R. 6 E., Humboldt Meridian, California.

Bearings should be made to sheet No. 1 for survey information.

DEPARTMENT OF THE COMMISSIONER OF LAND AND MINES
Sacramento, California

This map is hereby certified to the approved field notes and survey books lawfully executed in accordance with the requirements of the said law and regulations of this Bureau, as hereby accepted.

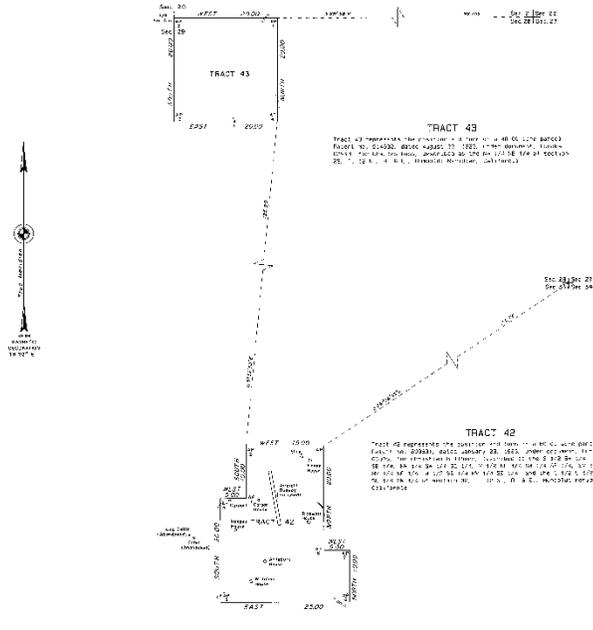
For the Director
DECEMBER 12, 1906
John C. Robinson
Chief Geologist & Surveyor



61 232-U

T. 12 N., R. 6 E., H.M.

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
DEPENDENT RESURVEY, AND SURVEY OF TRACTS 38 THROUGH 51



Reference should be made to sheet No. 1 for survey information.

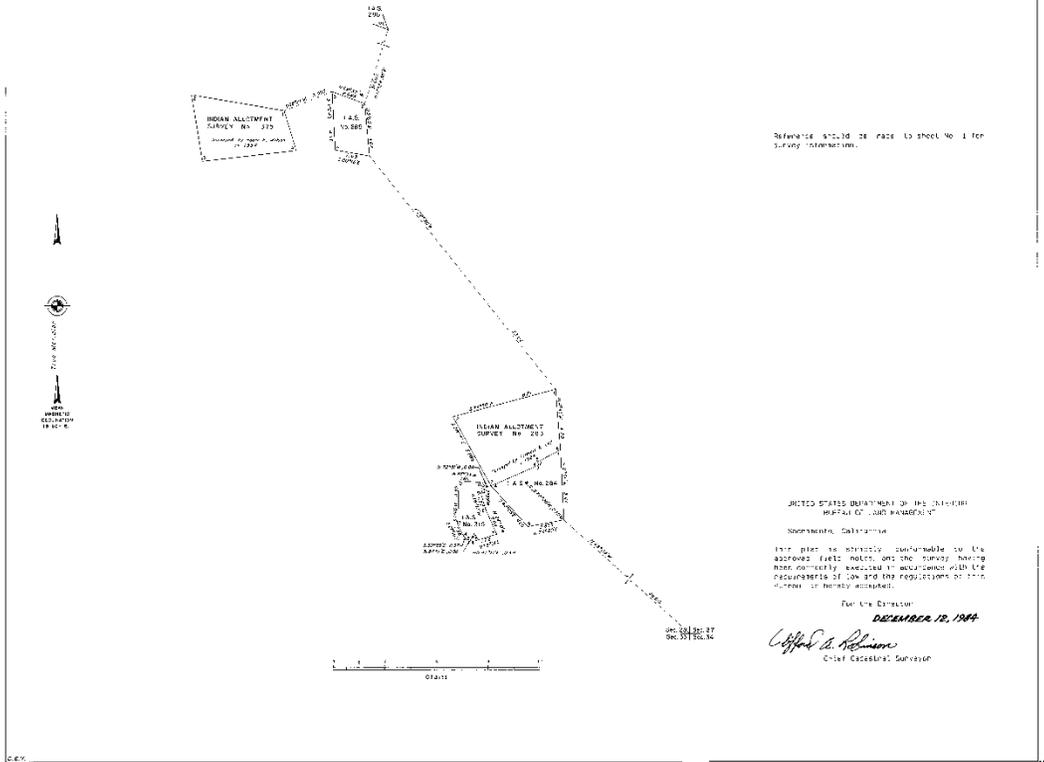
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SECRETARIAL DECLARATION

This deed is a copy of the original as the original is on file in the office of the Secretary of the Interior, and the copy is a true and correct copy of the original as the same is on file in the office of the Secretary of the Interior.

FOR THE DIRECTOR
DECEMBER 12, 1944
Clifford A. Robinson
CHIEF CLERK, BUREAU OF LAND MANAGEMENT

TOWNSHIP 12 NORTH, RANGE 6 EAST, OF THE HUMBOLDT MERIDIAN, CALIFORNIA.
DEPENDENT RESURVEY, AND SURVEY OF TRACTS 38 THROUGH 51

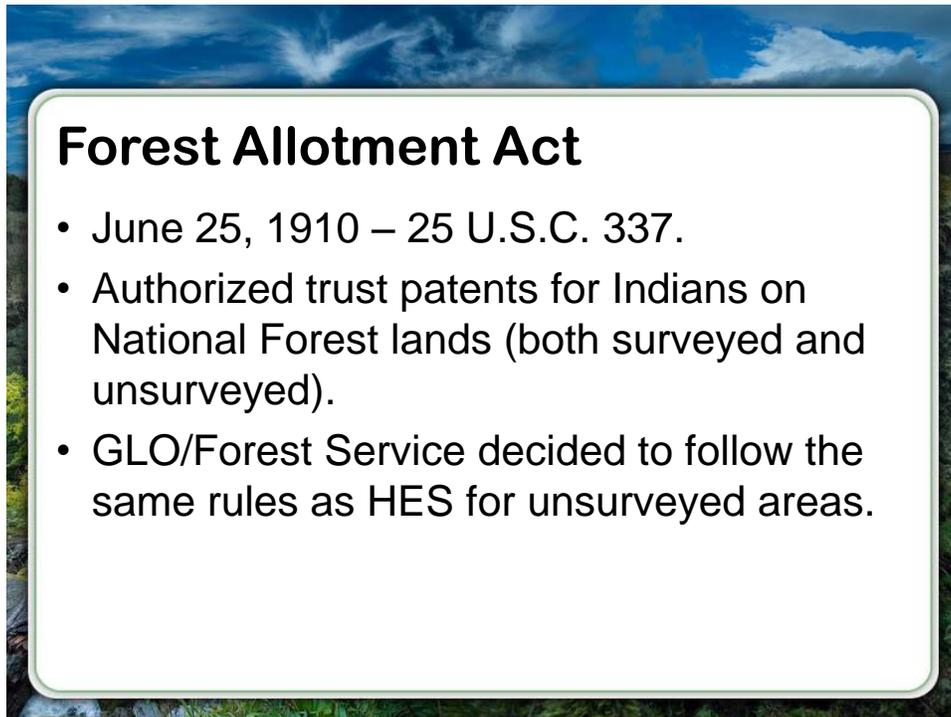


61 232-X

T. 12 N., R. 6 E., H.M.

Homestead Entry Surveys, Part 1

Hello. I'm Roger Green. I am the CFedS training coordinator here at the BLM's national training center. Since this is the first time I've been on tape with you, I'd like to give you some of my biographical information.



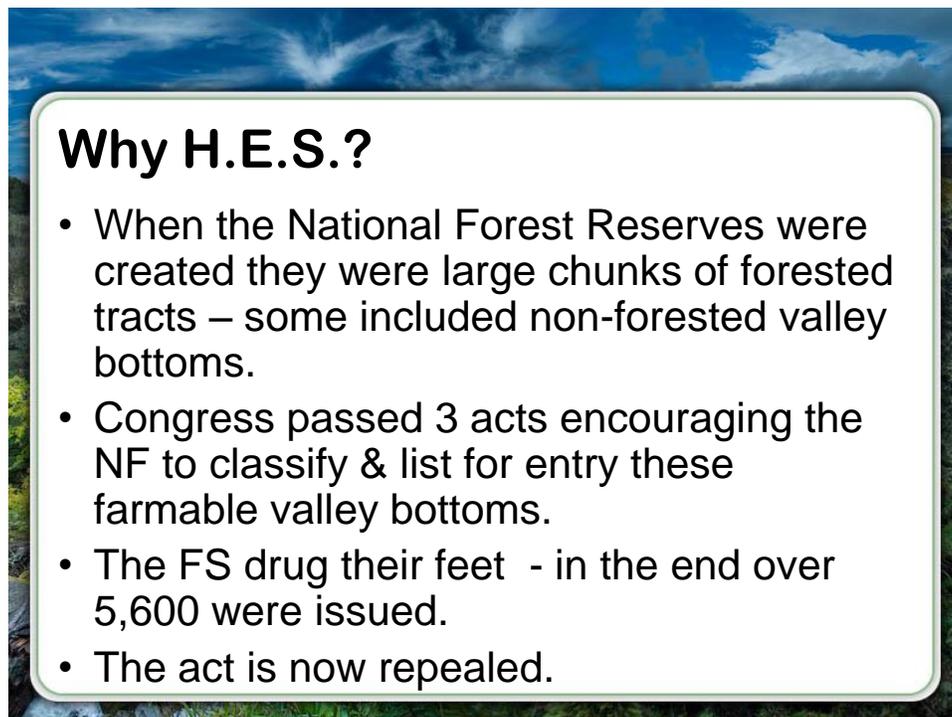
In the summer of '76 the bicentennial year, I signed on with the federal government in Washington D.C. I worked for the eastern states office in New York, Michigan, Wisconsin, and Minnesota, working mostly on Indian reservation boundaries and omitted lands up in Minnesota. The next summer I worked for the Western Field Office on the Yakima Indian reservation doing corner re-monumentation with one crusty old field surveyor. During that summer we re-monumented 550 corners and 13 miles of Indian reservation boundary that was a great experience for a young surveyor in school.

The next year I started to work with the U.S. Forest Service and have worked with them from 1978-2005, working in western Oregon, northern Arizona, northeastern Oregon, and northwestern Montana. Some of that early work on the Siuslaw National Forest was a forest that was contracting a million dollars a year in cadastral survey. That was a real intense program and I learned a lot there also. In the summer of 2005 I became one of the first BLM Indian land surveyors, working in the upper Midwest, working in six states and with 43 different tribes, that was a great experience and I'm really glad I did that before getting my job down here at the BLM national training center.

So, why HES? Homestead entry surveys, you know we are going to talk a lot about that today. You know H.E.S' homestead entry surveys, when the national forest reserves were created, they were large chunks of forested tracts. But lots of those tracts included some valley bottoms that were more suited for agriculture than they were for national forest purposes.

And through a succession of acts, the Congress pushed the national forest to classify and allow entry in these valleys, these farmable valley bottoms.

The Forest Service really drug their feet, they weren't very interested in having these people mess up their forest.



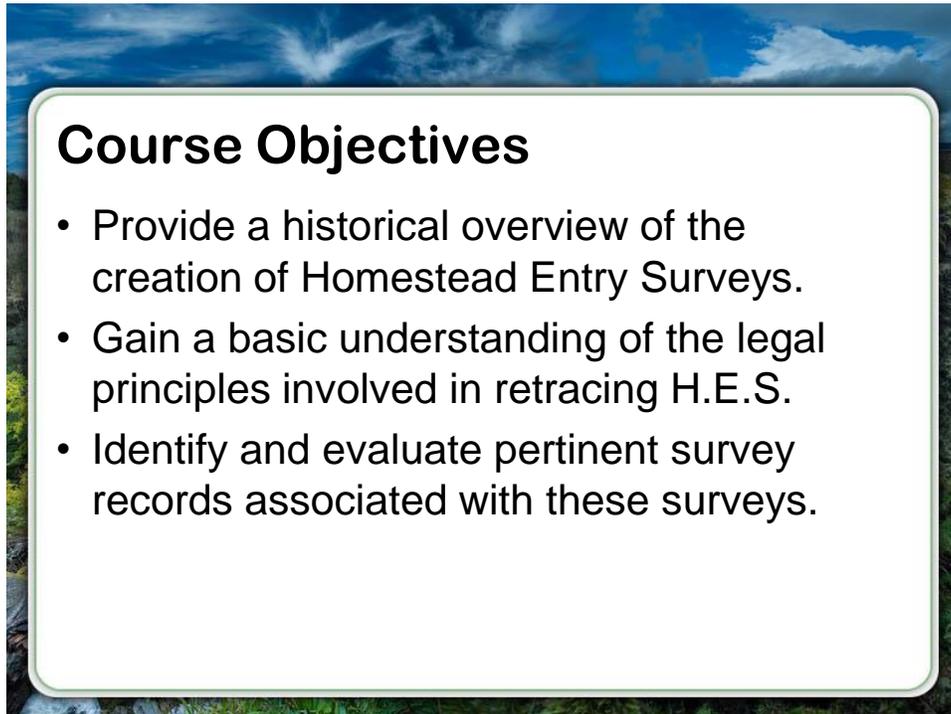
Why H.E.S.?

- When the National Forest Reserves were created they were large chunks of forested tracts – some included non-forested valley bottoms.
- Congress passed 3 acts encouraging the NF to classify & list for entry these farmable valley bottoms.
- The FS drug their feet - in the end over 5,600 were issued.
- The act is now repealed.

But in the end, over 5,600 HES claims or homestead entry surveys, the whole claiming process were consummated. The Act is now repealed so don't think you're going to go out into the national forest and get this prime chunk of land. I've got to say if you ever get the chance to retrace a homestead entry survey, some of these are just the nicest pieces of land out there in the national forest system. Did I say they all happened on the national forest that's one of the requirements.

Objectives

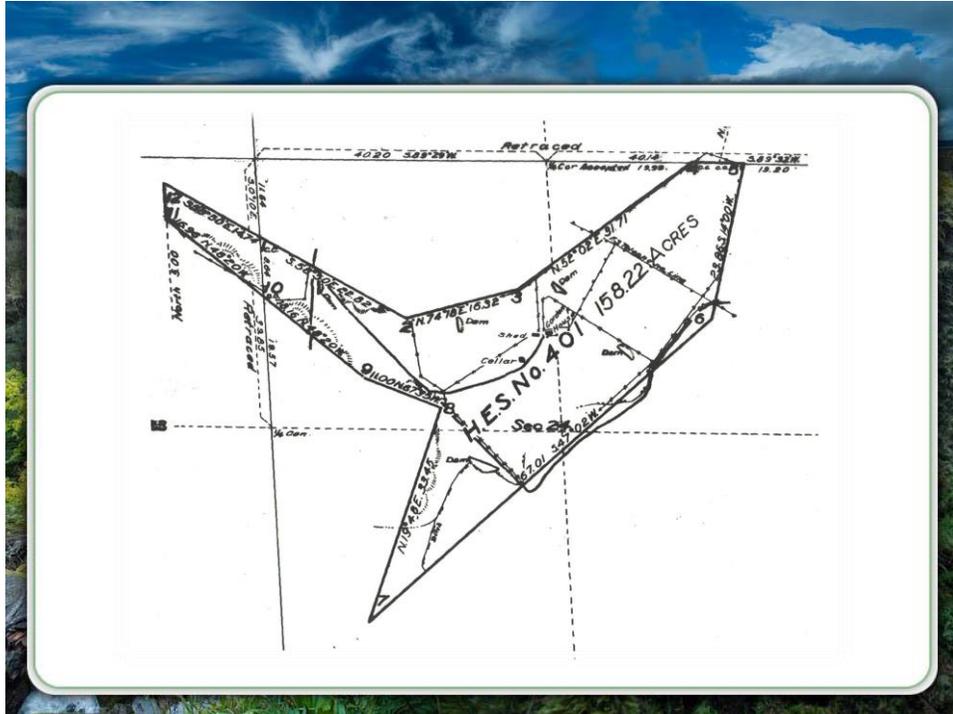
During this module, we hope to provide you with a historical overview of the creation of the homestead entry surveys, we hope that you will gain a basic understanding of the legal principles involved in retracing homestead entry surveys and identify and evaluate pertinent survey records associated with these surveys.



Course Objectives

- Provide a historical overview of the creation of Homestead Entry Surveys.
- Gain a basic understanding of the legal principles involved in retracing H.E.S.
- Identify and evaluate pertinent survey records associated with these surveys.

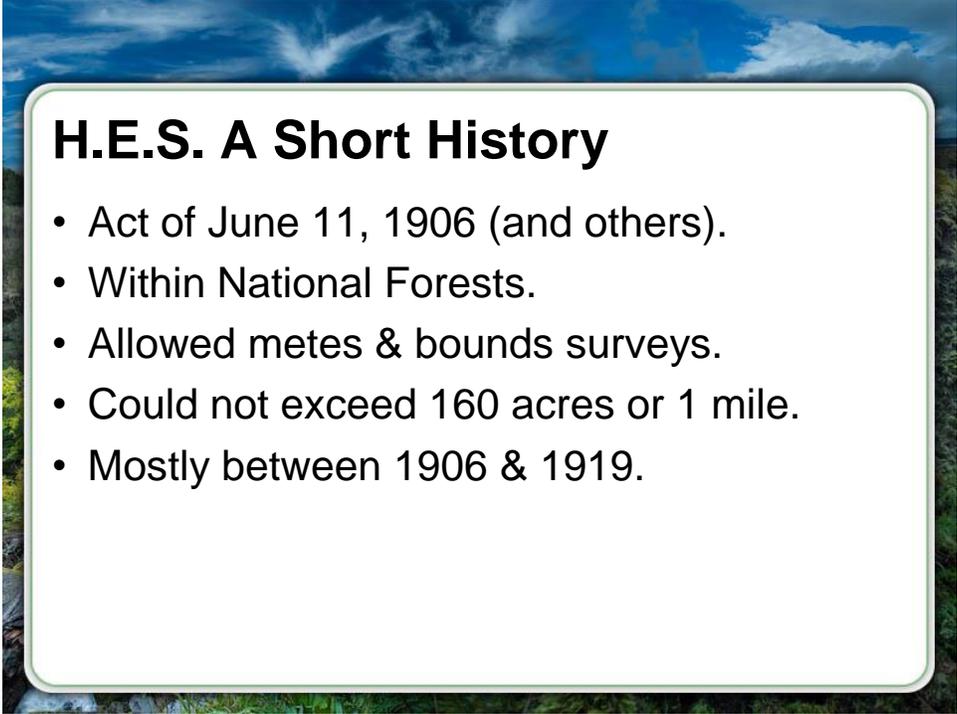
In many ways, what we're looking at now is a typical HES but in many ways this is a very unusual HES. This HES perhaps has been visited by many of you although you didn't know what it was at the time you were there, there are about five million visitors a year in this area. Most of them stop somewhere along this HES.



The population year round is only 562, there are 307 housing units but it's only 6 percent owner occupied. There are 8 motels, 6 restaurants, 4 stores, an RV park, and an IMAX theatre. In the mid 80's when I was working in this area, the McDonald's was located on a 2 acre lease for five years that cost 4 million dollars. This is HES 401, which is Tucson, Arizona. The only private property of the south rim of the Grand Canyon. Probably the most valuable HES of them all out there. I just thought that would be an interesting side note.

H.E.S. A Short History

Let's go into a short history of the homestead entry process. The act is of June 11, 1906, and there were others like I said before, the Congress had actually passed I think three acts to get the Forest Service to list and offer these lands. They are all within national forest boundaries, the Act allows for metes and bounds surveys, because some of these areas were in unsurveyed townships.



H.E.S. A Short History

- Act of June 11, 1906 (and others).
- Within National Forests.
- Allowed metes & bounds surveys.
- Could not exceed 160 acres or 1 mile.
- Mostly between 1906 & 1919.

The parcels could not exceed 160 acres or quarter of a section, if it was in a rectangular parcel, or one mile, and by the end of this era, they basically decide if they could box it in essentially a section, not that there are sections there but a one mile square.

It had to contained within that. Some of these valley bottoms are real narrow and long which led to long narrow tracts. Most of these happened between 1906 and 1919. The HES process, there was an initial study and a review of the lands, this was done by the Forest Service and they had discretions on what lands were going to be listed.

A listing survey which was a rough, it was typically a staff compass and a two chain tape. A rough survey of these tracts, and then a list was drawn up and physically posted at typically the local ranger station. The homestead process then began and it had specific requirements. Patent survey was performed after the homestead was proved up on. This was usually done by a Forest Service surveyor.

You'll find many of these irregular parcels that have discrepancies between what was done and what they said was done. Typically what you find monumented on the ground, that is going to control over everything else. Plats and notes were approved by the GLO.

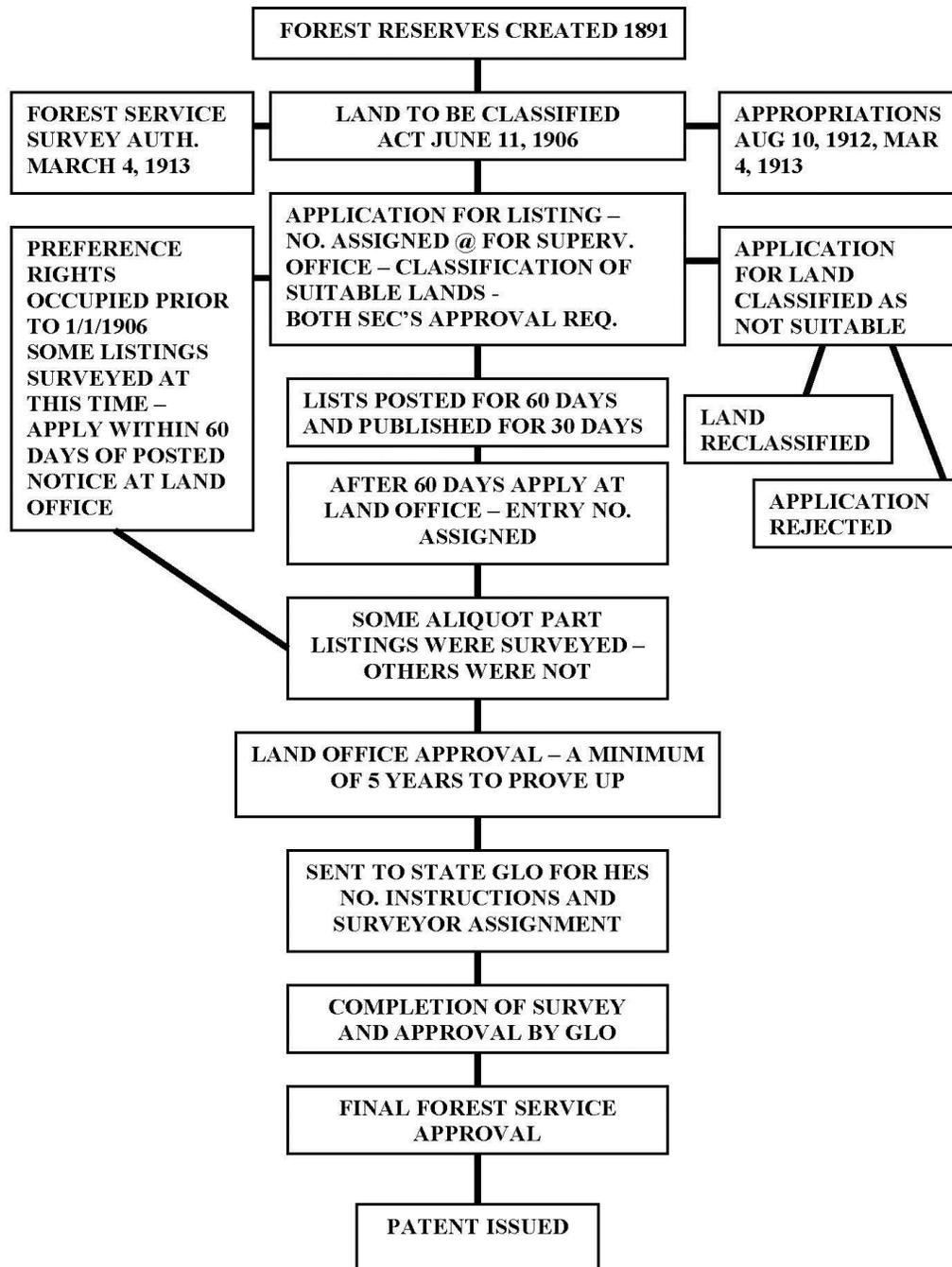
H.E.S. Process -The Short Version

- Initial study & review of lands.
- The “Listing” survey & the “List”.
- The homestead process.
- Patent survey is performed.
 - Usually by the Forest Service
 - What was done vs. what they said
- Plats & notes approved by the GLO.

A complete chart of the process is in the handouts.

In your handout materials, there is a complete chart of the whole process.

Process Chart



We're going to go next to some examples of typical HES', rectangular versus aliquot look-a-likes, riparian and non riparian HES'. "C" tracts, we'll explain what those are, and other fun stuff!

Examples of H.E.S.

- Typical H.E.S.
- Rectangular vs. Aliquot Look-A-Likes.
- Riparian vs. Non-Riparian.
- "C" Tracts.
- Other fun stuff!

Here we have a typical HES. HES number 91, let's take a closer look at that Tract.

Typical H.E.S.

**PLAT OF
HOMESTEAD ENTRY SURVEY No. 91
in the
MIRIAM NATIONAL FOREST**

1/2
approximately
Section 23 unsurveyed, T. 5 S., R. 48 E.,
Section 24 unsurveyed, T. 5 S., R. 48 E.,

of the
Willamette Meridian, Oregon

This plat of Homestead Entry Survey No. 91 is located in Section 23 unsurveyed in Township 3 South of Range 48 East and in Section 24 unsurveyed, in Township 3 South of Range 48 East.

If the Willamette Meridian is strictly conformable to the first meridian of the Survey, there will be no change in the area of the tract as shown on this plat, which has been examined and approved.

Office of U.S. Surveyor General
Portland, Oregon, June 26, 1908

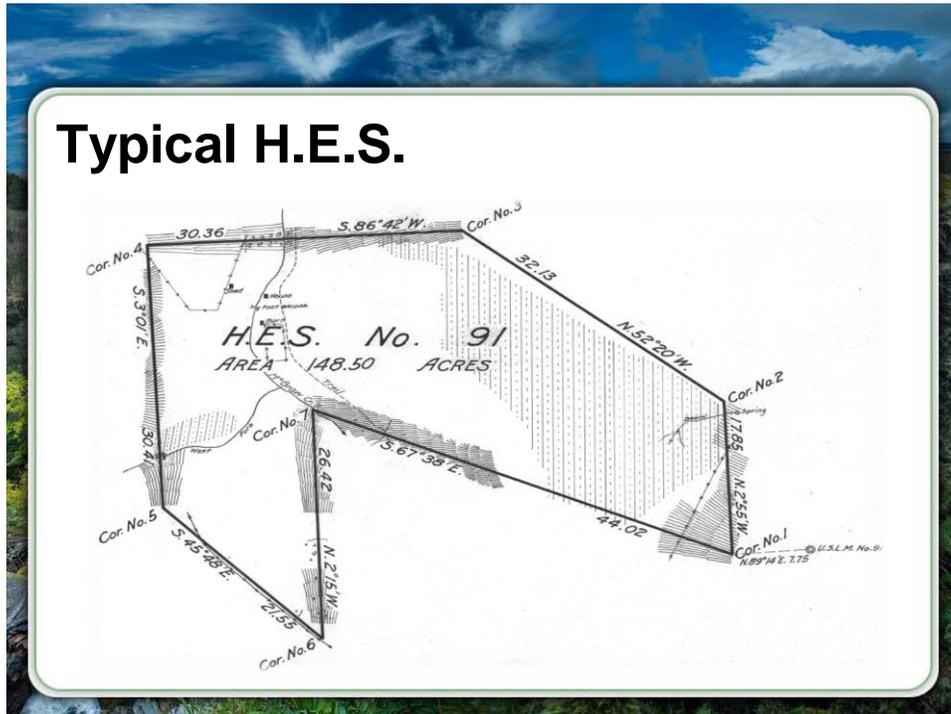
Edward A. ...
U.S. Surveyor General
for Oregon

Section	Area (Acres)						
1	160.00	160.00	160.00	160.00	160.00	160.00	160.00
2	160.00	160.00	160.00	160.00	160.00	160.00	160.00
3	160.00	160.00	160.00	160.00	160.00	160.00	160.00
4	160.00	160.00	160.00	160.00	160.00	160.00	160.00
5	160.00	160.00	160.00	160.00	160.00	160.00	160.00
6	160.00	160.00	160.00	160.00	160.00	160.00	160.00
7	160.00	160.00	160.00	160.00	160.00	160.00	160.00
8	160.00	160.00	160.00	160.00	160.00	160.00	160.00
9	160.00	160.00	160.00	160.00	160.00	160.00	160.00
10	160.00	160.00	160.00	160.00	160.00	160.00	160.00
11	160.00	160.00	160.00	160.00	160.00	160.00	160.00
12	160.00	160.00	160.00	160.00	160.00	160.00	160.00
13	160.00	160.00	160.00	160.00	160.00	160.00	160.00
14	160.00	160.00	160.00	160.00	160.00	160.00	160.00
15	160.00	160.00	160.00	160.00	160.00	160.00	160.00
16	160.00	160.00	160.00	160.00	160.00	160.00	160.00
17	160.00	160.00	160.00	160.00	160.00	160.00	160.00
18	160.00	160.00	160.00	160.00	160.00	160.00	160.00
19	160.00	160.00	160.00	160.00	160.00	160.00	160.00
20	160.00	160.00	160.00	160.00	160.00	160.00	160.00
21	160.00	160.00	160.00	160.00	160.00	160.00	160.00
22	160.00	160.00	160.00	160.00	160.00	160.00	160.00
23	160.00	160.00	160.00	160.00	160.00	160.00	160.00
24	160.00	160.00	160.00	160.00	160.00	160.00	160.00
25	160.00	160.00	160.00	160.00	160.00	160.00	160.00
26	160.00	160.00	160.00	160.00	160.00	160.00	160.00
27	160.00	160.00	160.00	160.00	160.00	160.00	160.00
28	160.00	160.00	160.00	160.00	160.00	160.00	160.00
29	160.00	160.00	160.00	160.00	160.00	160.00	160.00
30	160.00	160.00	160.00	160.00	160.00	160.00	160.00
31	160.00	160.00	160.00	160.00	160.00	160.00	160.00
32	160.00	160.00	160.00	160.00	160.00	160.00	160.00
33	160.00	160.00	160.00	160.00	160.00	160.00	160.00
34	160.00	160.00	160.00	160.00	160.00	160.00	160.00
35	160.00	160.00	160.00	160.00	160.00	160.00	160.00
36	160.00	160.00	160.00	160.00	160.00	160.00	160.00
37	160.00	160.00	160.00	160.00	160.00	160.00	160.00
38	160.00	160.00	160.00	160.00	160.00	160.00	160.00
39	160.00	160.00	160.00	160.00	160.00	160.00	160.00
40	160.00	160.00	160.00	160.00	160.00	160.00	160.00
41	160.00	160.00	160.00	160.00	160.00	160.00	160.00
42	160.00	160.00	160.00	160.00	160.00	160.00	160.00
43	160.00	160.00	160.00	160.00	160.00	160.00	160.00
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45	160.00	160.00	160.00	160.00	160.00	160.00	160.00
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63	160.00	160.00	160.00	160.00	160.00	160.00	160.00
64	160.00	160.00	160.00	160.00	160.00	160.00	160.00
65	160.00	160.00	160.00	160.00	160.00	160.00	160.00
66	160.00	160.00	160.00	160.00	160.00	160.00	160.00
67	160.00	160.00	160.00	160.00	160.00	160.00	160.00
68	160.00	160.00	160.00	160.00	160.00	160.00	160.00
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72	160.00	160.00	160.00	160.00	160.00	160.00	160.00
73	160.00	160.00	160.00	160.00	160.00	160.00	160.00
74	160.00	160.00	160.00	160.00	160.00	160.00	160.00
75	160.00	160.00	160.00	160.00	160.00	160.00	160.00
76	160.00	160.00	160.00	160.00	160.00	160.00	160.00
77	160.00	160.00	160.00	160.00	160.00	160.00	160.00
78	160.00	160.00	160.00	160.00	160.00	160.00	160.00
79	160.00	160.00	160.00	160.00	160.00	160.00	160.00
80	160.00	160.00	160.00	160.00	160.00	160.00	160.00
81	160.00	160.00	160.00	160.00	160.00	160.00	160.00
82	160.00	160.00	160.00	160.00	160.00	160.00	160.00
83	160.00	160.00	160.00	160.00	160.00	160.00	160.00
84	160.00	160.00	160.00	160.00	160.00	160.00	160.00
85	160.00	160.00	160.00	160.00	160.00	160.00	160.00
86	160.00	160.00	160.00	160.00	160.00	160.00	160.00
87	160.00	160.00	160.00	160.00	160.00	160.00	160.00
88	160.00	160.00	160.00	160.00	160.00	160.00	160.00
89	160.00	160.00	160.00	160.00	160.00	160.00	160.00
90	160.00	160.00	160.00	160.00	160.00	160.00	160.00
91	160.00	160.00	160.00	160.00	160.00	160.00	160.00
92	160.00	160.00	160.00	160.00	160.00	160.00	160.00
93	160.00	160.00	160.00	160.00	160.00	160.00	160.00
94	160.00	160.00	160.00	160.00	160.00	160.00	160.00
95	160.00	160.00	160.00	160.00	160.00	160.00	160.00
96	160.00	160.00	160.00	160.00	160.00	160.00	160.00
97	160.00	160.00	160.00	160.00	160.00	160.00	160.00
98	160.00	160.00	160.00	160.00	160.00	160.00	160.00
99	160.00	160.00	160.00	160.00	160.00	160.00	160.00
100	160.00	160.00	160.00	160.00	160.00	160.00	160.00

June 26, 1908. Form No. 73

Typical H.E.S.

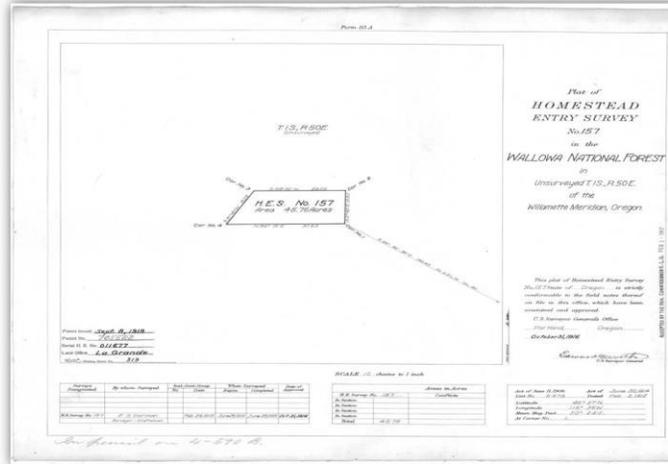
Here we have HES No. 91 inside of the Tract, that's normal, and 148 acres and we can see there are cultivated fields over here, some cultivated fields over here, and we have creeks and a trail and we have some buildings, houses, barns, here's another fence line and some other improvements.



Let's look at the Tract exterior. Over here we have corner number one, and then sequentially around the Tract 2,3,4 so on and so forth. Down here we have a tie to a U.S. location monument, it happens to be USLM No. 91 on this survey. You can see that there has also been some topographic relief filled in like these hills, ridges, so you can see largely they were going for the valley bottom area. This is just a very normal HES. Here we are going on to another sample HES plat.

We're going to look at some of the different kind of standard parts that you see on these surveys and frankly on lots of other cadastral survey plats.

Sample H.E.S. – Parts of the Plat



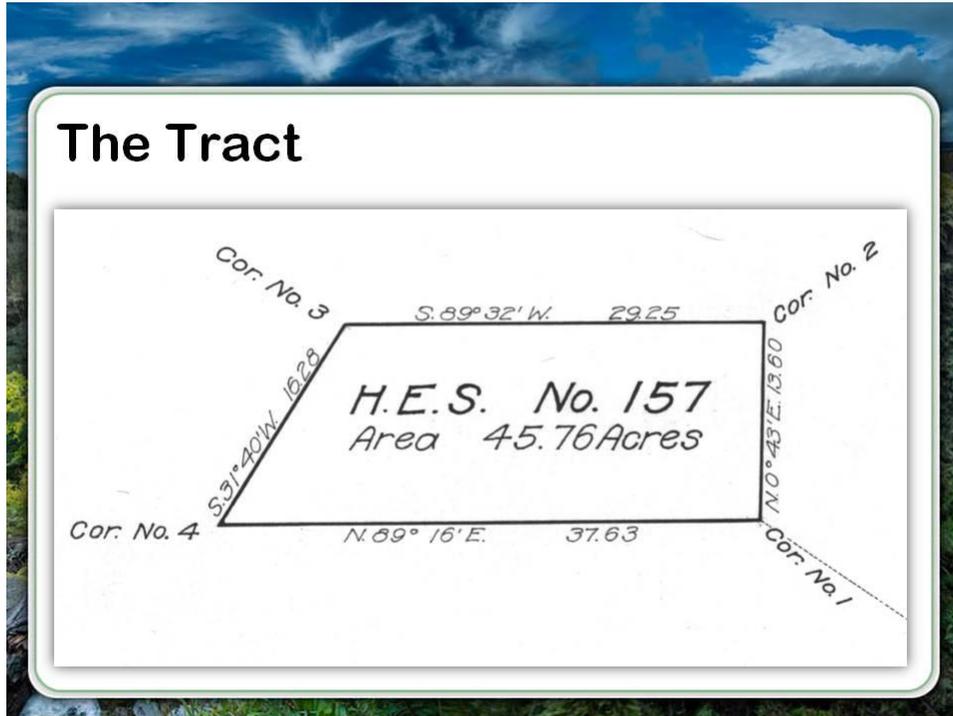
So here we have the title block with the normal information and I want to draw your attention to an un-surveyed township range. One south, fifty east.

Title Block

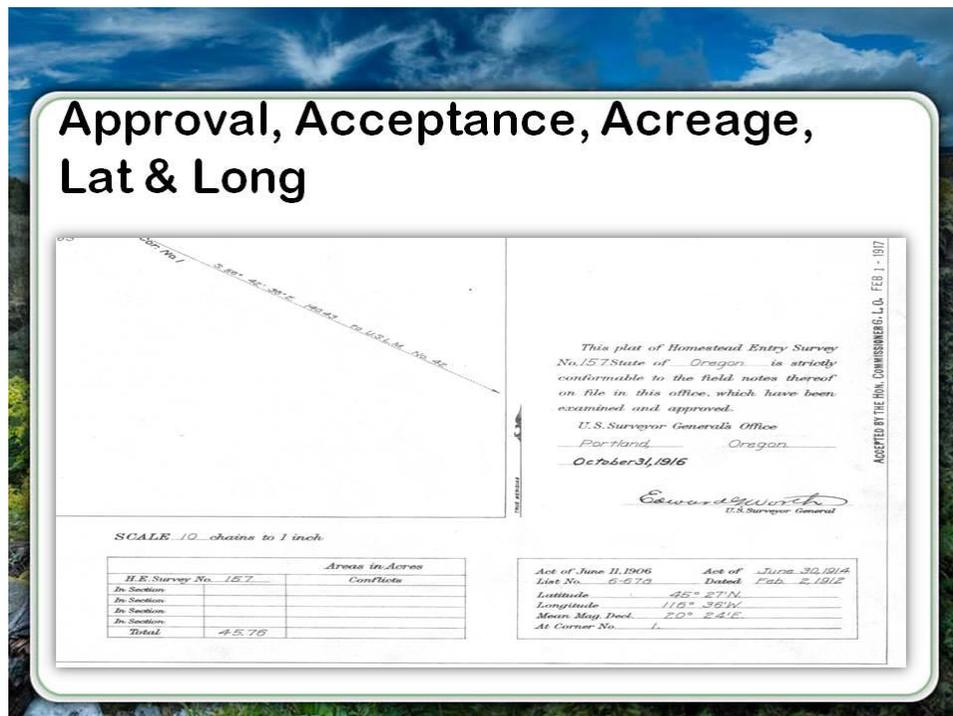
*Plat of
HOMESTEAD
ENTRY SURVEY
No. 157
in the
WALLOWA NATIONAL FOREST
in
Unsurveyed T. 1S., R. 50E.
of the
Willamette Meridian, Oregon.*

So sometimes you'll see corrections to these later on when they figure out it was actually in a different township when the survey really got out there.

Here we have the Tract itself, and again we have corner number 1,2,3,4 and bearings and distances around the outside.



This lying down here, is the tie line if I can get the pen to work. Later on you'll see that has a bearing and distance on it out to a location monument or something. So another area of the plat is we have the acceptance and we have the approval by the GLO.



We have a block that shows acreage and a block that shows the latitude and longitude along with other information. And then up here is where the tie line is and it's going out to U.S. Location Monument number 42. Lower right hand corner, typically we have this block that shows the tracking of the parcel information: patent issued, patent number, serial number, and land office.

Down here we have the survey information. Who surveyed what and when. Just like we have on the rectangular plats.

Parcel Tracking - Survey Information

Patent Issued Sept. 8, 1919
 Patent No. 705522
 Serial H. E. No. 011677
 Land Office La Grande
 N.O.C. Mining Sheet No. 319

Surveys Designated	By whom Surveyed	Inst. Cont. Group		When Surveyed		Date of Approval
		No.	Date	Begun	Completed	
H.E. Survey No. 157	E. S. Dorman Surveyor - Draftsman		Feb. 24, 1915	June 26, 1915	June 25, 1915	Oct. 31, 1916

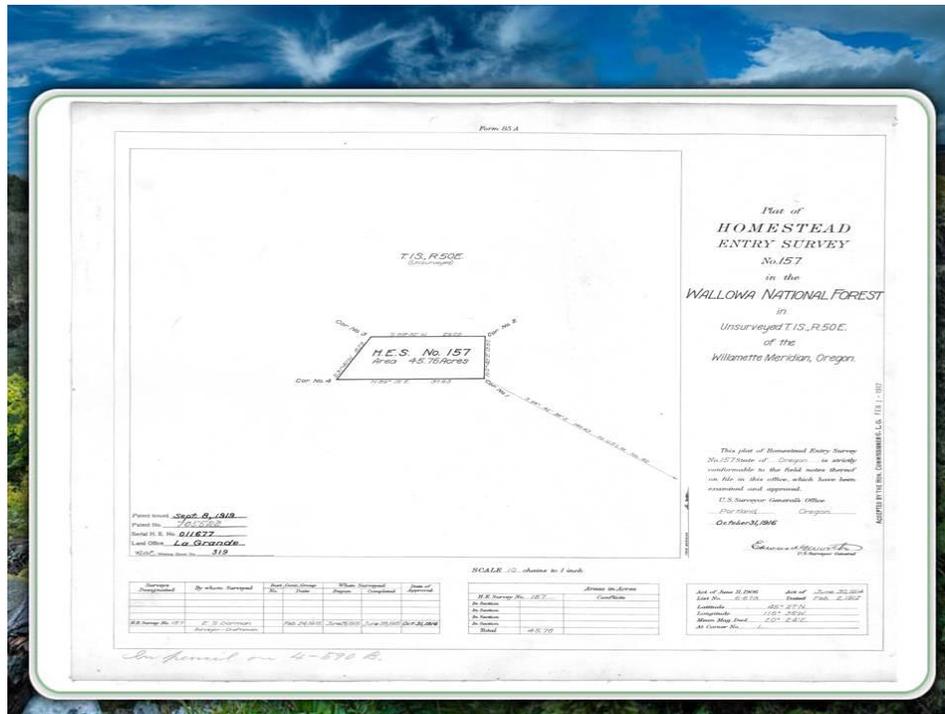
In pencil on 4-590 B.

In this case you'll notice that this was surveyed by E.S. Dorman Surveyor Draftsman.

On these HES' there are a variety of people who did these so I always look at that block, make sure you check that one out. Once again, back to the whole plat, just to give you a feel for what we're going to look at.

Looks Rectangular

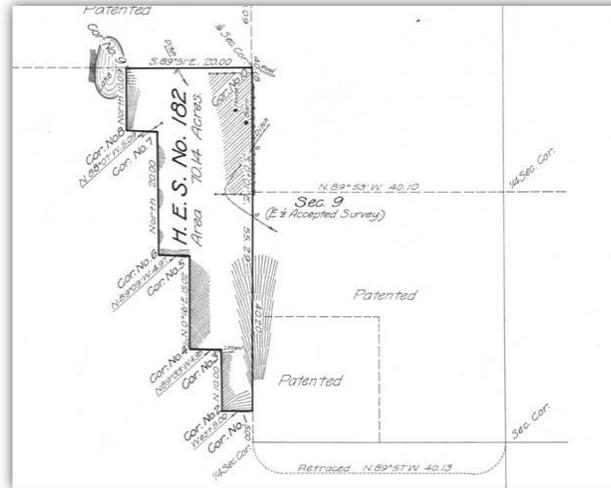
Now we are going to go on to some of these that these look rectangular and some of them are and some of them aren't.



That's why you have to really study these plats. You can see that we have patents already issued around portions of the exterior, and those look rectangular you know certainly they are. But over here, we see these stair steps where it's going east and north and east and north. But none of this is rectangular, it only looks rectangular.

So when you're looking at a GIS or USGS map or one of those other types of mapping products, lots of time it's impossible to tell, you got to get these HES plats to know what's really going on with them.

Looks Rectangular

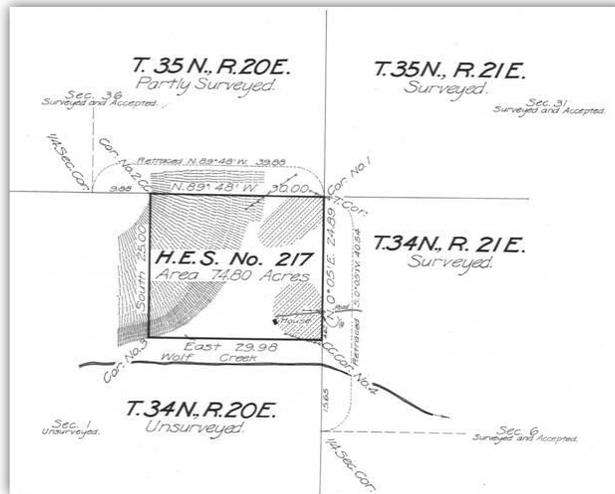


On this plat, this is another one, man that's nice and square that looks really rectangular.

But if we study this plat for a little bit, we see up here we have a surveyed township over here it's surveyed. Up here partially surveyed. And down here I know it's probably hard for you to read but it says unsurveyed. So that's why they did a HES here, they could go out into that unsurveyed territory adjoining surveyed territory and cut out the parcel that this person wanted to build their life on.

Here's another one, man this sure looks rectangular doesn't it? So what do we have here?

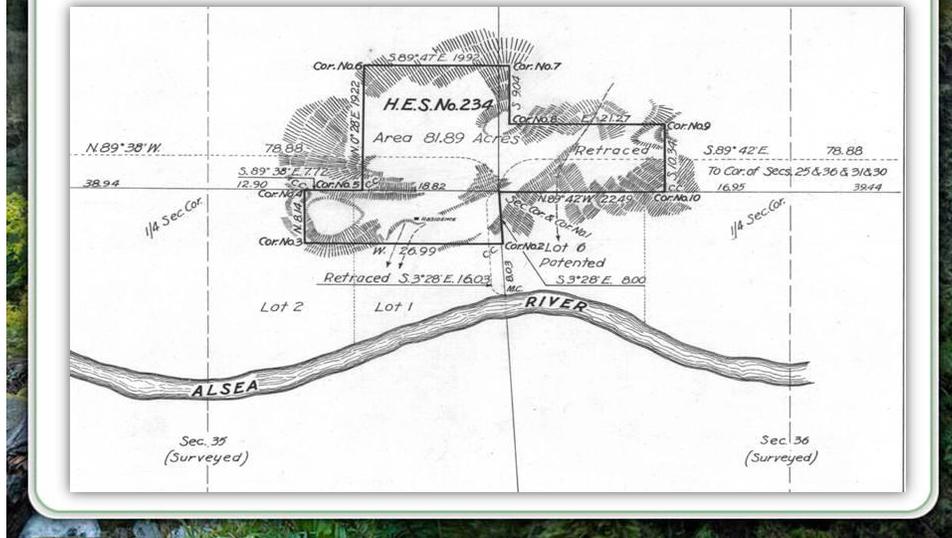
Rectangular?



We have, well obviously we got some section lines that have already been run in this area. But you look at this, here we have the section line here, but the HES line is over here. So they aren't coincident you know, they aren't the same. So you really got to be careful.

Now some of these corners down here, along this section line, when you calculate those or read the notes, you may find out that they really were intending to set aliquot corners. But they retraced the rectangular survey and have done all of the legal control to set an aliquot corner.

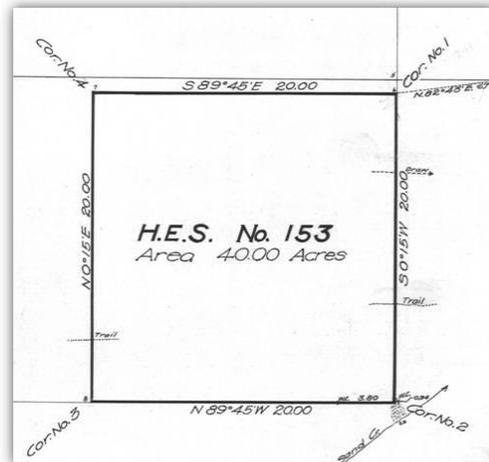
Rectangular?



Once again, you got to read these plats and understand what's going on with them. Man, this is great here look.

We got the perfect 40-acre parcel, how more rectangular can it be. As my parents always said you know grandpa's back 40. Well here if you look at it, we've got some lines over here, lines up here, so those were existing at the time. Those are section lines on this one. We've got this slightly diagonal tie here. So it's hard to tell from this, but my guess is it's in an unsurveyed area. They laid out a perfect 40-acre parcel, but it's probably not rectangular. Here, we get to see the rest of the story. So we're in a surveyed township up here, but look, it's wrapping around, or it's tucked in underneath HES 152.

Rectangular Right? The Perfect 40!



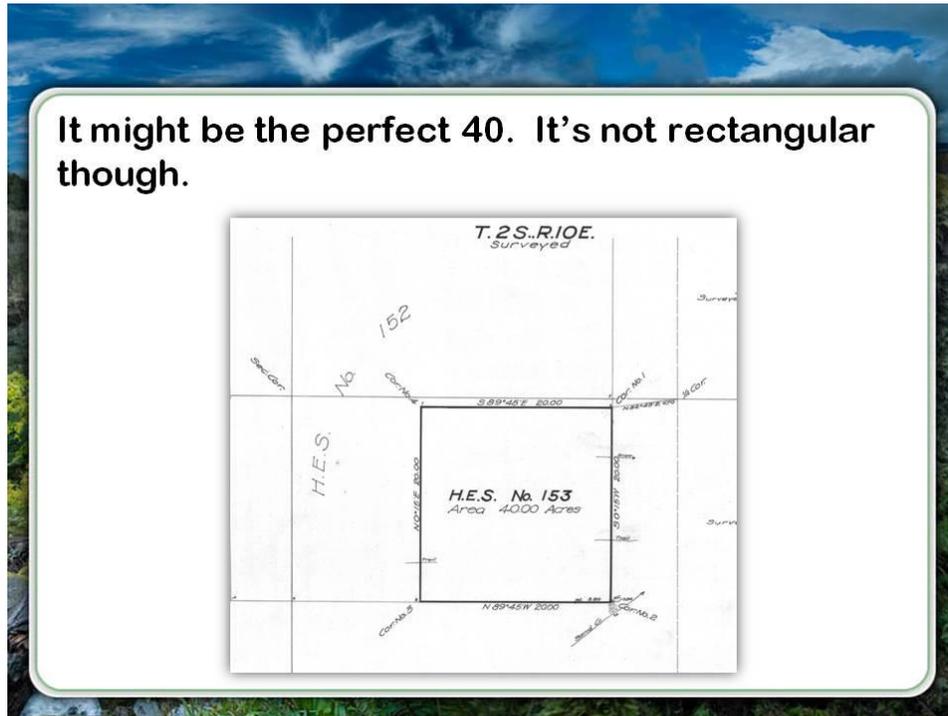
So 153 just picked up 40 acres, but even though it's all cardinal lines, it's not rectangular. So to wrap up this, is it aliquot or is it not? An HES survey, might be rectangular, it might not be rectangular, it might be partially rectangular.

Homestead Entry Surveys

- Might **be** rectangular.
- Might **not** be rectangular.
- Might be **partially** rectangular.
- Might **look** rectangular.
- Read the record, study the plat!

You got to bet some of these really look rectangular. Read the records, study the plat, if you have any questions, call somebody. Talk somebody, maybe the BILS or somebody at the state office.

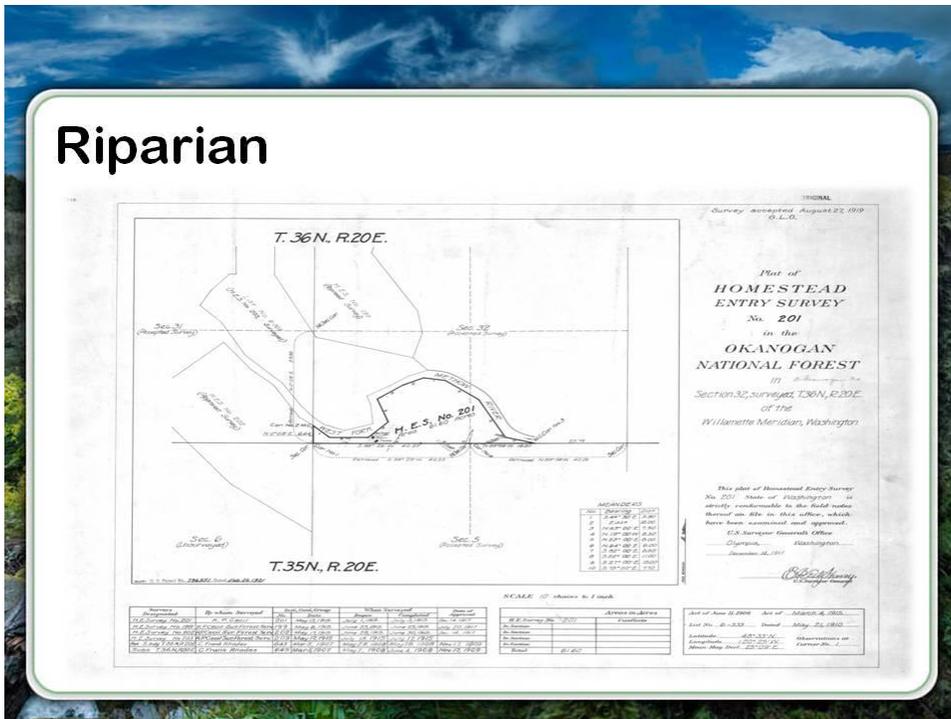
Get somebody's else's take on it, some of these are really not simple on the face of them to understand what's going on.



Riparian

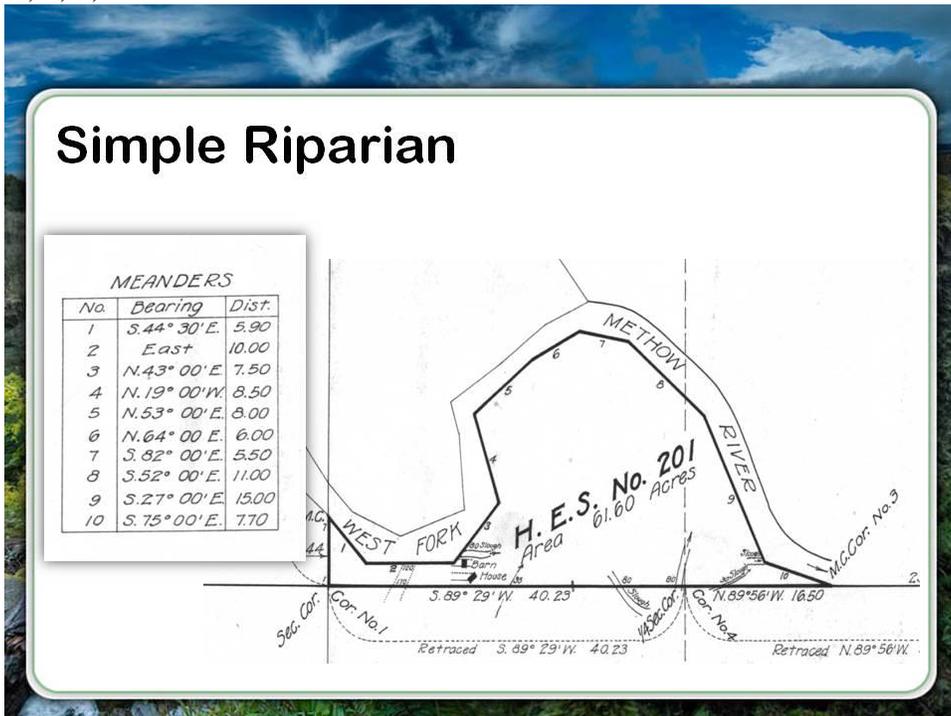
Let's look at some riparian issues. Here's a great little plat. We'll notice a few things on this, down here, we have a meander table, we'll see that better.

Riparian

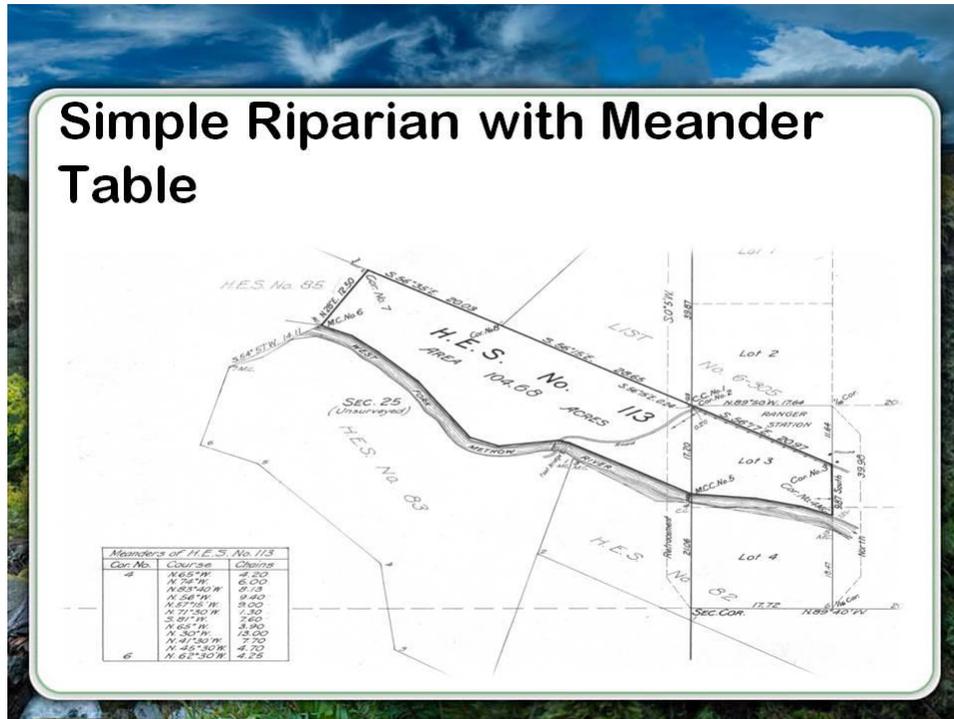


I'll just go to the next slide you'll see it better. So I moved it up over here now, the meander table, the meander table, if we look at this HES we've got corner number one here, we've got corner number two here, and then it goes through all of these courses along the Methow River to corner number three over here. Corner number four is this probably I think it's a quarter corner, and then it goes back to corner number one. So the monumented angle points on this Tract are going to be 1, 2, 3, and 4.

Simple Riparian

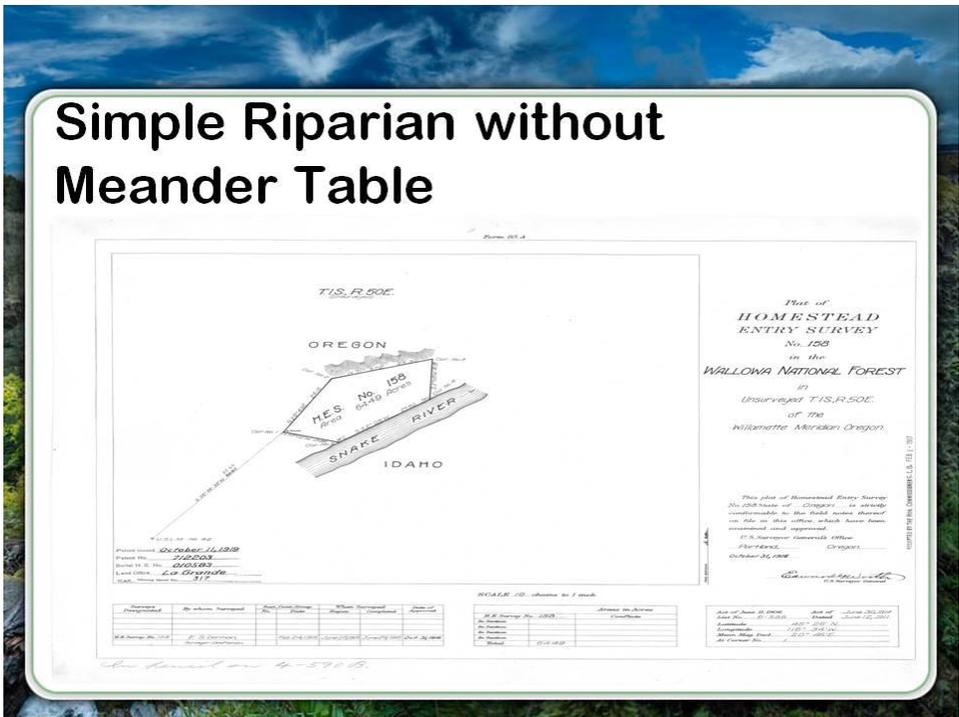


Along the river, those are not monumented. That's one of the distinctions you need to pay attention to when you're looking at your Tract trying to decide if it's riparian or non riparian in nature. Here's another one, let's see we've got a meandered table down here.



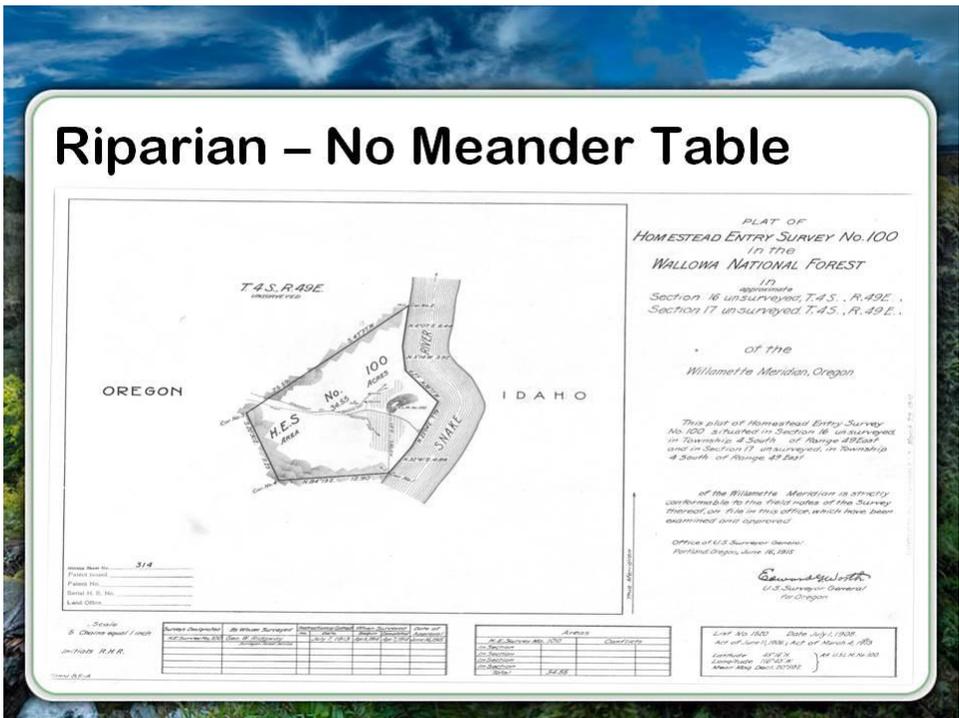
The courses between the meanders, that river. Again, we've got monumented angle points, along the section lines, or at the corners of the Tract. But each one of the sinuosity's along the river is not monumented. So again, that's the key to check to see is it riparian is it non riparian? This is a riparian HES. Here's one, if we look at the plat over here, this is kind of the area we'd expect to see a meander table in, and there is none.

Simple Riparian without Meander Table



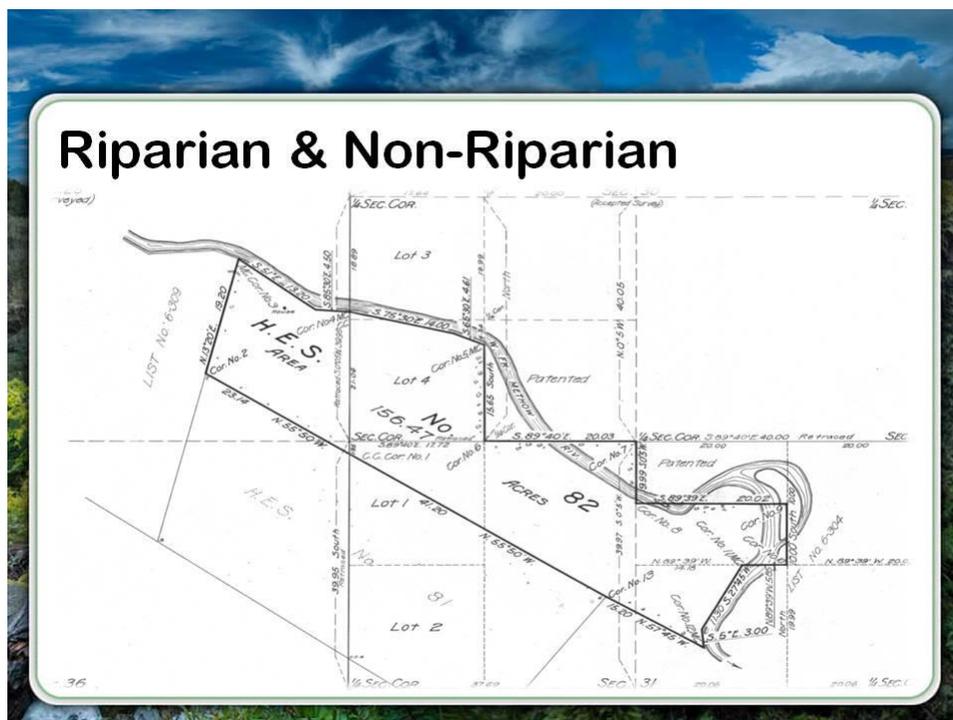
But if we look at the blow up over here, along the Snake River, this is down at Hell's Canyon, there's one bearing and distance between these HES corners. So they didn't need a meander table, they could put it all on the face of plat, that's fine. So the meander table doesn't make it riparian or non riparian, it's just one of those things, just one of those pieces of information you need to look at. Here's another one along the Snake River. Again, there's no meander table but on this one we have many courses, you can see they're labeled here, here, here.

Riparian – No Meander Table



So several courses along the river here, but the angle point numbers are down here corner number one, up here corner number two. That's a real key thing on these. So this is a meander of the river, and that's real important to understanding when we see, well this one is a great example. When we see monumented, every angle point is monumented.

Let me walk you through these down here. There's a monument, there's a corner, there's a corner, there's a corner, well that one wasn't set it was in the river. There's a corner down here and there's a corner over here. So this portion of this boundary, fixed and limited, it's fixed and limited by those monumented angle points. But, let me get rid of those. This segment is meandered and this segment up here is meandered. So here we have an HES that has both riparian and non riparian boundaries.



On the same HES. So that's the way it is. So to wrap up the riparian segment, you need to remember that an HES might be riparian, it might not be riparian, and it might be partially riparian. Read the plat, study the notes, and if every angle point is monumented it is probably non-riparian.

Homestead Entry Surveys

- Might **be** riparian.
- Might **not** be riparian.
- Might be **partially** riparian.
- Read the record, study the plat!
 - If every angle point is monumented, it is probably non-riparian.

“C” Tracts

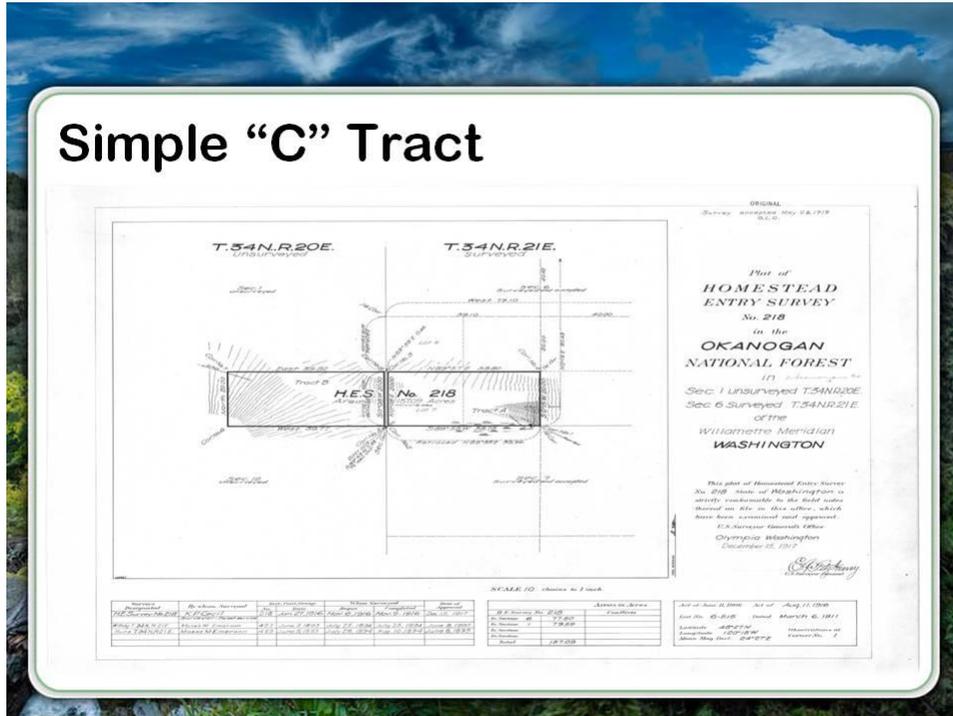
When a right-of-way is desired for a road, a telephone line, or other like improvement. The list Tract should contain an exception of a strip on which the right-of-way is to lie. This is from the Forest Service regulations.

“C” Tracts

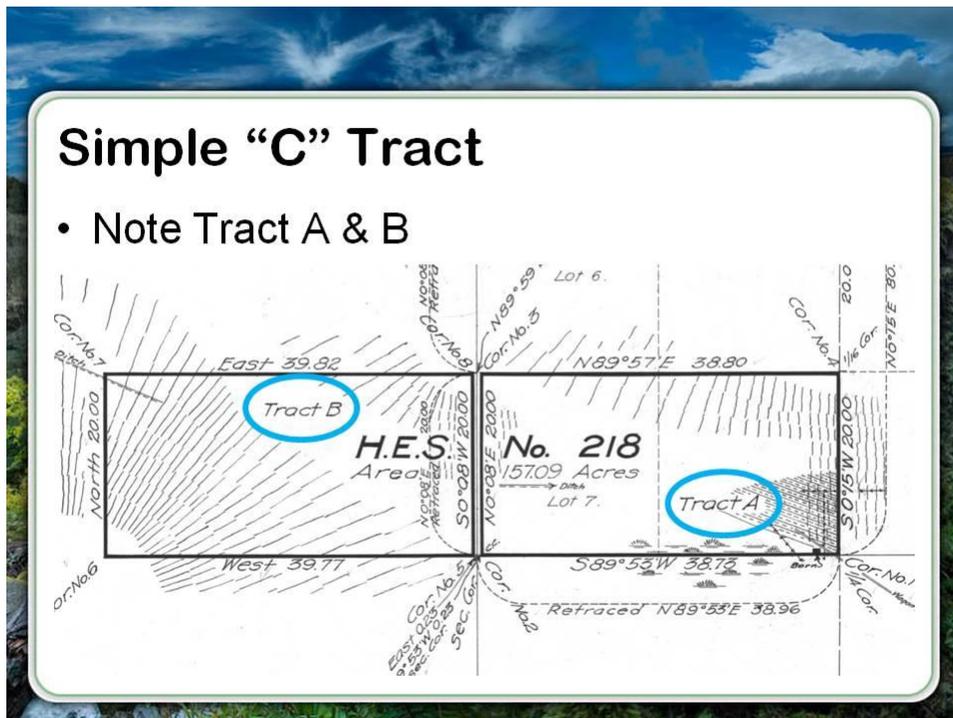
“When a right-of-way is desired for road, telephone line, or other like improvement...
...the list tract should contain an exception of the strip on which the right-of-way is to lie”

The National Forest Manual Regulations & Instructions Land Classification
1928

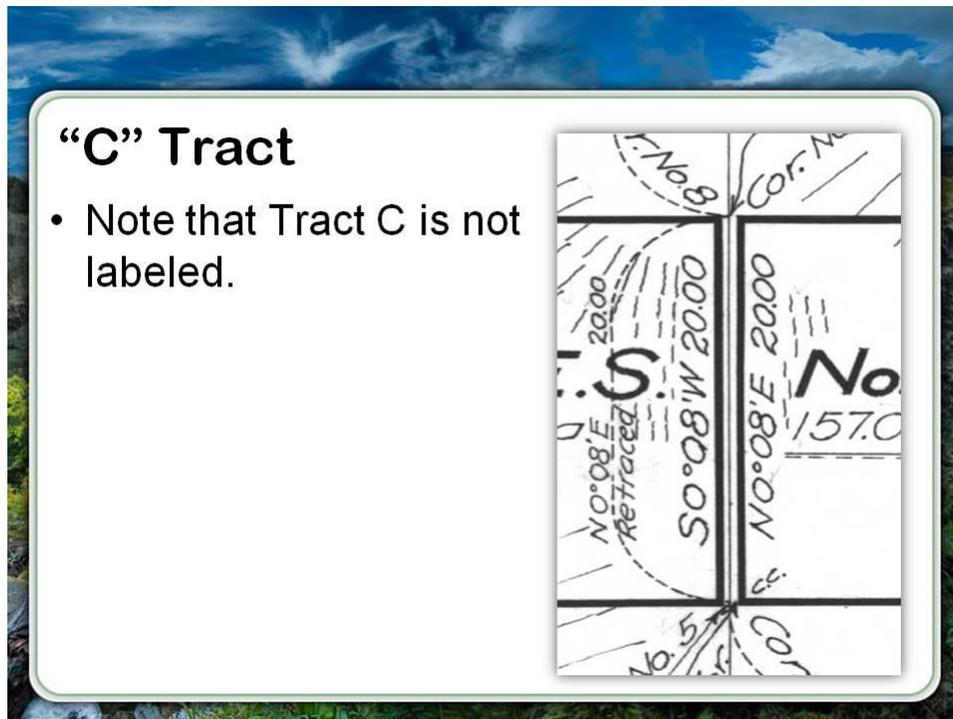
Let's look at a typical homestead entry survey. This happens to be 218, with a C Tract on it.



On this slide, we can see I circled Tract A and Tract B.



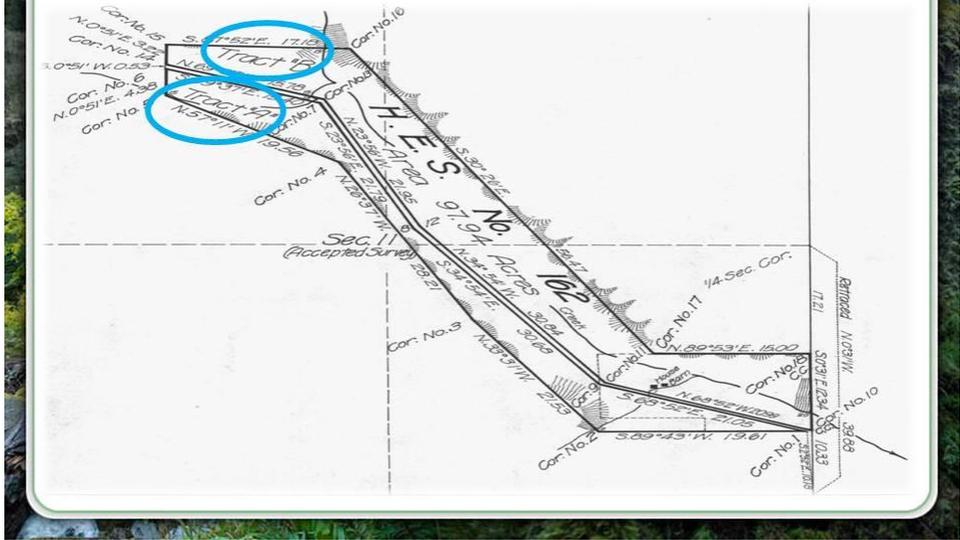
So when the patent went out, these were listed by, the patent would say, HES number 218, Tract A and Tract B. The implication there, is that there is a C Tract, now when we blow up this area and look at this little strip of land between A and B, it is not included in either A or B.



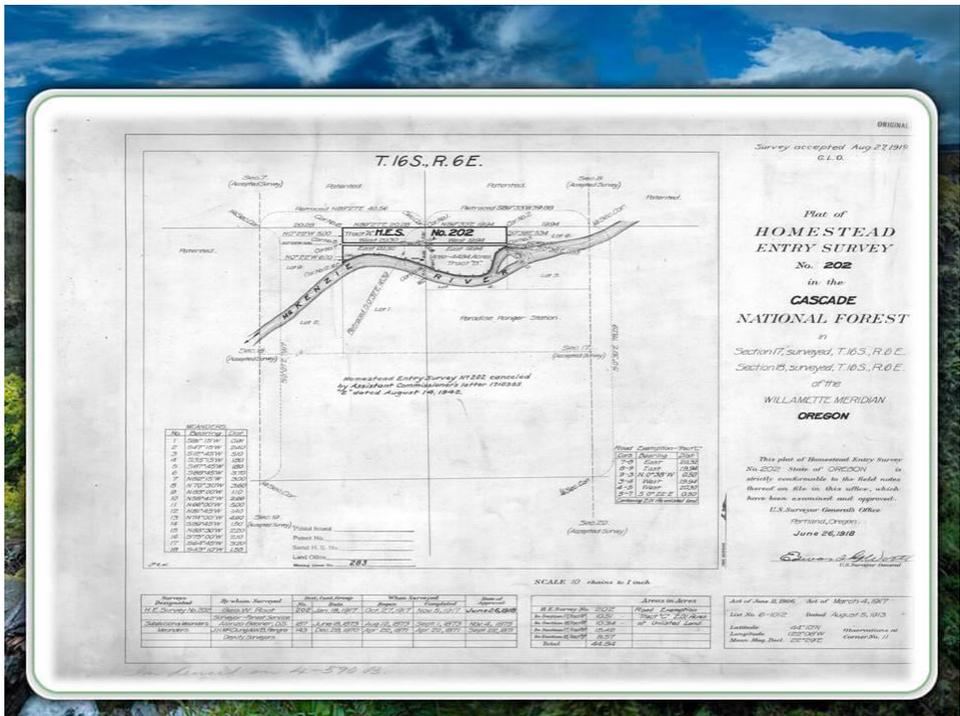
This is reserved public domain, it is not part of Tract A or B was never included in what was patented. On this particular plat, the C Tract is not labeled, that’s fairly common. We see that quite a bit.

Let’s look at another one. Here we have HES 162, and I’ve circled Tract A and Tract B, and you can see that there’s a road essentially a road what we would think of as a road right-of-way, going up through the middle.

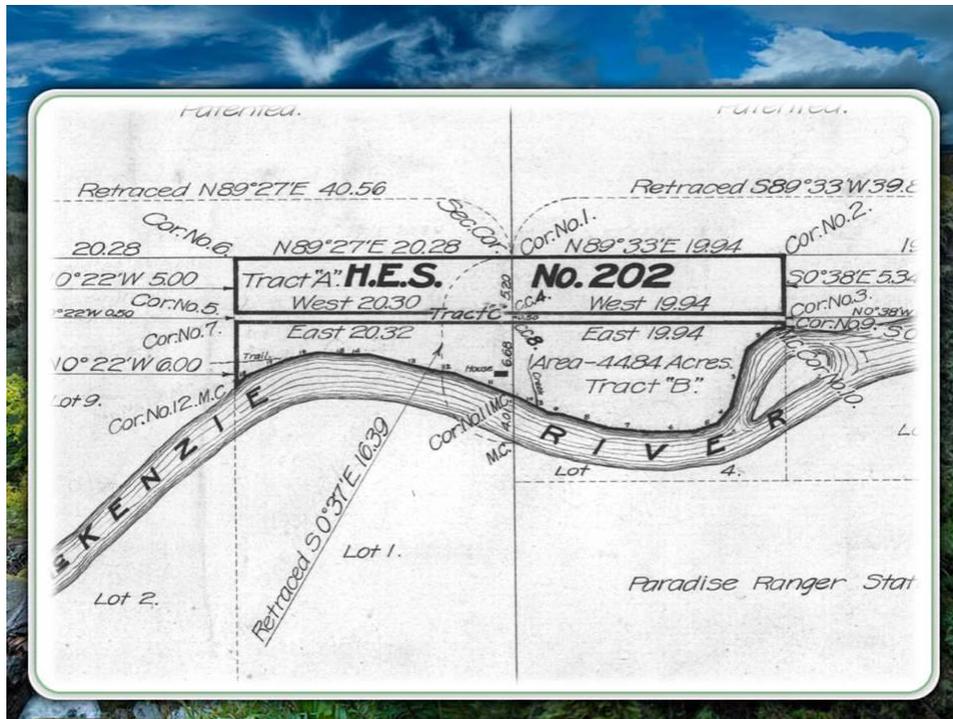
Labeled Tract A & B



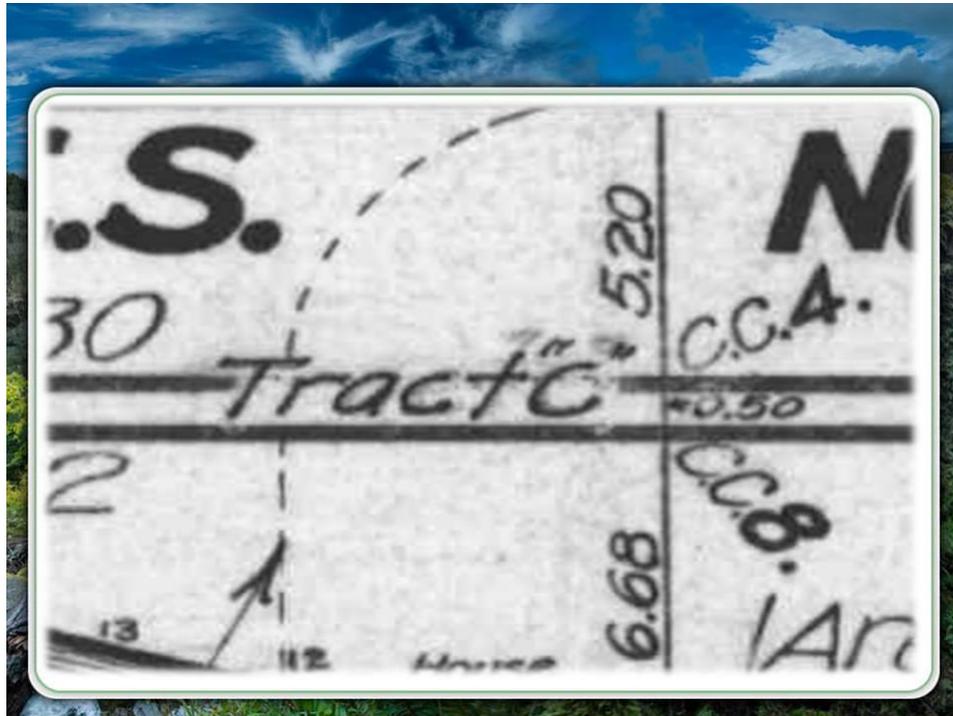
I've told you that lots of these are valley bottoms, so they needed to protect access to the rest of the National Forest up behind it. Lots of these have become county roads in later years. There's just, there's all sorts of things about these C tracts that we deal with.



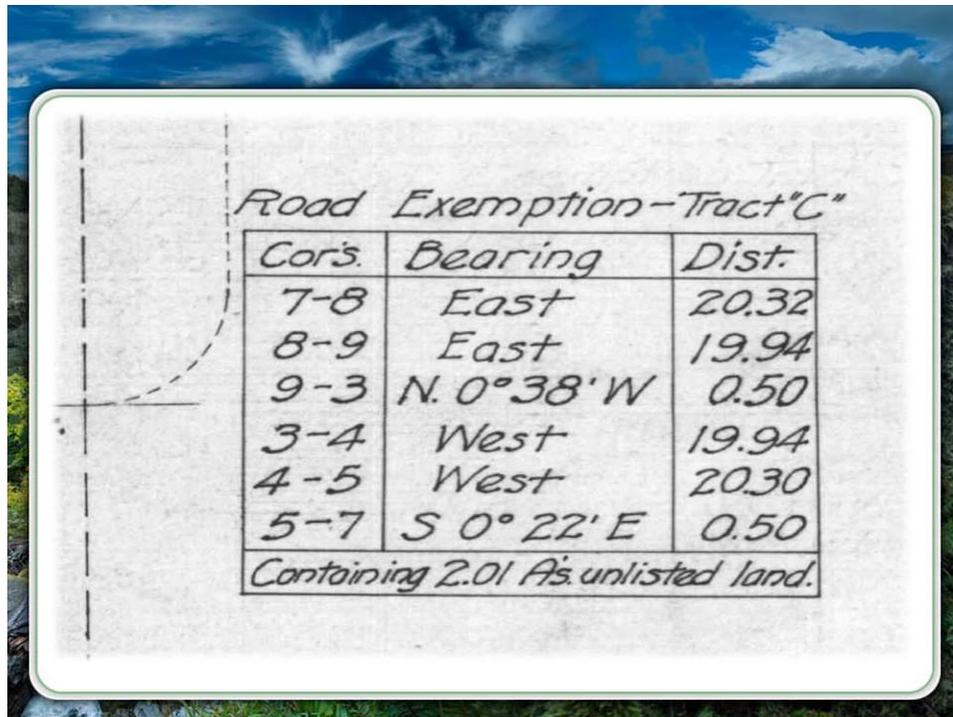
Here's another one, let's take a closer look at that.



On this one, we clearly see, here I'll go to my next slide. Here, you can clearly see they labeled it Tract C.

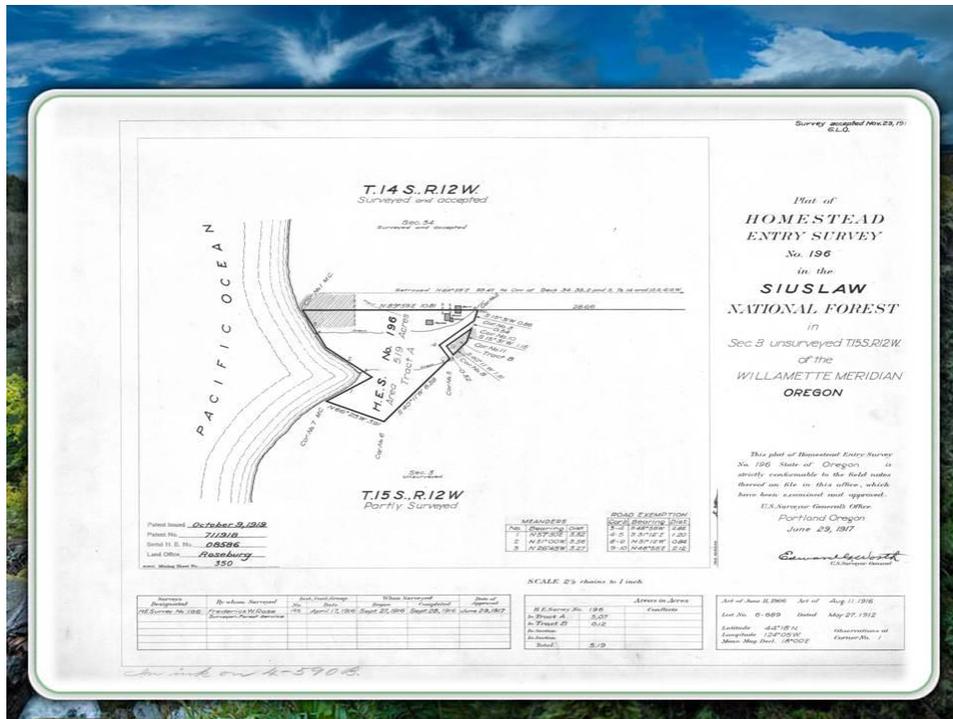


There's also a table on this plat just like we saw for the meanders, but here's a table of the road exemption, Tract C containing 2.01 acres unlisted.

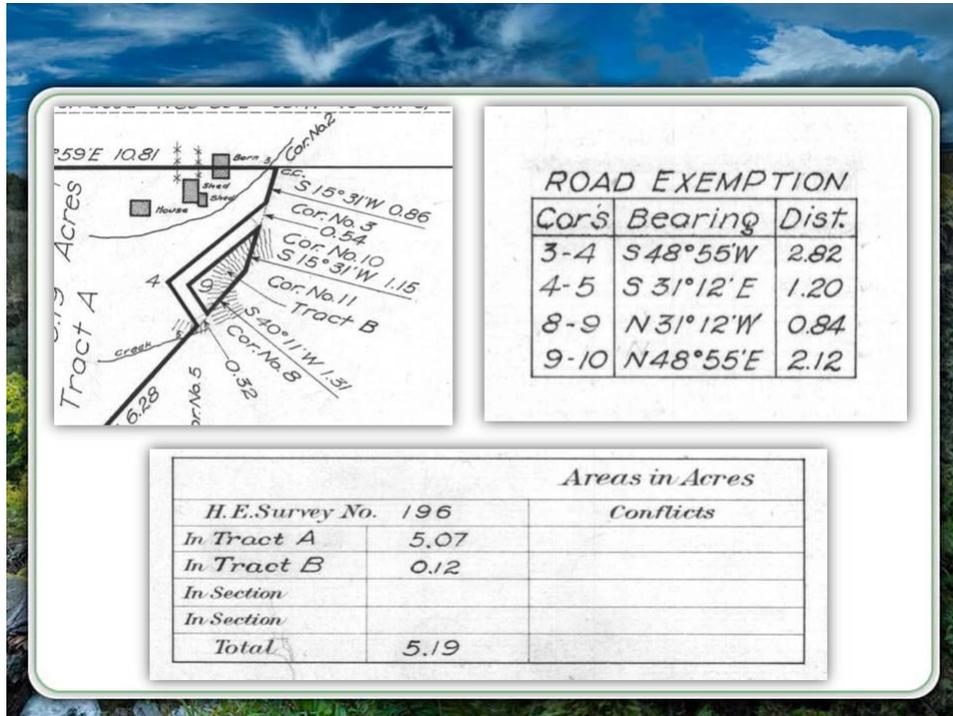


Down here, unlisted, that's really important, you need to clearly understand these were not part of the Tract. Lots of land owners have never paid attention to what their title said, and as a forest land surveyor when I was out retracing these, marking and posting these, I always marked and posted those lands that were still public domain.

We would pursue timber trust passes if the landowner had cut through there and taken the people's property, or the timber off the people's property. Here we have one out of HES up against the Oregon Coast, I'll go to some details of that.

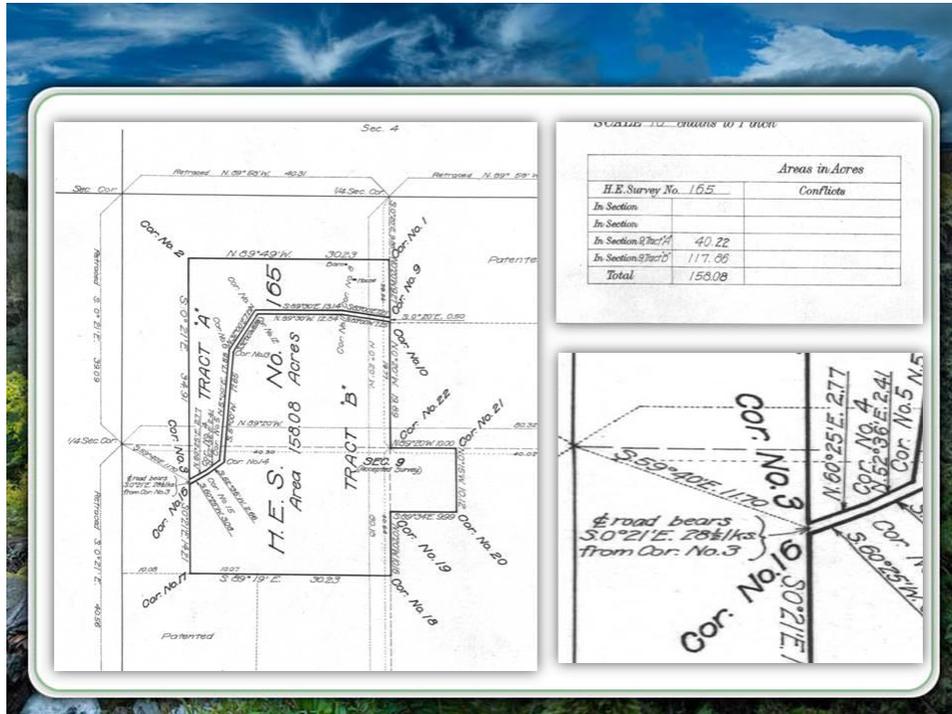


Up here, we have where the road exemption is, this little area up here. We have a table once again, with the bearings and distances, the road exemption.



Down here in the acreage table on this particular plat, they didn't show an exception for the C Tract. But they do list Tract A and Tract B. This is pretty common, this is pretty normal in HES'.

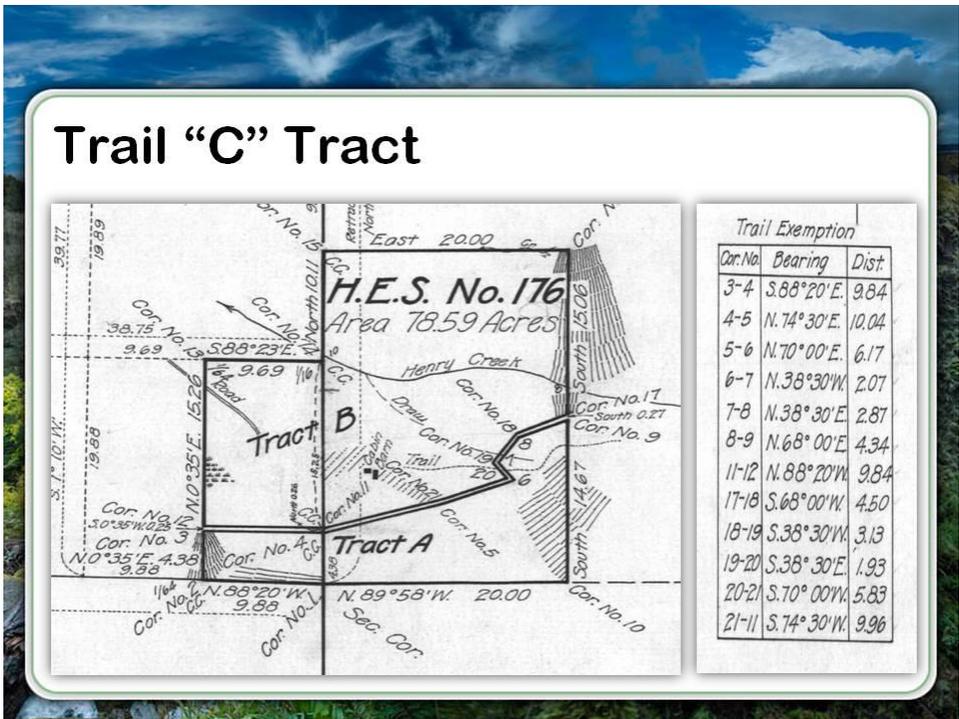
Now, I know that I've been referring to these as C tracts, because that's what we in the federal government call them. Some of them aren't listed but that's how it is. Part of this whole course is to help you learn how to speak like we speak. Here's HES 165 and we've got a table with the acreage over here.



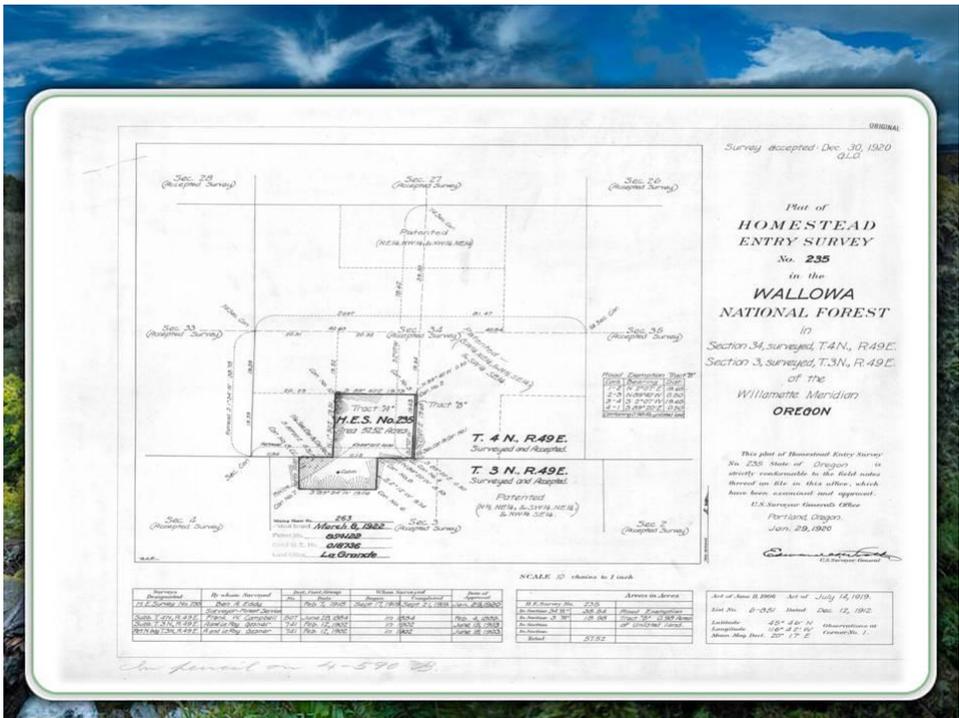
You can see down here, that they've actually given distances to the center of the road. This is pretty unusual. Most of the time they just give distances across the C tracts. In this particular one, well we'll come back and talk about it later. But there is a county road that goes up this C Tract. That's lead to some other interesting experiences for those land owners.

Now we said that C tracts can be for many different purposes. What I want to point out on this slide is that this is a trail exemption.

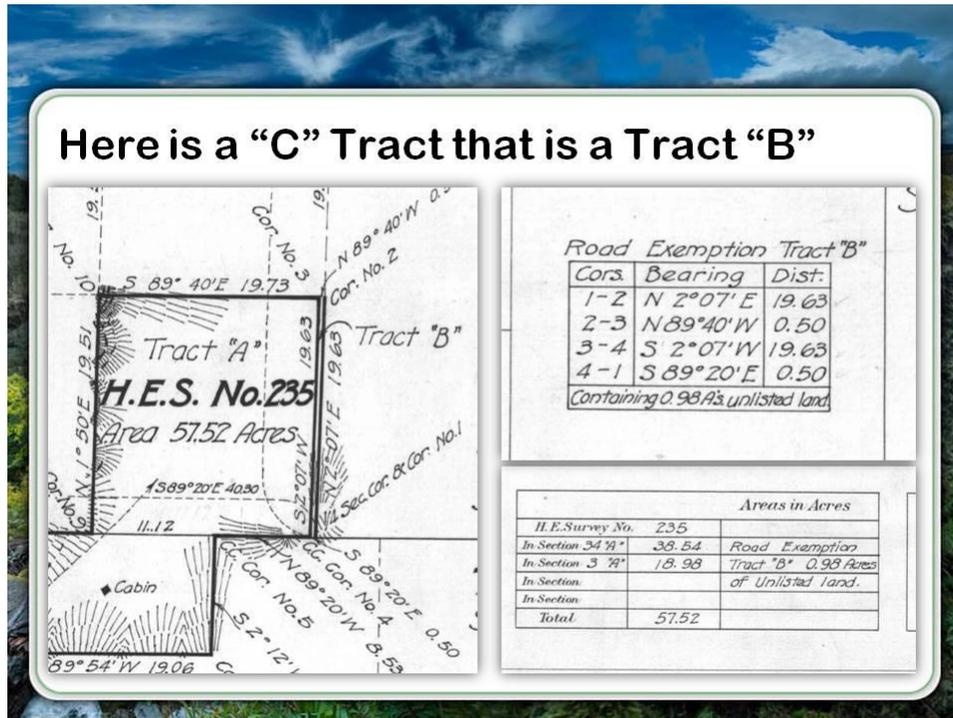
Trail "C" Tract



So it didn't have to be a road, lots of time trails in these remote areas are just as important as road access. So here we have Tract A and Tract B, and the C Tract separates both of them. Tract A and Tract B touch at no locations, they are completely separated. Here's an HES. Look at this we've got Tract A, over here is listed Tract B.

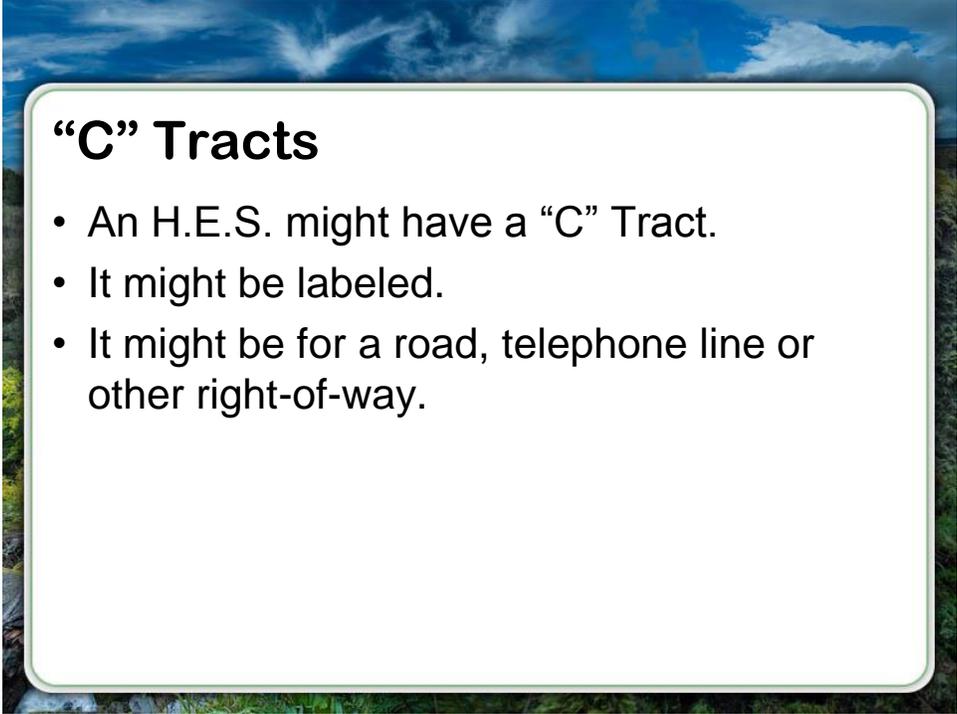


Now this is what we referred to we called these C tracts, but it's actually labeled Tract B, because on this particular plat, that reservation well it's not a reservation.



You got to keep your mind clear. This is just reserved public domain, it was never listed, there was never any interest by the claimant in these areas. So in this case, it runs up along side the national forest, want to make sure you keep that access. So it's the second Tract so it's called Tract B. down here in the acreage table we can see that they've listed road exemption, which really is mis-numbered because remember it's not an exemption, it was never part of the Tract, but that's what they called them. Road exemption Tract B, nearly an acre of unlisted land.

So C tracts, an HES might have a C Tract, it might be labeled, it might be there for road, or telephone, or other right-of-way purpose. They may not have a C Tract.



“C” Tracts

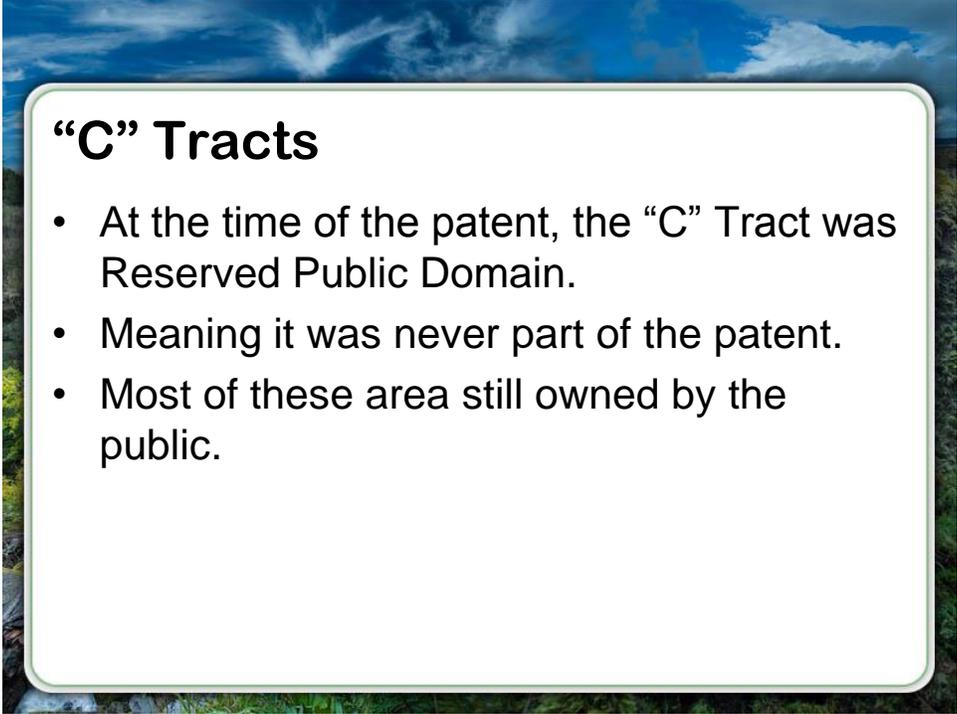
- An H.E.S. might have a “C” Tract.
- It might be labeled.
- It might be for a road, telephone line or other right-of-way.

I want to tell you a couple stories about some HES C tracts, things that as a younger surveyor I didn't understand and there were very perplexing to me. I've retraced many C tracts where there was a road, probably there has always been a road up the valley, but the C Tract wasn't located where the road was which just seemed odd to me. In one on the Siuslaw National Forest, the C Tract crossed the creek probably 8 or 9 times, in a place where you could have built a road completely on one side.

But it just kept wondering back and forth, well I realized later I was too ignorant at the time, I should have been looking up at the trees, I'm sure it was a telephone line, and if they ran it over the creek, they didn't have to clear the brush. I bet there were insulators up in those trees along the lines of that C Tract, so that they protected that telephone right-of-way, it wasn't for a road which is what I was thinking at the time.

Others out in eastern Oregon, where the C Tract will go straight across the desert, and then it comes to hill and it goes straight up the hill, right up the side of the hill. We never build a road there. But you got to remember that this day and age when these were new, they were doing horse and buggy, horse and wagon, these farmers. A wagon wheel can take no side hill pressure, so they would go straight up a hill, they'd wench it up or hook up extra teams to their wagon and pull it straight up the hill.

So some of them were built for the mode of transportation the day, which doesn't fit our needs now. There's another issue I need to talk about in C tracts, and that's the Forest Service has a law called the Small Tracts Act, and you BLM guys, this is different then the BLM's Small Tract Act.

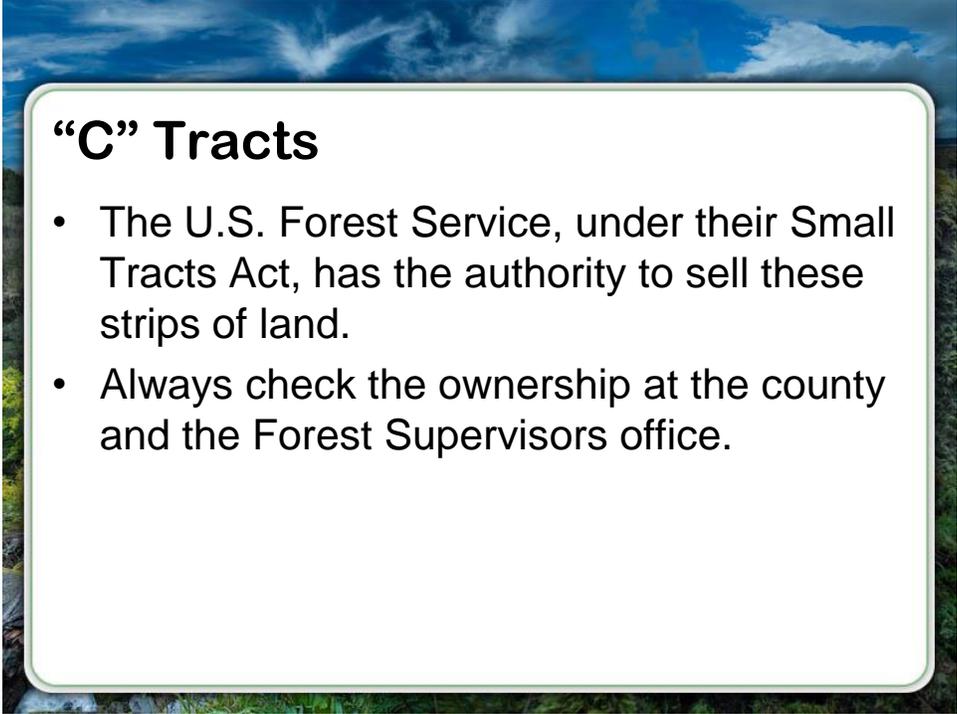


“C” Tracts

- At the time of the patent, the “C” Tract was Reserved Public Domain.
- Meaning it was never part of the patent.
- Most of these area still owned by the public.

But in the Forest Service these C tracts are specifically included in one category and the Forest Service has discretionary power to sell these typically to the adjoining landowner. So when you're doing research for homestead entry surveys, you need to double-check that, well let me go to my next slide.

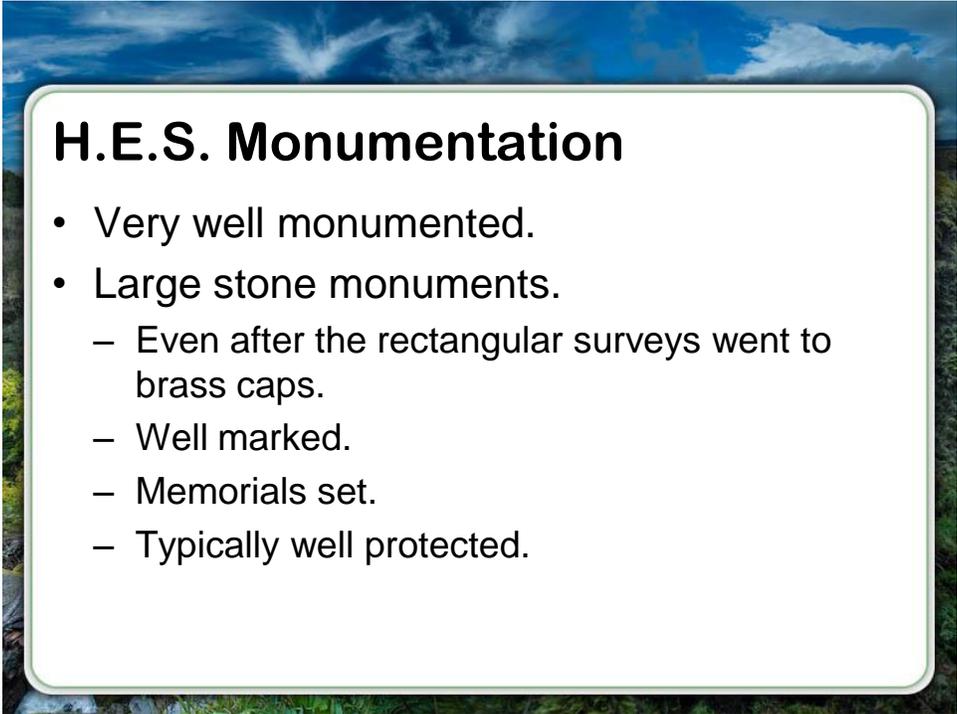
At the time of the patent, these were reserved public domain, meaning it was never part of the patent. Many of these are still reserved public domain. Here I'm catching up with what I've already talked about, the Forest Service and the Small Tracts Act, has the authority to sell these strips of land so check the ownership, you better check with the county, you better check with the Forest Supervisors Office, and probably in addition to the BLM Master Title Plat. Before you surveyed these. Make sure you know who owns them now. The Forest Service has sold some of these, but there are a lot of them that are still reserved national forest land.



“C” Tracts

- The U.S. Forest Service, under their Small Tracts Act, has the authority to sell these strips of land.
- Always check the ownership at the county and the Forest Supervisors office.

Next, we're going to go to monumentation of homestead entry surveys. When you retrace, if you ever get the chance to retrace, these are great surveys, these are very well monumented. I don't spend a lot of time talking about how to restore lost corners in HES', cause frankly my experiences there are very seldom lost corners on HES'.



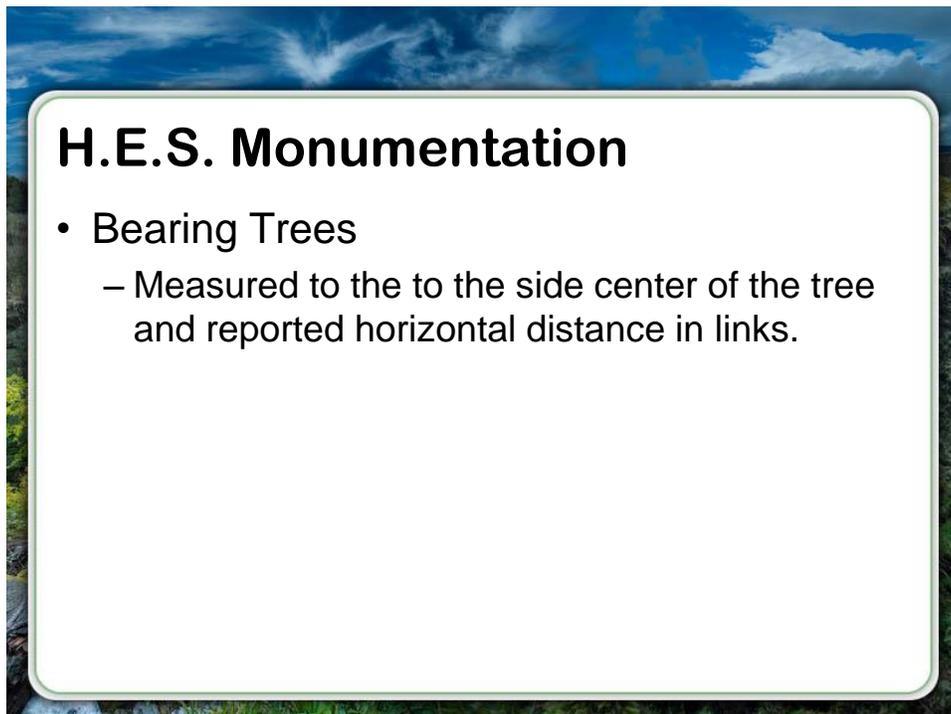
H.E.S. Monumentation

- Very well monumented.
- Large stone monuments.
 - Even after the rectangular surveys went to brass caps.
 - Well marked.
 - Memorials set.
 - Typically well protected.

They are monumented with large stones, and they are well marked. Even after the rectangular surveys went to brass caps, most, at least in my experience, most of the homestead entry surveys were marked with stones. Well marked as I said. Lots of these they set a corner for the listing survey, they marked a stone for the corner of the listing survey.

When I went to P3 the advanced cadastral school back in 1983, this part, this HES course was taught by Marshall Fulkerson, who'd retrace a lot of HES' in northern Idaho and he said it was very common to find when he dug out the marked HES corner that on the other end of the stone, was the listing corner marks. So when they went out to do their final survey, they didn't look for another monument, they just looked for the monument that was there, turned it over, and marked it down for the homestead entry survey. That makes a lot of sense why reinvent the wheel.

Now we're going to go to memorials, and I'm going to show you over here on the elmo, a memorial stone. This is, it'll probably go out of focus a little bit but I just want to give you an idea of the size of it. This is a real standard memorial stone for a homestead entry survey. As you can see, there's a cross chiseled in the top of this. Now I know most of you guys are good surveyors and know the rules, I should not have this memorial stone in the office with me. I've got to tell you I didn't find this one in the field. When I went to, well one of the national forests that shall remain nameless at this point. When I got there, this was in the office. So somebody had removed it from a corner position when they did the remonumentation but this is really normal.



Once while I was on the Wilhile Whitman we had a contractor retracing homestead entry survey, and he said he couldn't find a particular corner. We told him "man, you need to really look for it, cause the chances that it's really completely gone, we just didn't believe it." This happened to

be out in a sagebrush flattened kind of area, and the HES was doing five chains north and east stair steps.

In the office I just calculated bearing and distance from one of the nearest found corners. My partner and I when the contractor hadn't found it, we said man, we are going to go out and we are going to look for it.

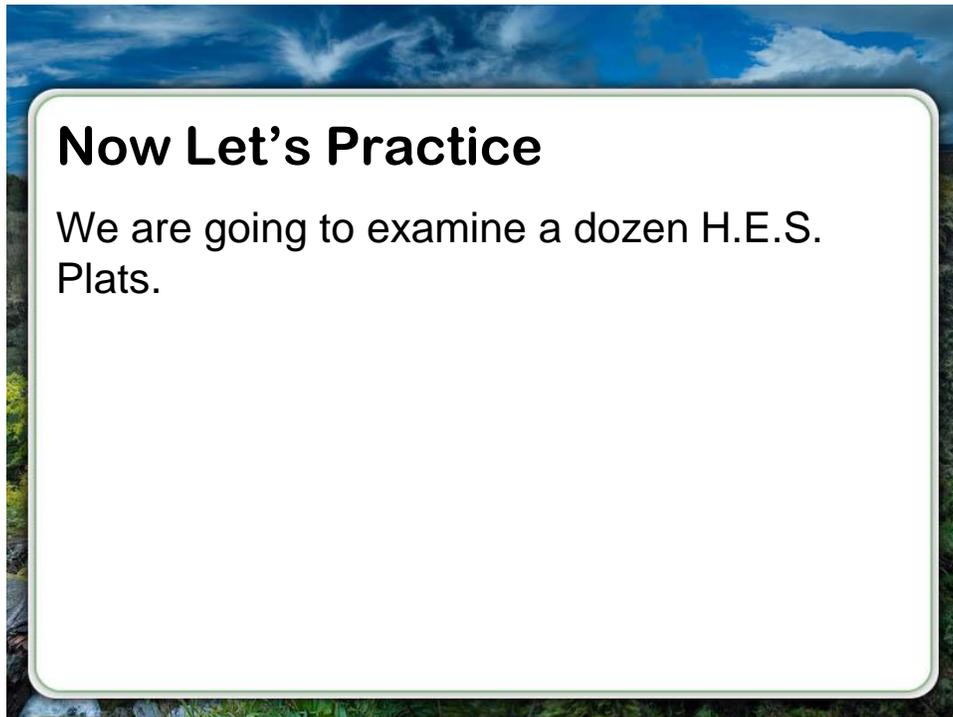
I calculated bearing and distance we made a move from his nearest traverse point. It took us four hours to drive from the office down there. We dug for about five minutes, find the memorial stone, and then marked it and drove back to the office, left it there so the contractor could find it.

Like I said these HES' are very well monumented, they almost always have memorials on them and most of the time you are going to find them. Another thing about homestead entry surveys because one person specifically was interested in that parcel of the land. Typically they've been held by families for a very long time. That's just the normal experience with these parcels. The corners have been well protected, they had a lot of personal interest in them and they weren't going to allow those corners to be disturbed.

And these non-rectangular surveys, there are some differences on how bearing trees were measured, so let me touch on what the instructions were on these homestead entry surveys. You were to measure to the side center of the tree, report your distance horizontally, and typically, they were reported in links just like in the rest of the rectangular survey system. Next, we are going to go to Linda Smith to tell us a story about retracing a real HES out in the ground.

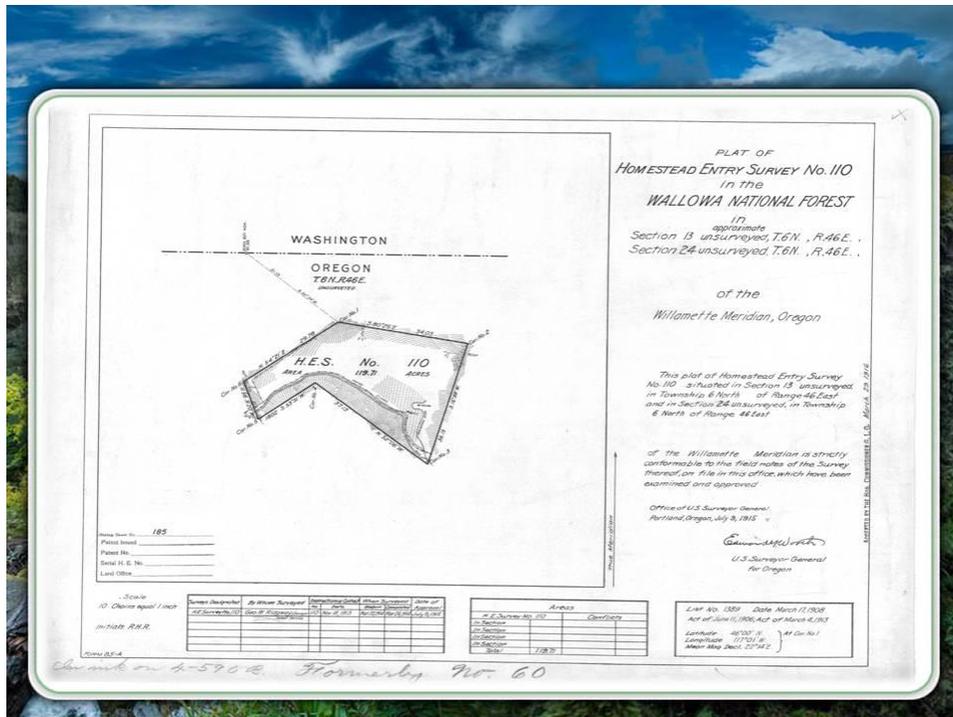
Homestead Entry Surveys, Part 2

Now we're going to start an exercise where we're going to take a look at a whole pile of HES plats and dig out some interesting details and some things that you may not have seen before or noticed.



Linda and I will do the first three together just to give you an example of the kinds of information we want you to be looking at and figuring out on these plats. All of the HES Plats in this section can be found at the end of this section.

So Linda lets talk about HES 110, this is an Oregon plat.



The first thing I think we'll talk about is on the very bottom of this plat you can see in pencil it says formerly number 60. You know something happened in their serialization of these plats cause they had to write in and get a number for each HES survey. It probably got assigned in two different jobs, accidentally or something happened. They had to change the number so they did.

One other thing that I noticed too is this tie to the state boundary monument.

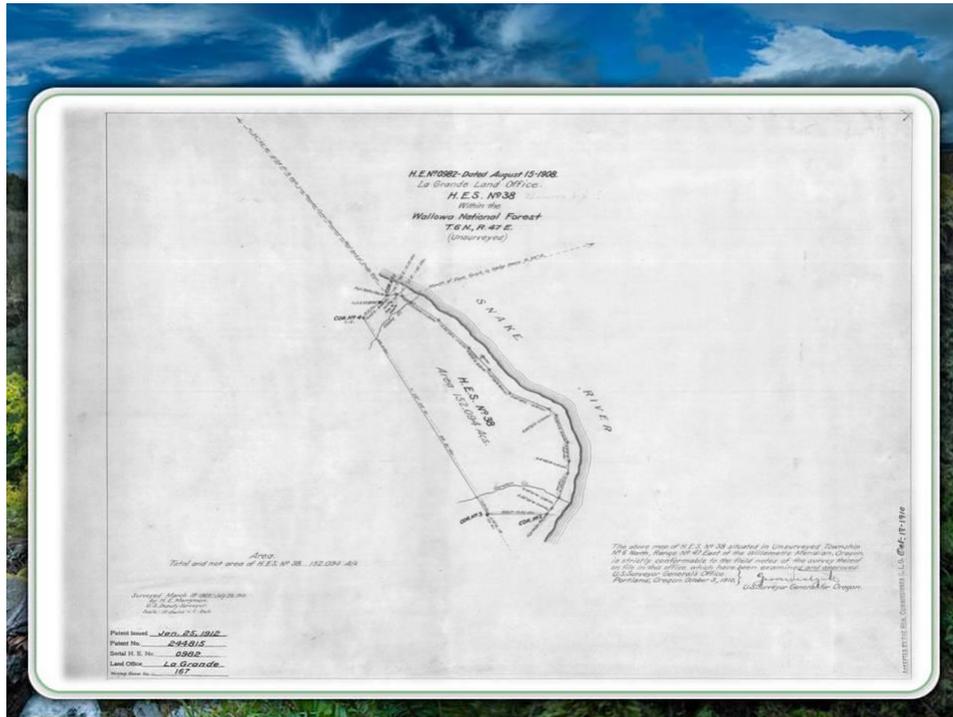
Yeah, their geographic location tie essentially, is up there to state boundary monument looks like 91.55. That's pretty unique; you don't see that very often. That's a 30-chain tie, 31 chains out there. There's another thing that I've noticed about this plat. There's a road running through it, but it could have been a county road or something that goes through and through so it's not just going up to the house but there's no C-Tract. Well, that's the way this one was done. Anything else Linda that you've noticed about this?

Well it probably was an earlier homestead also because of the lower number. I know lots of numbers are up there in the thousands in some states. So it was one that was probably done earlier on.

If we look at the power point slide we can see we have pretty much a normal GLO plat. This looks like a GLO plat. We've got the title block and other things, so that's pretty normal. In the elmo, let's zoom in to this westerly side here cause I thought this was real interesting. Where we have these fence lines. You see we've got fence lines that aren't out where the property boundary is.

It's one of those okay, that's what it is. So they had some ownership outside of their fence. That's what the survey was. Let's point out that the surveyor for this, George Ridgeway, Surveyor Forest Service, and that's pretty normal since these were on national forest lands. The Forest Land Surveyors at the time were doing those plats, or those surveys.

Now let's look at HES 38.



This is another Oregon plat. Well let's start with the 38, this is a very early HES survey. They started probably with 37 in Oregon so this would have been the second HES plat that was produced. There are some things here, well take a look at this whole right hand column, where's that title block? All of those other things that was see on every GLO plat. This is part of the history of the homestead entry surveys.

The Forest Surveyors were doing these surveys and they hadn't really worked out all of the kinks. It's just like you're riparian HES story you told us before where you drew the plat where it's a BLM plat. This is that same process 100 years ago. They just hadn't worked everything out. One thing I'd like to point out, well let's go to the elmo. Look at this, this is a pretty busy corner of the plat. We've got inside the HES, we've got a house, a shop, and a house. That's kind of interesting. We've got corner number 4 on the west side there. Then there's an LC below it. what do you think Linda?

I think that's probably the location corner also, it's a coincident with the listing location corner.

The listing corner right there with corner number 4, and then if we go northeast along that line we have USLM 38. Matches the HES number, that's pretty common on these isolated parcels, if

they needed a set a location. That's probably a high knob up there would be my guess. If I walked into that country I would go up to the high knob to be looking for that. He probably sat there sided corner number 1, flopped the scope and looked down at number 4, so there's a pretty good chance it'll be right on line there. What else is going on up there in that location?

Well, I noticed this reference to the high water mark. There's also meanders along the Snake River. It continues on to corner number 2 over here which also has a notation being on the high water mark.

Let's zoom in down there to corner number 2. I think we're thinking along the same lines. I think both of us for sure this is going to be a riparian boundary or that portion between corner number 1 and 2, we would treat it as a riparian boundary. If the rivers changed in a slow and imperceptible way, we would change this boundary to follow it.

I would agree. What's that notation below corner number 3? There's a bearing and distance there and it says location LOC, COR. Oh so that's the listing corner and that's a one foot? That's what it looks like, a one foot.

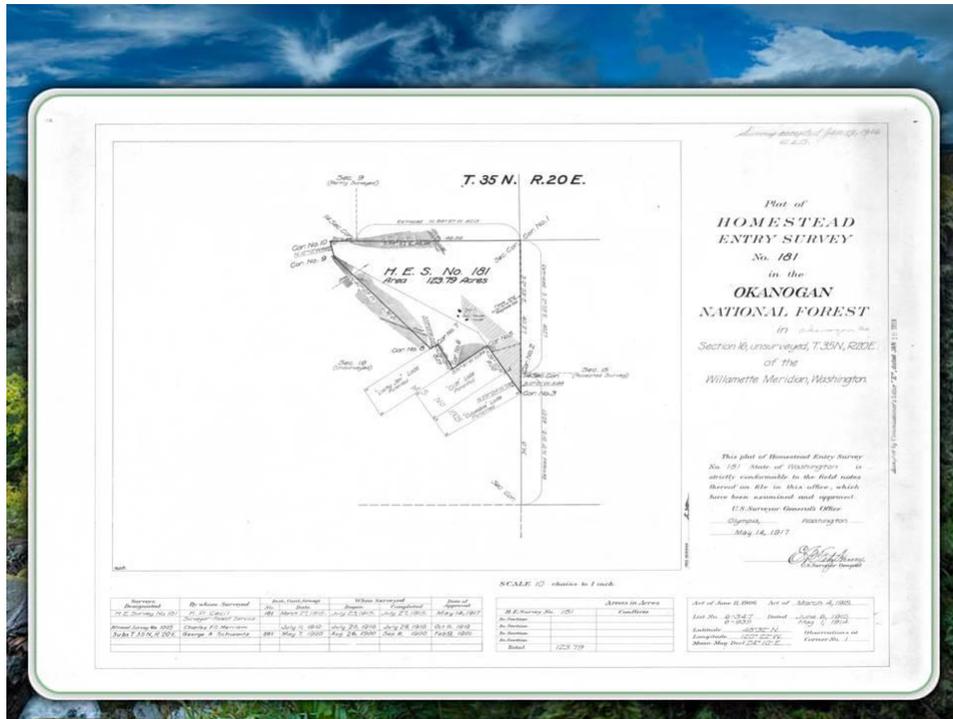
For some reason they didn't use the same location as the listing corner and so they gave us a bearing distance and we got a double set of corners there. I hate to do this to you Linda but half way up the meanders, there's a call there, or a little notation, but let's zoom in and take a look at that. Should get this set up on the elmo and then we'll take a look. See that boulder call?

A boulder, big enough that he gave us a chain distance along the line to that not monument but to that feature. Our second about this, in this day and age if you're going to go out and try to find it, this is early on, you would be boding down Hell's Canyon probably. I bet that boulder is a big boulder. It must have been for him to put it on the plat like that and in the notes, it's probably listed there.

I'm sure it's called in the notes. Which brings me to another point, we need you to zoom to the very lower left hand corner of this plat. We're going to take a look at who did this survey. Here we have a notation, surveyed March 18, 1909, through July 29, 1910, oh my god he had to go in there twice. That must have been an arduous trip. Anyway, H.E. Merryman, U.S. Deputy Surveyor, I thought that was very interesting.

Here's one that wasn't done in the Forest Service, it was a U.S. Deputy Surveyor, of course as a U.S. deputy surveyor that was nothing. But a contract surveyor at the time. Essentially, they didn't have state licenses in Oregon at that time but it would be equivalent to a state license surveyor. Anything, oh, you know there is something else, let's cut away from the elmo, yeah good, let's take a look at this tie that goes northwest off that corner number one. This is a tie that goes out a long ways 5,000 feet to the state line meander corner at the west bank of the Snake River. This is going up to the Oregon, Washington state line, and it's a meander corner of the west bank of the river and I bet that was a substantial monument up there.

Probably was, that's his tie to a location monument. As well as the USLM. Okay so I think that wraps up, anything else for HES 38 that you noticed? We'll, go back to the power point and slide to the next HES plat. This is HES 181, it's on the Okanogan National Forest in Washington.



What do we have here? Well first of all compared to that last one, this again looks like a normal GLO plat. So this was later in the era or system, they've gotten most of the kinks worked out.

I noticed that there's a dash line on the elmo here. See this dash line that has been highlighted. That doesn't really have any notation on it. But it appears to be maybe where the list survey ran.

Well I was curious when I first looked at this plat. So I went to the field notes and looked that up. This is actually two disparate list surveys that were combined to one HES that went out. Of course you wouldn't know that, we've got some indication cause we got that dash line. Your interest, when I researched it, two different lists went out as one survey. I haven't seen that before, certainly we see changes to the final list survey but I don't know that's how it went. How about these lines on the east and the north?

Well it looks like there was a previous public land survey system rectangular corners there, section line, section corners, and those were retraced and corner number 2 and corner number 3 were sat on that line. As well as well, look at the north up here. Corner number 10 looks like a projection of that. On the projection on that section line.

That's exactly what it was. They retraced from the section corner which is also corner number 1 to this HES. They went westerly along that line to the quarter corner and continued on the same bearing to set corner number 10 of the HES. So from the quarter corner to corner number 10, I don't think I'd call that a section line, you probably didn't have authority to do that. It's just

another tangent, another course of the HES. How about these objects, areas to the south and west of this claim where it kind of stair steps in there.

Those look like patented lode claims to me. That's what it says and maybe that was the reason for combining the homesteads was to not leave any small gaps in there or who knows the reason why they combined them but it's quite clear that there is probably common lines there between the homestead and the mineral surveys.

Like I said, I did read these set of notes and they did retrace those mineral surveys. No, no, no, they did. Corner number 8, that's the one, and I can't remember exactly what the notes said, did they just go down that called for a bearing. See he doesn't give a retracement for that side line of that lode claim. So you know that would be something you want to make sure there is no conflict between that lode and the HES.

Yes, cause it appears the lode is senior to the homesteads. Yeah, and I'm sure the lode was. Let's slide down, let's take a look at this fence area. Just cause I thought this was a real interesting notation on this plat right here. Back to elmo. It says, fence and telephone line. I just was wondering do you think that telephone line was run right there on the fence post?

Could have very well been, I can't believe they'd set two sets of posts. can't either, and the chance of them putting in tall utility poles that we're used to, I can't imagine up there at this time, this age. This is another one done by a Forest Land Surveyor, so that's pretty common. I don't see anything else that's real remarkable on this one. What do you think Linda?

I think that's about it. I did notice he did the survey in four days. It's one thing I've been looking at is how long did it really take these surveyors to complete these. This was a four day survey. We'll see some other indication on how long it really took them to do the work. It's kind of interesting. In four days, well in your experience, that was a fairly long survey or was that a quick survey?

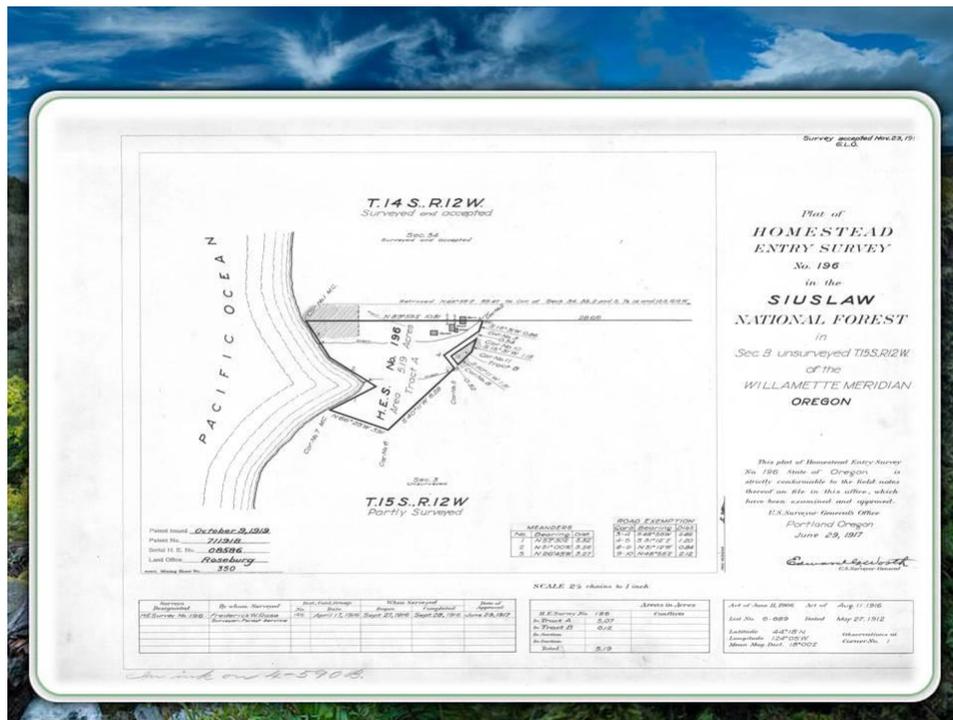
It depends upon how much work was involved, I'd say that was pretty long looking at this one. Yeah, that's my experience too. I'd say this was a pretty long survey. Must have been some tough going, and they had quite a bit of retracement going on too. We're going to switch plats here and at this point we're going to want you to stop the tape, I want you to pull out your copies of Oregon HES number 43, 196, and 202. Take a few minutes and look for these sorts of things on those and then we'll come back and Linda and I we'll talk about those.

I hope you had fun looking at those plats. Now Linda and I will give you some of our reactions. Man, it would be great if we had a call in show so you could tell us what you saw and we missed but we'll continue on, on this vain. Here we're looking at Oregon HES 43, and again the first thing that strikes me about this plat is it's very early.

It's interesting that you brought up names of entry men. One thing I always do when I'm retracing an HES, is I read the field crew at the back of the notes that lists the field crew and what their duties were. Many, many times the surveyor was using the entry men and maybe his oldest son as crew members. They might have chained and monumented, which I think is one of the reasons they are great to retrace cause if the landowner help set those monuments, you know he would protect them for his whole life and he probably as you used to say, he would beat it into his kids to protect those monuments.

Let's take a look at this tie down here to the location monument. What we see is, USLM established for HES 39. There are other HES' in this area, they aren't adjoining, this is only about a twenty chain tie. But you know there it is. There was a previous established monument, so we're going to tie this one reference to it. Essentially as we're building our land information system, we can relate where one HES is to another. Any other things that strike you on this plat? I think we've talked just about everything that's on here Roger.

Let's switch and we'll go up to HES 196 on the Siuslaw National Forest.



This is an Oregon Coast location and as a matter of fact on this plat you can see that the area west of this homestead is the Pacific Ocean. So what did you guys find out about this plat? Linda, how about your reactions.

Well, first of all, it appears there's a GLO survey common boundary with it a north marked line, it says he retraced to the corner of 34, 35, 2, and 3. also, I'm kind of wondering if that meander corner, corner number one is actually a common with the GLO survey or not. I would somewhat question that.

I used to work on this Forest and I think we look for that meander corner and it was the GLO meander corner. As I recall it was a 6-foot mound of stone. 6-foot base by 6-foot high. So that was a substantial corner. As long as we're right here, before we move on, what do you think of this cultivated field that looks like it just splits that HES line?

I'd say he's outside of his boundaries with his proving up work. That was my first reaction too having worked on National Forest and dealt with trespassing. Man, it looks like he's documenting that trespassing here, what's the date? 1917. Then I got to thinking that maybe this gentleman has another homestead entry of some kind north of here and it may be all of his field. That's one of those we'd have to do the research to understand that.

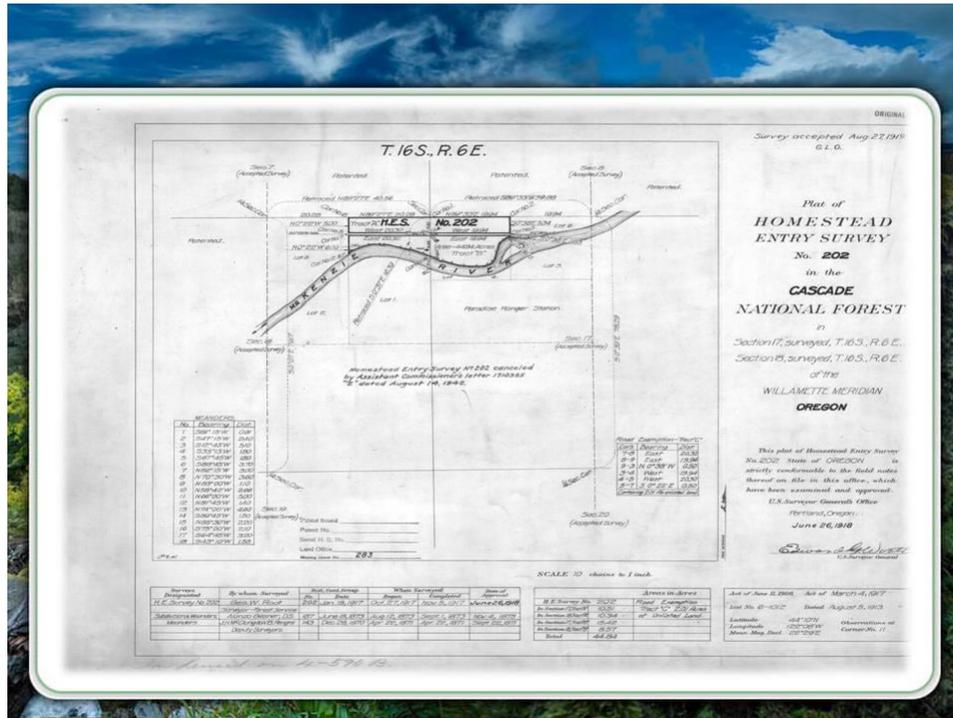
Yeah, I guess one other thing that I noticed is what appears to be an exemption strip over on the easterly side. It's not noted as a Tract C like we see in many other homesteads but it is an unpatented, unlisted portion, it looks like, of the homestead that creates a Tract A and a Tract B.

That Tract B was slightly off of our screen, lets slide the plat over a little bit and we'll take a look at that. I agree with you completely. This went out; if you read the patent, it would say Tract A and Tract B of HES 196. Isn't it interesting that they include it looks like a steep hillside, but that's what they did. Yeah, it was probably logical that a road could be built below that steep hillside.

Yeah, probably right along the base of the hill. That makes sense. Lets look down at, there's a meander table and a road exemption table on this plat. While Linda is sliding over to that. The road exemption table, it's not labeled a C Tract here, in our work we would come and refer to this as a C Tract even if it wasn't labeled but that's how it shows up on this plat. Then the meanders along the Pacific Ocean. Anything else about this plat? I guess one thing is it's quite a small homestead, 5.19 acres.

That's real small as far as homesteads go. Probably one of the smallest ones I've ever seen. Yeah, this one is pretty small and I hadn't thought about that. Makes me wonder about did he have adjoining property, and this was in an unsurveyed township. So the only way within a National Forest, so the only way to get it was to do an HES survey, a homestead entry survey. Great.

Lets see, well I guess it's time to switch to the next HES plat.



Here we have HES 202. This is another Oregon plat. We see the McKenzie River flowing through here. I thought this plat had some unique things offerings for us here. Yes, it does Roger. One thing I noticed right off the beginning is that it says homestead entry survey number 212 cancelled by assisting commissioners letter. It talks about the date 1942.

So this is a note that was definitely added much later cause it's a 1918 plat. But much later they went back and for some reason probably they didn't finish the homestead process or something. At some point they were cleaning up their records. Notice in the upper right hand portion of what we're looking at now, we have an area that is written in Paradise Ranger Station. That just reinforces that we're out on National Forest Land and that was probably withdrawn for administration purposes. Let's look up at that section line. So what's happened up here?

Well it looks to me like there's a senior GLO survey there. That was retraced from the quarter corner to section quarter corner. Of course the section corner is common with corner number one of the homestead. They also said what appears to be coincident with the 16th corner locations, corner number 6 and corner number 2.

So this is one of those. If we were out there retracing it, and we found those corner number 2 and corner number 6, we would probably, it would take a lot from me not to accept those as the 16th corner. He set them at the location that the 16th corner would be set. Even though he didn't call them that in the notes, it doesn't matter what they called them, that's what they are. What's that? The double set of lines halfway through this HES.

Looks like a Tract C. It says Tract C here. There was definitely an unlisted, un-patented, of course none of it went to patent anyway because it was cancelled. But the intent was to leave a road extensions from the railroad.

So even though this never went to patent, well I guess we should next talk about obviously meandered along the McKenzie River. We have got meander corners set on either side where the HES lines intersected the high water mark and then a whole set of courses and then we have a meander table on the plat.

Along with the table for the Tract C, the road exemption as it's labeled on this survey. but my point was, I was going to say that if you went out there and were working, we've got a ton of monuments out there like if you couldn't find the quarter corner on the north east side of this project. You know I sure would be looking at all of these other corners you know can I get myself back to where it was. You know collateral evidence.

Again, where you need to research just cause maybe you pulled all of the GLO notes, the rectangular notes in this area you really don't have all of the information for doing a resurvey of it. This survey may not show up in county records. It's kind of one of those things that's out there but may be difficult to even know that it exists since it did not go to patent.

Yeah, so another one, checking all of your sources and maybe chatting with the Forest Land Surveyor, you know to get clued in that there's something else to look for out there. This is another one done by the Forest Surveyor at the time. Anything else that you want to comment on this one?

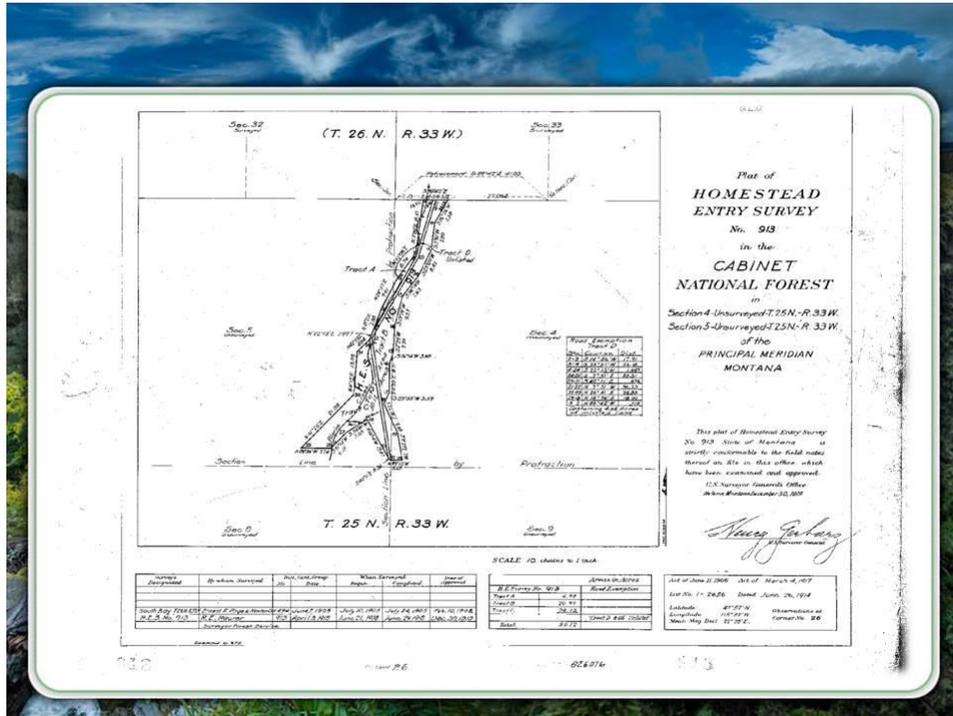
I guess one thing I do, I notice that they did set the MC, also on the section line and then some not on the section line especially corner number 11 is an MC that appears to be set on the section line between 17 and 18. Although, it didn't really tie this section or quarter corner to the south.

Isn't that interesting. Of course there's a possibility that the rectangular survey set those two meander corners north and south of the river, and he just tied it as he was going through. But he does give us a note, or distance to that meander corner south of the river so he probably measured that. You sure would want to look at his notes and read it carefully. But see to the left he's got retraced and he's got 1639 so he's retraced from the section corner to the meander corner south of the river. Yes, I see that.

Man, it's loaded with information, isn't it? Yes, there's a lot on there. Okay done with that one? I see some more green marks on your plat over there, what was that date approved? I guess I was looking at the rectangular survey was approved in 1875, but quite a bit later than the HES survey, that's quite a few years in there between, the two of them. So this was a pretty early rectangular survey I would say.

Having worked in that part of Oregon, that's a pretty normal rectangular survey date in this area. In this area we have that kind of relationship, in some places the rectangular surveys were just a few years before the HES' and sometimes they happened after the HES'. Cause you could go into non surveyed land to do an HES. So yeah, they're all interesting.

We're going to take another break and send you off to look at Montana, HES number 913, Washington, HES number 203, and then Montana 925, hope you enjoyed, take a look at those we'll be back in a few minutes and we'll discuss them with you, thank you. Let's debrief on this group of plats. We'll start with HES 913 on the Cabinet National Forest, this is up in the northwest corner of Montana.



Here on the power point slide, first thing I want to point out is the top sections to the north of here are surveyed, and the four sections below here are all unsurveyed. So that's why we're doing an HES, it's unsurveyed territory. Let's switch over to the elmo, and Linda can talk us through what's happening along this section line.

First it's interesting to know the section line between the section corner and the quarter corner was retraced. The corners that are set on that line are called cc's, one cc, two, and then 8 and then a 9. What I would question if I came in and retraced this survey is what if, do I even try to figure out if those closing corners are on the section line. Of course I'd retrace that section line and verify that they are. What if they aren't? the surveyor should consider those AM's and set corners on the true line or intersection of the section line.

Another argument might be that they actually were never closing corners, he did a full retracement of the line cause at the time remember closing corners at this time you only went up and did a side tie to the senior corner. Here he's retraced the senior corner so maybe it's a junior corner on a senior line. That's the other argument.

But for sure, this is a big caution, if you see this kind of thing in your survey you're going to want to retrace both of those senior corners so you at least know the relationship between the senior line and those monuments and then talk to the BLM, talk to the BILS, talk to the forest

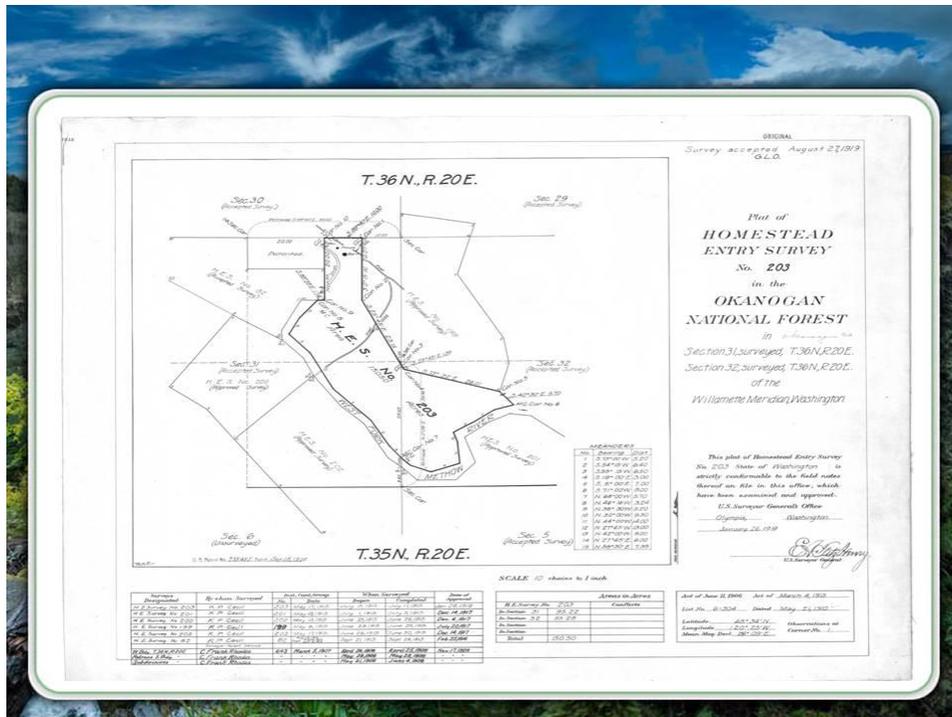
land surveyor, other learned professionals and make your decision on a case by case basis. But that's interesting, we have so many there because we have a C Tract that intersects that boundary. That's actually a D Tract Roger. A D Tract there I go I always call them C tracts but this one isn't it's a D Tract.

This homestead has a Tract A, Tract B, and Tract C that are a part of the homestead, a part of the listing. Oh now Linda, we missed some of that you're pointing to stuff we couldn't see. Tract A, Tract B, if you go farther south you'll get into Tract C. So A, B, C so again if you read the patent it would say HES, well it would say Tract A, B, and C of HES 913. Because D didn't go to patent, it's a road exemption of how it's listed on this one.

One thing I noticed about this, I think it would be a corner searchers delight, there's 31 corners out there. 31 corners. Yeah, as a matter of fact I've worked on this HES in the field. I wasn't retracing the HES at the time. What we were doing was we were dedicating to the county, a county road. We already had rights across the private land but we had to document where that roadway crossed the D Tract so that we could give the county the rights in those locations. It's one of those where criss cross back in forth several times. But that's what it took and there were a lot of corners out there and pretty easy to find. It was a piece of cake.

Let's see, says the Forest Surveyors did this one, so no surprise there. Let's move down and look at the acreage table. We haven't talked about this for a while. We'll get that, Linda will get that zoomed up for us. We'll take a look, I just wanted to point out that on the left hand side we've got Tract A and its acreage, B, and C. A total for the HES and then on the right hand side of that table, we've got the road exemption, and how many acres are included in the road exemption. So you know there they are, they're laying it out what's going to become private and what's going to remain a part of the national forest system in this case. Anything else on this one that pops out at you? Not that I can see Roger.

That was a pretty interesting case. Let's go ahead, we'll switch up to the next one. This is HES number 203, it's on the Okanogan national forest and this is an eastern Washington national forest area.



With quite a bit of settlement so we actually have looked at or will look at several HES' in this general area. So here we have HES 203. Man, this has got a lot of stuff going on with it. Linda, what are your thoughts about this plat?

Well first of all I noticed that there is an accepted rectangular survey to the north of this homestead and once again we have closing corners on a section line. The other looking at corner number 10, it looks as if it might be coincident with the 16th corner. Corner number 1 being the 64th corner because around, retrace the full section line and set those, add appropriate proportional positions.

That's real interesting and if we look at it, the retracement says 40.00 chains. At the top of that patent chunk, 20 chains. Next to are 10 chains and 10 chains. Just trusting HES' because I really trust HES'. I think that's what he found. I think that he was retracing a very accurate original survey and you know he might have been within a link or two, who knows but this is what he told us. Yeah, I also noticed that there is a river that goes through there and it appears that the HES is riparian all along there as it looks like it was meandered.

Yes. For instance, we have got MC corner number 7 CC. Now once again he has retraced a senior GLO line, rectangular line, and that meander corners is there. Chances are we really wouldn't treat it, well that's a difficult one, it's probably a meander corner, it's probably not a closing corner, we probably wouldn't make any adjustments on that meander corner. Either we would find it or reestablish it and just hold it there. What are your thoughts?

Yeah, I guess I would agree with you Roger, from what I know about river surveys it's probably a possibility we are not going find it anyway. But it being that close to, I think this is probably a major river but yeah, I would agree with that.

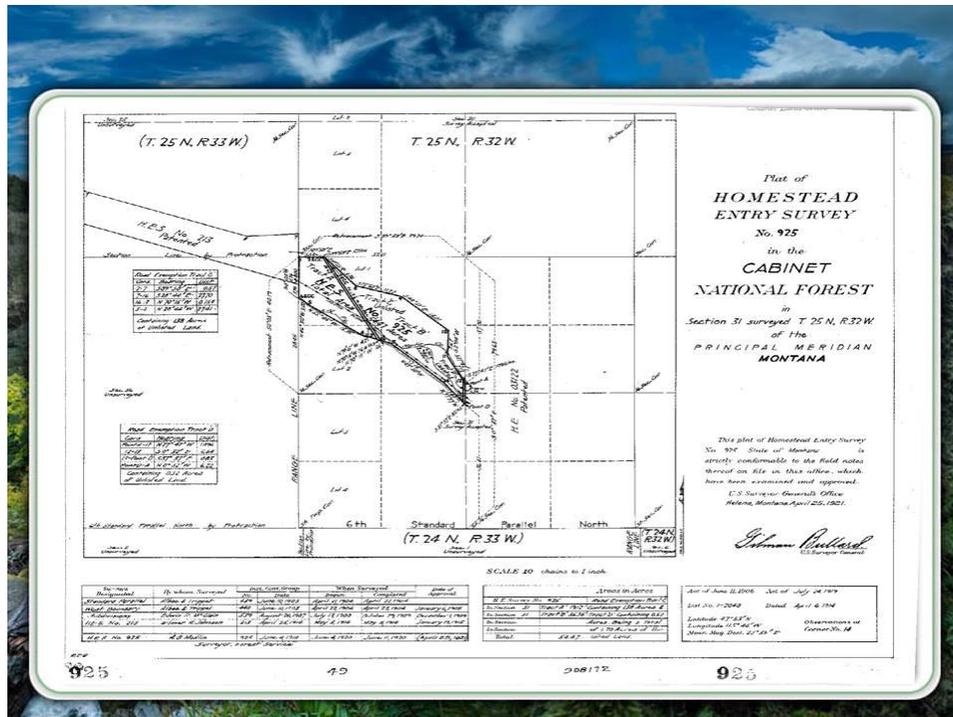
With it positioned right there, go up and take a look at this. We have got some other HES' in this area, and we got this dashed line across the river. I've looked at that on some other of these nearby HES plats. I think that was a low water ford on that, that road that came across the HES, yeah right there. But again, man wouldn't that have been a great place to have a C Tract. But they didn't do it, so if they didn't do it they didn't do it.

Yeah that's for sure. One thing I noticed was all of these other adjoining homesteads that had already been accepted. You can see this homestead is pretty much surrounded by other homesteads. Let me see if I can rattle off some of the numbers. We got 82, 199, 200, 202, 201 I missed in there. So all of those were already accepted surveys or approved surveys.

If you look in the corner, the information down there, K.P. Cecil, looks like he was the same surveyor for all of these.

Oh the forest surveyor did that whole batch up there didn't he? I wanted to go back up to that section line right by where it said that parcel was patented. Move back up there and take a look because that parcel was patented, it's probably for sure an aliquot part and then we come down along the east line of HES 82. So that could be probably is, might be, a rectangular line there, and then it probably jogs off west on a rectangular line. I'm saying that with a question mark cause man I'm going to read those notes and study everything that happened before it to know for sure. Hopefully again, this being an HES survey, my first blush is, I'm going to go out there and find those corners cause most of the time they are findable. Let's see did you have any other notes on this one?

Nope, I think it's pretty complete Roger. Let's go ahead and switch up to the next one. Going back to the Cabinet National Forest, HES 925. This is a Montana HES.



These are all up in the trout creek area. I mentioned that giving road rights-of-ways to the county, and that's why I happened to pick all of these plats, cause I worked on them on the ground. So what's happening on this one?

Well it looks like we have some adjoining patented homestead over here between corners number 1 and 6, and see once again 6 is a CC. Although the surveyor retraced the range line there. It would probably be a good idea to also retrace that to make sure there were no errors in the placement where corner number in CC to verify that it is on the line.

Let me back up to reinforce something. We're going to accept that corner unless we can prove what? Gross fraud or error. Gross fraud or error. That's a pretty heavy burden right there. That corner is probably going to be accepted. More so, I'd see that section 36 here to the west is unsurveyed. So if it is unsurveyed, although we do have the range line there.

Yeah, the range line has been surveyed but the section hasn't. Why don't you slide it down a little bit so we can see the previously patented HES. I just wanted to point something out that is common in these. Yeah, here we have HES 213, that's a much lower number than our 925. That's pretty common in this part of the country. The early HES' were where the big creeks came into the big rivers and so that first round, they tended to be broader valley bottoms, so that's what got patented first. That's where people wanted to be.

Then there was another round where they went further up the creek and these valley bottoms typically got narrower. Here we are it's kind of like the second generation HES, they are further up, they are a little narrower. When the previous Montana ones we saw, had a branch where they went up and there were two smaller creeks that came together. They're just pushing out there, what could they eek out a living on. Linda, how many tracts are on this HES?

Well it looks like there's 4. We got a Tract A, a Tract B, a Tract C here which is an exemption strip or the unlisted, and then down here we have a Tract D. of interest I also found that there's an HE over here that's patented. So we have a senior survey that this adjoins and there's a Tract D that's an exemption strip between the national forest plans on both sides.

Isn't that interesting? That Tract D is not internal to this HES. It's actually an exterior boundary. I almost said corners to the west side of that. What do you think about those?

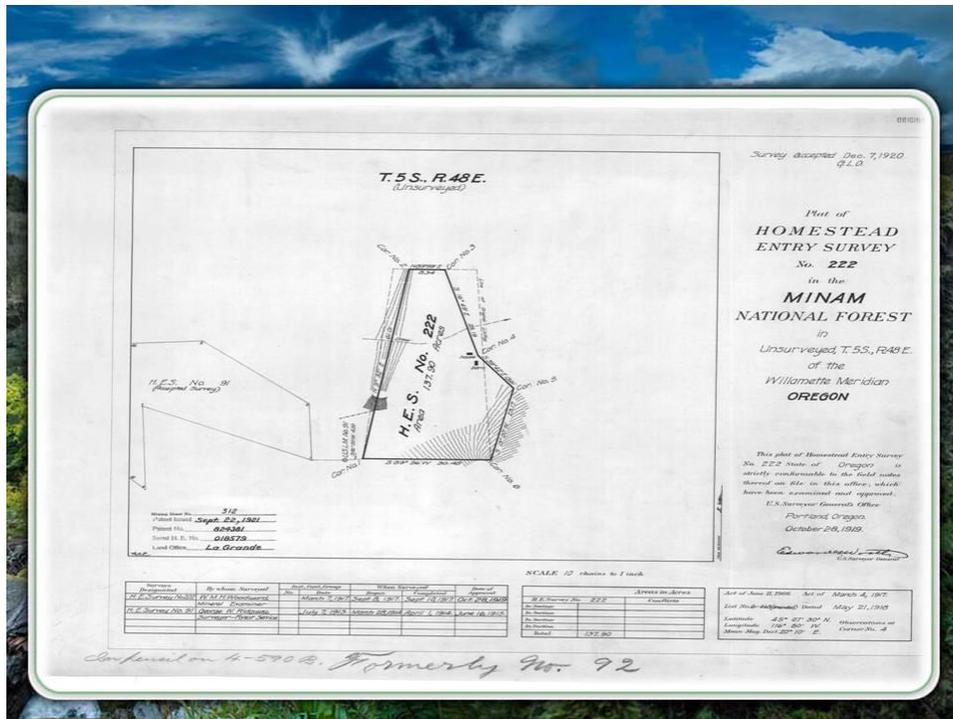
What's considered point A and point D? Yeah, point A and point D. I'm thinking that's what those are they're points. I don't believe those would probably be set corners but I think you have personal knowledge of this, don't you Roger? You know what, I can't remember. I would have to go back and read those notes. I don't know if they were monumented or not. It might just be called out points. Hey there was another feature up in Tract A, I thought we ought to point out. Just an interesting, part of the history up here.

Look at that, there's a log flume, that goes through this and the direction of the arrows which I assume that means that's the direction it's flowing. That's going against the creeks, so that was probably elevated up on wooden trestles, and they must have had a mill up the creek or something, so they're shooting logs up that way.

There's definitely arrows that look like they would be going up hill because I'm thinking maybe Martin Creek was flowing. I'm sure Martin's Creek is flowing down and I'm sure we've already talked about HES 213 and I'm sure that's more towards the Clark's Fork, of the Columbia River. Just curious what can the plat tell us?

Here's one other thing that I noticed here is we once again have a closing corner situation, with corner number 2, corner number 6. It looks like the surveyor retraced the section lines and it probably set those on the lines, that's what his intent was. It's kind of hard to see but to the east there, corner number 7 in CC, Tract B comes up to a point on that section line.

I guess we don't need to go back and look at it but I was just going to mention that A.O Modlen was the Forest Surveyor who did this work. Linda and I have both worked on this national forest and he did a bunch of the HES'. I'm sure he got practice out of it after a while. Well I think that's it for that one. The next group is Oregon 222, Montana 972, and Montana, oh no I'm sorry, it's just those two, Oregon 222 and Montana 972, why don't you take time, go look at those, take some time really, take your magnifying glass and take a look at this stuff, there's good stuff there, then we'll come back and talk about those. Hopefully you found some of the same things, and even more than what Roger and I are going to try to point out on homestead entry survey number 222 in Oregon.



If you notice on the power point here, along the bottom of that plat it says formally number 92, and we encountered that previously and we really don't know what happened there, whether or not it didn't go through the full process or something changed but there is something that might somewhat lend us to some information about that and that's if you look at those dashed lines which say line of original listing.

So maybe something did change there between the listing. It appears that the homestead surveyor actually kind of brought that in smaller than the original list in some places and then went larger in other places. Hey look at this too, Linda. We've got, it's tied to US Location Monument number 91. Then west of it is the HES number 91.

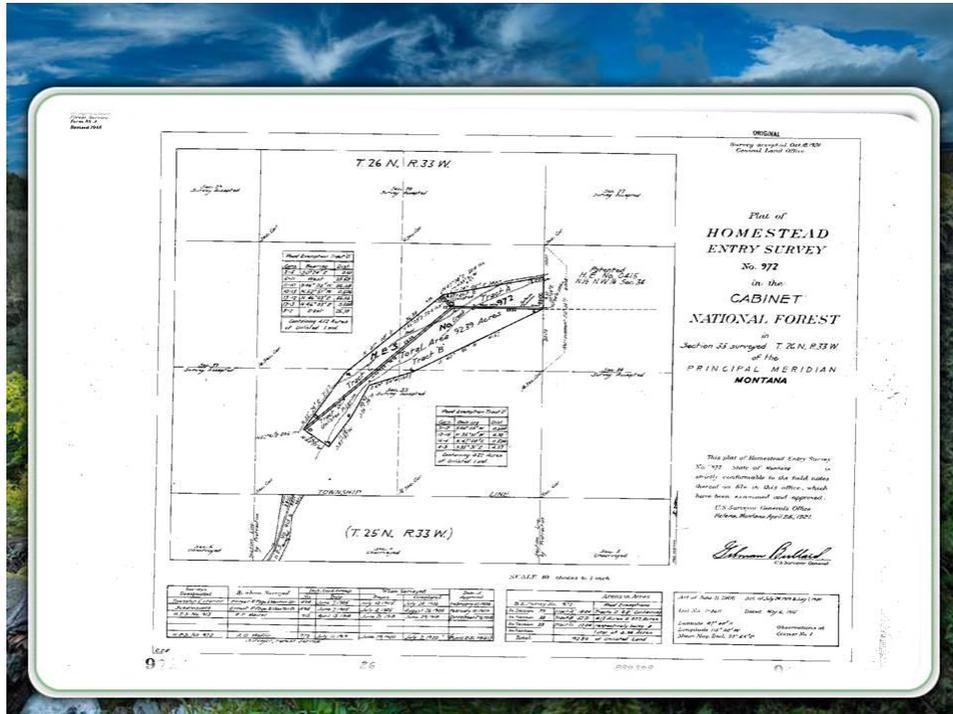
So maybe he just assumed he could do 91 and 92 together. When it got back to the office, OOPS! You can't do that. Very possible, maybe those numbers were already taken Assigned to somebody else, yeah. We've talked about the USLM. Yeah, point out those listing lines and how they differ from what went to patent.

We got a list line out here, and here's the patent line. Across the north here we have a list line then the patent line, dark line, and then that list line comes across it looks like inside.

So it kind of cuts this way and then cuts that way. So when they went, when they changed from the list survey, the Forest Service had to agree to those changes. Because the Forest Service originally allowed these tracts to be entered on, and they had some control on what was going to be offered and what wasn't. Those changes weren't just willy-nilly they had to be approved. Hey I need you to zoom into the lower left hand corner of this plat. Here's something that I personally find really unique about this plat. Look at this, it was surveyed by W.M.H. Woodward, Mineral Examiner. Isn't that interesting?

I haven't seen another one but you guys out there working, you could come across them. Let's see, oh there was something else, let's go back up to the Tract, I'm sorry to do this to you. But I think we've got a cultivated field here, that's pretty good there. Look we've got cultivated field and fence line that the HES Tract goes right through. You know a cultivated field in this time frame, 1919, that was a lot of work! Man, you just kind of wonder what went on there. I hope that guy hasn't been in trespass the whole time. Are we done with that one?

I think so Roger. We'll switch up the power point. Now we're going to take a look at HES 972.



Again, back to the Cabinet National Forest, this is on the, currently we call it the Coutiny National Forest, there's been lots of changes in forest names over the years or combining is really what they did. Northwest corner Montana. Go ahead Linda.

Well once again, we have multiple tracts here, we have a Tract A, Tract B, Tract C, and then Tract D is the unlisted Tract. We also have a Tract E here. I think that's the most I've seen on any homestead so far Roger. Another thing over here on the east boundary we've got a corner 1 NCC, and a 2 NCC, and that's up against a patented HE survey again. The section line was retraced.

Yeah, so we've got, as you said, D and E are the quote unquote C tracts or the road exemptions on this one. I've actually worked on one on the Coutiny that I think the patented tracts were A, B, C, D and the exemption tracts were E, F, and G.

Yeah, that's pretty unusual. Most of the time they didn't pull out that much. Again, Modlen did this survey and as we said he did a lot on this forest. Were there other, oh you have a note, I

guess that E Tract, just the traverse table. Yeah, highlighted I see on your plat. Let's go down and look at the acreage table one more time. We looked at one earlier. Oh, acreage at the bottom. She went to the road exemption table, they're both on here. Too many tables on here.

We'll get it repositioned. So here we are, the acreage table, we need to shift that a little to the other side. It's the other way. Okay, there we got it. So here we have, I was going to say I thought they broken tracts out by section but they hadn't on this one. It's just A, B, C on the left hand side. Those tracts going to patent and then D and E on the right and their areas. The unpatented portions of that. Gosh, that's been pretty fun exercise. Next we're going to go to, well I was going to punch up a power point but these are ones that Linda brought down so we don't have them on power point, we'll give her a chance to get it up on elmo. This is going to be homestead entry survey number 60, and I think this one is on the FlatHead isn't it?

Yes it is Roger, it's on the FlatHead. Oh and I should say Flat Head National Forest, Cow Spell, White Fish, that area of Montana. Northwestern Montana also. First of all what I noticed about this is that there are ties to the public land survey system are to a quarter corner. Then it looks like these other lines that might be construed to be subdivisional lines but I really don't think they are tie over here to a witness corner. This is a pretty small homestead, fact that it's only 7 acres. But as I zoom in here you can see corner number one talks about list corner number one also. There's a tie between those. Same thing with corner number two here, talks about list corner number two.

List corner number two, and corner number two and the same with corner number three. So all three. Isn't that interesting? They've made slight shifts on all of those. But that's okay what went to patent went to patent. But man, if you were out there looking, for instance corner number 3, and you couldn't find it. I'd sure be over there looking for that list corner. Because maybe you could find that list corner and come back to corner number 3 from it.

Yeah, I've found list corners before. Maybe they aren't intact. Because generally the surveyors, they said they destroyed those corners but they didn't always do that either. As mentioned before, Linda and I took Advance Cadastral back in 1983. Marshall Fulkerson, taught the class at that point and he would retrace a bunch of HES' in Idaho and he said nearly always the listing corner, what the surveyor did he pulled out the listing corner, flipped it over, and marked it for the HES corner and set that same rock back in the ground. Which is fine. They're great big substantial rocks, no need to go searching for another one.

Yeah, so this is interesting. Let's go up and look along the river. We have the FlatHead River, and it's not really a part of the HES but there is some interesting plat notation for me. Up here they have ties across the river and it's marked PC. I'm stumped, I don't know what that means. I know you guys come to these classes to know all the answers but sometimes we just ask all the questions. It's interesting I don't know what that is.

I don't either. Here's a midsection line, we have MC, normally there wouldn't be a meander corner on the north/ south midsection line. But read the notes, there maybe something there that they actually tied to cause there is a bearing on that line. Then, over here on the west side, there's that PC again. I think that's the E side.

But yeah the PC across the river, I don't know but I'd sure be reading those notes though. Look at this, at the bottom of that line, I just noticed this, there's another witness corner. Oh that might have been one of those steep mountainous terrain areas. I think it is, that was pretty common in some of the areas here. This is in a steep canyon. I think the GLO survey probably stopped at that point.

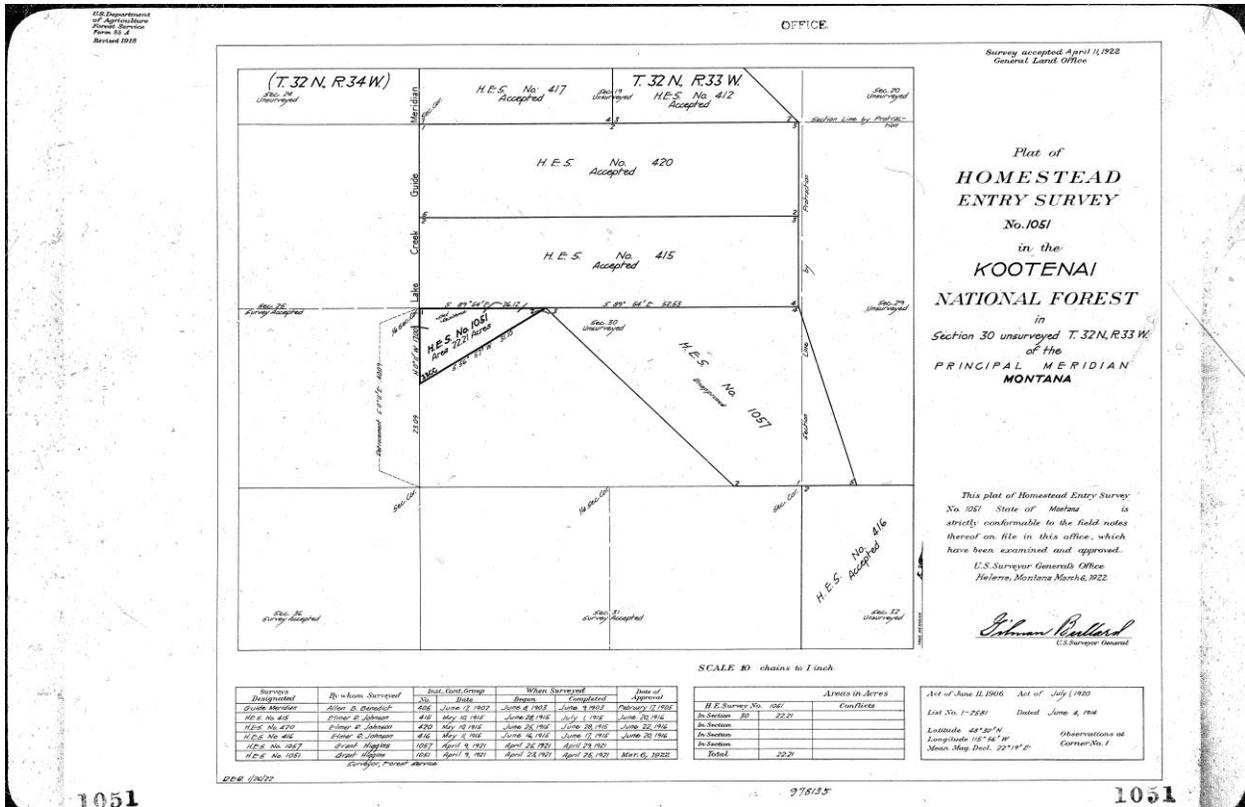
They were going for the land that people could use. The mountains at that time weren't very valuable. Let's see I think you brought another one for us Linda. I'll let you get switched over. We're going to go to, this one is on the Cabinet National Forest. It's HES 213. Linda brought this cause it's got some specific things that we like to look at, talk about, think about.

First of all, we have a previously surveyed section line here. It looks like the survey was tied in to. Although, we don't see the CC, like we have in some of the times in the past. Even though they did retrace the line, with CC, sometimes you see it sometimes you don't. Yeah, that's real interesting cause most of the time we've seeing they've marked them as closing corners but this one they didn't. I guess that's what they did. It's interesting that they have corner number 1 and section corner. So that's an angle point in essentially exterior boundary of this HES. So he gave it a corner number even though it's also something else.

Another thing I noticed, here's the county road going through here. It even says county road on the plat. County road, isn't that interesting? Man, you sure wonder if there's some pre existing rights. For us who practice in the national forest, that's like red flag kind of stuff.

We were just talking about a situation where an HES retraced senior line in that case it was a rectangular line. Then set monuments on it and came off and did there Tract. Linda is going to talk us though a situation she had on the Coutiny National Forest that had a similar thing but it's HES corners monuments against a senior HES.

Yeah, and this is true-life example. This really happened and this was a retracement of the homestead surveys. First of all, we had HES number 1051 over here, on the elmo you can see, corner number 1 was coincident with the quarter section corner.



Then, corner number 2 and you can see that this line, which is the south line of HES 415. Looks like they must have retraced that line because they said corner number 2 on it. then came back, to the section line with 3 and CC. Shortly thereafter cause it seems like 1057 is in the 6 after that, similar things. We have corner number 1 that is a section corner. It looks like this section line was retraced 2 and CC placed on that. Then up here on corner number 3 which is coincident with corner 2, and then back on the HES line, on the senior line to corner 4 to 5.

So that looks easy. They all come together at one happy point. What problems do you have there? This area up here was unsurveyed, and there was a proposal to land exchange that to private ownership. So of course back to the authority issue, only the BLM are under federal authority, can you survey public land for the first time.

We're going to create a new federal description. So we have to have a federal authority survey to do that. Right, so those special instructions were requested and issued. This is what we actually found on the ground for that situation.

You can see that actually this, which was corner number 2 and 3, is encroaching or north of that senior line. This is how the issue was resolved. The CC became an AM, and two new monuments were set. A CC 2 and a CC 3. On the same line between, on the same line of the exteriors of the homesteads but on that senior homestead line to the north.

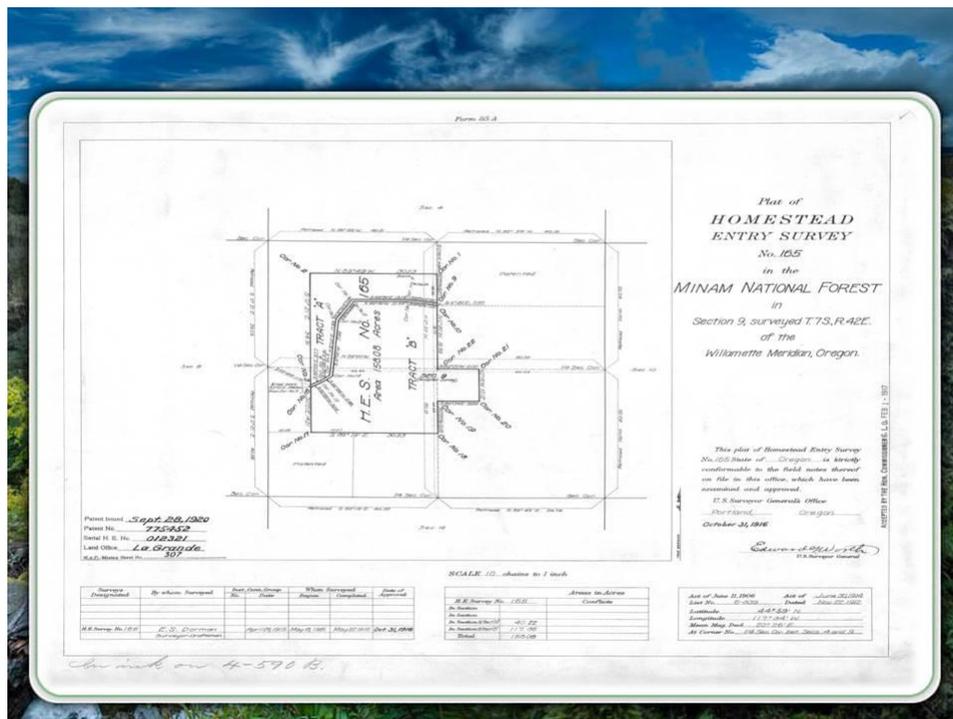
Let's take a look at your Murray pad sketch there cause I think it shows it a little bit better. We'll give the audience a chance to really see what's happening there. It gives you an idea of

what these distances are. This is 8.58 feet and 6.6 feet so it wasn't off by a whole lot. Probably less than even what the closure maybe might have been on those homesteads. Yeah, and then you've got almost 12 feet between those two, essentially crossing closing corners on that senior HES line.

So he didn't miss it by all that much. But the only thing you could do was to honor that previous survey that had already been patented, so you couldn't take a chunk out of it. So you're Tract 37 that looks like it comes up to a narrow point there, but it actually has this 12 foot flat tangent across it's north boundary. Well that's interesting, Linda did this while she was on the Coutiny National Forest. I happened to become the Coutiny National Forest Land Surveyor later on, and indeed that Tract was included in a land exchange with the timber company. About 5 years later that timber company sold all of their holdings to another timber company.

Those deeds are long, some of those deeds are 100 pages long in the legal descriptions cause they are buying al of their property and all of their road interest. The title company would not ensure this parcel, it fell out of that land deal between these two timber companies cause I'm sure BLM sent a copy of that plat, creating that Tract to the county but the county didn't realize, understand that BLM has the authority to change the description on federal property. It took me about 5 years, working with the county, patiently trying to educate them that no Tract 37 is real, they had been talked about, told about it, to get it into their records.

As Linda had said sometime recently, lots of times the counties want to tell us that it's an illegal partition or we're doing an improper subdivision. We just pretty much have to firmly say hold it you don't understand. We are the federal government we have the authority to change the description on federal property, we don't fall under state jurisdiction, and you need to comply with what we've done. We'll try to work with them but that's the reality of it.



So I'm going to talk about this last plat here, let's go ahead and switch to the power point slide and here we have homestead entry number 165.

This is a northeastern Oregon up on the Minam National Forest, it's part of the Wylow Whitman now. This is just, it looks like a pretty simple, straightforward job.

We'll get Linda zoomed in so you can see this Tract a little bit. Let's zoom so we can see that whole section first and then we'll go in and talk about some of the details of it. I think she's got that about ready so the first thing that struck me as I looked at this, and I actually contracted with a private surveyor to retrace the boundaries to this while I was with the Forest Land Surveyor.

Here we have the section and we have a full retracement and a physical subdivision of that section on the ground. If you read his notes, he did just what the Manual where it told him to, to create that section. Or just subdivide that section. This Tract, this HES, with the exemption of the C Tract out of it, all of its exterior boundaries are aliquot, they are all aliquot corners. That's why he did the full subdivision. Of course it had to be a homestead entry survey, because they withheld that road exception strip or C Tract or whatever you may call it. But the rest was aliquot.

I think part of that too Roger, might be, you can see that there were some patented aliquot parts out of that section already. It looks like the southwest quarter of this southwest quarter, over here the north half of the northeast were also previously patented.

Yeah, so they were already aliquot patents out so they had to conform to those. On the rest of it, like on the southeast quarter, he really didn't really have to conform to an existing patent there. But they ran them on aliquot lines. That's what it is. That was interesting.

First time I walked this project and I went out through the C Tract, the thing that just knocked me over the head, when I was walking it, there had been a county road in this general location, but I was finding some of the C Tract monuments and there were evident road alignments outside of that. In places I could find 2, 3, 4 different alignments. It looks like when they got wet they started driving in different place. That got too boggy and they drive somewhere else.

Anyway, it happened that after we finished this survey, well actually when we went to do this survey, Tract A and Tract B had been sold separately. At some point and time somebody had sold off on one Tract and held the other, that kind of thing. It happened that, well he was a crusty old rancher, I was going to call him that cause it's the truth but he's a really nice guy. Owns Tract B, and it happened that a retired wealthy couple from Portland had bought Tract A. well years before the retired couple bought it years before, the rancher had gone to the owner of Tract A and said lets just exchange deeds so that we'll use the county road as our dividing line between us.

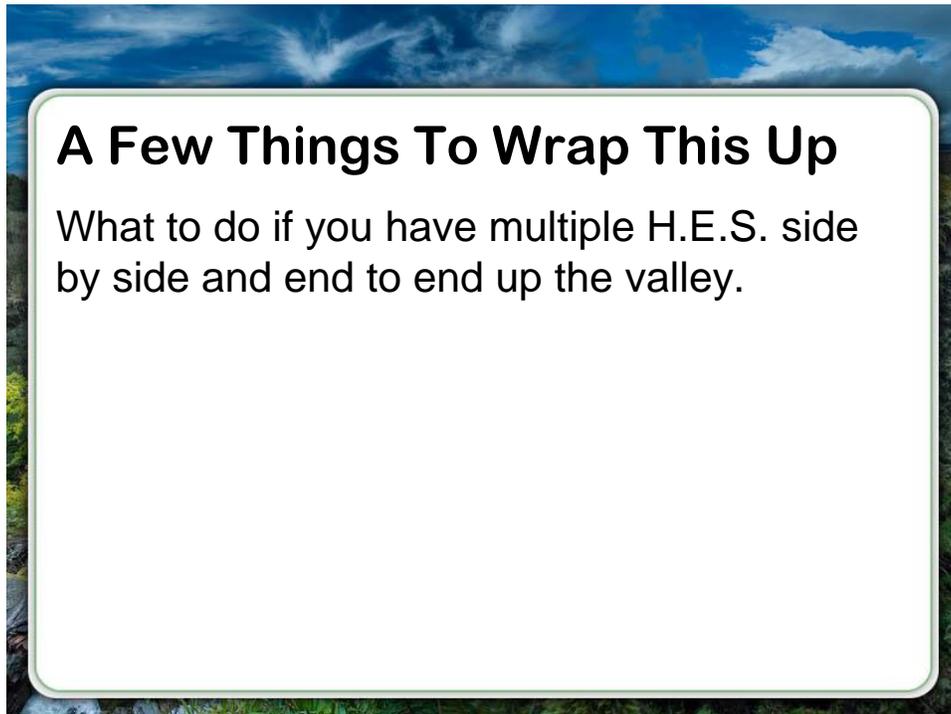
That seems pretty simple, they are pretty simple deeds, pretty straight forward. Well after the couple from Portland got that property, they got to looking at it and they didn't like that. They ended up suing the rancher on the other side. It went through local, district court trial, and in the

end the trial court or the judge said yeah, the county roads the location. I was so disappointed when I finally read that cause he did not order a survey of which county road location.

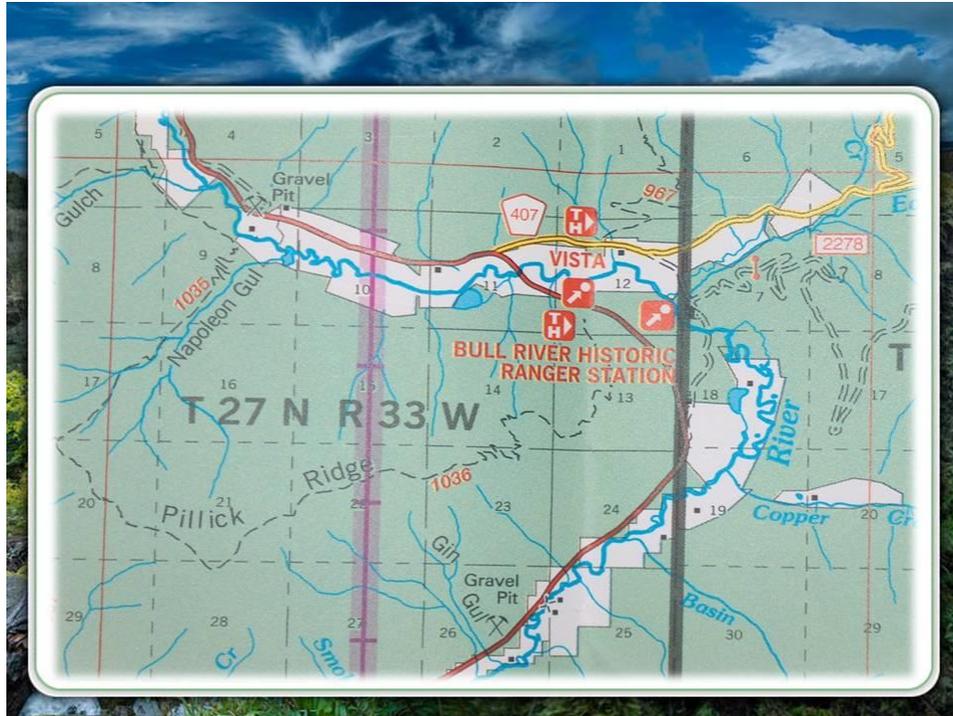
If I was that rancher I would take the most northerly location every time. There was actually more land, he gained property by going to the county road over going to where the C Tract was or that kind of thing. One of the things I found real interesting when I read the transcript to that trial, was the original patent for this, I don't recall the patent date but this was a 1916 survey, it was patented a long time ago, there was a long chain of title on the county courthouse.

The original patent was never filed in the courthouse until 1973. Somebody was doing some land transaction and found somebody that had that original patent and got it filed. So here's a simple HES, pretty straight forward. It does have the road exemption but what you find on the ground, and what conflicts arise after that, you just have to take them on a case-by-case basis. I think we're going to take time to switch up to a new power point and then we'll be back for the close out for this session. Thanks for your time.

Well we just finished spending quite a bit of time looking at individual HES plats and learning what information we can gain from them. Let's take a few minutes to wrap up pretty much this whole course. But there are a few issues that we haven't talked about. The first thing is I want to talk about what happens when you get HES' that are side by side, end to end, and this happened quite a bit up the river valleys where people wanted to settle.



We'll move up to this next slide. This is a little clip of the Coutiny National Forest map. I'll have Linda light pen, let's look at an isolated HES.



So over here we have an HES that's up that Copper Creek, off by itself. So if you had a lost corner there, it's pretty obvious we would at least start with a grant boundary solution to try to restore it. Let's look at the rectangular part of this and the lower part of this slide, we see a bunch of surveys that are rectangular, they just use aliquot part descriptions. So that's pretty straightforward, this is going up the Bull River.

Now let's look at the rest of this slide. Now we have big areas of white, the white is private land, patented land, so here we have, what's happening is we have HES' on both sides of the creek. So they are side by side with the creek kind of along that long edge adjoining them and then they are end to end. So there are places, let's look up in here. What you'll find on the ground, you'll have places where maybe four HES' come together and it's not a cardinal situation. They just all met at this one point. If you had one of those lost, you probably, you for sure wouldn't want to just look at the earliest HES and do a grant boundary. Cause you could really suck something away from one of those other HES'.

Sure, there could be many solutions for a grant boundary position. You're really going to want to think about what you do there. Back in the common elements course, we talked about a, oh shoot I just lost the term, it's a miscellaneous control from the 1947 manual. It talks about how to restore a lost corner when you have multiple lines that come into the point. That's a method I would really look at if you are there. Once again, we're talking HES', I don't expect you to find lost corners. It'll happen but I don't expect it to.

Let's go ahead and erase that. This next slide is as far as I know, I'm not perfect, but I think this list, all of the homestead entry surveys in the GLO/ BLM system.

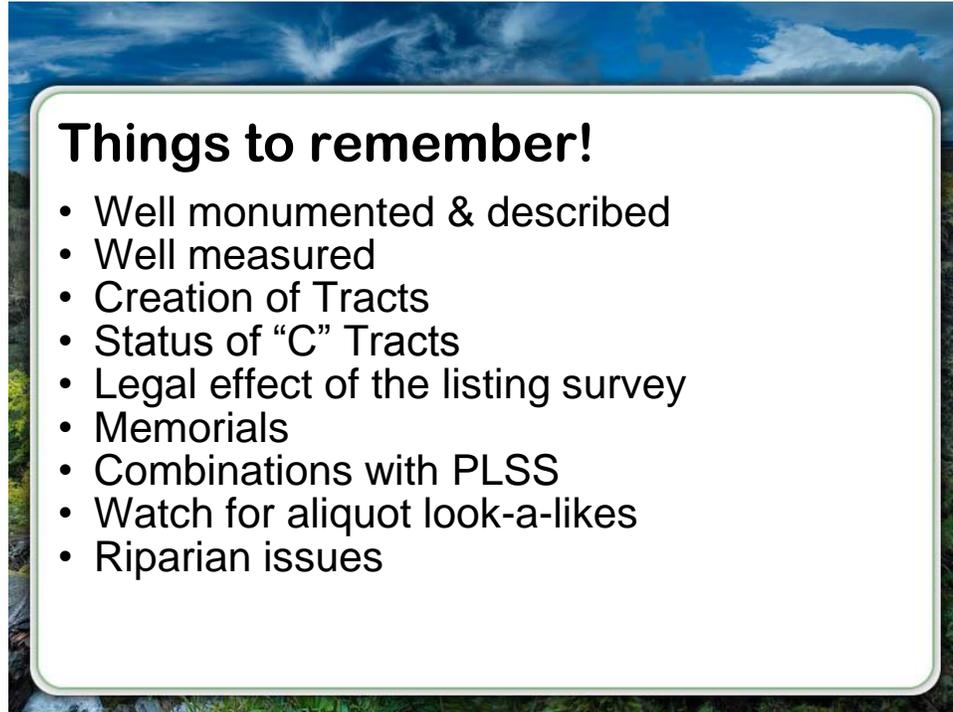
Number of H.E.S.'s by State	
Alaska	160 (All renumbered as US Surveys)
Arizona	No's 38 – 680
California	No's 37 – 377
Colorado	No's 37 – 376
Florida	No. 37
Idaho	No's 37 – 823
Montana	No's 37 – 1,260
New Mexico	No's 37 – 238
Oregon	No's 37 – 255
South Dakota	No's 37 – 651, also by claimant's name.
Utah	No's 38 – 217
Washington	No's 37 – 274
Wyoming	No's 37 – 255

In Alaska, we show 160 but all of those they started out numbering them as HES surveys, but in Alaska, all of the non-rectangular surveys are now at least called US Surveys. So they renumbered all of the HES'.

They have got a US Survey number on them but on a lot of them you will find HES Survey numbers also. I thought it was interesting in Arizona and Utah, the first HES was numbered 38. You know somehow they didn't want to use 37 but you know whatever. What they did is what they did. Look at California and Colorado where we are into the high 300's, so a bunch of surveys but not that much. Man you go down look at Montana 1200 HES Surveys, what's up with that Linda?

I would say that there was a lot of people out there homesteading before the rectangular got there and there is a lot of forest. I mean there is a lot of green out in Montana. Exactly. That is my exact thought. We had a lot of people out there in unsurveyed areas and craw bottoms that were farmable. That was the point of this. So Montana really utilized it a lot. We can look at New Mexico 200, Oregon 250 you know not that many. Utah 217, Dakota up to 650 but they also have HES that are filed by the claimant's last name. You know each state there were separate offices, so they are all a little bit unique. Anyway this is for your information and I think it is a pretty complete list.

Here is my last slide. This is the stuff I really want you to take away from this course.



You have got to remember, Homestead Entry Surveys they are well monumented and well described. Well measured, the bearings and distances are going to be really tight most of the time. These are really good surveys. They created tracts as in metes and bounds they are unique tracts, you see they went out and created it. The status of the C Tracts which by saying that I want to make sure you look for those unlisted tracts, road exemptions if they are called C Tract or not. If its, D, E and F, I don't care what it is called, you need to pay attention to that because there maybe a change in ownership there. Also remember that the Forest Service has a Small Tracts Act authority and they may have sold those road exemptions. If they don't need it they can sell it to the adjoiner. So you just need to make sure you check the status of that.

Some of the other things that we want to remember include the legal effects of that listing survey. That was what was listed but you know that wasn't always what ended up as the end result that went to patent. But those corners were set. And if you can find those corners when you cant find the lost HES corner, that can provide a piece of evidence to reestablish one of those lost corners. Essentially another accessory.

Yes it is. And then the memorial. We talked about memorials. I showed you a bona fide memorial that I found underneath – it wasn't underneath but it was in the ground because the original stone had been moved. Those memorials, they are out there. And even thought they may be upside down they are still there. And also those combinations with the public land survey system.

We showed you many examples of how the public land survey system ended and a homestead entry survey adjoined that and how the public survey system lines were retraced and corners

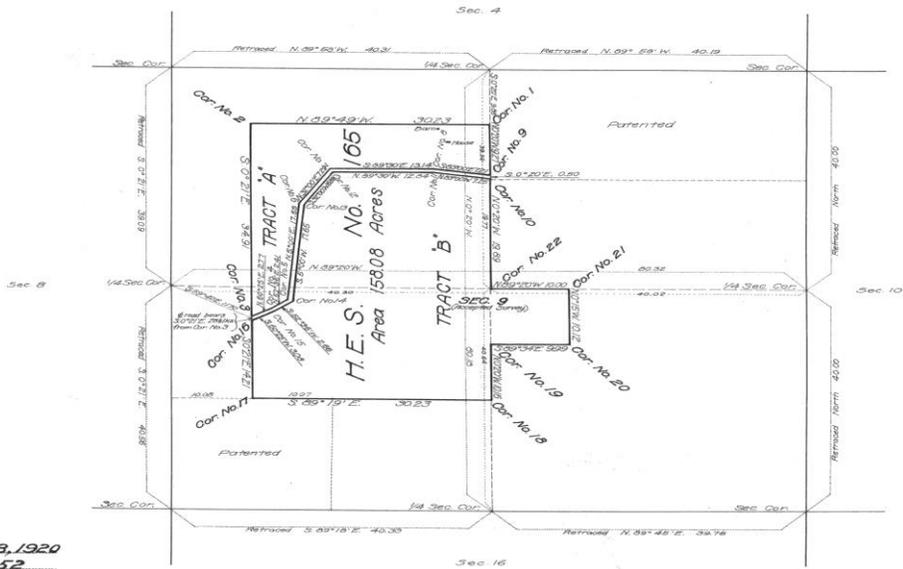
were set on those both. Some they noted as being closing corners and some they did not, but generally it is a junior situation. Generally. And one of the last ones we looked at was the aliquot part look a like surveys. That surveyor subdivided that section, retraced the whole section, ran the mid section lines and set what appeared to be 16th and 64th corners. So we know those are out there.

Wow the riparian issues, whenever there is a water boundary involved, that is huge. The evulsions that can happen the accretion . Generally it is accretion and erosion that changes that riparian boundary, but looking at old maps, photos and doing that research really pays off.

Well we would like to thank you for your time and attention for going through this part of the non-rectangular course and you know listening to us talk about Homestead Entry Surveys. We are both a lot of time as Forest Land Surveyors have a lot of time and experience with this and I think we both jump at the chance to go out and retrace an HES they are really fun. Yeah I think everyone in my forest has been done. I am not surprised. Thank you.

HES Plats

Plat of
**HOMESTEAD
 ENTRY SURVEY**
 No. 165
 in the
MINAM NATIONAL FOREST
 in
 Section 9, surveyed T.7S., R.42E.
 of the
 Willamette Meridian, Oregon.



Patent Issued Sept 28, 1920
 Patent No. 775452
 Serial H. E. No. 012321
 Land Office La Grande
 H. & D. Mining Sheet No. 307

This plat of Homestead Entry Survey No. 165 State of Oregon is strictly conformable to the field notes thereof on file in this office, which have been examined and approved.
 U. S. Surveyor General's Office
 Portland, Oregon
 October 31, 1916

Edward Worth
 U.S. Surveyor General

ACCEPTED BY THE MIN. COMMISSIONER, L. & D. FEB. 1 - 1917

SCALE 10 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group No.	When Surveyed		Date of Approval
			Began	Completed	
H.E. Survey No. 165	E. S. Dorman Surveyor-Draftsman		Apr 11/20 1915	May 19, 1915	May 22, 1915
					Oct 31, 1916

H. E. Survey No.	Areas in Acres	
	In Section	Conflicts
165	40.22	
	117.86	
Total	158.08	

Act of June 11, 1906	Act of June 30, 1916
List No. 2-339	Dated Nov. 22, 1912
Latitude 44° 53' N.	
Longitude 117° 56' W.	
Mean Mag. Decl. 20° 56' E.	
At Corner No. 1st Sec. Cor. Dist. Secs. 4 and 9	

See note on 4-590 B.

PLAT OF
HOMESTEAD ENTRY SURVEY No. 110
 in the
WALLOWA NATIONAL FOREST

in
 approximate
 Section 13 unsurveyed, T.6N., R.46E.,
 Section 24 unsurveyed, T.6N., R.46E.,

of the
 Willamette Meridian, Oregon

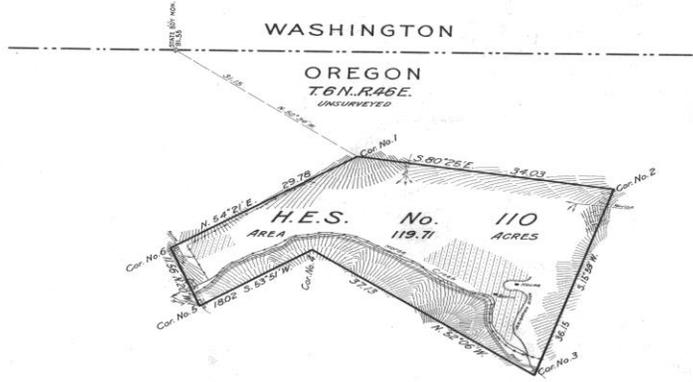
This plat of Homestead Entry Survey
 No. 110 situated in Section 13 unsurveyed,
 in Township 6 North of Range 46 East,
 and in Section 24 unsurveyed, in Township
 6 North of Range 46 East

of the Willamette Meridian is strictly
 conformable to the field notes of the Survey
 thereof, on file in this office, which have been
 examined and approved.

Office of U.S. Surveyor General,
 Portland, Oregon, July 9, 1915

Edward M. Work
 U.S. Surveyor General
 for Oregon

EXCEPT BY THE HON. COMMISSIONER G. L. O. March 29 1916



Missing Sheet No. 185
 Patent Issued _____
 Patent No. _____
 Serial H. E. No. _____
 Land Office _____

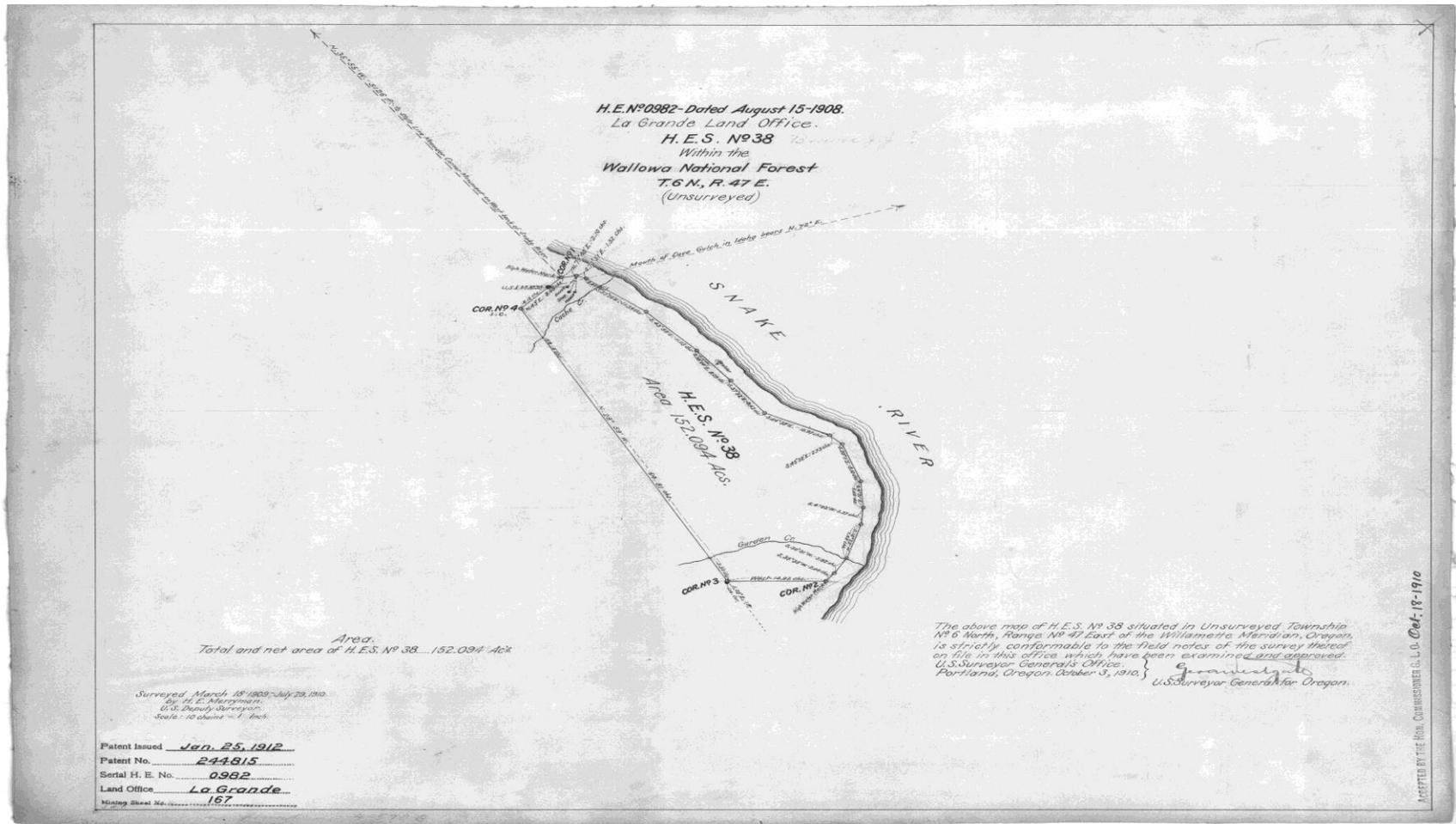
Scale
 10 Chains equal 1 inch
 Initials R.H.R.

Survey Designated	By Whom Surveyed	Instructions Given No. Date	When Surveyed Began Completed	Date of Approval
H.E. Survey No. 110	Geo. W. Ridgway	110 Nov 19, 1913	Nov 20, 1913 Nov 24, 1913	July 9, 1915

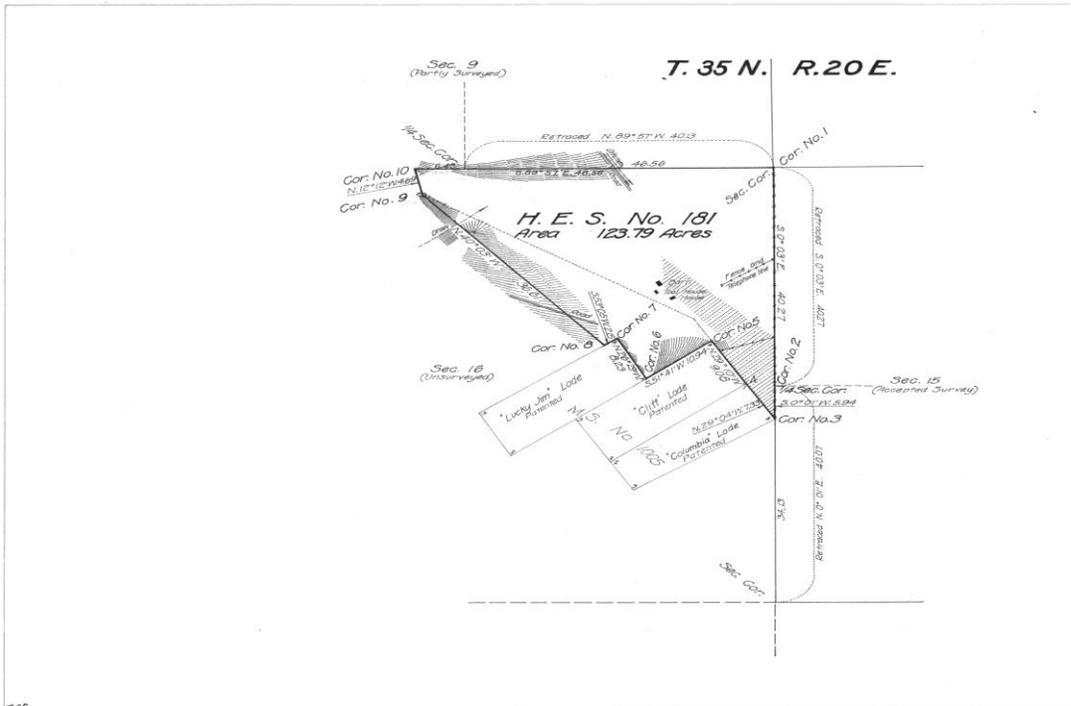
Areas		Conflicts
H. E. Survey No. 110		
In Section		
In Section		
In Section		
Total	119.71	

List No. 1389 Date March 17, 1908
 Act of June 11, 1906; Act of March 4, 1913
 Latitude 46° 00' N. } At Cor. No. 1
 Longitude 117° 01' W.
 Mean Mag. Decl. 2° 44' E.

See map on 4-590 B. Formerly No. 60



*Survey accepted Jan 19, 1918
E.L.O.*



Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 181
in the
**OKANOGAN
NATIONAL FOREST**
in *Champan Co*
Section 16, unsurveyed, T. 35N., R. 20E.
of the
Willamette Meridian, Washington.

This plat of Homestead Entry Survey No. 181 State of Washington is strictly conformable to the field notes thereof on file in this office, which have been examined and approved.
U.S. Surveyor General's Office
Olympia, Washington
May 14, 1917.

E. J. [Signature]
U.S. Surveyor General

SCALE 10 chains to 1 inch

Survey Designated	By whom Surveyed	Inst. Cont. Group No.	When Surveyed		Date of Approval
			Date Began	Completed	
H. E. Survey No. 181	M. F. Cecil	181	March 23, 1915	July 27, 1915	May 14, 1917
Mineral Survey No. 1005	Charles F. G. Merriam	661	July 11, 1910	July 28, 1910	Oct 8, 1910
Subs. T. 35 N., R. 20 E.	George A. Schwartz	661	May 7, 1900	Aug 26, 1900	Sep 9, 1900

Areas in Acres	
H. E. Survey No. 181	123.79
In Section	
In Section	
In Section	
Total	123.79

Act of June 11, 1906	Act of March 4, 1915
List No. 6-347	Dated June 6, 1910
8-235	May 1, 1914
Latitude 48° 32' N.	Observations at
Longitude 120° 22' W.	Corner No. 1
Mean Mag. Decl. 24° 10' E.	

Approved by Commissioner of Litter, dated JAN 19 1918

List N^o 1602, Dated April 6, 1908
H. E. N^o 05828 Dated Feb. 17, 1908
 La Grande Land Office
H. E. N^o 43
 (Alfred P. Marks, Entryman)
 Within the
WALLOWA NATIONAL FOREST
 T. 25. R. 30. E. T. 25. R. 30. E.
 (Unsurveyed)



THIS SURVEY FALLS IN
 T 25 R 30 E INSTEAD OF
 T 15 R 30 E
 ALSO THE CRK ABOVE THIS
 SURVEY IS WATER SPURT CRK
 INSTEAD OF MARKS -

Area
 Total and net area of H.E.S. N^o 43, 95.67 Ac.

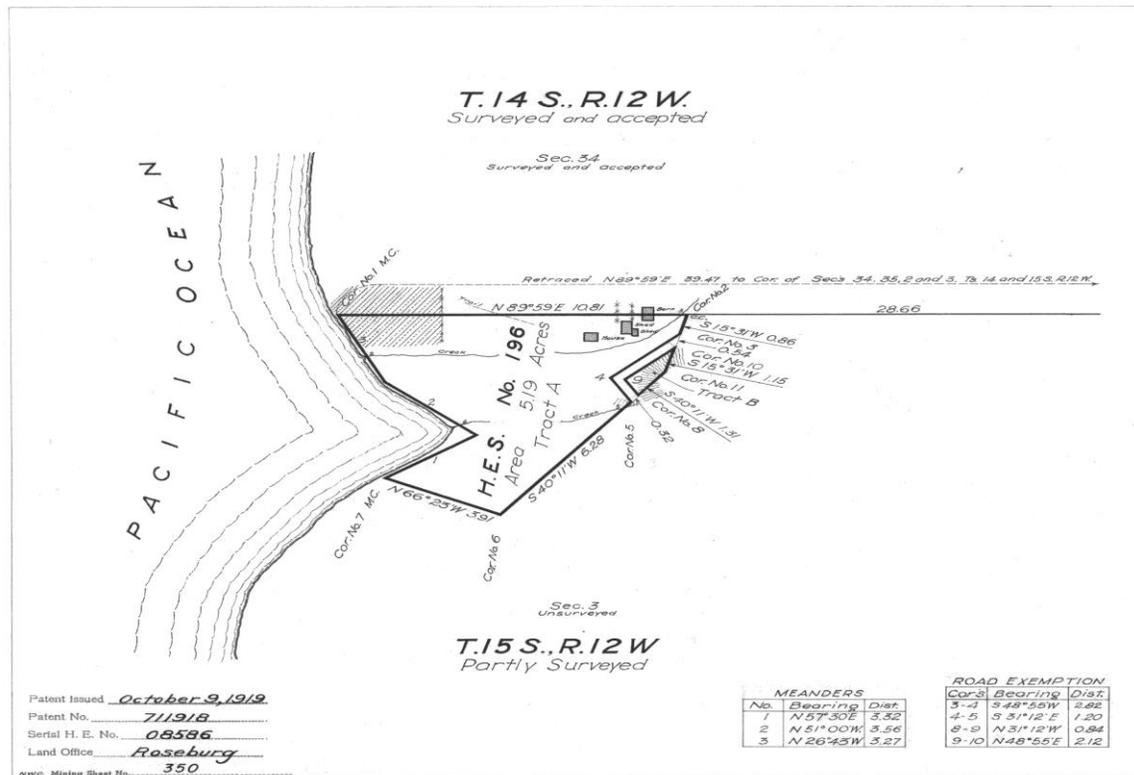
Surveyed May 1-3, 1910
 By Arthur H. Pender
 U.S. Deputy Surveyor
 Under Special Instructions
 Dated April 6, 1910
 Under H.E.S. N^o 29

Mislog Sheet No. 168
 Patent Issued Feb. 8, 1913
 Patent No. 313855
 Serial H. E. No. 05828
 Land Office La Grande

The above map of H.E.S. N^o 43, situated in unsurveyed Township 25 South, Range 30 East of the Willamette Meridian, Oregon, is hereby certified to the files of the Survey whereof on file in this office which have been examined and approved.
 U.S. Surveyor General's Office,
 Portland, Oregon,
 April 12, 1911
 J. Gooding
 U.S. Surveyor General for Oregon.

ACCEPTED BY THE REG. COMMISSIONER G. L. O'Connell 16-1912

Survey accepted Nov. 23, 1917
G.L.O.



Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 196
in the
SIUSLAW
NATIONAL FOREST
in
Sec. 3 unsurveyed T.15 S., R.12 W.
of the
WILLAMETTE MERIDIAN
OREGON

This plat of Homestead Entry Survey
No. 196 State of Oregon is
strictly conformable to the field notes
thereof on file in this office, which
have been examined and approved.

U.S. Surveyor General's Office
Portland Oregon
June 29, 1917

Edward G. Smith
U.S. Surveyor General

Patent Issued October 9, 1919
Patent No. 711918
Serial H. E. No. 08586
Land Office Roseburg
Mining Sheet No. 350

MEANDERS		
No.	Bearing	Dist.
1	N 57° 30' E	3.52
2	N 51° 00' W	3.56
3	N 26° 43' W	3.27

ROAD EXEMPTION		
Cor. No.	Bearing	Dist.
3-4	S 48° 55' W	2.82
4-5	S 31° 12' E	1.20
8-9	N 31° 12' W	0.84
9-10	N 48° 55' E	2.12

SCALE 2 1/2 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group		When Surveyed		Date of Approval
		No.	Date	Began	Completed	
H.E. Survey No. 196	Frederick W. Rose Surveyor-Forst Service	196	April 17, 1916	Sept. 27, 1916	Sept. 28, 1916	June 29, 1917

H. E. Survey No.	Areas in Acres	
	In Tract A	In Tract B
196	5.07	0.12
Total	5.19	

Act of June 11, 1906	Act of	Aug. 11, 1916
List No. 6-689	Dated	May 27, 1912
Latitude 44° 18' N	Longitude 124° 05' W	Observations at Corner No. 1
Mean Mag. Decl. 18° 00' E		

In ink on 4-590B.

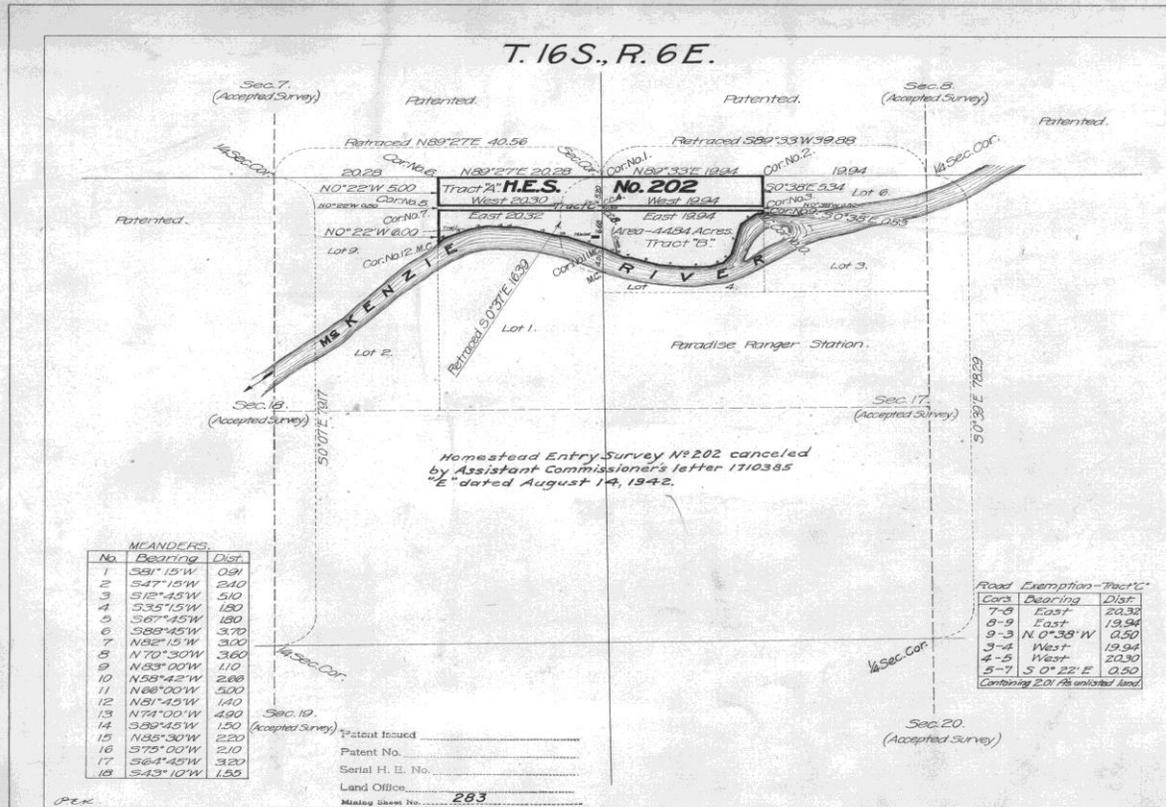
Survey accepted Aug 27, 1919
G. L. O.

Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 202
in the
**CASCADE
NATIONAL FOREST**
in
Section 17, surveyed, T. 16 S., R. 6 E.
Section 18, surveyed, T. 16 S., R. 6 E.
of the
WILLAMETTE MERIDIAN
OREGON

This plat of Homestead Entry Survey
No. 202 State of OREGON is
strictly conformable to the field notes
thereof on file in this office, which
have been examined and approved.

U.S. Surveyor General's Office
Portland, Oregon.
June 26, 1918

Edward G. West
U.S. Surveyor General



SCALE 10 chains to 1 inch

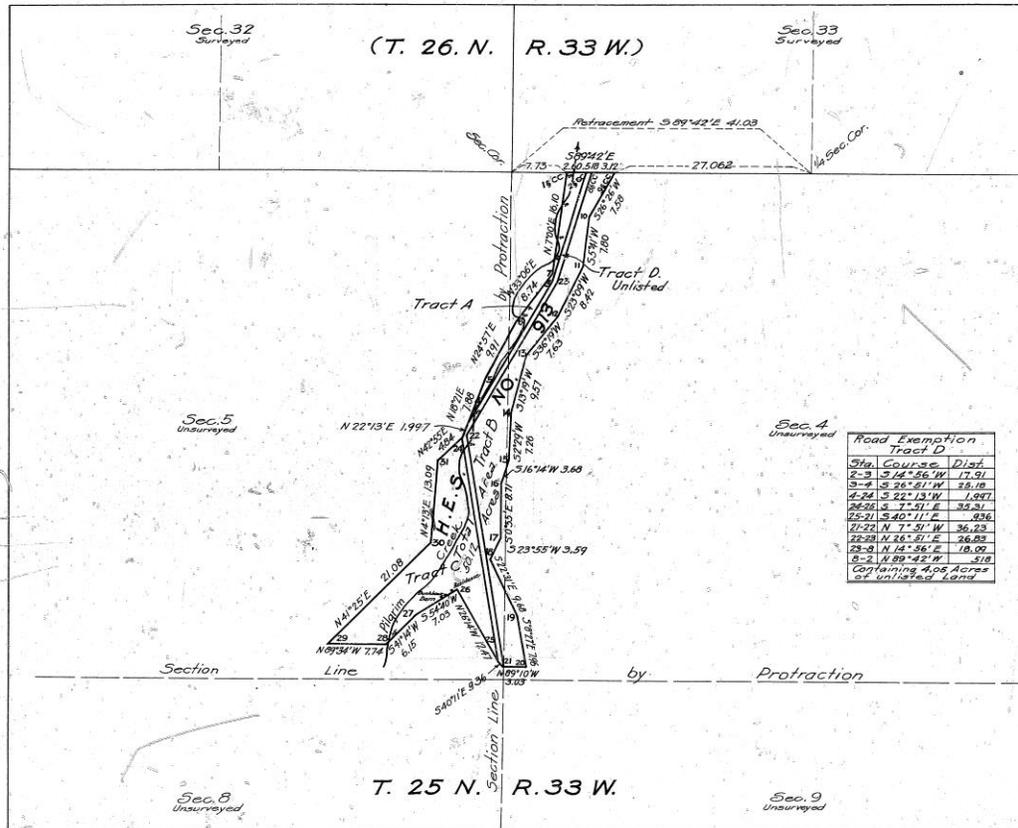
Surveys Designated	By whom Surveyed	Inst. Cont. Group		When Surveyed			Date of Approval
		No.	Date	Began	Completed		
H. E. Survey No. 202	Geo. W. Root	202	Jan. 18, 1917	Oct. 27, 1917	Nov. 5, 1917	June 26, 1918	
Subdivisions Meanders	Subdiv. - Forest Service Alonzo Gascher, D.S.	187	June 18, 1873	Aug. 12, 1873	Sept. 1, 1873	Nov. 4, 1875	
Meanders	J.H.M. Cury & W.B. Pengra Deputy Surveyors	143	Dec. 29, 1870	Apr. 22, 1871	Apr. 22, 1871	Sept. 22, 1871	

Areas in Acres	
H. E. Survey No. 202	Road Exemption
In Section 7, Tract A	Tract C, 20.12 Acres
In Section 8, Tract A	10.34
In Section 17, Tract B	15.42
In Section 18, Tract B	8.57
Total	44.84

Act of June 11, 1906	Act of March 4, 1917
List No. 6-1012	Dated August 5, 1913
Latitude 44°10'N	Observations at
Longitude 122°08'W	Corner No. 11
Mean Mag. Decl. 22°29'E	

See pencil on 4-590 B.

Survey accepted Dec. 30, 1919
G.L.O.



Sta.	Course	Dist.
1-2	S 14° 56' W	11.91
2-3	S 26° 51' W	25.18
3-4	S 22° 13' W	1.997
4-5	S 7° 51' E	32.21
5-6	S 40° 11' E	9.56
6-7	N 7° 51' W	36.23
7-8	N 24° 51' E	26.03
8-9	N 14° 56' E	19.00
9-10	N 89° 42' W	2.18
Containing 4.05 Acres of Unlisted Land		

Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 913
in the
**CABINET
NATIONAL FOREST**
in
Section 4-Unsurveyed-T.25N.-R.33W.
Section 5-Unsurveyed-T.25N.-R.33W.
of the
**PRINCIPAL MERIDIAN
MONTANA**

This plat of Homestead Entry Survey
No. 913 State of Montana is
strictly conformable to the field notes
thereof on file in this office, which
have been examined and approved.
U.S. Surveyor General's Office
Helena, Montana, December 30, 1919.

Nancy Gerhart
U.S. Surveyor General

SCALE 10 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group No.	Group Date	When Surveyed			Date of Approval
				Began	Completed		
South Bay T.26N.R.33W.	Ernest R. Pope & Newton Or	494	June 7, 1905	July 10, 1905	July 24, 1905	Feb. 10, 1908.	
H.E.S. No. 913	R.E. Maurer	913	Apr. 13, 1910	June 21, 1910	June 29, 1910	Dec. 30, 1919	
	Surveyor-Forest Service						

Examined by N.E.K.

H.E. Survey No.	Areas in Acres
Tract A	4.98
Tract B	20.99
Tract C	24.16
Total	50.12
	Tract D 4.05 Unlisted

Act of June 11, 1906	Act of March 4, 1917
List No. 1 - 2656	Dated June 26, 1914
Latitude	47° 57' N.
Longitude	115° 52' W.
Mean Mag. Decl.	22° 28' E.
Observations at	Corner No. 26

913

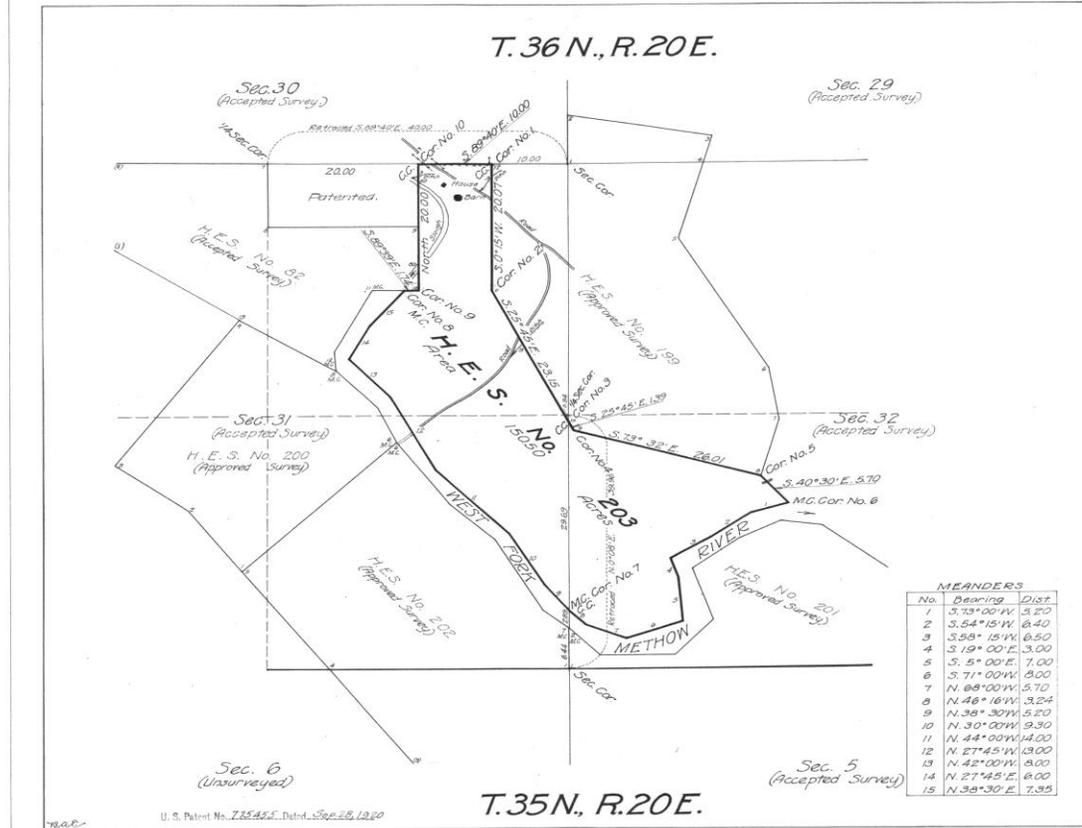
Co. Sheet 26

826076

913

ORIGINAL

Survey accepted August 27, 1919
G.L.O.



Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 203
in the
**OKANOGAN
NATIONAL FOREST**
in Okanogan Co
Section 31, surveyed, T. 36 N., R. 20 E.
Section 32, surveyed, T. 36 N., R. 20 E.
of the
Willamette Meridian, Washington

MEANDERS

No.	Bearing	Dist.
1	S. 73° 00' W.	5.20
2	S. 54° 15' W.	6.40
3	S. 58° 15' W.	6.50
4	S. 19° 00' E.	3.00
5	S. 5° 00' E.	7.00
6	S. 71° 00' W.	8.00
7	N. 68° 00' W.	5.70
8	N. 46° 16' W.	3.24
9	N. 38° 30' W.	5.20
10	N. 30° 00' W.	9.30
11	N. 44° 00' W.	4.00
12	N. 27° 45' W.	3.00
13	N. 42° 00' W.	8.00
14	N. 27° 45' E.	6.00
15	N. 38° 30' E.	7.35

This plat of Homestead Entry Survey No. 203 State of Washington is strictly conformable to the field notes thereof on file in this office, which have been examined and approved.

U.S. Surveyor General's Office
Olympia, Washington
January 26, 1918

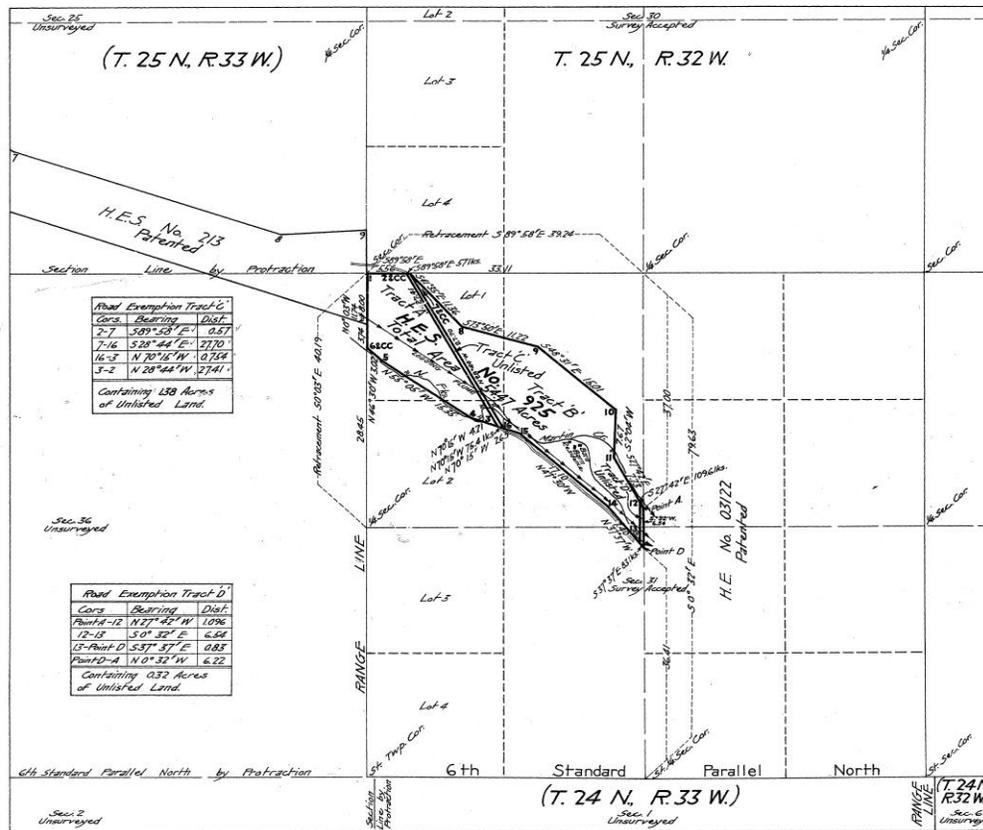
E. C. Army
U.S. Surveyor General

SCALE 10 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group		When Surveyed		Date of Approval
		No.	Date	Began	Completed	
H. E. Survey No. 203	K. P. Cecil	203	May 17, 1915	July 15, 1915	July 17, 1915	Jan. 26, 1918
H. E. Survey No. 201	K. P. Cecil	201	May 13, 1915	July 1, 1915	July 3, 1915	Dec. 14, 1917
H. E. Survey No. 200	K. P. Cecil	200	May 13, 1915	June 23, 1915	June 26, 1915	Dec. 6, 1917
H. E. Survey No. 199	K. P. Cecil	199	May 8, 1915	June 23, 1915	June 25, 1915	July 20, 1917
H. E. Survey No. 202	K. P. Cecil	202	May 17, 1915	June 29, 1915	June 30, 1915	Dec. 14, 1917
H. E. Survey No. 82	K. P. Cecil	82	May 23, 1915	Sept. 21, 1915	Sept. 26, 1915	Feb. 25, 1916
By Whom Surveyed	Surveyor General's Office					
By Whom T. 36 N., R. 20 E.	C. Frank Rhodes	643	March 5, 1907	April 24, 1908	April 25, 1908	Nov. 17, 1909
Thomas S. Ely	C. Frank Rhodes	"	"	May 28, 1908	May 28, 1908	"
Subdivisions	C. Frank Rhodes	"	"	May 21, 1908	June 4, 1908	"

Areas in Acres	
H. E. Survey No. 203	Conflicts
In Section 31	95.22
In Section 32	55.22
In Section	
In Section	
Total	150.50

Act of June 11, 1906	Act of March 4, 1915
List No. 6-304	Dated May 21, 1910
Latitude	42° 34' N.
Longitude	120° 25' W.
Mean Mag. Decl.	26° 09' E.
Observations at	Corner No. 1



Plat of
**HOMESTEAD
 ENTRY SURVEY**
 No. 925
 in the
**CABINET
 NATIONAL FOREST**
 in
 Section 31 surveyed T. 25 N., R. 32 W.
 of the
**PRINCIPAL MERIDIAN
 MONTANA**

This plat of Homestead Entry Survey No. 925 State of Montana is strictly conformable to the field notes thereof on file in this office, which have been examined and approved.
 U.S. Surveyor General's Office
 Helena, Montana April 25, 1921.

John Bullard
 U.S. Surveyor General

SCALE 10 chains to 1 inch

Sta-ways Designated	By whom Surveyed	Inst. Cont. Group No.	Date	When Surveyed		Date of Approval
				Began	Completed	
Standard Parallel	Albee & Trippel	439	June 19, 1903	April 21, 1904	April 22, 1904	
West Boundary	Albee & Trippel	440	June 19, 1903	April 22, 1904	April 23, 1904	January 6, 1905
Subdivisions	Edwin P. McClain	539	August 26, 1907	July 13, 1908	October 29, 1909	December 1, 1909
H.E.S. No. 215	Elmer H. Johnson	213	April 25, 1914	May 6, 1914	May 8, 1914	January 19, 1915
H.E.S. No. 925	A. B. Mallin	925	June 4, 1920	June 4, 1920	June 11, 1920	(April 25, 1921)

Areas in Acres	
H.E. Survey No. 925	Road Exemption Tract C
In Section 31	Tract A 1912 Containing 138 Acres
In Section 31	Tract B 36.35 Tract D Containing 032
In Section 31	Area Being a Total
In Section	of 1.70 Acres of Un-
Total	54.47 - patented Land.

Act of June 11, 1906	Act of July 24, 1919
List No. 1-2048	Dated April 6, 1914
Latitude 47° 53' N	Observations at
Longitude 115° 46' W	Corner No. 14
Mean Mag. Decl. 22° 35' E	

925

49

908172

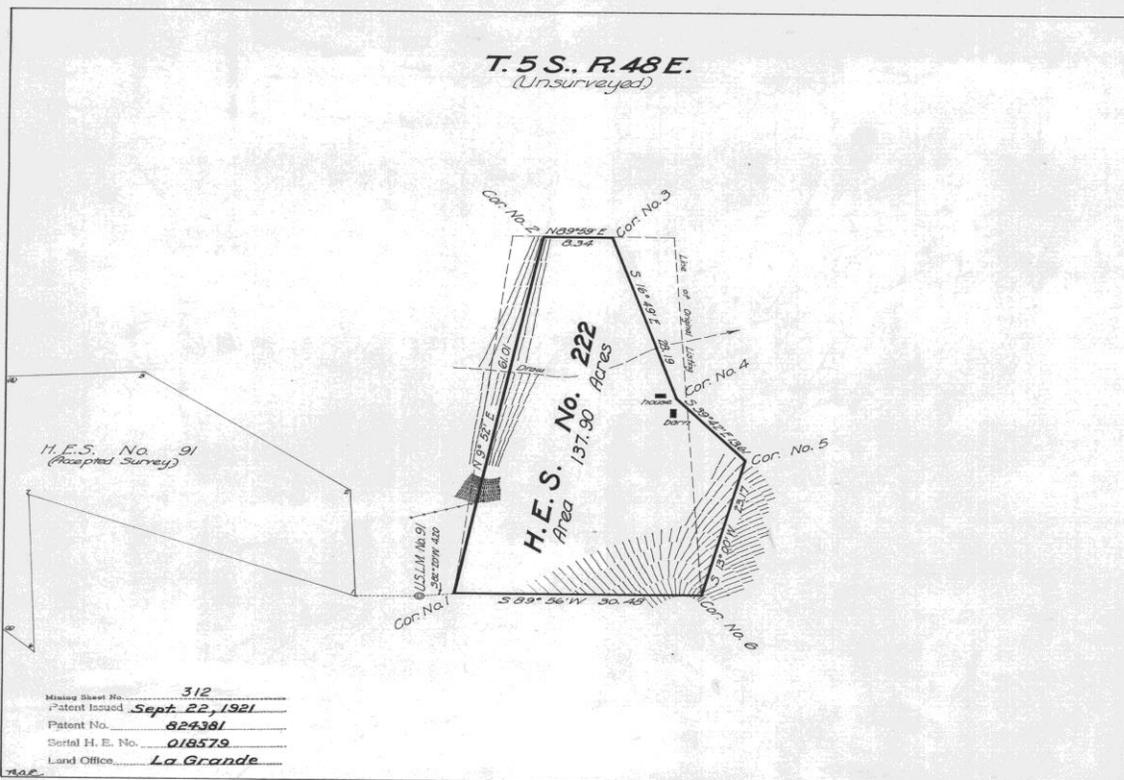
925

Survey accepted Dec. 7, 1920
 Q.L.O.

Plat of
**HOMESTEAD
 ENTRY SURVEY**
 No. **222**
 in the
MINAM
NATIONAL FOREST
 in
 Unsurveyed, T. 5S., R. 48E.
 of the
 Willamette Meridian
OREGON

This plat of Homestead Entry Survey
 No. 222 State of Oregon is
 strictly conformable to the field notes
 thereof on file in this office, which
 have been examined and approved.
 U.S. Surveyor General's Office
 Portland, Oregon.
 October 28, 1919.

Edward J. ...
 U.S. Surveyor General



Missing Sheet No. 312
 Patent Issued Sept. 22, 1921
 Patent No. 824381
 Serial H. E. No. 018579
 Land Office La Grande

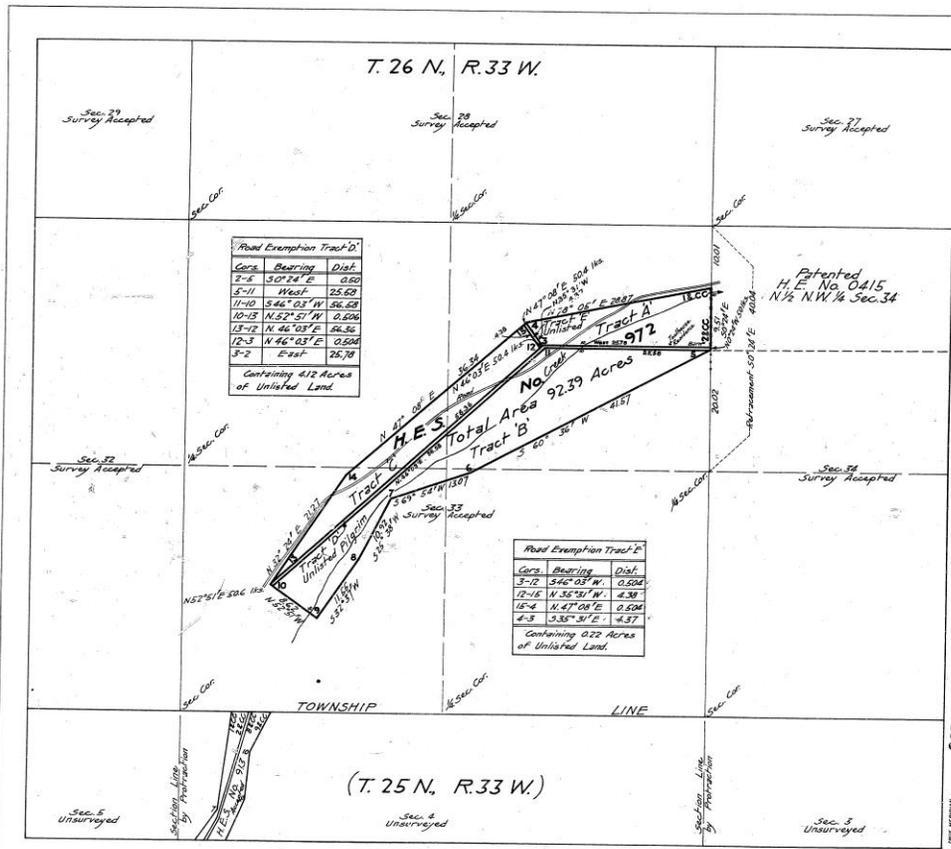
SCALE 10 chains to 1 inch

Survey Designated	By whom Surveyed	Inst. Cont. Group No.	When Surveyed		Date of Approval
			Began	Completed	
H. E. Survey No. 222	W. M. H. Woodward Mineral Examiner		March 7, 1917	Sept. 3, 1917; Sept. 13, 1917	Oct. 28, 1919
H. E. Survey No. 91	George W. Ridgeway Surveyor-Forest Service		July 7, 1913	March 28, 1914; April 1, 1914	June 16, 1915

Areas in Acres	
H. E. Survey No. 222	Conflicts
In Section	
In Section	
In Section	
Total	137.90

Act of June 11, 1906 Act of March 4, 1917.
 List No. 6-463 (revised) Dated May 21, 1918
 Latitude 45° 07' 30" N. Observations at
 Longitude 116° 20' W. Corner No. 4
 Mean Mag. Dec. 20' 10" E.

Confined on 4-590 B. Formerly No. 92



Course	Bearing	Dist.
2-E	S 0° 24' E	0.80
5-11	West	25.69
17-19	S 44° 03' W	56.58
10-13	N 52° 51' W	62.00
13-12	N 46° 03' E	64.36
12-3	N 46° 03' E	65.04
3-2	East	26.78

Containing 412 Acres of Unlisted Land.

Course	Bearing	Dist.
3-12	S 46° 03' W	0.526
12-18	N 54° 53' W	4.28
18-4	N 47° 04' E	0.504
4-3	S 35° 51' E	4.37

Containing 022 Acres of Unlisted Land.

ORIGINAL
Survey accepted Oct. 12, 1921
General Land Office

Plat of
**HOME STEAD
ENTRY SURVEY**
No. 972
in the
**CABINET
NATIONAL FOREST**
in
Section 33 surveyed T. 26 N., R. 33 W.
of the
**PRINCIPAL MERIDIAN
MONTANA**

This plat of Homestead Entry Survey No. 972 State of Montana is strictly conformable to the field notes thereof on file in this office, which have been examined and approved.
U.S. Surveyor General's Office
Helena, Montana, April 25, 1921.

Edman Reel
U.S. Surveyor General

SCALE 10 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group No.	When Surveyed			Date of Approval
			Date	Began	Completed	
Township Exterior	Ernest R. Page & Newton Or	494	June 7, 1905	July 10, 1905	July 24, 1905	February 10, 1908
Subdivisions	Ernest R. Page & Newton Or	494	June 7, 1905	July 9, 1905	August 26, 1905	February 10, 1908
H.E.S. No. 913	R. E. Meurer	913	April 13, 1918	June 21, 1918	June 29, 1918	December 23, 1918
H.E.S. No. 972	A. O. Modlin Surveyor, Forest Service	972	July 11, 1919	June 29, 1920	July 2, 1920	April 25, 1921

Areas in Acres	
H.E. Survey No. 972	Road Exemptions
In Section 33 Tract A 18.04	Tracts D & E containing
In Section 33 Tract B 62.81	4.12 Acres & 0.22 Acres
In Section 33 Tract C 22.04	respectively being 2
In Section	Total of 84.16 Acres
Total	92.39 of Unlisted Land.

Act of June 11, 1906 Act of July 29, 1919 & July 1, 1920
List No. 1-7611 Dated May 6, 1915
Latitude 47° 28' N Observations at
Longitude 105° 50' W Corner No. 1
Mean Mag. Decl. 22° 45' E

972

26

889398

972

T. 30 N. R. 20 W.

FRACTIONAL

Homestead Entry Survey No. 60

Scale 10 Chs. = 1 inch

Application No. 227 (new T9)
 List No. 1690 Dated June 22, 1908
 Flathead Land District
 Entry No. 0206 Dated Sept. 1, 1908
 Located in the
 Flathead National Forest
 Section 11 Township No. 30 North Range No. 20 West
 Principal Meridian Montana
 (Unsurveyed Portion)
 Area 792 Acres

THIS PLAT

of the Homestead Entry Survey No. 60
 of

Frank Opalka

is strictly conformable to the fieldnotes of the survey
 thereof by

C.P. Smith U.S. Deputy Surveyor

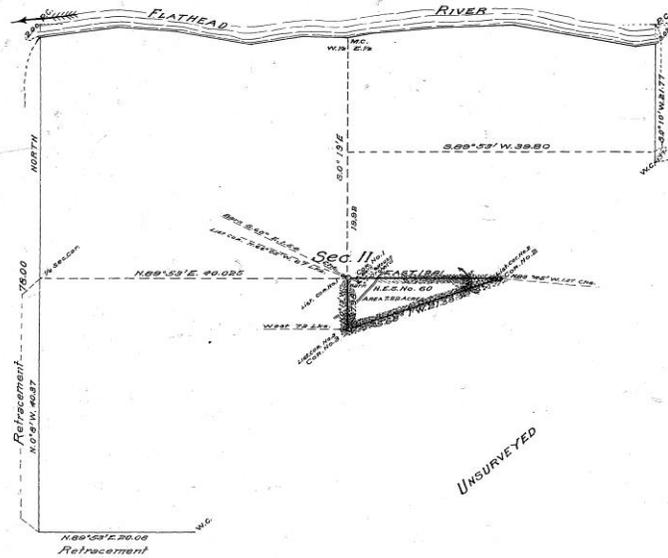
Under his special instructions

Dated Feb. 8, 1910

Which fieldnotes have been examined, approved and
 filed in this office.

U.S. Surveyor General's Office }
 Helena, Montana Dec. 13, 1911.

Jerome G. Lock
 Surveyor General



Sec. 12

UNSURVEYED

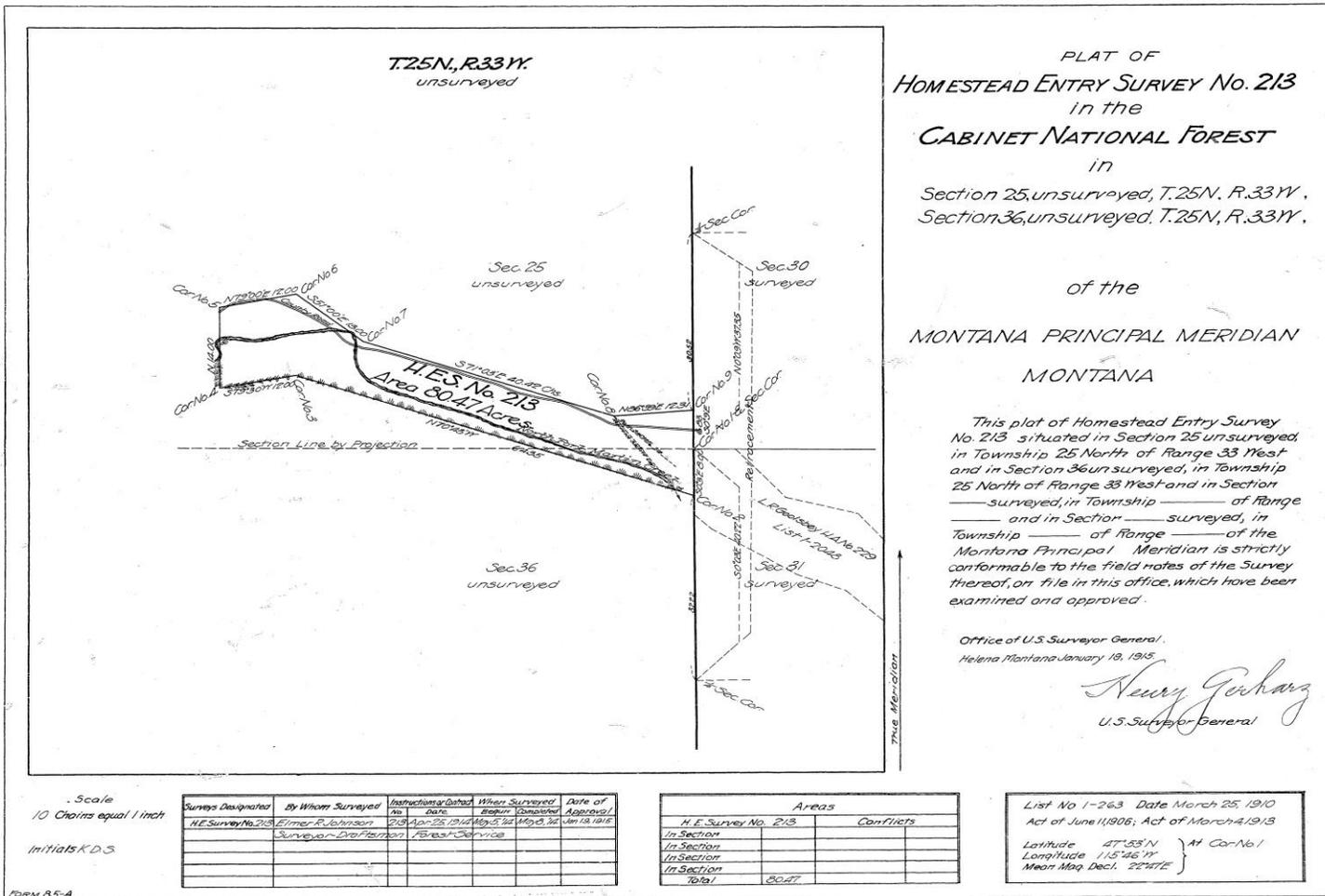
Orig. Return

ACCEPTED BY COM'R.

67 sheets. Con. Sheets 79

60

Pat. No. 284088
 7/15/12



213

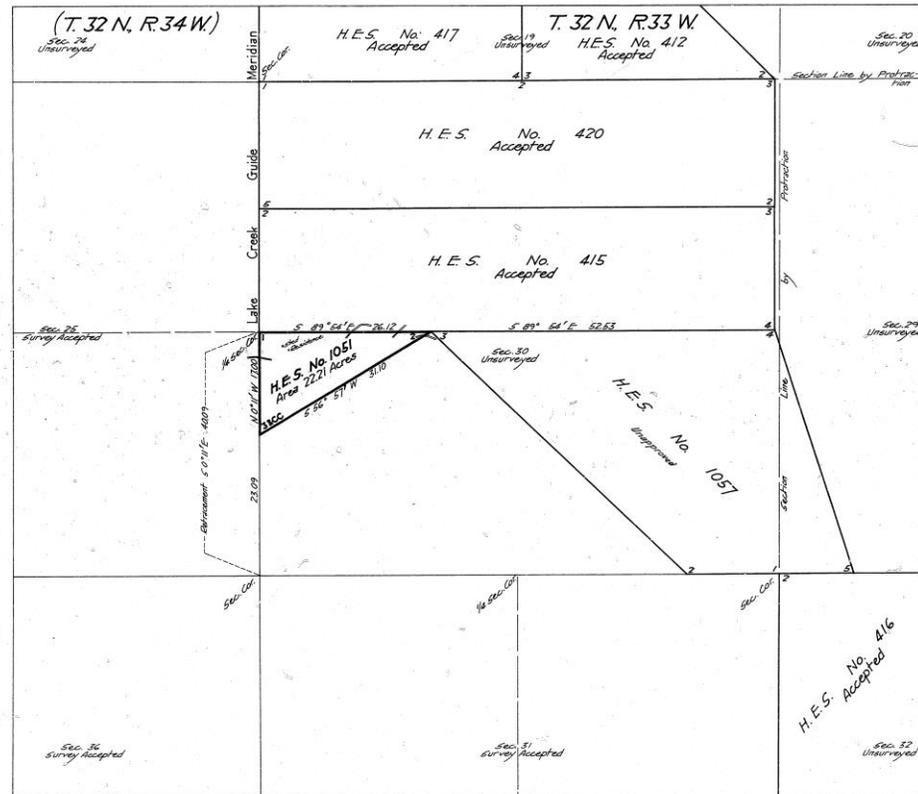
Pat. No. 544,125
8-31-14

Con. Sheets 49

ACCEPTED BY COM'R.
APR 13 1915

OFFICE.

Survey accepted April 11, 1922
General Land Office



Plat of
**HOMESTEAD
ENTRY SURVEY**
No. 1051
in the
**KOOTENAI
NATIONAL FOREST**
in
Section 30 unsurveyed T. 32 N., R. 33 W.
of the
**PRINCIPAL MERIDIAN
MONTANA**

This plat of Homestead Entry Survey
No. 1051 State of Montana is
strictly conformable to the field notes
thereof on file in this office, which
have been examined and approved.
U.S. Surveyor General's Office
Helena, Montana March 6, 1922.

John W. Ballard
U.S. Surveyor General

SCALE 10 chains to 1 inch

Surveys Designated	By whom Surveyed	Inst. Cont. Group No.	When Surveyed		Date of Approval
			Date	When Surveyed	
Guide Meridian	Walter B. Bondurant	406	June 17, 1902	June 8, 1905	June 9, 1905
H.E.S. No. 415	Elmer R. Johnson	415	May 10, 1915	June 29, 1915	February 17, 1916
H.E.S. No. 420	Elmer R. Johnson	420	May 10, 1915	June 26, 1915	June 20, 1916
H.E.S. No. 416	Elmer R. Johnson	416	May 11, 1915	June 16, 1915	June 22, 1916
H.E.S. No. 1057	Grant Higgins	1057	April 9, 1921	April 26, 1921	April 29, 1921
H.E.S. No. 1051	Grant Higgins	1051	April 9, 1921	April 23, 1921	April 23, 1921

Areas in Acres	
H.E. Survey No. 1051	
In Section 30	22.71
In Section	
In Section	
In Section	
Total	22.71

Act of June 11, 1906	Act of July 1, 1920
List No. 1-2581	Dated June 4, 1914
Latitude 48° 20' N	Observations at Corner No. 1
Longitude 115° 56' W	
Mean Mag. Decl. 22° 19' E	

PER 1/26/22

9/8/33

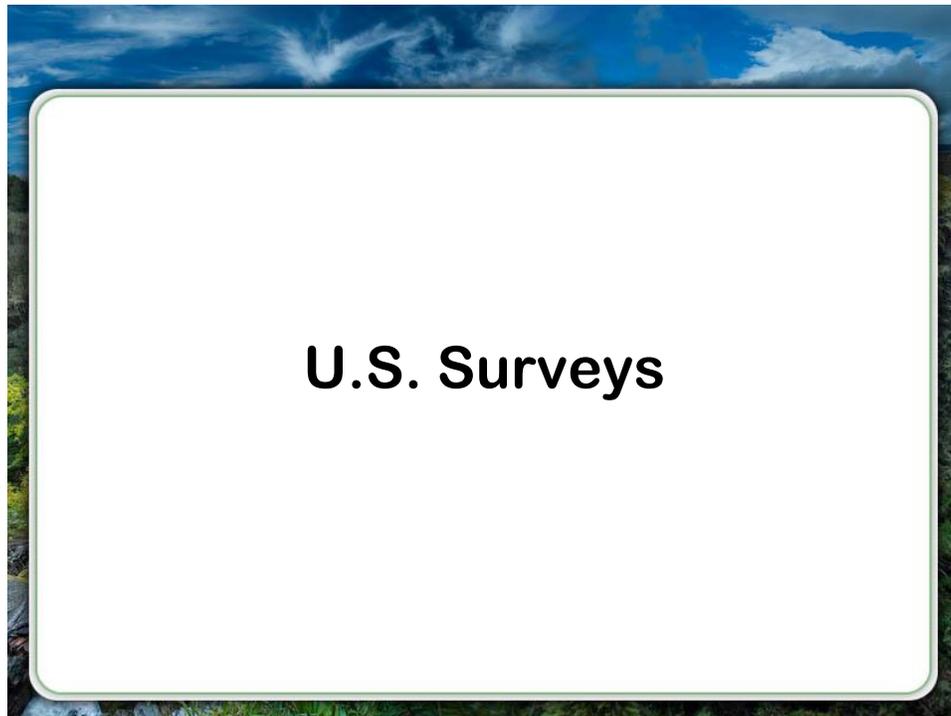
1051

1051

U.S. Surveys, Part 1

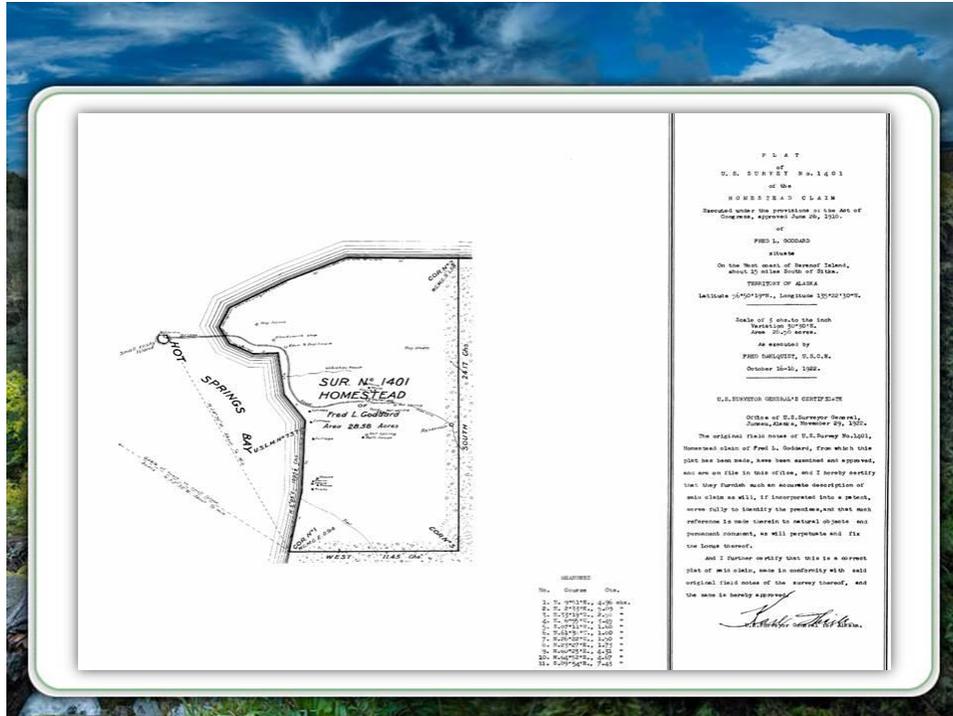
Introduction

Hi. I am Ron Scherler and welcome to the next portion of the non-rectangular survey course. This portion we are going to talk about U.S. Surveys and we've got Mike Harmening from Alaska here to do that.



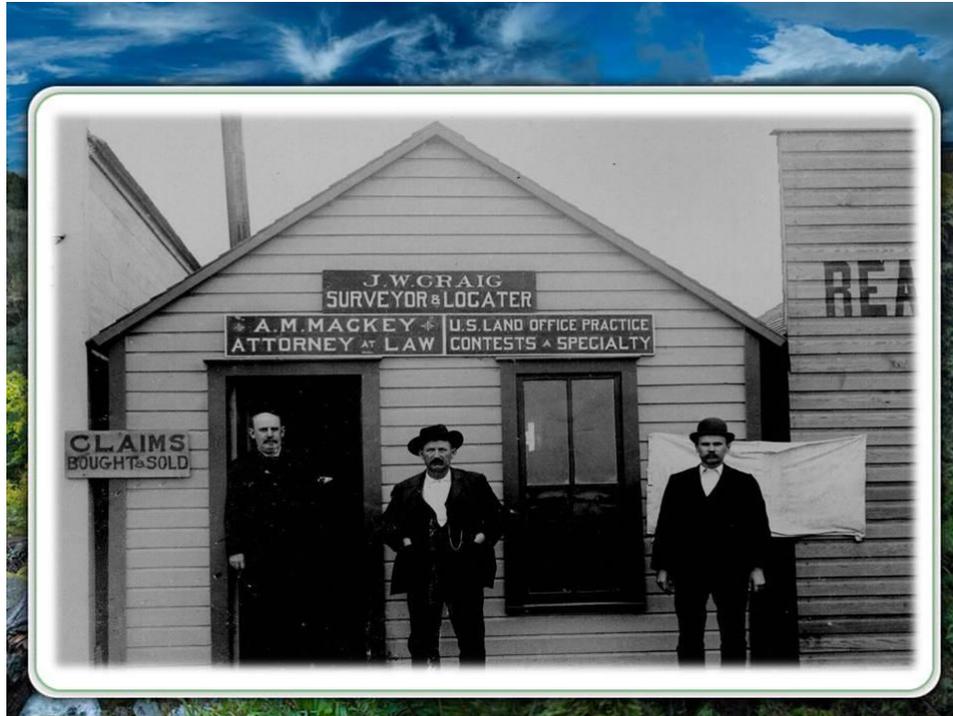
All right. As mentioned, I am from Alaska. I have spent 20 years there working for the Bureau of Land Management in the Division of Cadastral Surveys. Most of that time has been as a crew chief in the field. But more recently I have spent the last five years splitting my time between the review and the contract administration section.

I am here to talk about the U.S. Surveys as Ron mentioned and just to kind of get you guys a feel for this. There is a common element that applies to lower 48 surveys because essentially what a U.S. Survey is it covers all non mineral entries under the public domain and a lot of those Federal Acts that provided for entry for on the land were either extended from the United States or lower 48 or they applied jointly.



So what you are saying is in Alaska you might have a homestead entry down here but in Alaska, it is a U.S. Survey now. Or you might have a townsite down here but in Alaska it will be classified as a U.S. Survey. Kind of lumped them all together up there.

Yes that is kind of the way that it progressed and I will show a little bit about that history as we move forward. The next slide that I have up, I put it up mostly just because I think it is a cool photo. One of the great things about our job is that we get paid to survey the history and we get to learn the history and a lot of times that history helps us solve the problem we are looking at.



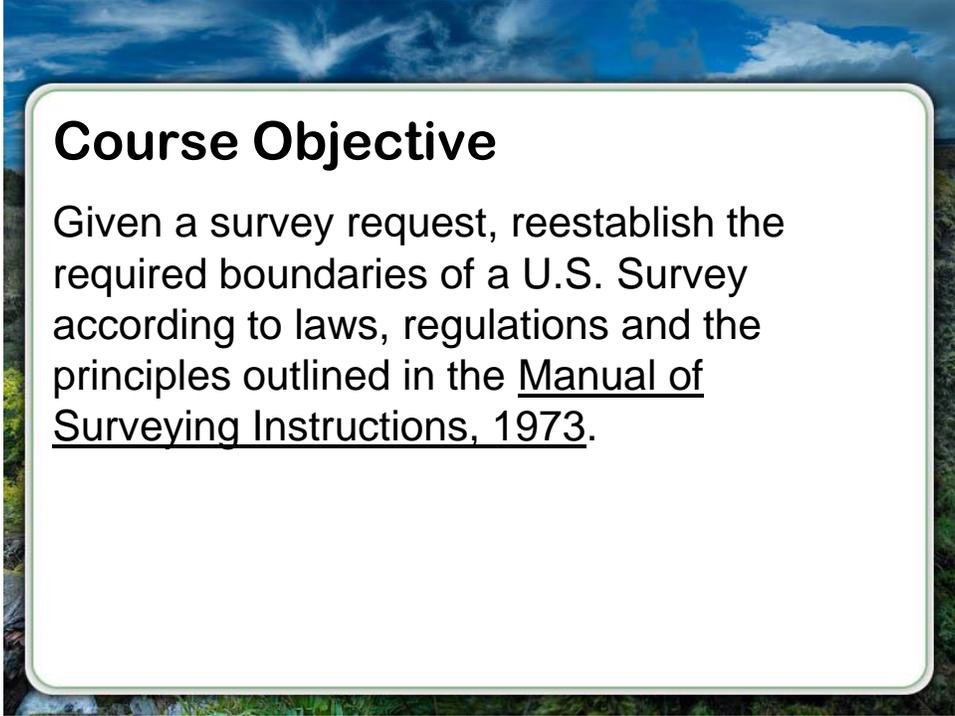
Then we prepare a record whether it is an original survey or a resurvey, we are there for a reason and we get linked to that land and that history.

I don't think there is a cadastral surveyor around who just doesn't find interest in why they are there and what came before and what reason. This actual photo was actually taken in 1902 in Nome, Alaska and that point in time over 80,000 people had settled, (I don't know if you would say settled) , they located themselves up in Nome and they were staking out claims. And I thought it spoke to the time. You would be hard pressed to find a photo with a surveyor, an attorney, and what I think is a real estate agent sharing the same office especially with the claims bought and sold placards on the side.

And the U.S. Land office there beside it. U.S. Land Office, Contest Specialty. I always wanted to go and see how many of those claims were held by attorney Mackey.

Objective

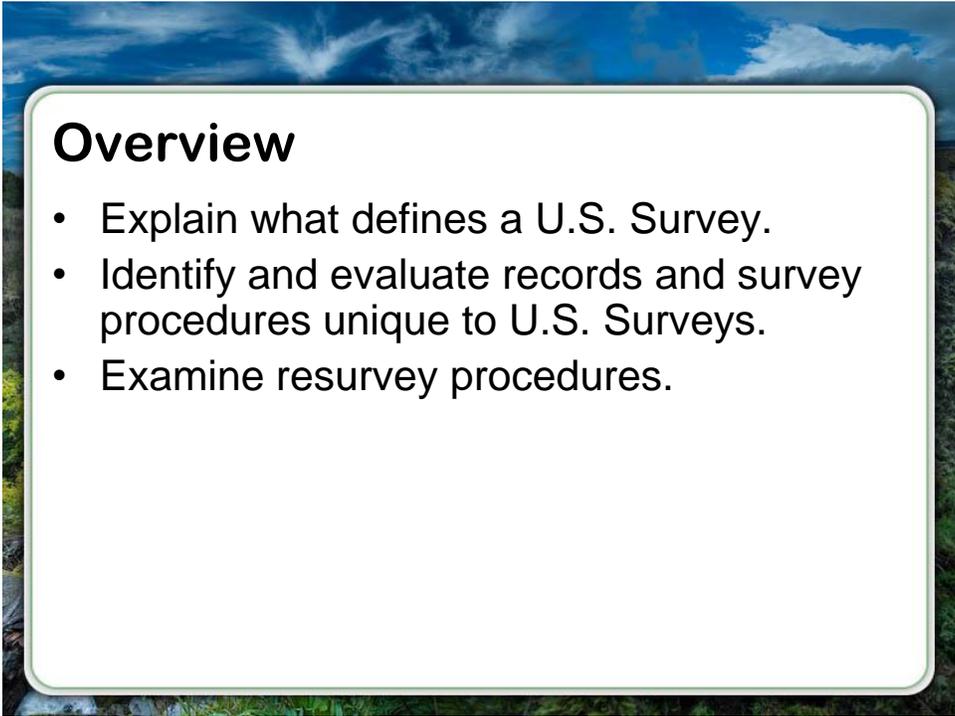
Well, we want to take a minute and look at the objectives. The course objective is for you if you are given a survey request to reestablish the required boundaries of a U.S. Survey according to laws, regulations and the principles outlined in the Manual of Surveying Instructions, 1973.



Course Objective

Given a survey request, reestablish the required boundaries of a U.S. Survey according to laws, regulations and the principles outlined in the Manual of Surveying Instructions, 1973.

So basically we want to talk about when we are done with this, you will be able to execute a resurvey of one of these U.S. Surveys given whatever the circumstances might be there. And some of the things we are going to talk about is we want to explain what defines a U.S. Survey, identify and evaluate records and survey procedures unique to U.S. Surveys, because there are some unique records we are going to end up with some unique procedures.



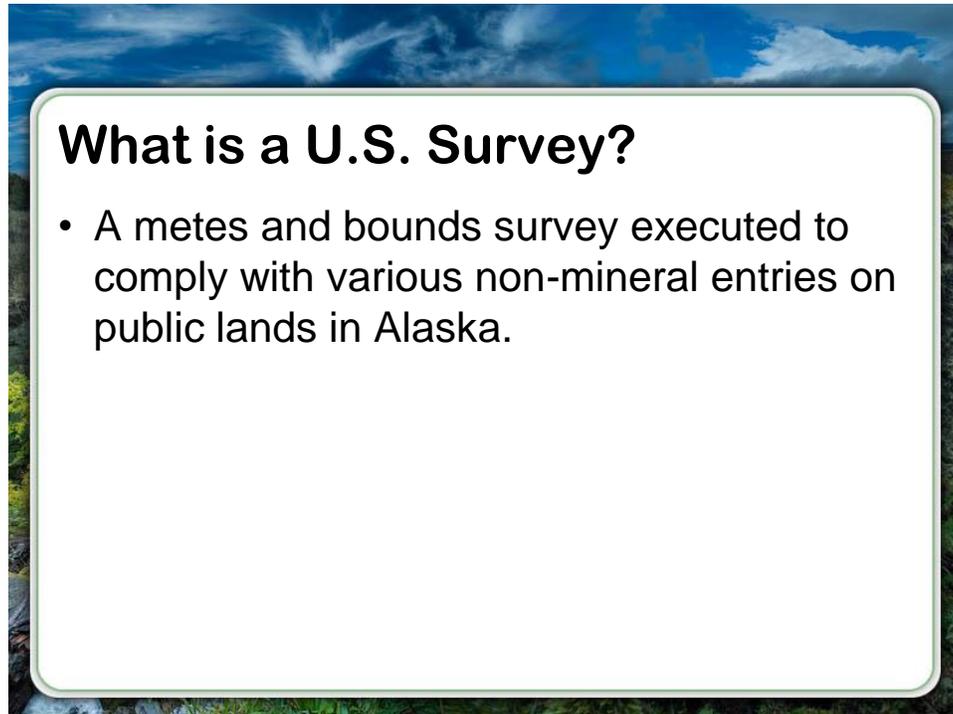
Overview

- Explain what defines a U.S. Survey.
- Identify and evaluate records and survey procedures unique to U.S. Surveys.
- Examine resurvey procedures.

And then talk about or examine the resurvey procedures. So I want to start with talking about what is a U.S. Survey. So Mike, why don't you take a minute and really explain what a U.S. Survey is.

What is a U.S. Survey?

Well Ok. It's a metes and bounds survey, executed to comply with various non-mineral entries on public lands in Alaska.



The first U.S. Surveys were started in 1891 and prior to that time there was no way for anyone to enter on the land in Alaska.

So people just live there but had really no right or no way to get title. Yeah, mineral entry was there and we had a GLO office established for that. In fact it was in June and at the time one of the surveyors was out there surveying townsite lots because there was so many people up there that were servicing the mining industry.

So they were surveying townsite lots even though there was really no mechanism. Yeah and I even have gone back and seen the letters that the GLO sent informing the surveyors that he is without authority to establish. So the authority just wasn't keeping up with the settlement and the people coming. Correct. So the act in 1891 it extended townsite laws that existed in the lower 48 up to Alaska.

What is a U.S. Survey? (Cont'd)

- Act of March 3, 1891 (26 stat.1095) 43 U.S.C. 732.
 - Extended trust townsite laws to Alaska and provided for Trade and Manufacturing entries within the territory.
 - Regulations approved June 3, 1891 (12 L.D. 583) established a serial number system for non-mineral entries in Alaska.

And it also created a new act called the Trade and Manufacturing Sites Act which provided for the salmon industry, canneries, 80 acre parcels. So that was the first four or five years of the survey system. Those were the two acts. So if you are going out and surveying something anything between 1891 and 1900 odds are that it is one of those two surveys.

Those ended up being U.S. Surveys. Correct. And I find it quite amazing that the regulations that were established were three months after the act was passed. You think about that today, it takes 3 months. It takes us a little longer to do regulations than three months.

Anybody who is resurveying these old surveys should take the opportunity to get out there and look at those old surveys at those things because they talk about everything from how the corners should be established to how the plat should be prepared. And it also created that serial number system.

And they called them U.S. Surveys and they ideally started with survey #1 and went up and there was a little bit of glitches in the beginning with surveyors calling the same survey, survey #1.

Well there's probably Alaska is a big place and so there was probably some record keeping problems with the surveyors scattered around the state and I can see how you can get a few duplicates and miss a few numbers here and there.

Yeah. Eventually what they ended up doing was giving each surveyor that was working in Alaska a unit of numbers. One survey would have 1 thru 50 and when he ran out he would report back to the office. Let's talk a little bit more about the primary ones as we look at the next slide. These are the main surveys in Alaska that are going to end up as U.S. Surveys.

U.S. Surveys

- Primary non-rectangular entries identified by a U.S. Survey number are as follows:
 - Townsites
 - Trade and Manufacturing Sites
 - Homestead Entries
 - Mission Sites
 - Native Allotments
 - Headquarters Sites
 - Lighthouse Reserves
 - Withdrawal Surveys (Forest Reserves, Park Boundaries, Wilderness Areas, Reservations, etc.)

Yup those are the primary ones as mentioned the townsite and trading manufacturing sites 1898 the homestead entries the same ones that existed and a lot of parts of the lower 48 and that act extended to Alaska.

And it's my understanding that in the beginning they actually were given homestead entry numbers and then later converted to U.S. Surveys, is that correct? Actually that was with the homestead entry surveys on the forest. On the forest?

That's the part that Roger talked about in this part of the course. So some of those will have duplicate numbers, they'll have a number that's a HES number but it was also then given a U.S. Survey number.

I didn't have the homestead entries listed in this category and there are several others that I don't, but I guess the homestead entries I'm talking about here are the ones that are on the public domain.

And in the lower 48 most of those were taken by aliquot part because we had the rectangular surveys there. In Alaska there was no survey existing, so they needed to be surveyed by metes and bounds cause there was no rectangular it was unsurveyed.

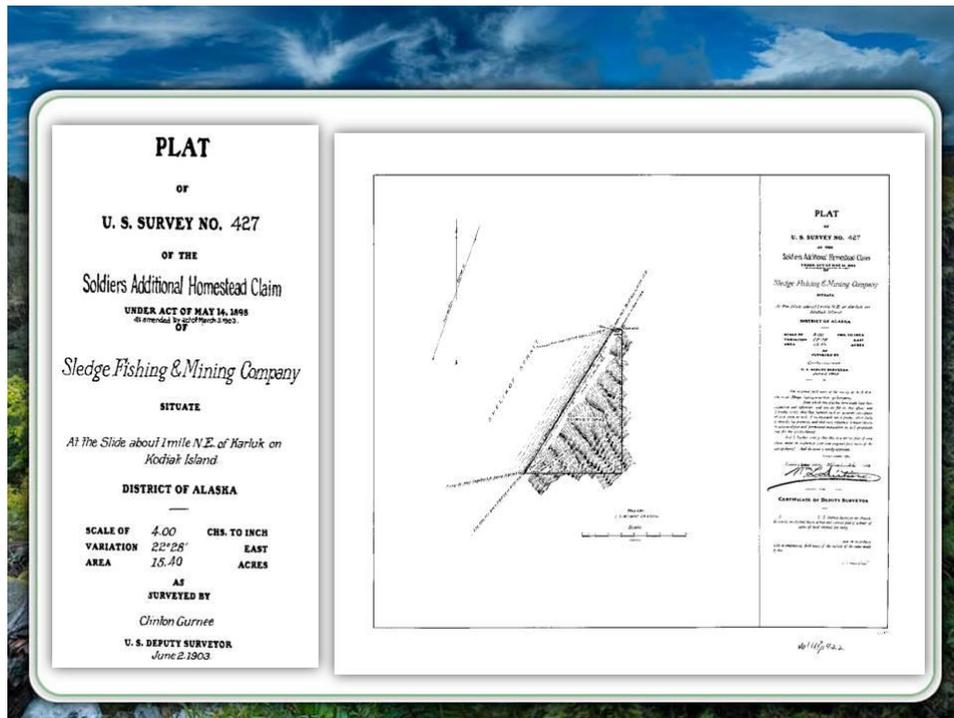
And we did not have the rectangular system in Alaska until 1905 and it's progressed slowly and then due to legislation that has occurred they have taken a lot of short cuts to facilitate different acts that we had placed upon us by the state. So our rectangular system is quite different. There is a lot of similar aspects to it of course. We have a lot of unique issues and those tie in to the U.S. Surveys. Problems as well.

I think as we look at this list you'll notice that a lot of things on this list are parallel with things we have in the lower 48. So a lot of the things we are going to talk about in this portion are going to have applications to similar situations in the lower 48 they just aren't going to be called U.S. Surveys maybe but there going to have applications to how we do things.

That's correct. I mean as you see the different segments of the ARCS IV class we talked about in congressional designated boundaries and wilderness areas or all those are put under the context of U.S. Surveys so a lot of the unique aspects to a U.S. Survey really a lot of them aren't really that unique. And in fact I would say that the U.S. Survey system in Alaska is one of our success stories. Surveys are typically very well executed. And we monumented all the corners which is a rare up there. So the resurvey process of them with everything else you got the evidence to go on.

And good records. It's very easy to find the records there's not a lot of ambiguities like you said there and done very well. Well let's take a minute and begin looking at some examples and talk through some of these we have one on the overhead here.

Let's look at a few examples on the overhead Mike. Alright. This first one I put up basically just to talk about some of the unique aspects of these things.



This looks fairly straightforward and simple and it probably is. This was from the Soldiers Additional Homestead Act of 1903 and one of the unique things about that act was the actual soldiers never really entered onto the land and they were given these as payment for their service and then they would sell them off to fishing sites or whatever else so it was a way for them to get income and it was a way for the government not to have to pay them.

Pay them. So that's what kind of came around there's actually quite a few of them. There are probably a few that they have actually settled with the majority sold them took their money. Let's kind of a unique thing. Most of these surveys had entry. A lot of times. I'm not sure if the canneries located themselves before they actually got title or not. Of course another thing is the water.

They have a lot of right, just about every U.S. Survey in Alaska I would think has some kind of riparian or it's going have because the rivers are moving so much. Because water's everywhere. Transportation's difficult transportation is by water. Tremendous amount of shoreline. It's kind of unfathomable. I mean when you travel around the state.

So riparian issues and we are just now starting to get into some unique issues where we actually got fairly extensive settlement and there's been quite a bit of riparian action on the ground. Because you really have a lot of pretty flat country up there with some major rivers that do some major movements in places.

That's one thing that I've noticed the difference between some of the things I'm seeing at least currently. I think a lot of the riparian action of the lower 48 been channelized and fixed. Not all but a lot of issues been decided on a lot of the parts so we are still pretty young in that aspect. I think, I know we are going to have a lot of work so if anybody interested in getting up there dealing with a lot of riparian, you are going to get into a lot of unique stuff.

Anything else about that before we go and talk about the records? I think the position, you think about this, this is out on Shelikof Strait Ridge which is right across from Kodiak and at the time a lot of times these surveyors have traveled weeks or maybe months to get to sites and a lot of times they are pushing the weather.

And so it's amazing to me they were there and they put corners in and they did their jobs faithfully as a result a lot of times they have a lot of position deviation on the older surveys and we also have a lot of rotation. Bearing problems because they couldn't get the sun.

They went with the needle a lot on some of the surveys where they indicated where they got the sun someone might question it. Well after you have been there 3 weeks, and the sun hasn't shined, you know maybe you have to do something to move on.

One unique story that I remember reading in the general description of the set of notes, there was a surveyor who was apologizing for the condition of his monument because he had to hurry because he had to catch the last boat out for the year. Oh yes, so ... if I don't get my corners set I'm spending the winter.

That's just some of the unique aspects I think that go. Especially as we look historically, there were some, they were dealing with some, issues that made it a little more difficult to work. Remoteness, and travel and terrain and just all kinds of things. Sure and it is amazing where they went and it was, and they followed the salmon, and some of salmon runs were way out on the Alucian Chain, thousands of miles out there.

You had to go out there and survey it. Well let's talk a little bit now about the records and so what's interesting, unique, different about the records for U.S. Surveys?

U.S. Survey Records

- U.S. Surveys do not reference a group file, but have an equivalent survey file identified by the survey number.
- Case Files for most entries surveyed as U.S. Surveys contain land exams that identify location, legitimacy of entry and a description of the claim.

Well, the actual, I don't know if there's too much unique about the records. It's pretty straightforward system we pretty young with it and I think we kept pretty good records. We basically have, we don't have a group file associated with U.S. Surveys like a rectangular job. We have with the survey file and one unique thing about that is if we go out and do any additional work with that survey, that all goes to that same file. Whereas you think about rectangular assigning a group number.

In a township you have different files for different work so you could theoretically have 50 years of work all on one file. And there filed by U.S. Survey number. And now another thing most are plat only, correct? There are a lot that are plat only. So you may not have a set of field notes. Whereas in all other the majority of rectangular surveys, we have plat and field notes here, we have a lot of plat only. And it would make sense because most of them were small surveys.

Started taking off but most ones started showing up in the mid 60s. And they really really became I guess vogue in the 80s. It was I think the advent of CAD. It was when people said hey, And another aspect of this slide before I move on to an overhead is the case files not much different from what you would find in any case file. One thing with anything for sure post 1960s they had, they had land exams. There was actual federal employees that went out and checked out the validity of the entries. Interesting prior that a lot of the times they had special instructions without lining that obligation to the surveyor. So the surveyor had an adjudicated role a lot of the time to the surveys.

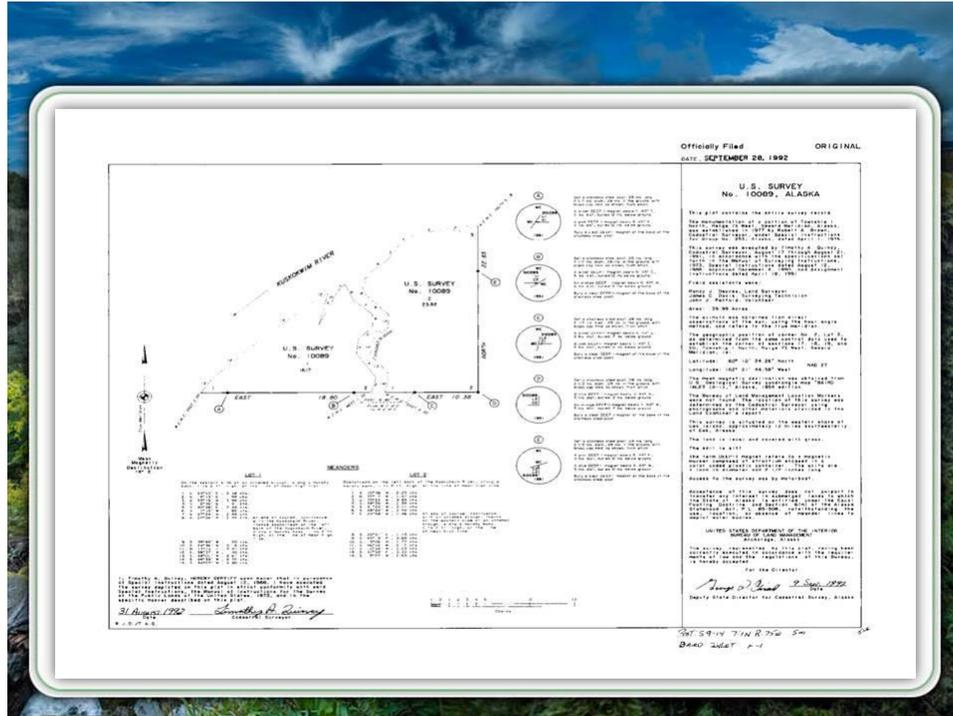
And they, and it is my understanding that while in the field, there was there is some kind of a mark or monument, often they marked a tree or left something on a tree that said here is where the site is. And on occasion, there are there is confusion about where these things are and that can become very important because by lat and long or by position, we may end up with surveying it in one place, and then find out later they were down river eight miles, see here is the tree with the monument. Does that sort of thing happen?

We got a lot of people that are, actually they have applications and claims and they actually located themselves on the ground or their heirs did and now they're coming back and saying that is not where my allotment is. And well it really speaks to the importance of making sure we document the land exam and then we go out and do the survey and we should clearly document what we found and how we found it, find accurate stuff. It's a little bit like having a preliminary survey which we have in U.S. Surveys and DOCS and some of those. This isn't a survey but it's a point on the claim somewhere.

So if you don't get the claim around that we've missed it. Yeah. The homesteaders going out and marking it. Another thing that I just want to mention, when I worked in Alaska, one of the things that really struck me, was that they don't have a control document index, there is no CDI file. I think all of the other states, I am not positive but all of the other western states have a control document index which have a copy of all the patents, all the withdrawals, everything that's happened, in that township and Alaska does not have that for whatever reason. However, Alaska is really much newer and so getting patents and things, is not such a big deal. It's a little easier.

Most the time. A few places where we have a lot of activity, a lot of things happening, and it sure would be nice. Well, records that often an issue. Is getting all the records and making sure you have all the records. So know we are going to look at another document here on the overhead. Mike, let's look at another example on the overhead.

Well here's a record that of the one you mentioned that is plat only.



This is a pretty recent one, it looks like it was approved in 1992. As you can see, this represents the entire record. We put a lot more information in the plat memo that would show up upon either the title page or the preliminary statement of the field notes. The general description and then we have the surveyor's certificate down here. Then we have, if you look at each corner, there's corner designators, let's zoom in a little bit here. A corner designator goes with the corner, we show the corner how it was marked and we write, kind of in field note format, what was set, and the accessories to that corner. We also have meander tables, right here, and they are basically numbered on the plat, they run around, pretty straightforward stuff, and they work fairly well for original surveys.

Sure, and really on that one it looks like there are only five corners. There are five corners to describe, there are meanders. I would imagine sometimes, meanders can become a problem with how many courses you might have but not normally.

For sure, and I guess that's one of the disadvantages of these things, the time you get too much information and if you get into a resurvey context your, in my mind you want to go to the field notes, have a tendency of people trying to push, push more information than they have to shrink the actual picture. All over. Well, you can take any one of those corners descriptions, in the original, original survey form, it's a pretty short thing. In a resurvey form, it could end up being a whole page of field notes to do it correctly.

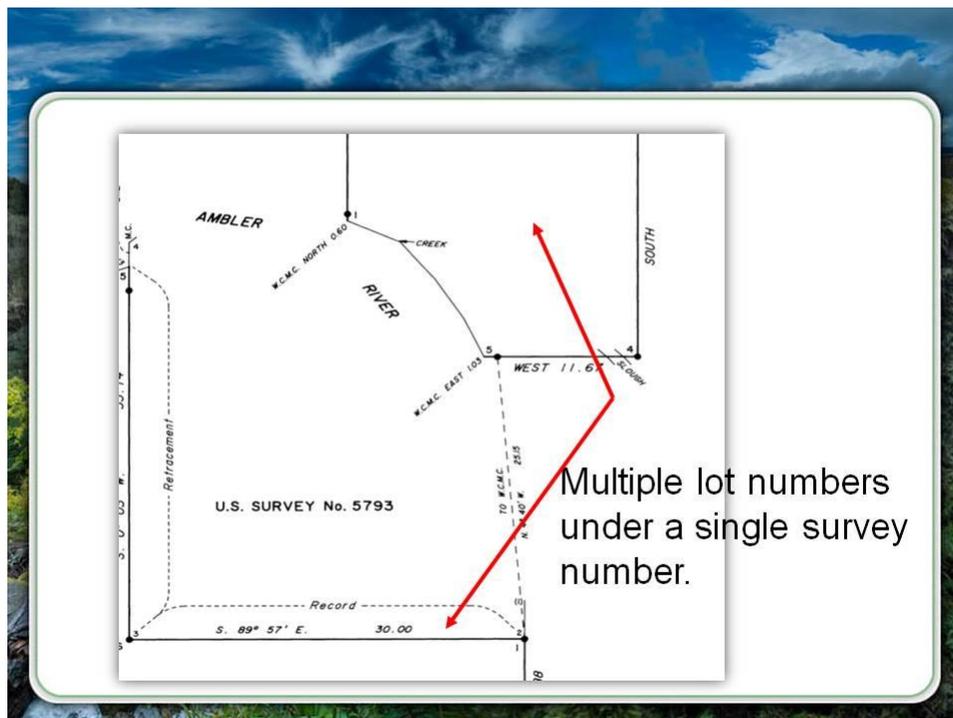
Your getting a type of restoration, and you want to explain things, you get quite extensive. I think you lose some things without making the line calls. So, but there is some flexibility. So you will find some that have field notes when they are needed, and some that will not.

Yeah and we will even go to two page plats only which I, you know I'm not a fan of them, I've done a lot of them, I think they work great for original surveys, but one of the things that came up that kind of changed my mind on them was the GCDB folks. And it told me that you would just be amazed by the number of times where we lost data. We actually had surveys where the record was approved but they didn't have the meander layer label turned on at the time.

And there's a redundancy in that field note writing. And you can catch errors, you can trap things and so there's an advantage to field note writing. Two documents. I think that they do, there's a reduction of work load most of the time, although I think sometimes people spend so much time, situating stuff, that they might have been quicker writing field notes. And, and the real advantages I see is there's the, the volume. We've had a volume issue with storage and everything and all this.

Alaska, off the top of your head, approximately how many plats per year in Alaska. I don't know, it's a lot. It's a lot 4 or 5 hundred. 4 or 5 hundred plats per year at least. At least and that goes back to these U.S. Surveys we're up in the high thirteen thousand numbers now. The result, a lot of them. So there's a lot of non-rectangular surveys. Alright, well let's keep moving along with the next example.

I don't know if these here are unique or, or not but a within one U.S. Survey unlike the original homestead entries or the trade and manufacturing sites usually one entry. Okay Mike let's look at the next example on the overhead. All's I'm showing here is that we can have multiple lot numbers under these surveys and if you looked at the early surveys, mostly U.S. Survey correlated with one entry.

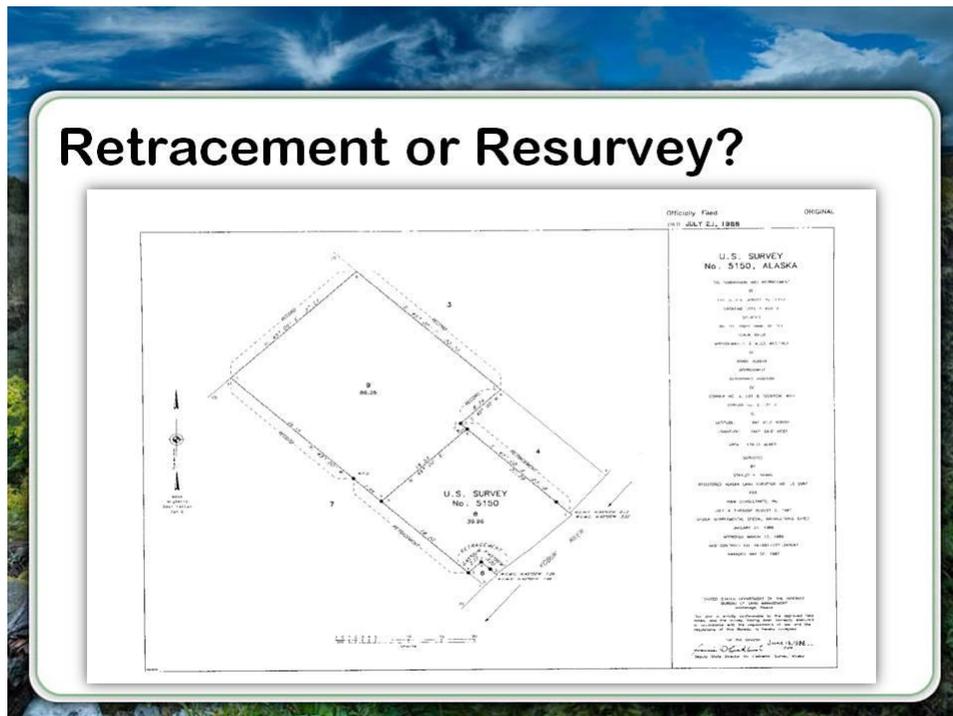


You have Homestead entry or you had a trade and manufacturing site or you have and as we progressed and we had primarily the Native Allotment Act that came in, we had, sometimes we had 30 or 40 different applications all in one area. And we would do them all under one U.S. Survey. So, so we can actually have 30 applications to allotments and they can be upwards of 5 miles apart and they can all be under the same U.S. Survey with a different allotment.

So, if I'm isolated, I'm pretty remote, my allotment may have a unique U.S. Survey number, it's just is my allotment. But if I'm in an area where there are multiple allotments to be surveyed, my allotment is probably going to have the lot number within a U.S. Survey number.

Yeah, and you can also have a single application that has multiple lots, segregated by numerous water bodies. I've seen applications where we have 20 lots. Cause each lot is segregated by the water and each one was creating riparian rights up against it. Because there's lots of water up there. And it gets kind of crazy sometimes. Alright well let's go on to the next one.

Alright, and once again this is just kind of going through the records that we have up there and that there, I bring this one up but because we are pretty young in the resurvey realm, I think a lot of us have struggled with the terminologies and how you use it and when you use it and sometimes I think when we are talking with lower 48 surveyors what were thinking is different then what they are thinking. And what your talking basically here is that the definition of retracement and the definition of resurvey.

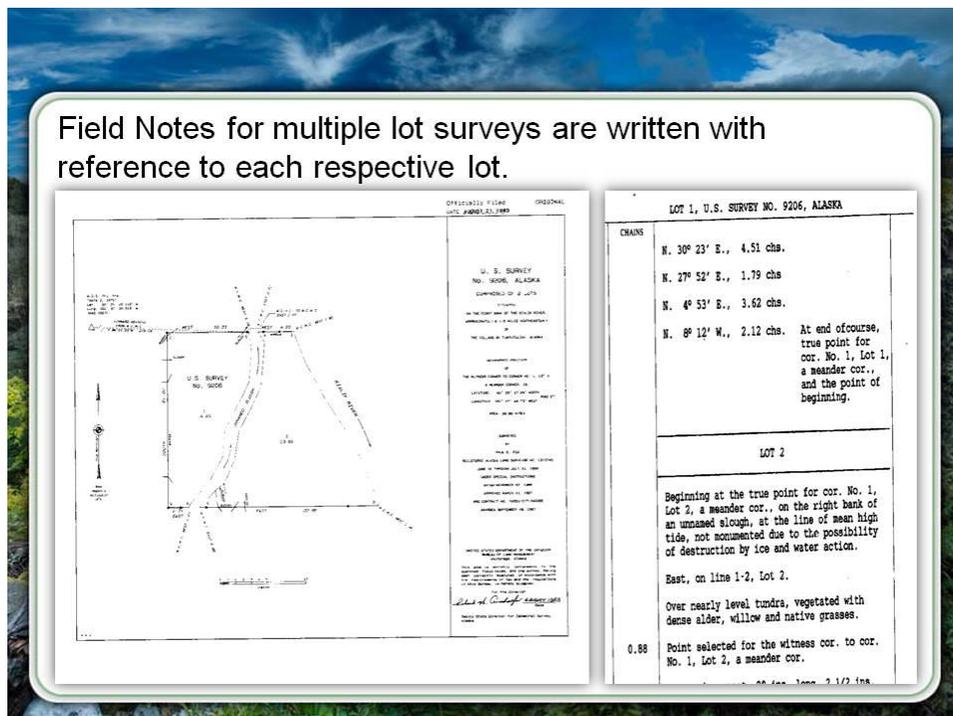


In this particular case that's one of the issues I think that, and I bring it up for the U.S. Surveys that I happen to be a part of, through the early 90s we were kind of schizophrenic, with the terminology in that. A lot of it was politically driven I think with how it came up with terminologies and I show this one because we have a U.S., a new U.S. Survey being that we are

creating a lot up here I believe, would up in, you can see there is a little bit of difference in the water and it was erosion, and it showed retracement, they established and called for corners on the lines and in my mind that's what I would call a resurvey at this point in time.

I think that's thing we've seen in the rectangular system over time in a lot of places. So, that the retracement resurvey thing is a little bit unclear so again it is up there as well. It really is and we're struggling with it right now, the rectangular, and one way I'm thinking about it right now probably doesn't apply all the time but I like to think of it as do we need to describe the line or don't we. Is the retracement is a tie when you skip over things or not describe that line, seems like when I tell, when I explain things to people in that way, we are not on the same page, to start using the word, resurvey or retracement.

Then there's some confusion. Confusion is what we are talking about. Okay, here's an example of probably one of those applications that was a single application that was segregated by the water. So, so there's two parcels there. So there's the lot and the reason I showed some of the field notes, I'll pan back over there in a minute, but what you have here, have lot 1 is described in it's entirety, so that the field notes would run thru corner 1, thru corner 2 and then up through the meanders and close back out to the point of then I would start at number two and we would run a tie over to corner from corner 1, and then we would go around in it's entirety.



So when you are reading the field notes, each lot is independently described. And that's, I guess, to my line of thinking that it's kind of unique based on the way we actually ran them on the ground. And I'm saying that because, sorry about so much movement there, I'm saying that basically because most the time the surveyors would run it thru the whole lines then do the meanders kind of like this. And we would provide measurement, you know when you made a measurement you should provide it. Standard procedures not, is not to.

And, and I'm familiar with situations where we, we've had that same kind of a thing, written the field notes around the exterior of the whole parcel, and then came back and written field notes around each piece. Well, that doesn't work very well either because you end up redescribing the same line more than once. And so that, that doesn't work very well either, well there's been a lot of ways it's been done. Is that sort of the norm?

It's been, it's been done that way for a long time. I'm not sure if, I'll bring that up one more time, that one of the things that they were talking about doing, was that doing away with setting the MC's if it's a single application. So if it was a single applicant, we were only going to set the corners and make calls to the MC, and I was very adamant that if we were going to go that route, then we better write them on the rectangular notes. Well, hopefully they are still setting these.

Like I said it's one of our success stories. I would hate to see us go. Well now we are going to talk a little bit about, well I guess we have another example. Let's look at our next example on the overhead. This is just another one of those things to bring up with U.S. Surveys with regards to a lot of those earlier entries, a lot of them never went to patent. And they were cancelled so we don't show those on the MTP and we don't have that, a lot of times we have, it's not readily available information, it doesn't just stick out that there might be a survey out there and I'm showing this one in particular on the elmo because this is an actual survey where we had a surveyor that had to go out and reestablish the corners, U.S. Survey number 44.

Which is a valid survey. He found, yeah, he found this cancelled survey after the fact and he actually had to reestablish the corner on this line and he wasn't even aware there was a corner on the line and it irritated him greatly. And there's a lot of travel involved often up there. It's expensive to have to go back. And so the cancelled ones in the records don't show up. You have old district maps sometimes and old protraction diagrams.

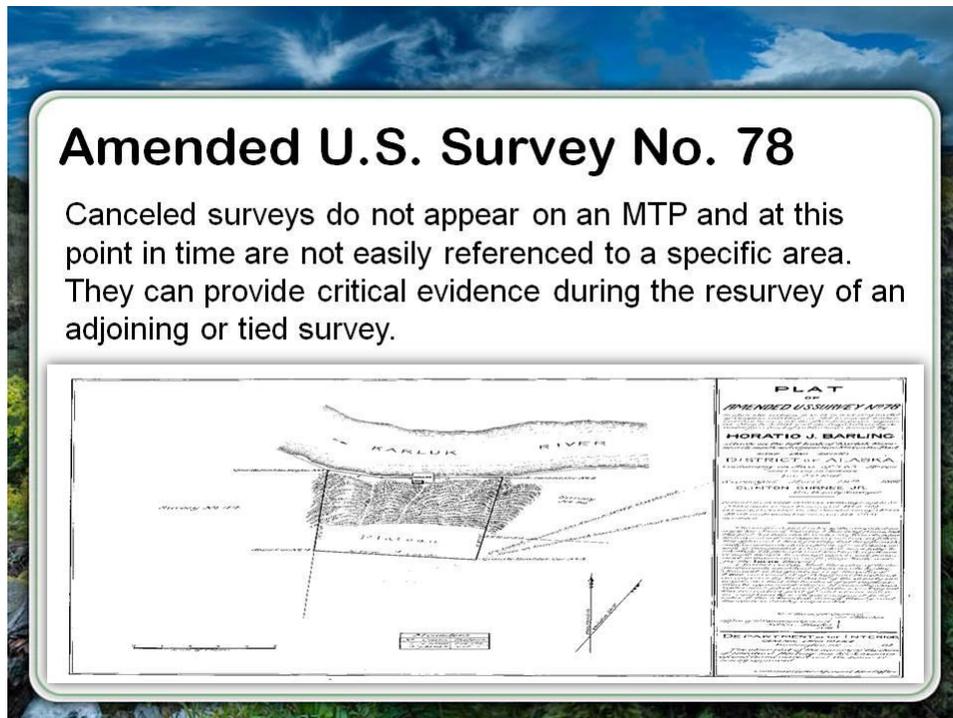
Before we were computerized, people used to plot everything. So there are some records you can find and I also think historical indexes to go through them and actually look. Sometimes I just don't, I have one up there in the Nome area, where I stumbled across it. And it just didn't stick out.

So that's just another good piece of information to know, that there are cancelled U.S. Surveys that might have an impact of your resurvey and sometimes it can be difficult to find the record. What I wanted to bring forward there and be aware of them especially in the places that have been heavily settled. This is Carluke and this is famous fishing river on Kodiak, and it's got an amazing history.

I would imagine even sometimes you would have a cancelled survey and later somebody else comes in that same area and it gets surveyed later. So then you can end up with multiple monuments or all kinds of things, you can't figure out where those where those extra monuments come from. And the interesting thing also is a lot of those guys tied with a tremendous amount of stuff.

They would tie one corner not two, three or sometimes four different corners on a claim, they had to figure out where they were before they could locate them. Which is really helpful when doing a resurvey one of those other claims if you can come up with the records. Now we are going to talk a little bit about the coal claim surveys.

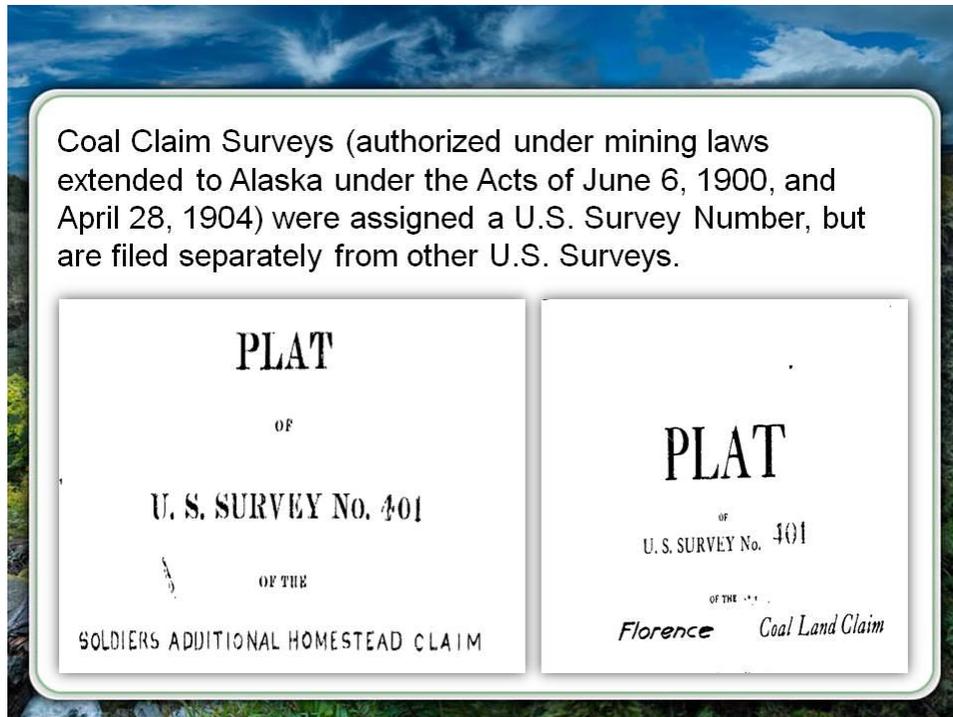
Is that another thing that's unique to Alaska? I believe so. Yep. There was two acts, I don't think there's a tremendous, I think there's maybe a little over 400 of them, very very few of them went to patent.



I don't know the exact number. The surveys are out there and it was primarily for the mining and coal. Once again, if they didn't go to patent we couldn't then tract the record. There out there, the record, we have the record it's not readily available you don't know what township it's sitting in.

You don't know if it's setting over the top, you don't know if they tied to anything. You have to, you have to be aware of those records and then the other unique aspect about, about that is if you look at the U.S. Survey numbers here, see if this arrow works, and both of these are U.S. Survey Number 1. One is for a coal claim the other one is for a soldiers additional homestead. So they had the same survey number.

Coal Claim Surveys (authorized under mining laws extended to Alaska under the Acts of June 6, 1900, and April 28, 1904) were assigned a U.S. Survey Number, but are filed separately from other U.S. Surveys.



On two different things. Coal claims overlapped and they actually had, I've actually had coal claim surveys in my special instructions I should have had, the U.S. Survey. So the record's pulled where incorrect. Sure. Alright. So and again, how many did you say? Thirteen thousand U.S. Surveys? So, so we have done a lot of them over a long period of time and it's a big state with travel and communication problems early on, so you can see where some of that could happen.

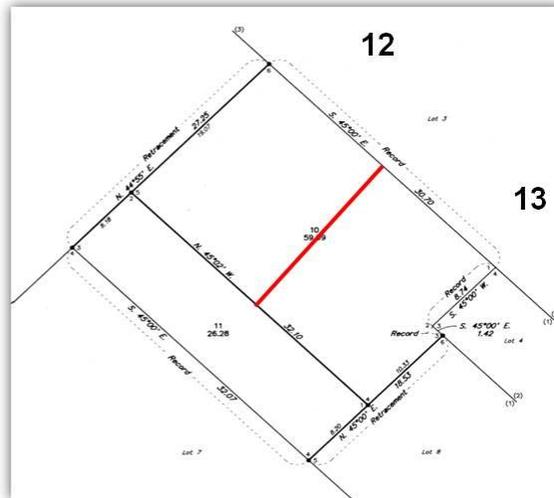
So we talked a little bit about the a different kinds of things, the things to look at and the things that are unique. So we have these U.S. Surveys, are you ever involved in subdividing? Cause I would think if we got something we are going to be subdividing it and especially where we are talking about native allotments where there is still a federal interest.

So were out there subdividing them, I would imagine. Yeah, exactly. The restricted native allotments we are going back in and we're a doing a lot of that right now. So, what are some of the issues, things that we come up with there? This next slide, if we move to it, the standard that we followed were subdividing these is we would go in and typically under the normal context and you think if we are subdividing it, revising the lots then it still hasn't been patented.

Federal authority subdivisions of U.S. Surveys are prepared under supplemental special instructions to the original survey.

New Lots created by subdivision are assigned the next available.

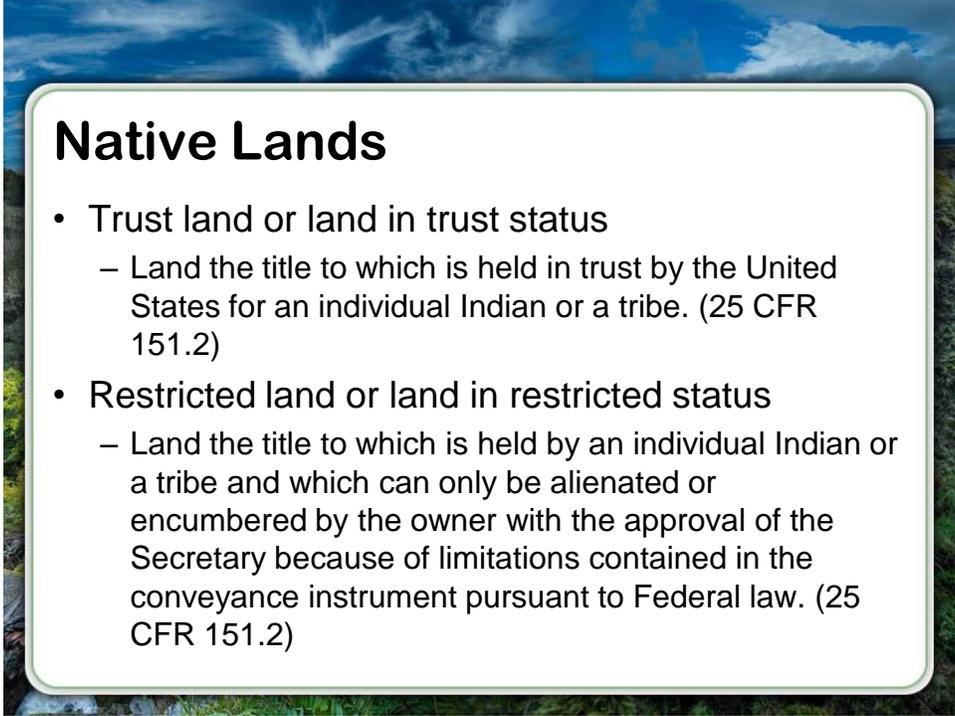
Lot number associated with the U.S. Survey number.



So we are saying most of these are restricted title kind of, they haven't been patented but they've really been conveyed with a restriction on selling it. But there's a federal interest there. So in the past we've looked at it as well there's a federal interest we can re-lot it? Is that what happens.

Yeah. Well I think, I think to start with a lot of them are we have actually surveyed a claim and it would be adjudicated and they said, well hey they aren't entitled this part. So we hadn't conveyed it yet and so we go in and we follow that same type of scheme we are doing the rectangular system were we assign a new lot. And if it still hasn't been conveyed, there's no problem with it.

Right. And we just kind of kept, kept doing that I think you get into a role, but now we are getting inside of those ones where it was conveyed title whether it's restricted or not, sometimes, we are going in, those are the ones we are subdividing. The ones we know there's that federal interest. On the native lands, and we got quite a few surveys where we went in and still followed that kind of scheme. That it was subject to revision like the public domain.



Native Lands

- Trust land or land in trust status
 - Land the title to which is held in trust by the United States for an individual Indian or a tribe. (25 CFR 151.2)
- Restricted land or land in restricted status
 - Land the title to which is held by an individual Indian or a tribe and which can only be alienated or encumbered by the owner with the approval of the Secretary because of limitations contained in the conveyance instrument pursuant to Federal law. (25 CFR 151.2)

So you gave it, it's been conveyed with a restricted conveyance and maybe it was conveyed as lot two, and we might go in and make lots, we divide it lots 7 and 8 out of it, now we have a description that doesn't tie back to the original.

Yeah and it's not a huge issue most of the surveys, most not all of them, but most of them actually would say the subdivision of lot 2 creating lots, right in the title. And you tie them back to that parent parcel and I've seen three or four where it's not clear and you think that you're dividing land that's still public domain and you're not. It's not a huge issue but I think we are clarifying it and we are getting into the point now where we are referencing, we are doing Lot 2A and 2B and stuff like that where we are dividing interest where it's already been conveyed.

That's a very common issue in the lower 48 with a trust lands that are individual allotment trust lands and we're called in to subdivide those and so this individual has a trust patent for an aliquot part, we divide it somehow, and have to make lots out of it, what have we done to that chain of title, and then we had a lot of discussions on how's the best way to do that. So, a similar thing. And so now you go what was originally lot 5, you'll have lot 5a and 5b. So I like that.

There's some other issues too, I have a lot of times now where something was conveyed thru GSA and it's a metes and bounds description and we conveyed by deed. The opposite of creating a plat they can reference on the deed and we are now going out and surveying what was given to us and we have where they go in and call it lot 1 and we are going well you better say lot 1 represents the deed and tie back to that document that the survey, you got to show intent there. And it's not always clear and we are so used to just dealing with dividing public domain then creating a forest survey where we are not thinking.

And I think this idea of a GSA conveying land we don't normally think of that happening, BLM writes patents, but there's regulations that allows GSA to convey a lot of times it will be some military land that's no longer used, lighthouses, those kinds of things that I think the wording is something that is it's no longer fit for public domain, doesn't come back to the public domain what it does is GSA sells it by deed so it never gets patented, so that's what you're talking about.

And then you go out and survey it, and it's important that record ties the surveyed Lot 1 back to this deed. Yeah, this is a place where I think we can take a lesson from the private sector where we are so used to dealing with that public domain. Any other issues with dividing lots or I guess most of the, as we talked about most of the subdivisions are happening on native allotments within townsites they have restrictions of that. I thought I might define on the next slide here, define the differences between those.

So we are going to look a little bit at the status here and what those are. I think there's a lot of times I think we think where we understand what the definitions or we are not sure and one of the ones I struggled with a whole lot when I first came up to Alaska and I'd go to these, everybody be talking about trust land in Alaska and we never talk about trust lands.

And they'd be talking about trust land and you would be certificated allotments and everything else so I put these definitions up on the power point and I think that it clarifies it for me and basically trust land is held by the United States Government in trust, and then the restricted lands are lands where we actually issue a patent, there called a certificate to the allottee or the owner with it comes restrictions that place an obligation on the federal government to make sure the lands are protected. So, in one case the federal government still has really title and in the other situation, the individual has title with some restrictions.

You know, at the time of the Dawes Act, they had the trust lands and I think there was an enabling acts that came on after that the real strong desire to take the federal government out of it. It might have been what was worded in those enabling acts. Due to recent legislation things the court would place that burden back on us and they said that restricted lands are going to be treated like they were a trust.

And so as far as surveyors go I think the distinction is not that great we treat them as though we have an obligation to survey them and have that federal authority and they can't adversely possess against them all the restrictions they can't be taxed and everything else it just that the actual title has transferred to the allottee.

Now one of the things I want to bring up here is the Bureau of Indian Affairs tracks title on these restricted lands. They are the agency to go to. To find out what's been going on with that land from the time it was conveyed to the individual and title status report is the document you want to ask for because the title status report will show if that parcel's been divided, how many times it's been divided and how many parcels are there now. If it is some of them have been conveyed to fee because what, what were going to show on the master title plat is the restricted deed has been issued.

But that may have been then conveyed by deed to a non Indian in a restricted status and basically what has to happen is on that deed there's a statement where the BIA has to approve that conveyance. So before dealing with these restricted lands it's really important to check with BIA to find out what the status is of that now.

And even then sometimes you end up doing that right, and an interesting thing has happened in Alaska, I think it's passed in 2002 or 3, I don't quote me on the date, there's this Native Allotment Subdivision Act, and I still haven't gotten my hands around it, I think the ramifications for surveys, surveyors are going to be, going to be great, basically what it's saying is that the allottee, there was a question as to whether they had the right to designate streets, roads and utility lines and a lot of times power companies and everything else have gone across their allotment and they couldn't do that. There was no legal avenue for them to do it, even if the allottee wanted them to.

Because it was restricted. unless BIA signed off on it. And the only way they could do that was kind of drop it into a fee status, so you couldn't, so the Subdivision Act allowed them to create these dedications under the state laws. It allowed them to subdivide their land maybe give away portions and still retain portions as restricted and maybe a piece would drop off into fee and I think there's going to be a lot of ramifications for our work. And especially all of the things that were done prior to that act.

Aguilar v. United States 474
F. Supp. 840 (D. Alaska 1979)

Under requirements stipulated by this court case valid Native Allotments located on lands which have been patented to the State are surveyed by BLM surveyors with instructions from the State.

DATE OF SURVEY BEGINNING <u>September 17, 1997</u> ENDING <u>September 20, 1997</u>	NAME OF SURVEYOR U.S. DEPT OF INTERIOR BLM, CADASTRAL SURVEY 222 W 7TH AVE #44 ANCHORAGE, ALASKA 99518
STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF LAND ANCHORAGE, ALASKA	
ALASKA STATE LAND SURVEY NO. 97-6	
WITHIN PROTRACTED SECTION 36, T. 5 N., R. 44 W., and PROTRACTED SECTION 4, T. 4 N., R. 44 W., SEWARD MERIDIAN, ALASKA ILLIAMNA RECORDING DISTRICT	

SURVEYORS CERTIFICATE

I hereby certify that I am the Deputy State Director for Cadastral Survey, Alaska, Bureau of Land Management. The lands noted herein have Federal interest under Aguilar vs. United States, 474 Federal Supplement 840 (D. Alaska 1979) and have been surveyed by Roger E. Blouch, under my supervision, by authority of the Memorandum of Understanding dated July 25, 1991. I attest that the monuments shown hereon actually exist as described, and that all dimensions and other details are correct.

4-15-98
Date

Debra P. Grant
Deputy State Director for Cadastral Survey,
Alaska, Bureau of Land Management.

And they actually have some, like I said I haven't dealt with enough of them yet to feel like I'm an expert on them. But it's out there. It's a thing to be aware of. Okay, alright. So let's move on and I think we are going to talk about another something here on the overhead. This was a court case, and it's one of the court cases that clarified and asserted the government's responsibility on these native allotments.

There was an argument that the Bureau basically said were done and we don't have to deal with it. At issue was that they already conveyed the land to the state.

Ethel Aguilar had claimed that had placed an application after the patent, but it was still a valid timeframe for the application. So this person had, did they have some kind of a right, they had been located out there?

So they've been located and this state makes an application because the state gets a certain amount of land, like every other state did. So the state of Alaska makes an application for this township somehow we missed or the application hadn't been made so we don't know there out there and we patent to the state, and then the application for the native allotment is made for the native lot within the time frame which makes you ask the question, why were we patenting land to the state when it was still within the time frame for the native allotment, so then now we have to go back and do something.

We are doing title recovery and quite a few issues and it directly correlates back to this court case. And that's what we call it so basically what we are doing is going back to this state, getting title to that allotment, there giving back to us and then, so we are going to then convey to the allottee. It's kind of unique in my mind though is that we should have to give title back to the whole parent parcel. Our patent to the state was the whole township and I always thought we should have to take the whole township back and go in and do that...

But we have come up with some rules, memorandums, and agreements that kind of things and they progress through time. So what, so I imagine, we have to survey it before we give it back? Is that what's happening? What I, there was the, there was the crux here, and, and reason I have this up here, if you look at, up here it's that real important that you can read everything, but if you look it says an Alaska State Land Survey and it's recorded in the recording district. Well it's signed, it was surveyed with, by a cadastral surveyor and it was signed by the deputy state director cadastral survey.

We would actually go out and we would get special instructions issued to us by the state, because the state was asserting that this is land that belongs to the state now. And if now, we would have stuck to our guns now, we'd have a federal right to survey, so we go down there, and that is in fact what we are doing now. But these records are out there, but the state has agreed that, so now we are going out and surveying the allotment and they will convey the interest referencing that allot.

But when we are through this time frame, what we had to do was do an ASLS and then we'd get it and then we would, couldn't use the ASLS to convey the restricted title we needed with the federal title and we convert the ASLS's to U.S. Surveys. So, so that sounds like a really nice system. It, what's happening now seems to be the proper thing? There is still a federal interest there whether we have patented the state or not we have the authority to go out and survey out that allotment get title back and then convey it back to the allottee. And then that's, I guess the perfect way would be go back to the parent parcel and do it that way. A lot of times there are third party interest there conveyed out to the state.

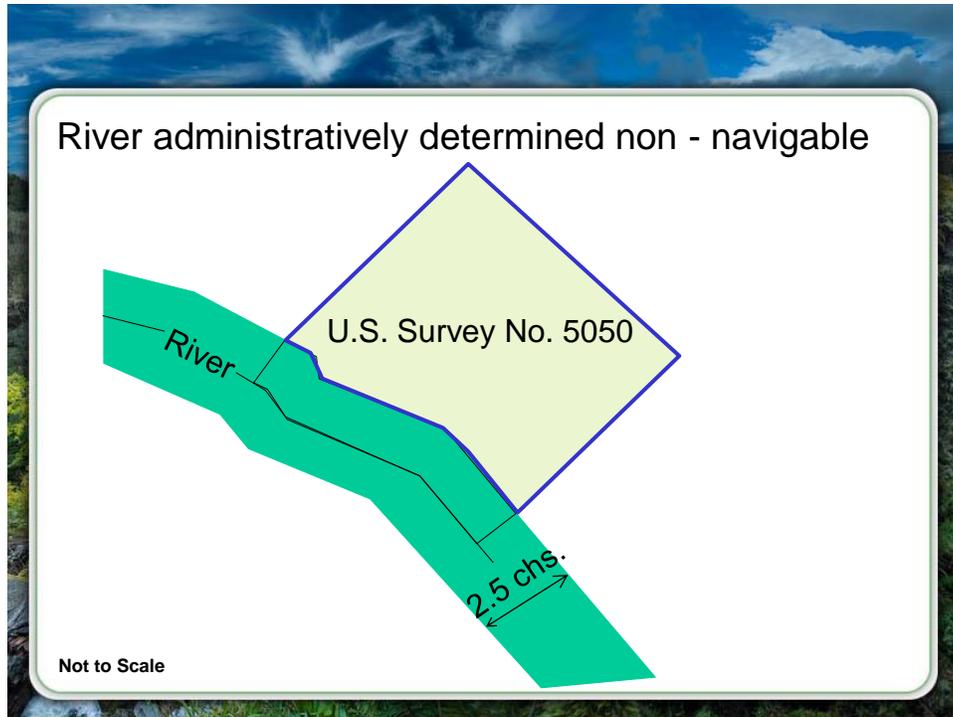
So, and this is just another one of those things where it's important to know when these happen, so when you come across a record like this and it's signed by the Chief Cadastral Surveyor, if the state survey and we've got special instructions for the state, then understand what was happening. And the other thing is that when we did, sometimes we created supps, supplemental plat of the ASLS which is not...

And then sometimes we created the U.S. Survey, of the supp, but basically it was a regurgitation of that record so you didn't go out and do a new survey, just made a plat and said we went out and made that survey and it's important to know that to know that this is the original document that's the one that you are going to want to because you want, if you come up with some discrepancy it might be traced back to it was a transposed number.

Now Alaska Surveys allotments I know lots of water. We talked about that earlier so you, we got some examples so we are going to talk about this a little bit. Some of the issues maybe. And I'm just kind of throwing out some of the ones that have kind of hung out there. People debated over time stuff like that but this here we have a situation where we go out and this probably in all likelihood was surveyed prior to us doing any rectangular work.

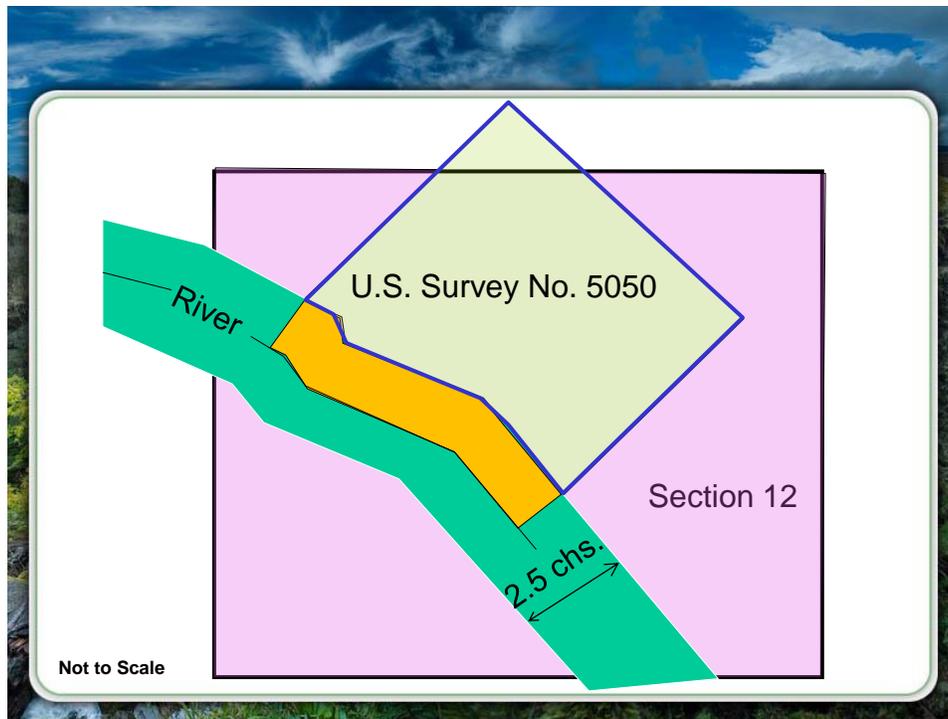
So this is entirely unsurveyed land that's a remote allotment on a river we go out and survey it, monument it and convey it. Yeah. And the application allottee was very clear that he wanted riparian frontage. And that's a meander line along the river. We are creating riparian frontage that is up against the river that under our guidelines we wouldn't necessarily segregate with rectangular, so it's deemed non-navigable. So under that context the ownership is implied to that side of the stream.

So, so let's reset this again so everybody understands what we are talking about. We are talking about this stream is non-navigable but it's also a stream that's two and a half chains wide so we aren't going to meander it but because this allotment was a riparian allotment, he wants to have access to the river no matter where the river goes we surveyed a meander line there.



And this same situation could happen on a 48 acre lake. So and there all over the place. There's a lot of them. So what does that allotment really own? So when we go out and we create lotting for section 12 how do we lot him right against the allotment. Yeah, that's the question. We are not going to segregate the river so we are not going to show the river when we show section 12.

Yeah. So all that's going to show up on the plat is U.S. Survey 5050 and it's going to have a meander line in front of it and it might have a topo call to the river but it's going to show section 12, the rest of section 12 going right up to that meander line. Is that what there showing?



It would, we showed that allotment sitting out there in space with a riparian lot and there would be nothing segregated around it. Even though in reality most of us would argue that U.S. Survey owns to the center thread something of that stream. I'd go further than that, contend that they do, as long as it's a non-navigable river. But it's not platted that way.

And so, okay I will put you on the spot a little bit here, what is BLM Alaska's official opinion on what we would do in a resurvey situation if we had to deal with that riverbed or does Alaska have a official opinion? I think our official response is we're following a standard riparian procedures and you know to me this is a riparian issue. And it's not, you know when we came in and segregated the allotment, the section, that's the area we returned. Everything except the allotment.

Now let's put this in context here though, when we don't segregate a river, they own the bed of it, but when we segregate a 50 acre lake and it's non-navigable, they own the bed. The upland owner. So it's a credit, it's an area credit. And there's a give and take there, there's a 49 acres we don't segregate it but when it's 51 we do, all of a sudden they get 51 acres somewhere else because it's an acreage driven selection process.

Let's stop here and just explain that a little bit cause most of our people are not going to understand that. Alaska, the native corporations were given so much land area. The state of Alaska was given so much land in area. Lower 48 most of the times states got sections 16 and 36 or you know section 36 so many sections within each township as it was surveyed. That's not the case in Alaska. In Alaska it's a specific number of acres. So if a lake is 48 acres and not segregated, then Alaska gets credited with getting 48 acres and that comes off their total.

But if we segregate it, and there's 52 acres, then that's 52 acres they didn't get and that gets credited and they get to change that 52 acres someplace else. So it becomes a very important issue for the state. So here, the way this is written right here, if I'm understanding what you are saying, if the state was selecting section 12, there on the records it's going to show that they got all of that land right up to the meander line.

And we didn't segregate that area but there's a riparian right that exists there. And that riparian right is superior to the acreage that we put on the plat. So you would short the state a little bit on each one of those. But don't tell the state.

Well, you could also argue that when we make a determination that a three chain river, how do we, we do it? I mean how does he, give and take everywhere, it's a, and we are trying our best to follow those regulations and we actually have, it's been an interesting issue with the rewrite in the Manual cause we actually been codified that we follow the guidelines of the 73 Manual segregating rivers and lakes because the acreage driven process.

So we got, we got law, that says we are going to follow the 73 Manual, pretty soon we are going to have a different addition to the Manual. Maybe they'll fix it and go to the next addition, hopefully. There's been a lot of really good comments on some ways that could really make life a lot better for everybody and you know we could do acreage credits and everything else but we, we are where we are.

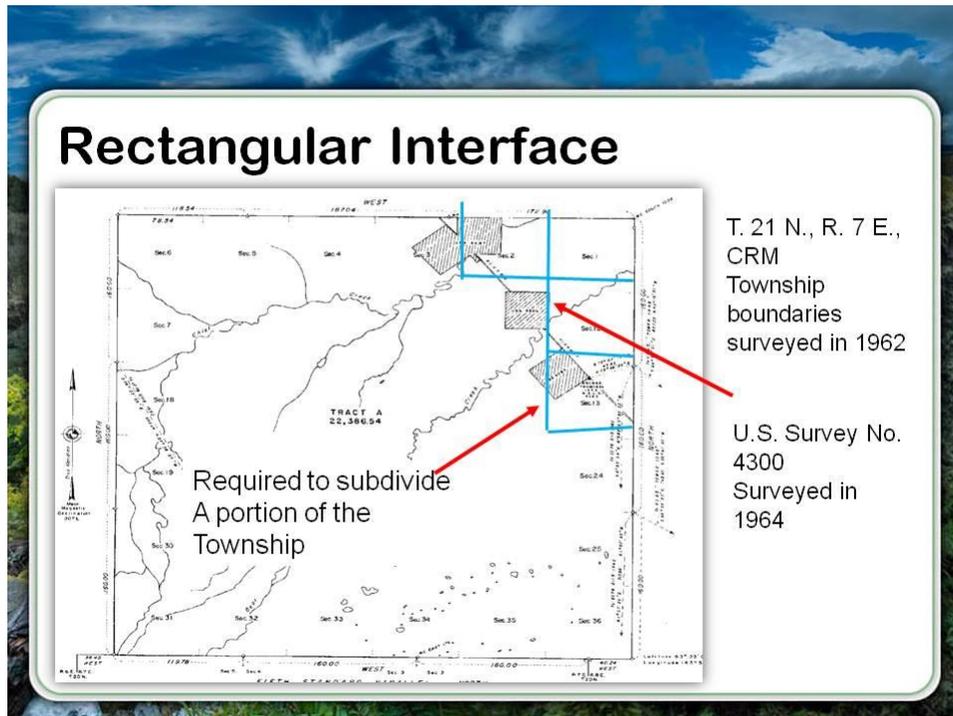
Well, I do know that a lot of people mentioned that this should have never occurred in the first place and maybe we shouldn't have created the riparian rights and I think when you were in Alaska, you were actually. I had some issues with it because one of the things that can happen here, this is a river that we would not normally meander, it's small, it's not navigable, and, but because the rivers move around so much, it's possible for this, allottee to lose their allotment it gets washed away. I felt that it might have been much better to have an allotment to lay across the river or have fixed boundaries and obviously the river can move away from the allotment so I felt that was a much better thing to happen then to lose the allotment entirely. So, but I think there are a lot of good arguments both ways.

Yeah, I think there would be a lot of issues that would pop up if we did that, now for one establishing a fixed line boundary, and other points that. Alright, well we are going to take a short break now and then when we come back we are going to talk about some of the issues that come up when we have existing U.S. Surveys and then when we now come in to a bring in the rectangular survey and we have existing stuff, so we are going to take a short break and then we'll come back and we'll talk about that.

U.S. Surveys, Part 2

Well welcome back. Now we are going to talk a little bit about what happens when we have existing U.S. Surveys that were done when there was no rectangular. We come in to start the rectangular survey, so Mike, what kind of issues are we going to end up with?

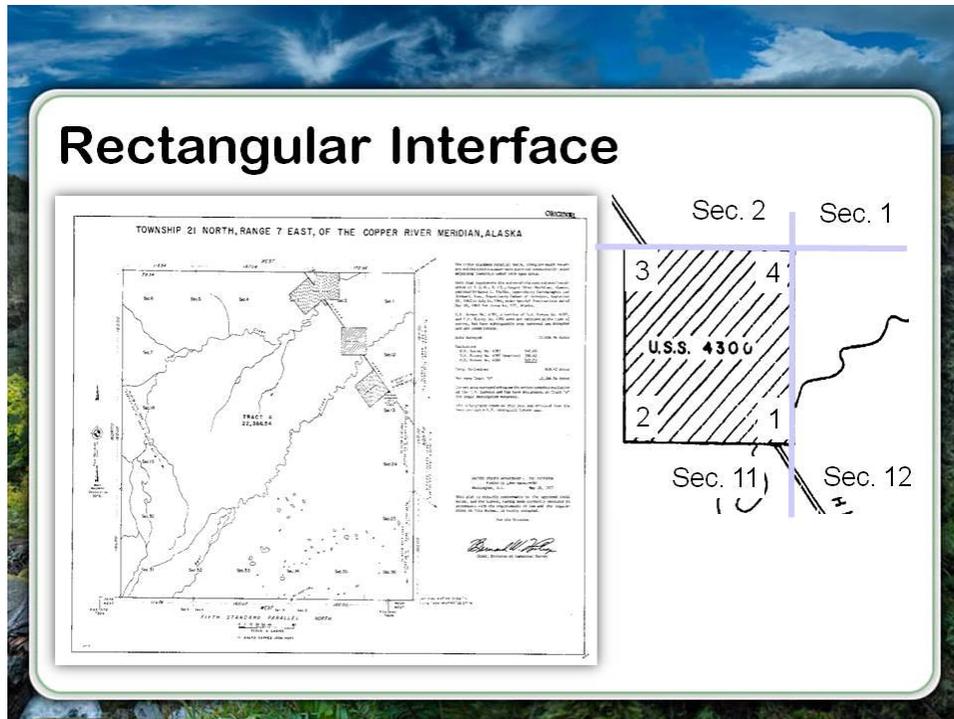
A lot of issues. Okay, alright, well let's look at some of them. Starting out you know a lot of those that we talked about with the unique aspects of these things being so remote and the ties not being so good well sometimes we taken those ties and we haven't verified them and we've gone in segregated the rectangular around these allotments or these end holdings without making an actual tie. And a little bit of explanation in Alaska when we are surveying the rectangular we don't necessarily subdivide it and we are actually protracting sections, like you protract inside of a section.



Alaska is so huge the conveyances are so huge, we're getting the state's getting multiple townships, the native corporations maybe getting multiple townships so we are surveying the exterior of the township or the exterior of the conveyance, so to tie in a U.S. Survey, might mean an extra, it might mean 3 or 4 miles to the nearest monument and hard to find.

Then we have a cartographer in the office create a bunch of protracted lines on a plat. Here we want to survey the exterior boundary, and there's an allotment in the middle of the township, and we have a protracted line going thru it and we creating rectangular lottings we may not necessarily have those and there's a lot of issues with the rectangular that we are not going to get into today.

But there is, I want to point out that interface and I have here on the elmo, I have an example, kind of one example and this is the case where the rectangular, if you look at it, the rectangular boundary was surveyed and we only returned to what we call the Tract A area for the township. And the way I would describe the Tract A is all the sections inside the township exist the just haven't been defined yet, so if it was a Tract 37 it usually because it can't conform to the rectangular system.

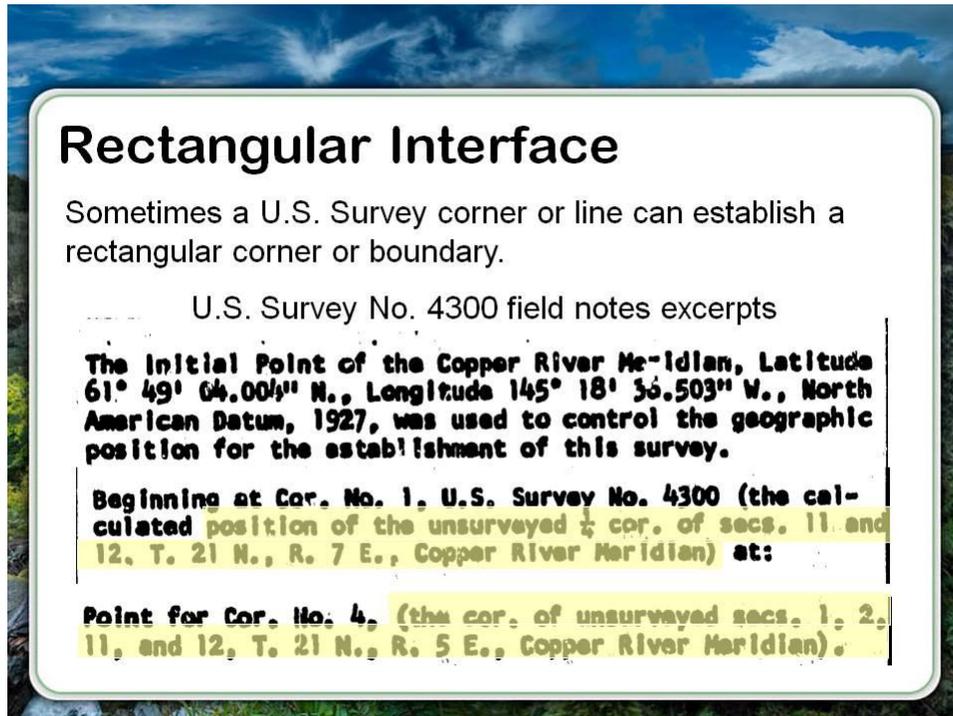


So this was kind of a concept that came up at statehood and it worked pretty well, a lot of these lands we actually conveyed in some form to the state prior to ANCSA which was passed in 1971 and that's the Alaska Native Claim Settlement Act. Anyways once ANCSA passed, a lot of these lands fell within the court townships, of the way the legislation was written they were entitled had certain lands and they would have certain lands within the vicinity or village.

A lot of these lands we ended up recovering title or might of still been in the public domain but the intent was to convey it to the state at one time and we have to go in and subdivide. And one unique thing, most of the statehood act was based it on a township level conveyances and ANCSA was a section by section type thing so we need there, so we're getting down to the final entitlement, so in this case we were required to come in and subdivide the sections, the section, you see sections inside this Tract A.

So we're subdividing the township creating the sections which, if I understand right, the state will probably get the rest of that tract but the native corporations will get those sections. That involves a resurvey of the east boundary of the township and then we are usually getting a portion of the south boundary or we are going parallel to, off the governing south boundary to build these sections, you come in and when we do survey the line we monument two mile intervals and we usually get, anytime we cross an end holding selection boundary, we go grab those so we know that's there. We know where the U.S. Survey is, tied it in then we come up and just notice that this one of a kind of falls right on the line here, and I'm like kind of huh, well, in this particular case then it's, I guess it's not real common, but it exists for whatever reason. The U.S. Surveyor even before the rectangular existed, he established corners of the calculated positions for the rectangular. If you read the field notes, here I will try to zoom in a little bit, he talks about the initial point of the Copper River meridian and the latitude and

longitude with, it's that, he notes that that was used as control coming off a U.S. Coastal and Geodetic Survey.



And he could do that because you had protractors that told us where those corners should go, and in Alaska, that's the controlling feature we survey two coordinates, we have pre-assigned coordinates on the protraction diagram and we survey to them. So he knew where those corners were supposed to go. That's the other unique thing that's supposed to NAD27 in Alaska we reference it for a reason for all those protraction diagrams and the network and the 27.

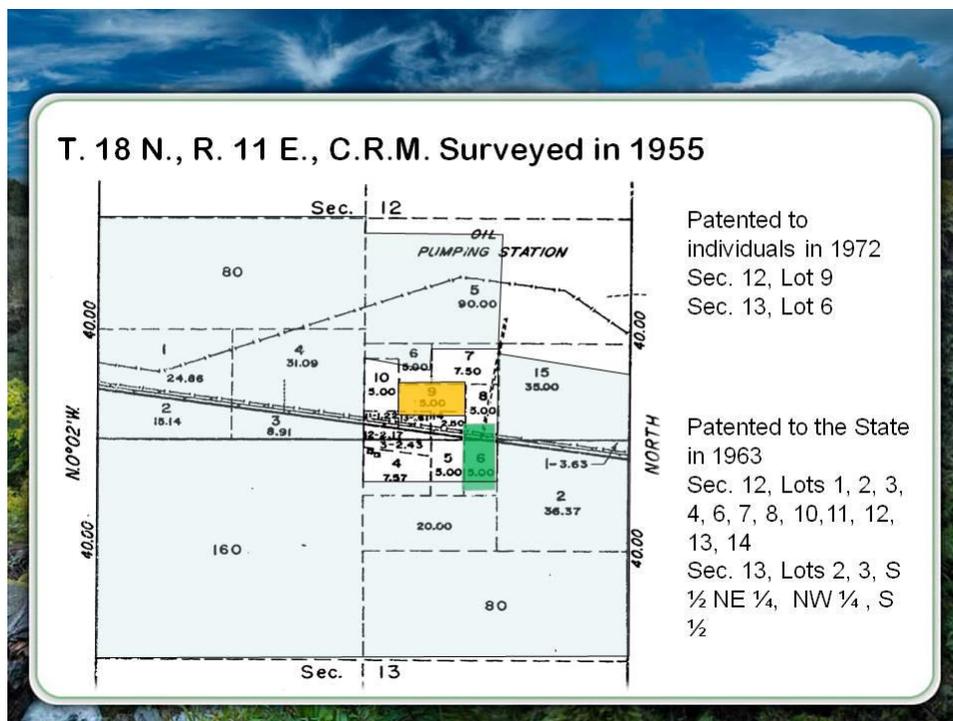
Anyways he calls for the quarter corner and he calls for the corner #4 being a section corner, I think it was unique, he calls for corner 1 being on a quarter corner but called corner #3 at a quarter corner. Even though, by measurement it appears to be. It was. So anyways in this case the entire land in this case was selected boundaries and we were within our right to revise.

I think if these corners weren't at their correct location, we could have set those section corners, not there. There might be a case out there where there is a patent we are surveying the boundary and that would play into that establishment of that corner like, like that corner he had full intent of not crossing over.

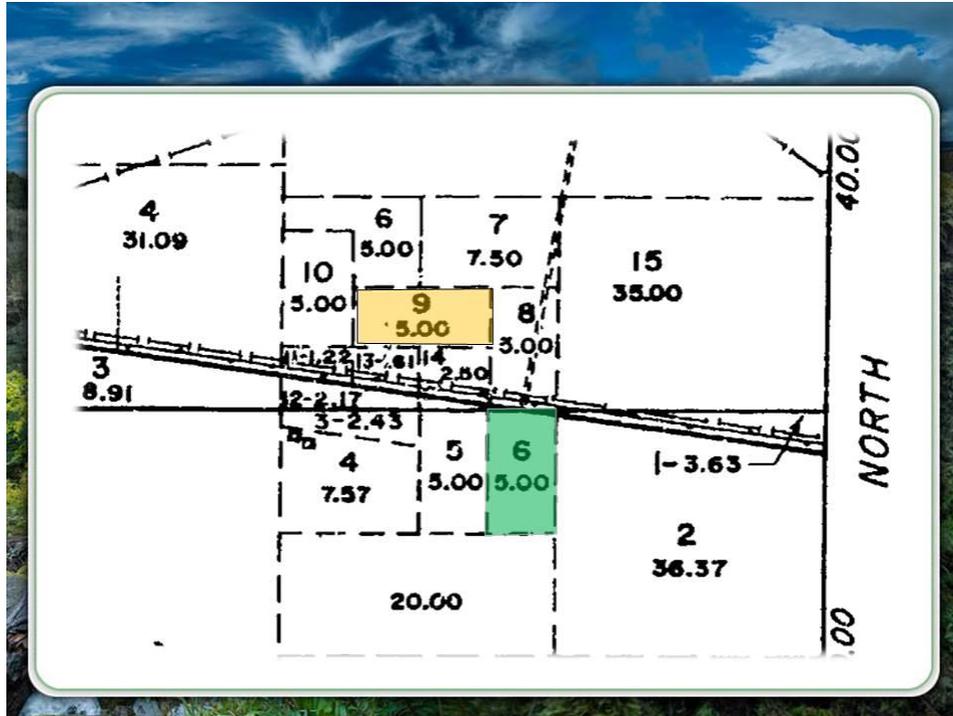
That boundary, and yet it hadn't been surveyed. One of the things about Alaska that is different than the lower 48 is there not near as much monumentation and there are some unique conveyance rules that allow for a conveyance of land that are near, clearing and accurately defined as those in the lower 48 which, of course as surveyors we know can create problems down the road.

But the other thing about Alaska is it is so huge that there is so much work to do to get those state lands conveyed, and the corporation lands and the native allotments conveyed that the money it would have cost if we tried to do you know ½ mile monumentation would have just been unbelievable there. It's been a unique problem for us because we have been asked to conform to the system that the legislation was written that necessarily didn't conform to it. So we are always struggling with, well okay, here's the rules, but here's what the law is telling us to do and somewhere in the middle you meet, there's some struggles we got, we are going to have some problems to deal with because of it.

Now we got another example we want to talk about, and in this example when I looked at this immediately it brought back memories of climbing over a 6 foot chain link fence with barbed wire on top. And I went go into the story but a I did that here and I think, let's see, I think I was 55 years old when I did it and maybe I should have been younger to be climbing over that fence. But let's, anyway, go ahead Mike let's, with this situation. Well this is this kind of is a series of slides I think I have three slides for it but I'm just kind giving the overlay, here's an example of a area where we actually subdivided down to the quarter corner, section corner. Traditional what we'd consider it rectangular and there are quite a bit of a few places in the state where we do that.

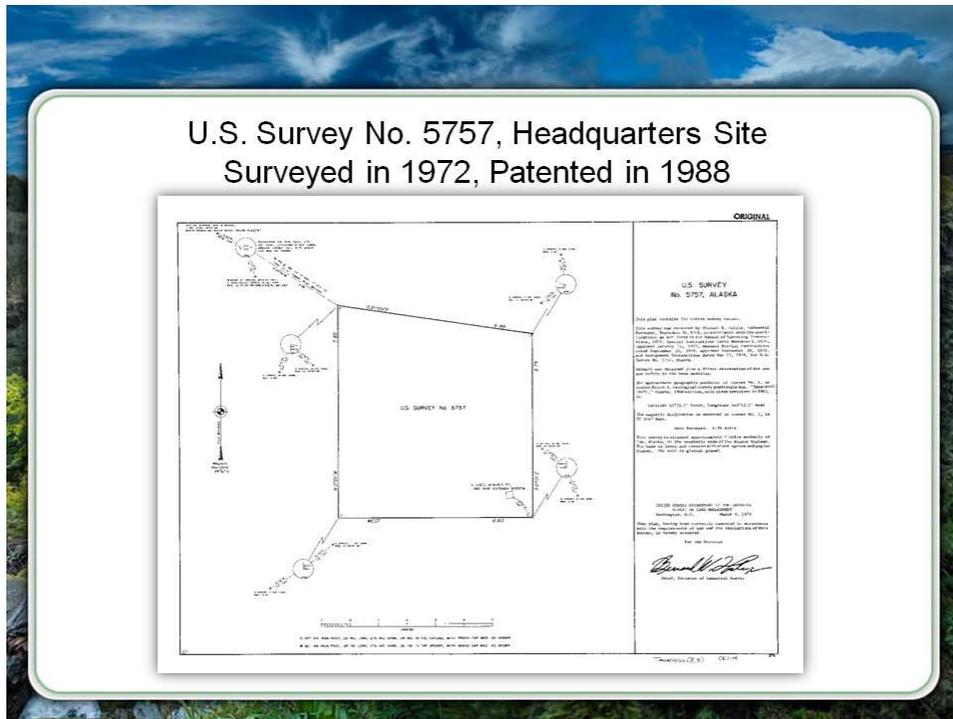


We have a normal township all the section corner, quarter corners are established and then we've got some allotment or something within that township. They've gone in and protracted a bunch of lots and they could protracted some lots that were running parallel to the right-of-ways these roads and stuff but in this case I'm just bringing out it's patented here in section 12 and basically the area of interest that we are dealing with is right in here and I think the key ones you need to focus on are this lot 3 here, if I zoom in a little bit more maybe that would.



This lot 3 was patented to the state along with all the adjoining lands around here and then we had two individual going out for and I, I'm not, I can't remember what the entry was based on. They were not native allotments and it was not the state, going to the state, so anyways we had some remaining public domain here, we had this lot 4 and we had a lot 5 and then we had it. We had an aliquot corner even though its showing 20.00, but it's described as an aliquot relationship there.

So what we are looking at here is a U.S. Survey. This is actually the entire record in this case minus the plat memo and survey certificate they actually just made ties out to the corner and showed their accessories. Anyways this was surveyed in '72 and went to patent and it was a headquarters site I guess the things to note on here is notice the bearing where it looks like probably running parallel to something and then, and then if you have a, if we zoom in here, you see that he made a tie to the quarter corner up here and that's it. That was his survey and that what he returned and that's his record.



And Mike was that a survey of a native allotment? This was actually a headquarters site. This was a I guess 1920's was when that act provided for entry and I think they were 5 acre parcel type deals. So now I'm going to widen back out here and I kind of penciled in a little bit of the patent area a little better. This is a supplemental plat that was created.

1995 Supplemental Plat

U.S. Survey No. 5757 was segregated from original Lot 4 and created Lot 7, Sec. 13, T. 18 N., R. 11 E., C.R.M.

What is wrong with this picture?

Proper subdivision of the section did not occur during the survey of U.S. Survey No. 5757

Sometimes a rectangular survey or a rectangular supplemental plat will incorrectly create aliquot relationships with an in holding that do not exist.

They just combined the records, they took the record of the U.S. Survey and they took the record of the rectangulars they took what was original lot 4 and they created lot 7 they put the U.S. Survey in there and they show it butting up to the lot 3 up there on that same boundary and they keep the aliquot part around there they didn't revise any of these lots so we had basically had one revision.

So what's that looking like is that the U.S. Survey follows some of the aliquot part lines. Is that correct? That's what it's looking like. The U.S. Survey you showed us the plat of the entire U.S. Survey. I guess what I would ask you guys to think about for a minute is a what's wrong with the picture?

Yeah, we, we have a normal section we have a the created some lots along the road and a bunch of aliquot parts and most of those lots were based on aliquot part lines butting up against the road, then we have this U.S. Survey come in that plops down in the middle of the section and ties to one corner. So what's wrong with that picture, so I think you are going to tell us what's wrong.

I think probably most of you caught on to it. A proper subdivision did not occur for the survey to maintain those aliquot parts of the rectangular lots. They should have gone out and got the quarter corners and figured out where the center corner was and gone down and broke down those lots if he was going to butt up against them. This here was a 16th corner, I believe, yep there's a quarter corner, so he had all these lines to find out here and we send this thing in and our supplemental process the cartographer just took the records combined them there and they didn't fit good and they created these relationships on the plat that really may not exist and I think, maybe you are the best one to talk about what happened when we went back out there.

Well I think a first of all the it's fairly obvious that the surveyor of the U.S. Survey calculated where those aliquot part lines were and tried to put his corners at those positions without doing the proper subdivisions section. And of course when we then got there to survey some other parcels and started to subdivide the section properly, those corners are not quite in the right place, and I don't remember if we are talking a few feet as I recall.

It was, you know, none of it would have been a problem had that not been patented up there and I think at the time the way the MTP was read it was really hard for you to tell which one but we could have just re-lotted everything but as it turned out this thing when we located it and we we actually recovered the corners that define this boundary, there was actually some witness points that were surveyed along the right-of-way.

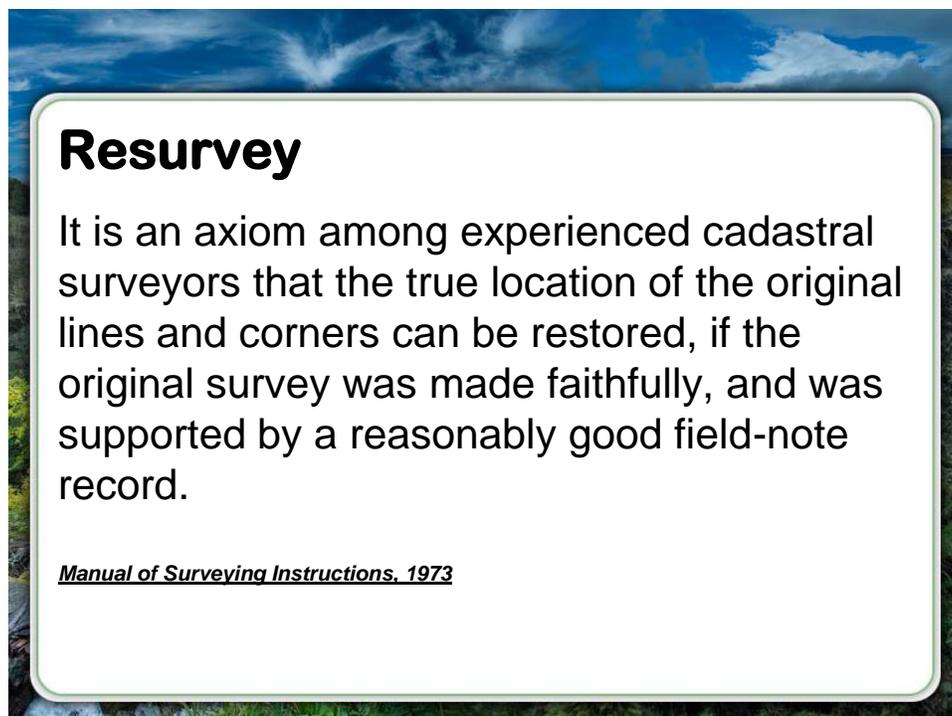
That would prolong that line and get thru the record and this U.S. Survey actually went up to this patented lot 3. It actually went over into the federal lot and it went in to the aliquot part. So we ended up taking away the aliquot relationship down here and making a lot and we ended up relotting lot 5 and we ended up showing the conflict up there between lot 3 and the U.S. Survey and those were already patented lands.

And really you know, that's not such an uncommon thing someone cutting out a parcel within a section without doing the proper subdivision. We, it happens where someone stubs in a line

those 1320 from a quarter corner say and they can be sometimes very old surveys and a lot of things happen based on those surveys so that's not unique to Alaska or unique to U.S. Surveys, it happens in a lot of places that over time and sometimes a lot of business has been done based on those surveys.

I guess two examples to me is what they did one. The first example showed where the U.S. Survey was intended to put it on the rectangular it wasn't very clear and here a supplemental plat created a rectangular relationship that didn't really exist. So it's kind of a flip flop of the two and I thought that it showed it quite well and it's actually pretty common, you got a lot of these plats where we are seeing relationships that they just aren't really there yet. Part of this is a communication between the field surveyor and the office staff and part of it is a proper documentation so that we really know what this parcel was really intended to be.

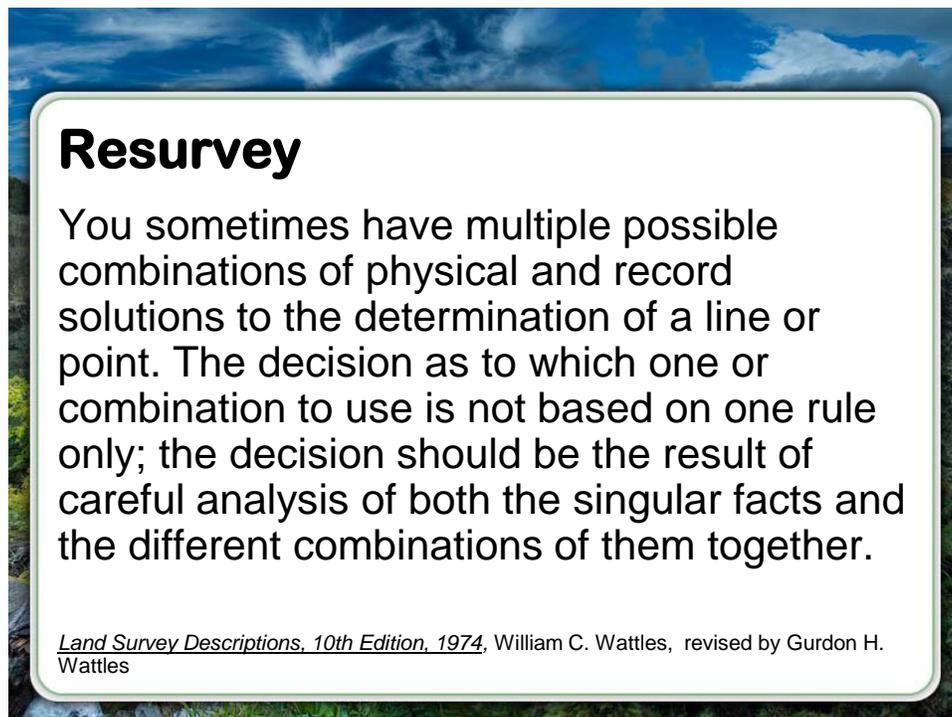
If that surveyor had instructions that clearly specified that he was to go get quarter corners and everything else then he would have a hard time just to find. It his specials would have said subdivide the section, okay. Well now I think we are going to talk a little bit about resurveys and some of the interesting issues that we have with resurveys of these U.S. Surveys. Well I guess to start off with these are kind of, some of a, I've read them so many times but they, they hold true.



The first one is a axiom, in my experience cadastral surveyors that the true location of the original lines and corners can be restored, if the original survey was made faithfully, and was supported by a reasonable good faith, field-note record. And I think with our U.S. Surveys it nails it to a tee, we've got good records we got a good faith in almost every case I've ever been exposed to, and it's not, it's not, the most cases some unique situations but for the most part it's pretty straight forward stuff.

And you've even had some situations that the survey itself was great, it's location on the surface of the earth was a little bit suspect so it took a while to get to the right location, up or down the river or around an island on the shore but once you got there there's the survey and it's good and it's accurate. And mostly, 90% of our problems has to do with that rectangular interface and the riparian.

The other one that I added to it and this one pertains, it's written with reference to legal descriptions but to me it's one that I've always remembered. When I was out there doing resurveys and I think it holds very true. You sometimes have multiple possible combinations of physical and record solutions to the determination of a line or point.



Resurvey

You sometimes have multiple possible combinations of physical and record solutions to the determination of a line or point. The decision as to which one or combination to use is not based on one rule only; the decision should be the result of careful analysis of both the singular facts and the different combinations of them together.

Land Survey Descriptions, 10th Edition, 1974, William C. Wattles, revised by Gurdon H. Wattles

The decision as to which one or combination to use is not based on only one rule; the decision should be the result of careful analysis of both the singular facts and the different combination of them together. And I read that the one rule thing, I think we want to always apply the standard operating procedures and the policies of our Bureau, we don't want to deviate from those but when we have evidence and facts that point to a different direction then we document that and we do it, points us in that direction. And to me when we do that we are covering ourselves.

Yeah, it's much easier to survey if you make all your decisions based on one rule. In reality we have so many legal issues we have a just so many things to consider with each resurvey situation that this really does hold true. But I think we are going to look at a few situations now and discuss those, and I think you have something for the overhead and on the powerpoint.

Actually, it's on the powerpoint, and hopefully it's coming in clear enough. This next slide here I'm showing just some pretty straightforward maybe simplified examples in this case.

Given the following, how should the lost corner be reestablished:

1. Survey No. 2 indicates a resurvey of the common line.
2. Survey No. 2 indicates Closure against the previous record of the common line.
3. Survey No. 2 indicates a resurvey of the common line, But the return is identical with the previous record.

◆ Found Original Corner
■ Lost Corner

We have a survey #1 which was surveyed in 1896 so it was patented in 02 and then we have survey #2 which was surveyed in '45. So we would have what would be a senior right and there we have a senior survey out there as well. Given the following, how should the lost corner be reestablished? Survey #1 and Survey #2 which indicates a resurvey a common line so that the common line here starting right there and the surveyor when he came around and he indicated that he ran a new line, returned a new bearing distance and everything and ran through the corner.

In 1945, and 1896 both are going to be pretty good surveys probably, and we are going to have two measurements on that one line the original 1896 and the 1945 and they will probably be slightly different. Yeah, and you are going to more than likely, you are going to find a big deviation of rotation that would appear as we resurvey that line. And for this case our assumption is these are all cardinal lines. Too begin with these are records, so the record for the north line of lot 1 and 2 those are both east/west lines.

To reestablish that lost corner. So first of all we have measurements in three directions, we have found corners in three directions and in one direction we have two measurements and two bearings. So I'm looking at that and I can say what, what are our options. Single proportion along the north boundary that would 1 option and a but that leaves out the two measurements along that one common line, which doesn't seem very, very good solution. So, so three point, can we use three point here?

We could if we returned cardinal or close to cardinal, I think it would still apply. And these are cardinal, or close to cardinal ...

Sometimes they have used variations or some variation called Modified Proportioning, I don't know, I don't know if the solution took you there and you could justify it, that would be but normally with the three-point or the double proportioning you need to have cardinal directions, that's the way it works cause you do cardinal offsets.

I think probably when they modify it somebody probably goes record- distance on that line 1-4 instead of going cardinal. I seen all kinds of little variations. Like running parallel. So, a three-point would be acceptable. I suppose you could a two point using either record you could do a compass rule, a grant boundary so you have lots of options so what kinds of things are you going to consider in deciding what method you want to use?

Well I think the Manual I'm going to read closely and I think most people will think will directed to some sort of grant boundary solution they follow the Manual and they read it and I think you want to give that heavy consideration. However, a grant boundary is going to leave out one line somewhere.

I guess the one thing I would point out in this case is. If that surveyor did run around and return a new bearing and a distance in it's entirety, and he ran thru the corner and you find a good relationship between the found corners that he ran thru you are going to probably have a good relationship there. If he's got good tight closures and relationships that very well could be the best evidence toward the original corner.

Okay so one of the things you're going to do is say I'm going to judge how good that original survey was by the relationship between corners 1 and 3. So is it necessary to tie to corner 3 of survey #1? I contend it is and I guess in Alaska one of the directions that we were always given is I was told it was go to the latest record.

It really became apparent that was an issue when I was dealing with a lot of the mineral surveys. Where the latest record was a combination of him accepting someone else's when he had indicated that he had run it and you were finding these variations. These basis of bearing you know you might have a rotation of 20 minutes of one line then all of a sudden be right back on, a consistent rotation of it.

And really if you don't find corner #3 of survey #1 your not recovering all the evidence that there is available to restore that corner. So, we are in agreement it's necessary it's not just kind of good to get it, it's necessary to figure out where corner 3 is.

I think in particular we've been guilty of not doing it. We've been and in this case there the first solution that I would advocate given that you have a good relationship and you might even find that extreme rotation of that 1896 survey, in this case where the 1945 surveyor said that he did run thru I would advocate a grant boundaries and the latest record. And and that would have to be confirmed by once you did the grant boundary, calculated the corner position, that would also have to have a good relationship with corner 3 of survey #1.

When you are doing that you keep in mind that that is a senior right there and of course all of the things that's come to location come into play.

We are looking at the dates here these are going to be pretty good surveys, you may be in an area, maybe not in Alaska, but in the lower 48 when you are looking at much older surveys a lot less accurate surveys and issues they become more difficult. Like I mentioned I think the one unique we get a lot of is extreme rotations but the distances and the relationships to themselves is tight.

So probably a grant boundary if everything looks good and one of the good things about doing a grant boundary is when it's pretty defensible when you go back with what the Manual tells us to do. And that can be a big thing if you are ever challenged. It is, and I think you highlighted the one thing that substantiates your decision with that recovery of an extra corner.

And document, good documentation of what you considered and why you decided to do it this way. That's the direction I would go given everything being equal. Now survey #2 indicates a closure against the common line, so in this case he started at corner 1 ran his traverse around and stopped at corner 3 or 4 and then he just said surveyed. So he called record bearing and distance between 1 and 4.

Yep so he just closed against the record like he's probably directed to as long as he can meet. So now we only have one survey of that line between the two and it's the oldest record. We still have the same options I guess, three- point grant boundaries, compass rule, single proportion, two point all of those things that are there, so what things would you look at now in deciding what method to use.

Well, I would be highly suspect of the one we just advocated. Cause you are mixing records, although in cadastral surveying we often have to mix records. It is the record and that, the reason I say that though, I would be even more adamant that that relationship between corner 3 of the original survey related. My experience from those mineral surveys, sometimes I'd have 4 or 5 records closing into a corner and the mineral surveyors would regurgitate the record and they'd indicate that they ran the line, sometimes they would even describe the corner so they'd went to the corners but they exact bearings and distance, they were reading that record and they, sometimes it's significant.

I think one of your points you made earlier, is generally the measurements on these surveys are very good but there may be a varying rotation so going back to the original survey that surveyed both of those lines might give us a better position. And that fact is where we are going back to the original record that established the corner and the angular relationships are maintained that grant boundary solution as long as he ran a, with a good transit and carefully you are going to put that thing in and I was always starting with these latest records and when I was young and I was looking at this apples oranges thing, I'd go back to that original record and I can't tell you there was probably 7 or 8 times where I actually found evidence of the corner after I first searched positions based on going back to the oldest record.

That makes you begin to feel pretty good about the procedure you are using to reestablish ones even when you don't find the original. As long as I have confidence in that he didn't radically side-shoot these out and that he's not all over the place and there's some good integrity between

the corners that you are recovering. And now one of the things we can also mention here is a that this is something that's kind of not known I guess widely but in the '47 Manual there's a section called Miscellaneous Control. It's not in the '73 Manual but it's a method for reestablishing a corner when we have multiple tie, multiple directions, different bearings. They are not cardinal, some corners are two chains away, some corners are twenty chains away and it's actually a pretty nice method, it weights the line inversely to it's distance, so the corners that are closest to that missing corner are given the most weight in reestablishing it. And it's not a method the BLM uses very often, it still can be used, even though it's not in the 73 Manual but it's a pretty nice method if you got a corner where things aren't cardinal you got lines in a lot of directions, it can give you a pretty good solution.

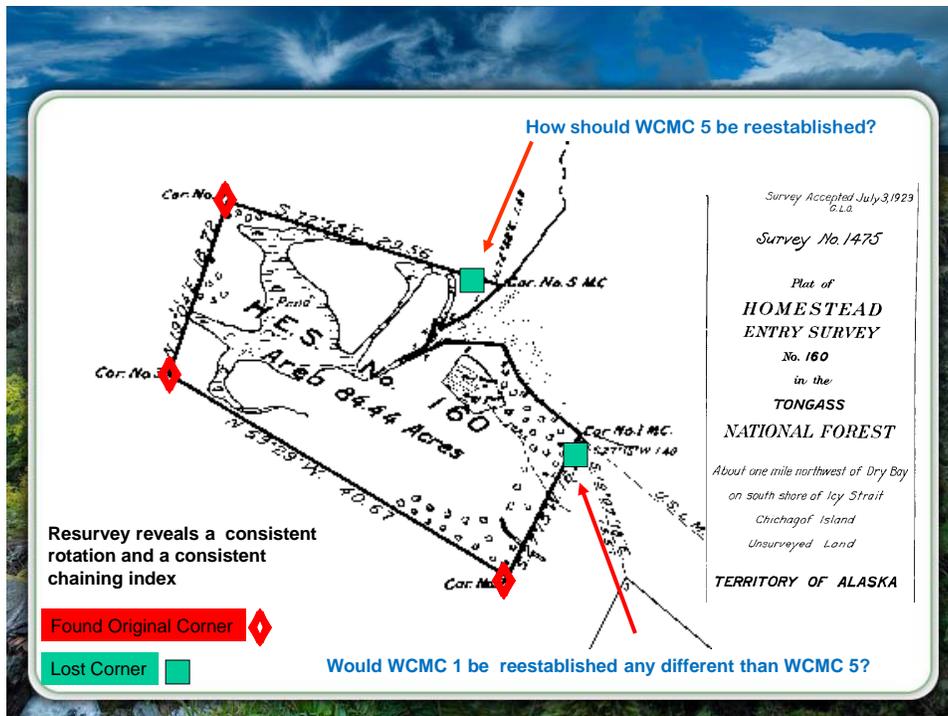
Especially if you are not given any collaboration between any of the records, it gives you a way to a... and where I wished I would have used it had I known about it, was a bunch of mineral surveys corners tying to a townsite corner that had been lost. And I had like 10 ties and some of them are five chains away and some of them are 40 chains away and some of them, well my circle created by all these ties was about 30 feet ...

And I played that game with that solution after I already came up with a way to establish that corner and I didn't use that method but had I been aware of it, I think it's one of the ones I would have heavily considered. Any more about this one?

No, I think that's pretty much it, I think that the only other thing is that a lot of times when we mention they indicate that they resurveyed the line when in fact they are just regurgitating that record. That's one of the reasons I'm kind of an advocate of report what you find, there's times when you have to say report the record to show intent clearly when you got little breaks and everything else but in general if you are running the line and they are asking you to resurvey it, go ahead and report what you find. And keep those apples and apples.

So this next one is, again these are just kind of straightforward, I got to a, oh, I did want to show you something here. I put this in here cause this was an example of the homestead entry survey and I just took the title page and a the plat memo and a these are the ones that entered onto the forest. So eventually though, so it started out as Homestead Entry Survey 160 and now it is called U.S. Survey in it's index as a U.S. Survey.

Yes, so we got a Homestead Entry Survey #160 and you pull out the plat and everybody's looking for reference to 160, well it's U.S. Survey #1475. So it's one of the unique little things that, and they quit doing that at a certain point in time, though I can't remember the specific date but sometimes you get people rushing records and it's something to check on to make sure you got the right record.



You know that concept is not unique to this, I know mineral surveys in some places, Oregon and Washington I believe both with mineral surveys, they begin by numbering them above the nearest section so originally there were a lot of mineral surveys number 37's all over the state, well eventually they came back and started numbering them consecutively so those things have two numbers. Mineral Survey 37 but later they were given another number so this happens and it's nice to be aware that it's happened.

Helps you find records, helps you make sure you are talking about this. I remember when I first learned that there was a difference, you know you are out there doing work and you want to understand it. I took the plat memo off and I just wanted to throw another scenario here and this pretty much speaks to what we do in Alaska's standard operating procedure for these things and a the question is how should MC 5 be reestablished given that the witness corners that, meander corners that are lost? And we have the found, we are talking right there, we have these found three corners.

So we got three found corners that meander corner's lost and we need to reestablish it and so what is the Manual tell us to do when we have a lost terminal corner, it tells us the record bearing distance. How do you normally reestablish this type corner? The standard operating procedure is for us to I would call it record bearing distance, cause the record's based on the corners out there but it's holding the interior angle of, so you would recover, you would recover that corner and recover that corner and hold the rectangular ... and figure out for your rotations.

So you would go in record bearing and distance. And really, what that is, is a form of indexing, that's really what it is, and it's not a, I think that's really important that the Manual tell us about indexing and this is a form of indexing. I don't like procedures that we sort of make up I think they need to founded on what the Manual says, what the law says and when you have something

that deviates from that, I think you need to look at it carefully. This is just a form of indexing and because of the quality and the time frame that these surveys were done, this form of indexing is very valid. Other places it would not be valid at all. 1860's rectangular surveys in the lower 48 that angle may not be valid at all, so I think that's a thing to keep in mind.

And I also find in those relationships, if you are finding a consistent angle there, that consistent rotation and this being the national, at the time it's thought he actually ran that thing on the ground thru it because he had no choice but yeah, there's other solutions that you might consider, one thing that has been pretty common is the first, some people have jumped on the grant boundary going thru the meanders.

That's not suggested methodology and the meander courses and the way that they were laid out didn't have anything to do with the relationships of that survey necessarily. That's a really hard one to support if challenged. Because your overlooking the corners that were established on the ground, and your overlooking what the Manual tells you to do and no good justification.

Yeah, and you know if you had enough recoveries, say if you had 10 recoveries of his work and you could apply a chaining index that might be applied to. You could do the rotation and chaining index which is a grant boundary. Though the chaining index probably in these situations is going to be so small as to make not much difference. Just one of the things I wanted to point out here again is these surveys were done by Forest Service employees cause they were in the national forest and submitted to BLM and approved in the official record. Okay, anything else about this one.

Yeah, I just put in is there anything different about how this one would be reestablished? That's tricky. You got some extra ties that's just the highlight, standard operating procedure would still be the same although I'd probably want to go out there and go look for that USLM down there. You know what, at least get that closest one. If you did the record angle, record distance, found that closest one and that tie was good you could feel pretty good about it without going to the USLM.

Right, and in this case I think these were pretty much done by the same surveyor in the same time frame and thru the same network but you know, you may have, you may have the same surveyor down here that's just one of those surveyors that was always right. And this guy might have been sloppy as heck. You know, you might be able to justify one point off of a tie.

You might have enough. Although this tie here is the surveyor 160's tie probably. Evaluate the tie don't overlook evidence a go the extra mile to find corners that may shed some extra light on the method. Let's keep looking at a few examples here, here's one where we have a U.S. Survey and this is all one survey, this is a multi lot U.S. Survey so it's all done in a sequential situation or simultaneous, excuse me, and a we have a couple lost corners and we recovered ones, this, this gets cut off down here but this is a riparian boundary that extends all the way the boundary of I think 4 lots.

procedures that happened. One of the things, a lot of these happened was the surveyors would run along the exterior boundary of these things, and they would come around the riparian frontage, and have control out here and they might side-shoot some of those and would they ever make the tie of that, of that line between the control?

You know, if they were doing it, with good means and they were usually closing thru it and a lot of guys would actually run the traverse thru the points. How about that line, kind of the northwest up to that lost corner. Well yeah, those weren't typically run. But there's a bearing and distance shown on the plat. Right, and one thing that sticks out real high on this plat to me. If you notice there's topo calls and if you looked at the whole plat, there aren't topo calls and that sort of thing, so that's just something.

So is this a plat only or are there field notes? In this case, this was field notes. And in the field notes it would say that that line was surveyed. They would run it and say beginning at point 1, identical with portion of and they'd go thru it and they'd say point corner 2. Which is, you know one of the things you said earlier is report what you find, report what you measure, report what you do, this is a situation where maybe we reported something we didn't do.

That's a good thing to know about procedure in those time frames. Because that could lead us to not, maybe not trust that line as much.

Yeah. And in fact, I think we already emphasized the point so we don't, we don't need to go into it with too much detail here, but the recovered corners, when you inverse between these two corners, we are finding a 5 minute rotation and 18.6 links long. For a lower 48 surveyor he's going perfect. For those old records but a for a 1985 survey.

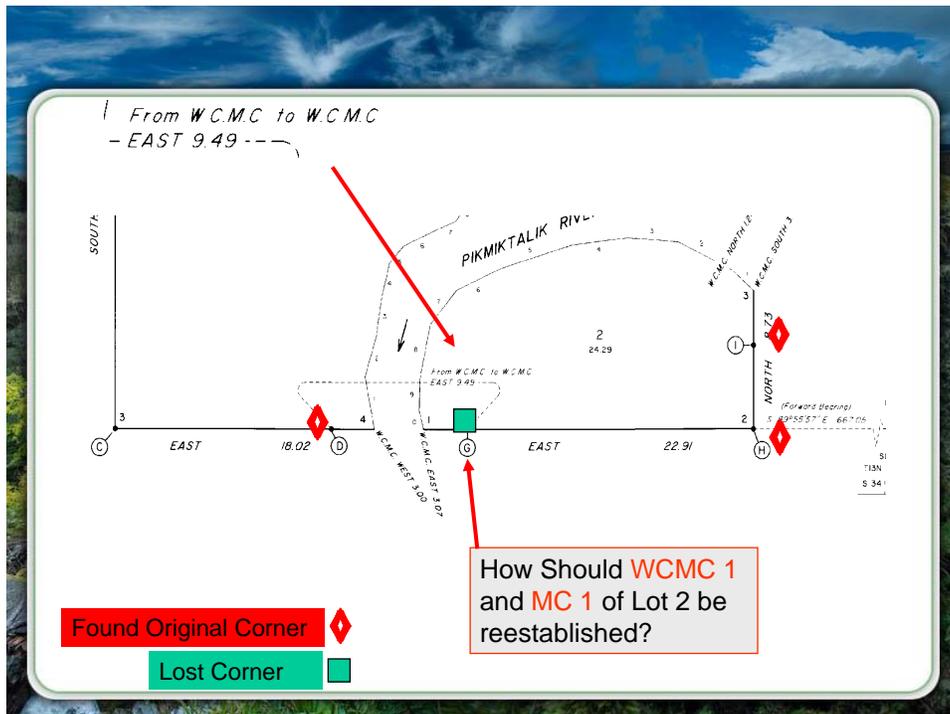
Right, but we were closing, we were closing those things 1 in 5 thousand minimum usually. I don't know we usually ran close traverses around everything and you come in an inverse between these corners and it's like, oh wow, I'm tired as heck I'd know where I would like to put that corner because I'm pretty sure he ran thru it so I'm probably going to run a grant. And so, so that's really good information about survey procedure. And at that time frame as least they tended to survey the exterior. That makes you feel much better about not using one of the lines that goes thru that corner and it helps you choose which line you should use.

I get, some guys would run all of them, some guys wouldn't, some guys were adamant that we'd traverse thru them and some guys would run them twice. And I think the main point though goes to back to what we said on the other one, no matter what issues, you are still going to tie all three of those corners. You are going to know the relationship and a sometimes I think the relationship is really what leads you to the method. If the opposite was found, let's say you ran all those lines, and you found a very good relationship between the WC meander corner and that northwest corner you might single proportion if the relationship was poor the other way.

Yeah, if that was the case I would probably in fact advocate single proportion measurement and put that in and then I'm evaluating all of the, combining all of the lines and all of the measurements going into the corner. So then perhaps a single proportion measurement from there and then holding that point to grant in the next corner and as long as all of those

relationships are being maintained with the found corners, I can advocate that. And we have to step back always and think about what's our goal. Our goal is to put the corner back in its original position. And so once we are comfortable that we have the best method for doing that, that's the method we should use and then we need to document that including what methods we considered, why we chose that method. So, okay. Now we have another example, we have a couple more of these I think, we'll talk thru.

Another one on the overhead here. You know, I think we keep getting back to a lot of the same concepts that we've talked about with first principles. The Manual comment about the axiom and Waddell's comment about evaluating more than just one set.



This one goes back to kind of a what's standard operating procedure here in Alaska, we are given this case and it kind of highlights some of the issues that are unique to the U.S. Surveys, the next two slides will. In this case we have a lost witness corner, meander corner, how should the witness corner and we MC of Lot 2 be reestablished? Is the question.

And just to highlight I blew up the tie up there, and I can zoom this in a little bit more. There's a tie across there, 949, okay and we've got two found corners over there and we got the corner across the river we've got a lost WCMC. And that's the only corner set on this U.S. Survey. The rivers been meandered and we need to reestablish that lost meander corner.

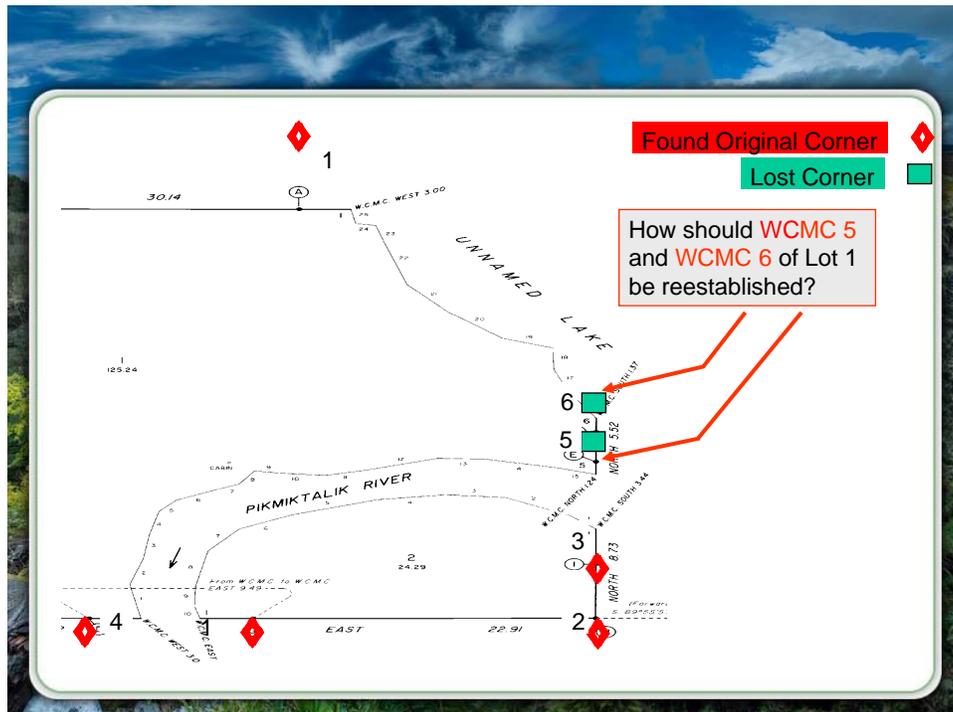
In fact this is a plat only record as you can see the numbers for the meander courses. So standard procedure would tell us if the line continues thru the meander corner that we would normally single proportion, to reestablish that meander corner. I guess this is where, and I would ask you know, if we should the measurements like we did with the rectangular, that's what I would advocate is single proportion but in fact the standard operating procedure the norm is to go record bearing, treat it like a terminal. Even with the tie there.

Because you think the tie wasn't made? No, I know they were made. So the tie was made, and for some reason your thinking that the angle is better than the two controlling corners on either side. I guess that they just, the logic came from treating it like a terminal course in each one of these lots is standing on it's own. I'm pointing out the standard operating procedure and I would go grab those corners but I don't think I would ever set that corner without getting that corner across the river.

I would never set that corner without getting the corner across the river. And I think that the first method that you have to consider there is single proportion. Because that's what you back up with the Manual. Then you might be able to consider some other method which is the record angle and record distance but and I think you have to justify that with something. So but you are telling us and really what we want is we want to understand maybe what is happening why you might pick up a survey plat, a resurvey plat and it was reestablished with that method.

You might find a lot of cases where this corner was reestablished without ever going and getting the corner across the river. And, and that should never happen. Not in my opinion. It is something that and I, and I think about circumstances where someone could be harmed in most cases because you are so tired but I don't know if that issue would arise. Certainly see a situation where he had a different type of claim not against an adjoining boundary this thing kicked out.

I could, I could see situations maybe, where the tie is across a large lake, something really a considerable distance, and the controlling corner to the east there is very close, I think that would influence me as well. If I were setting policy, because I knew what I ran in the field, I would run my lines and then do the meanders afterwards. And show those measurements and treat it like a section line.



But, that being said, this is what the records are and we got to take them for what they are and current procedure is to a, interior angle record distance. And I think this next one highlights the same plat actually. It's just gone a little farther north. Widen it out just a little bit. What we have here is this is the corners I was talking about down there saying this one was lost now I've added it, let's say we reestablished it at this point, but there's that tie. And now we have two lost corners on a line and we the line is divided by meander courses on both sides.

And there is no tie across the water to the south. Correct, and that's the craziness and in all probability the surveyor ran across this and kept on line and there is no tie. But we didn't show that measurement. In our notes we showed, and the logic at the time I think they didn't want to have a conflict in ties.

That's a little scary, but that's what we are dealt with so what do we have? All we really have there that I see is the meander line. Is there anything else that we can put that line back in with? In my line of thinking, I'd want to go recover these corners and make sure my procedure was put in and some type of relationship, especially if you know, if there was issues over here.

You would want to make sure that that's pretty close to projection of that line across the river but given no tie and no record that those are on a common line other than graphically on the plat that could be a hard if challenged that might be a difficult thing to substantiate and validate. For sure, you know it's like report what you did and show what you did and it's that axiom that you get back if you give a good record of what you did, it gives all the answers to how to reestablish it. And here's a case where we are not, our records don't reflect what was actually done out in the field.

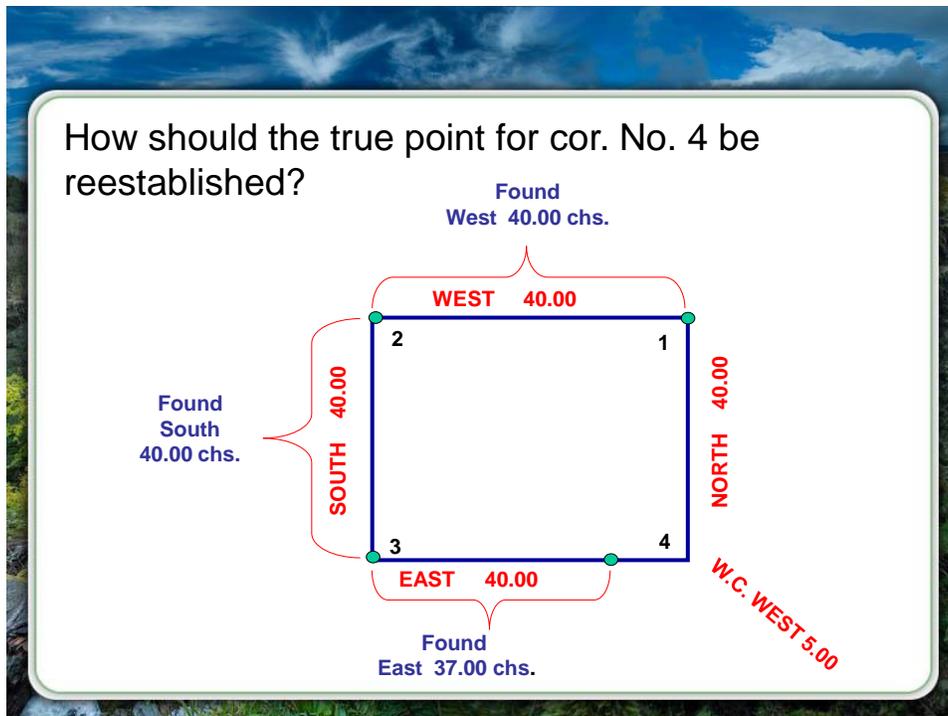
And there are some, I mean you made a reference to it, this concept of well let's show less, well that's usually a bad decision. Showing more information is normally the best decision. Okay, so is that, anything else on that one? No, that's pretty much it other than I talked to a lot of people, I don't know if we have a standard operating procedure because this is a pretty unique situation, it's one that I pulled up, it's one I thought about and I've talked to a lot of people and the consensus is it probably running, treating it like a broken boundary...

Compass rule adjustment. The whole thing, using those two corners given that they were relate to each other. And how all that relates to the present shoreline if the shoreline is stable and how it relates to the two corners down below. So, yeah, yeah. Alright. I think this is our last example. It kind of maybe want to have the students take a chance, I'm going to put it up there, and maybe take some time and think about what they would do.

Kind of come up with something in their mind and what are the things that are given. And you have this example in your handout so you can take a few minutes answer the question and once you've done that then come back and we'll, Mike and I will discuss it.

Okay, and the situation here is this was an actual survey that occurred and it's been simplified here but in essence the issue is there was a found 37 chains here and there was a report of a 5 chain witness distance, so the distance should have been 35 chains.

How should the true point for cor. No. 4 be reestablished?

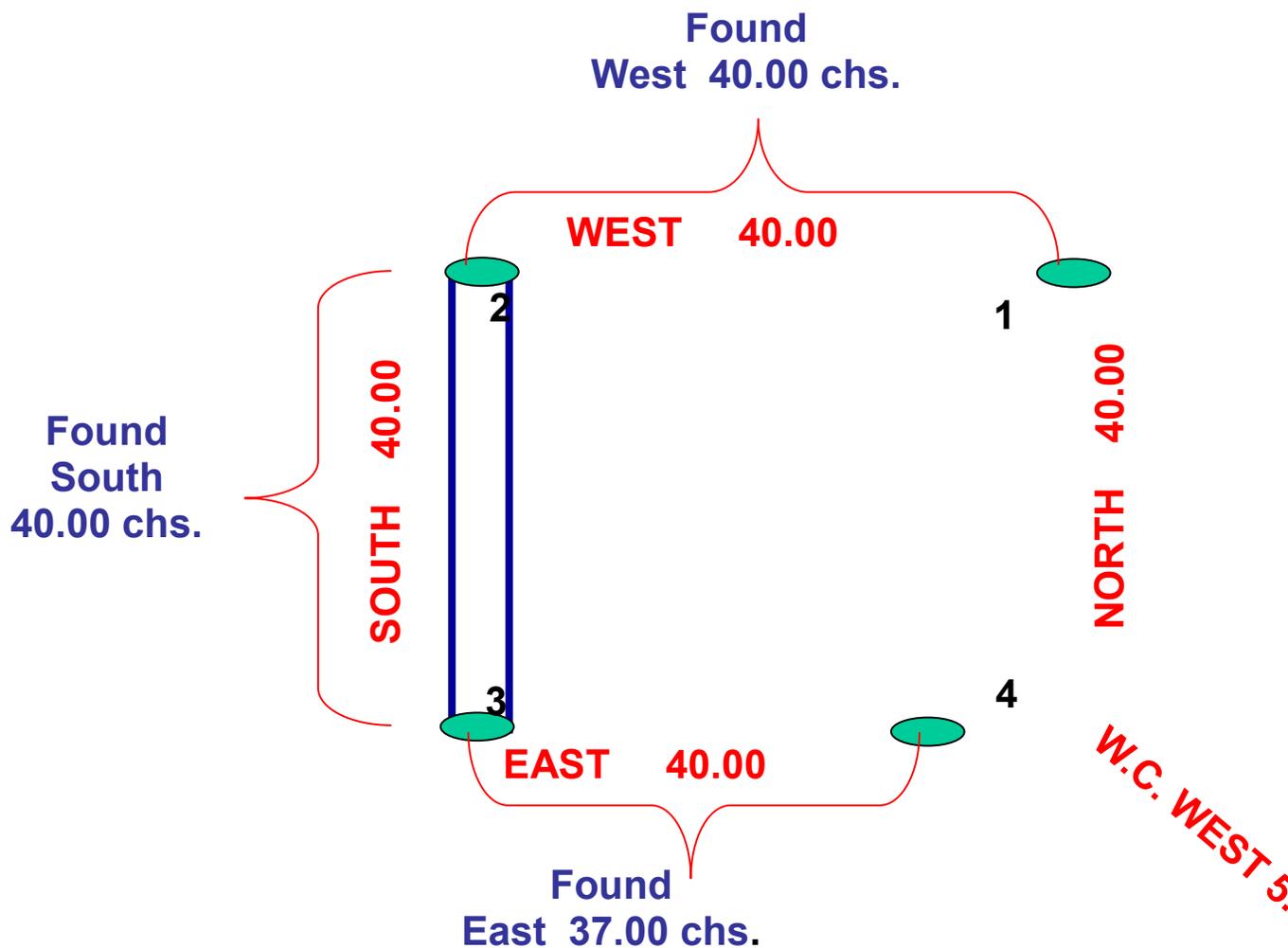


So the witness corner should have been 35 chains, the distance should have been 35 chains to the witness corner, according to the witness distance, so according to the record however it's found that 37 chains but on line, basically in proper position, north south. And exactly at 37 chains, not 37 no 10 and this was found. It was and reason being is this is a certificated parcel out there and there was a pond out here and we are butting up against it. So we have to protect him. So take a few minutes look at that think it over and answer the question and when you've done that we'll discuss it.

Exercise

U.S. Surveys **Exercise #1**

How should the true point for cor. No. 4 be reestablished?

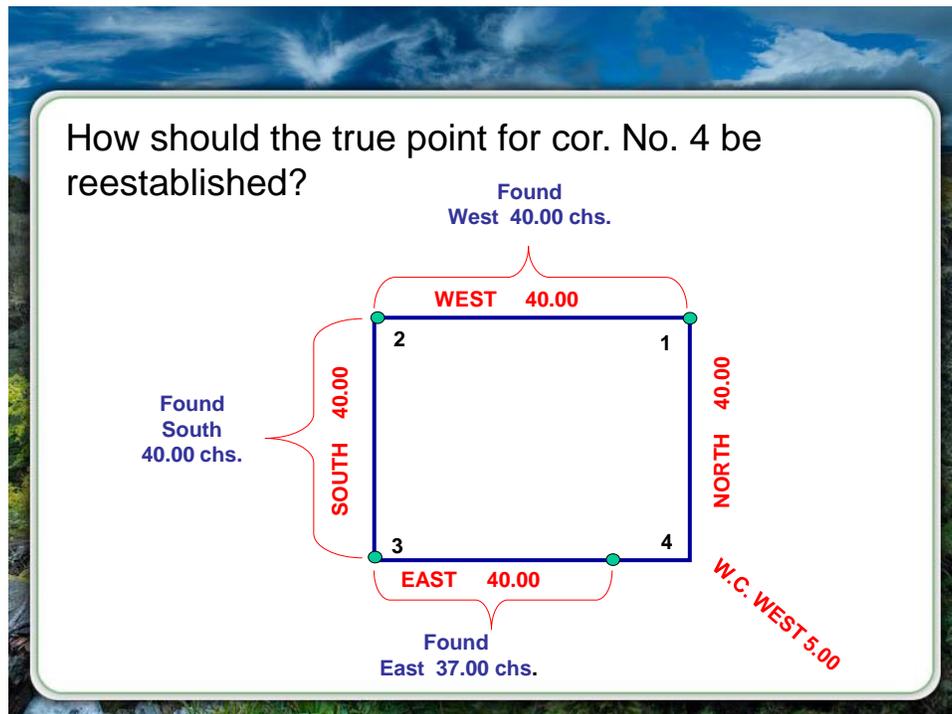


U.S. Surveys, Part 3

You've had a chance to look at that decide what you think you would do so Mike let's discuss it a little bit and as it turns out Mike and I have a different opinion here so this is good. So go ahead Mike.

Originally I didn't think this would be something that was discussed as much as it was in class, but it actually generated quite a bit of discussion. From my standpoint, the way I look at this survey, is I've got a bearing and distances on there. There is evidence of the plat and I have physical evidence on the ground and I have these measurements and I'm thinking, I've got enough evidence here with the recovery of these other corners. I'm getting perfect relationships with this guy, and I'm thinking this is a cartographic error and I'm thinking I've got an east 40, and a west 5, I've got conflicting bearings and distances.

So, based on the collaborative evidence here, I'm inclined to hold the east 40 over the west 5 and call that a three chain witness and actually put that thing in there and that was a cartographic error on the plat. There's other things that could factor into that, maybe some substantive evidence I'd want to get on the ground and one of the key things is the topo calls. And I would think that the on the ground evidence would trump the bearings and distances and we've got, I guess we've got that hierarchy of evidence, why would this have any more weight than this, and vice versa.



And of course, now I get my, I get my turn. And it's interesting because each time we see each other I think we talk about this, I don't know and neither one of us is making much progress convincing the other one. So one of the things I think is there's a couple thoughts I have. Number 1, generally if you have found the witness corner, you have the corner. If you have the

witness corner, you have the corner. Here we have a witness corner but if we only go three, we have two different positions we could use. And so I sort of advocate my stance is I don't care what all those other distances on this plat are, monuments control and I would go five chains from the witness corner which would put a heavy bearing on that east boundary.

Now part of this discussion is, one of the things we do when we are reestablishing corners, is put the error or the blunder, where the blunder occurred, when you try to take that approach with this example, you can't decide where the blunder occurred. Did the blunder occur in the measurement, did the blunder occur in the plat, you know what actually happened. We all know the meander corner or the witness corner is not where it said it was, but you could say well we measured it wrong, but you could also say the draftsman calculated the distance from the witness corner to the true point wrong. But my position is this isn't a situation where we are trying to put the blunder where the blunder occurred, this isn't what we are up to, we have the meander corner, therefore we have the corner. And you notice I haven't convinced Mike and he hasn't convinced me.

I think the most important point about this is, think about it. Consider, what really you are doing and when you are done, complete a good documentation of why make sure that it's clear in your documentation what you have considered, and then hopefully whichever method you decide, people behind you are going to follow. Because I think I can see someone approaching this problem and doing it the way Mike says without ever considering anything else, and I can see people doing it the way I say without ever considering anything else. And both of those need to be considered, and you might talk a little bit about some of the other things I know you have mentioned what if you have a cut line, over there on that east boundary how would that influence me?

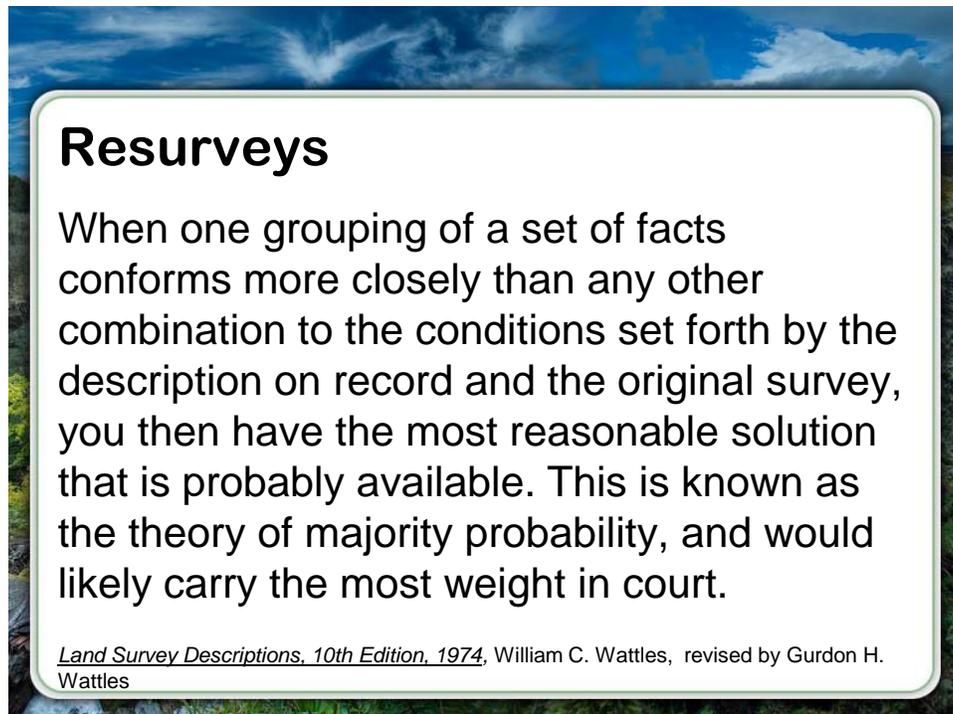
Yeah and I think it goes back to the fact that, what I'm trying to emphasize here is look at everything and sometimes you will deviate from the standard. What Ron advocates is probably what you would get out of the Manual, so if you just ask somebody point blank, if you do go record bearing and distance from the corner and in fact, I think that's what the surveyor did. I think that there are times when you deviate from that record, and yeah, what if this was in the woods and you have a cut line?

This guy returned some substantially tight stuff, for him to be off that much is just like, if this thing hadn't been 37.00 I might have been well okay, but he was going for a equal distance witness. And I'm speculating on a lot of that stuff but if I had gone out and recovered this guy, this one was 2 chains out this way and this one was a chain that way well then, yeah I don't have anything. I'm getting more and more of that majority probability rule that comes in that if you get enough evidence then, evidence of a higher weight, you can deviate but you have to do it, like you said you have to document, and especially when you deviate from the standard operating procedure your office or the Manual.

If I were looking at this, some things that would affect me are, if there was a adjacent parcel there it's a 40 acres parcel or whatever. There is any kind of use or something along that line then I'm now going to encroach on that and I'm going to cause some trespass things or something, that might affect my decisions. So we really have to look at everything and make

sure you consider it, because you shouldn't get to this situation and just go record bearing and distance. And shouldn't get to this situation and go oh, well it's an obvious error, and do this...

In every one of these cases, we want the simple what method to use for lost corner but we didn't get into the location. And that's the whole other aspect of that, you know, if somebody's occupying this, you got some other issues involved. Well, why don't we finish up with this PowerPoint slide and Mike, I'll have you read that. Cause I think that kind of sums some things up for us.



I think it says that this is again from Wattles, the land survey descriptions, but... When one grouping of a set of facts conforms more closely than any other combination to the conditions set forth by the description on record and the original survey, you then have the most reasonable solution that is probably available. This is known as the theory of majority probability, and would likely carry the most weight in the court. And this is written sort of about descriptions but the concept carries over to surveys.

If you look at our standards, if we are trying to declare a corner found, a preponderance of the evidence. Or not preponderance, substantial evidence. We have to have substantial evidence to show that, that corner is found. Basically it's saying that the majority of the evidence is shows in this situation. So it's in a line with other.

I look at our surveys as being a deed and a reference and they are a description and when I'm doing a resurvey where I have those controlling calls, I have that hierarchy of evidence, and I have all those things that when I'm reading a deed, that I have to consider to, and the words and the verbage may be different and but the same principles apply.

Sure, sure, alright. Well that concludes this portion of a non-rectangular surveys, thank you Mike, for your time and all your effort you put into this. We hope you all found it interesting and hopefully the next portions of this course will be interesting for you as well. Thank you.

Townsite Surveys, Part 1

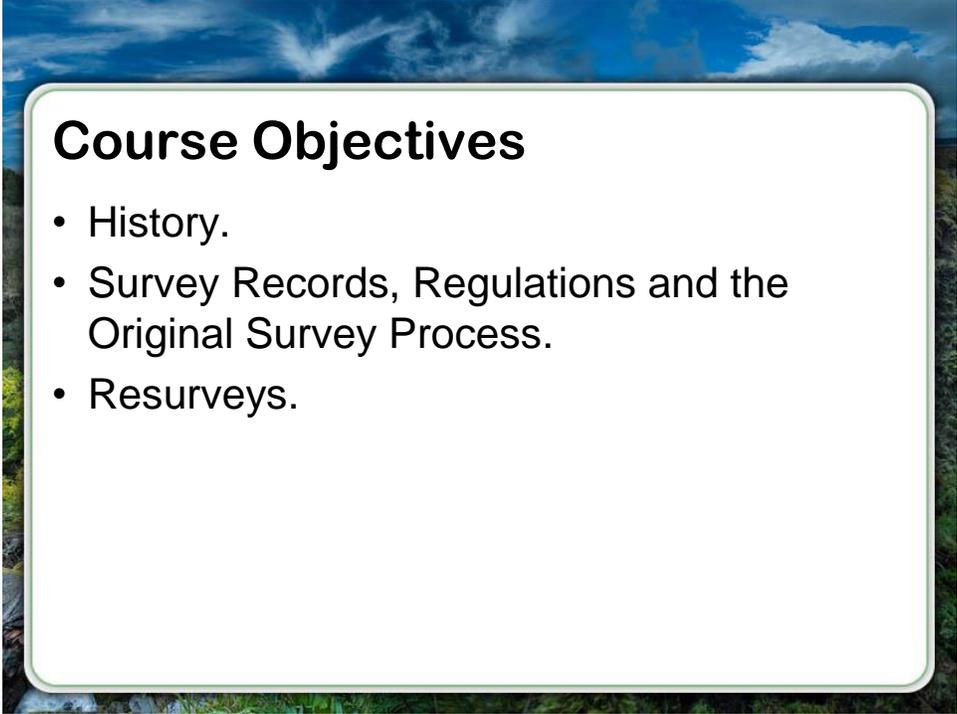
Introduction

Hi. Welcome to another portion of the non-rectangular survey class, I am here with Mike Harmening and we are going to talk about townsite surveys.



Objectives

First of all, I just want to give you an overview on what we are going to talk about, history, and the history of townsites is a pretty interesting thing and I think you will find that interesting. Survey records, regulations in the original survey process, and survey records can be found in a lot of different places, and then resurvey processes which have some unique aspects. Mike, I am going to turn it over to you and let us start with the history.

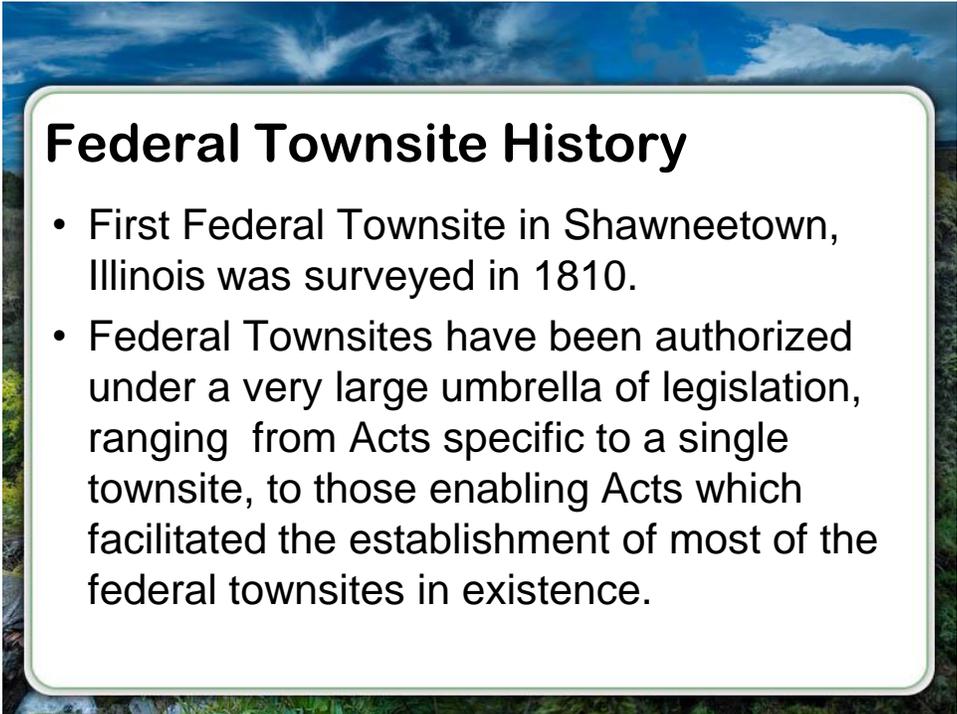


Course Objectives

- History.
- Survey Records, Regulations and the Original Survey Process.
- Resurveys.

Federal Townsite History

The first federal townsite was surveyed in Shawneetown, Illinois and that is about all I know about that. 1810 though, so it was a long time ago.



Federal Townsite History

- First Federal Townsite in Shawneetown, Illinois was surveyed in 1810.
- Federal Townsites have been authorized under a very large umbrella of legislation, ranging from Acts specific to a single townsite, to those enabling Acts which facilitated the establishment of most of the federal townsites in existence.

In fact, right about the time the GLO was established. Also, the one thing to be aware of is that these federal townsites especially in the early years were authorized under a wide umbrella of legislation.

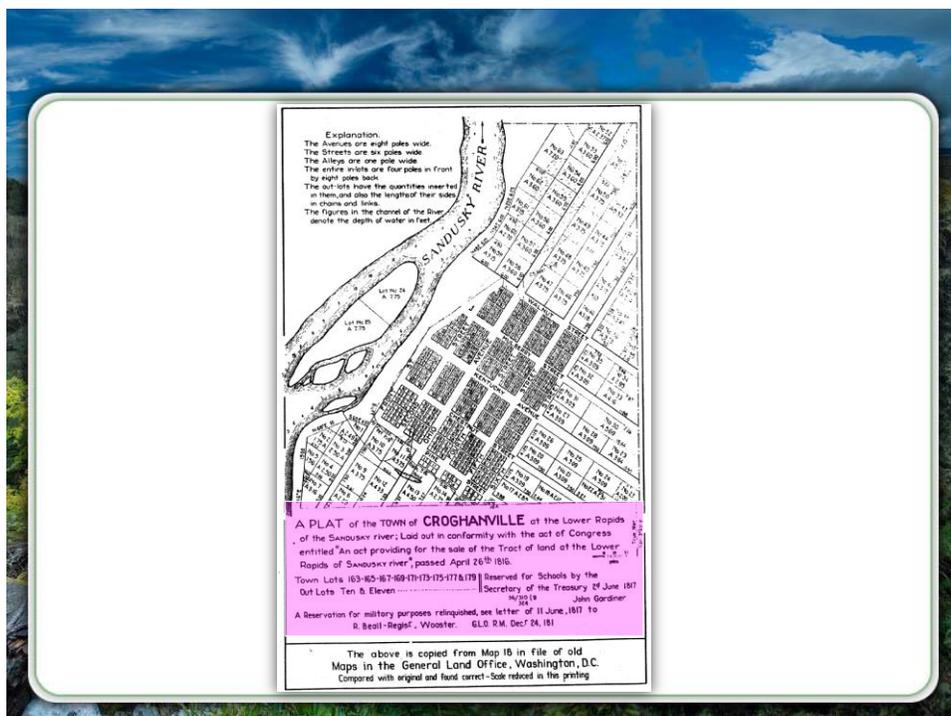
Often times for one specific townsite. Some of the history that I find more interesting in the lower 48, one of them was the Oklahoma Land Rush.

It opened up the territories that were seeded to the United States from the Creek Indian, they opened it up for settlement in 1899.

When they did that, under presidential proclamation he established a specific date to do it and at noon on a given day they rushed out to settle the land and that included homesteads and townsites. In the chaos, several people staked out townsites that overlapped and there were also people that were granted entry before the settlement by the authorities out there which became known as the sooners. Anyways they might have staked out some townsites that no one else knew about.

As you could kind of guess chaos ensued in towns like Guthrie, they are still trying to settle who owns what, there is conflicting deeds, overlaps, and everything else. That was not a real good idea. So anyways, if we moved on to what I am more familiar with in Alaska, we have a very large townsite program in that state. Over 185 of them. Out of those over 130 are known as trust townsites. I will get into that as we move forward.

I put this next slide on the overhead just to show an example of a townsite that was established early on, just four years after the GLO.



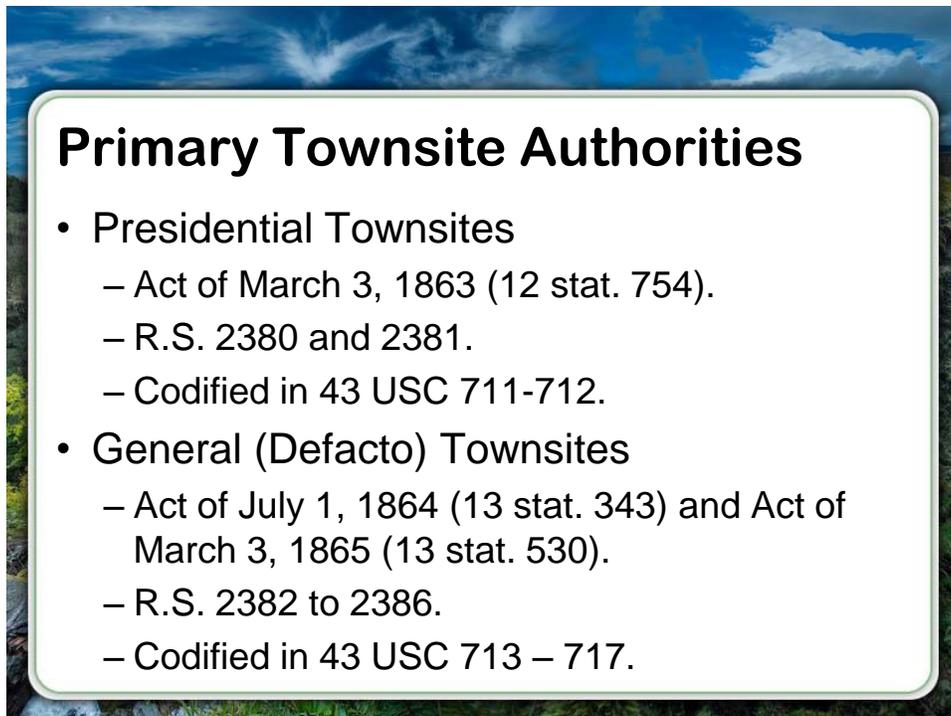
Basically, what I wanted to focus on was not the actual image of the townsite but just showing the individual act that created this townsite which was established in 1816 and it was for a tract of land on the Sandusky River. So it is just an example of one type of townsite that might be out there that was authorized under federal legislation.

That is a specific legislation for just that townsite? Correct. So each of those legislations could have very specific elements to them that are unique to that townsite.

Primary Townsite Authorities

Yeah, and I will get into a little bit of that too as we move forward. One of the ways I thought would be the best way to present this history is to just talk about the federal authorities and as they were authorized as they put them in chronological order. I think that it kind of gives you a touch of what was going on at the time.

This should be a good reference for people in the future. Here is a place where you have put together all of these different authorities.



Primary Townsite Authorities

- **Presidential Townsites**
 - Act of March 3, 1863 (12 stat. 754).
 - R.S. 2380 and 2381.
 - Codified in 43 USC 711-712.
- **General (Defacto) Townsites**
 - Act of July 1, 1864 (13 stat. 343) and Act of March 3, 1865 (13 stat. 530).
 - R.S. 2382 to 2386.
 - Codified in 43 USC 713 – 717.

Yeah, definitely a lot of that information I will try to make available to the students. The first one is the Presidential Townsites. This says you can see is an Act of March 3, 1863. One of the primary purposes of this Townsite Act was to preserve the land. At that point of time preemption was still going on.

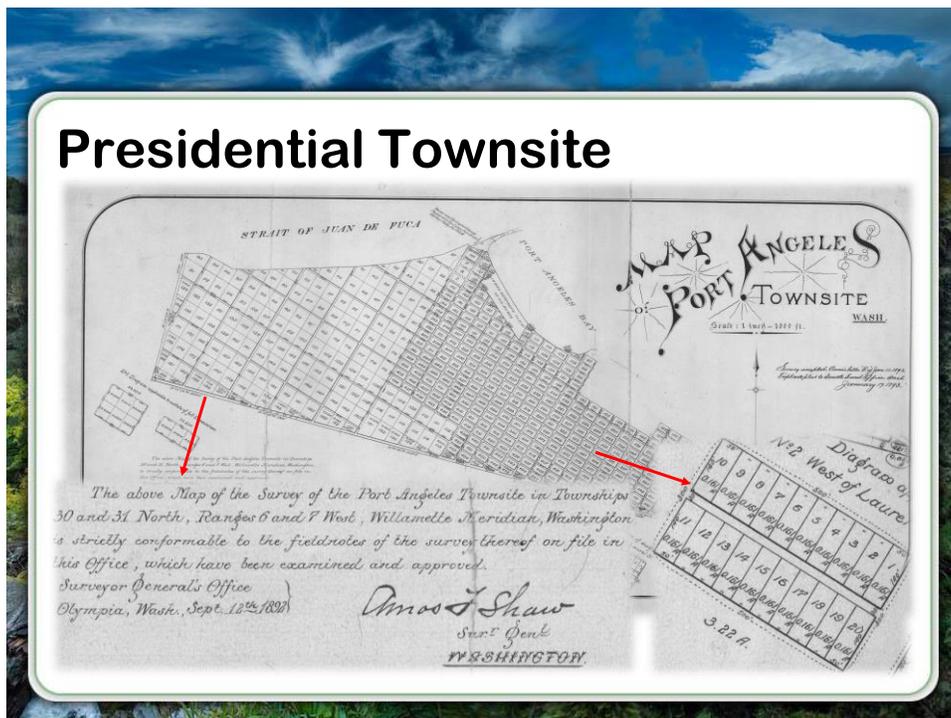
People were settling and they could require rights by just being there. They wanted to make sure that key areas like junctions of roadways, harbors, and railroad terminals and things like that

were set aside for townsite purposes. It established up to 640 acres for a townsite and the land was usually withdrawn from entry. They usually were laid out by the GLO and in those were statues that were set up through specifics and how they were to be surveyed and laid out.

The next one, is the General Townsites. This was shortly after 1864 and these ones accommodated mostly the places where people had already been and settled. The towns were building up and they needed a way for them to enter on to public domain. There were up to 640 acres again and these were usually surveyed by the individual townspeople. Although there was a provision in the act that allowed for the GLO to come in and do it at an assessed value per lot cost. So if the townspeople did it, who conveyed the land? GLO? Townspeople or was it a mixed bag? I think it was a mixed bag and I am still trying to figure that out because it was before the trust townsites came into play but I am not certain of that.

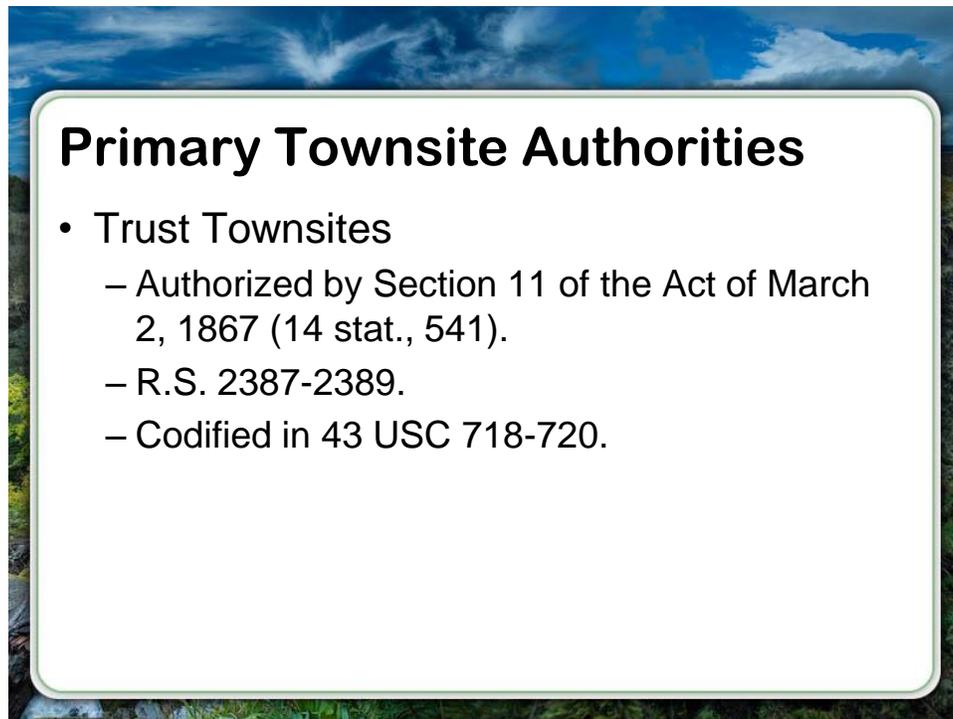
So that is one of the things if you are involved in one of these you need to do a little research to make sure because there is so many of them that it is hard to know everything about all of them. Go ahead. Another point on these and I would love to talk to them. How wide indicates that these are probably the ones across lower 48 that there is the most of. I did the very question that Ron asked, how the land was conveyed. I never got to the bottom of that.

On this next overhead I am showing you an example of Presidential Townsites.



There is just a few things that highlight on this and the first one if you can see the uniform nature in which these things were laid out. Obviously that is because no one had settled there yet. It allowed for that to occur. Also, on these things usually there was reserves set aside for industry. In this one it is right up here and it is a harbor area. This is in Port Angeles, Washington.

Moving over to the slides again we have the next townsite authority and that is what is known as Trust Townsites. This is when it becomes clear how the land was conveyed to me. Basically, the GLO would grant to a trustee usually a judge or a respected person in the community.



They would transfer the whole townsite over to the trustee and he would grant the individual, people who were occupying the land, their lot, and then he would auction off the un-occupied lands. His job was not complete until all the lands were sold.

So that sounds like there was some opportunity there for some mischief maybe.

Correct me if I am wrong but the current townsites in Alaska, it is actually a BLM employee who is the trustee. Yes, and for that very reason. As you can imagine there was a little bit of power of owning a whole townsite.

Primary Townsite Authorities

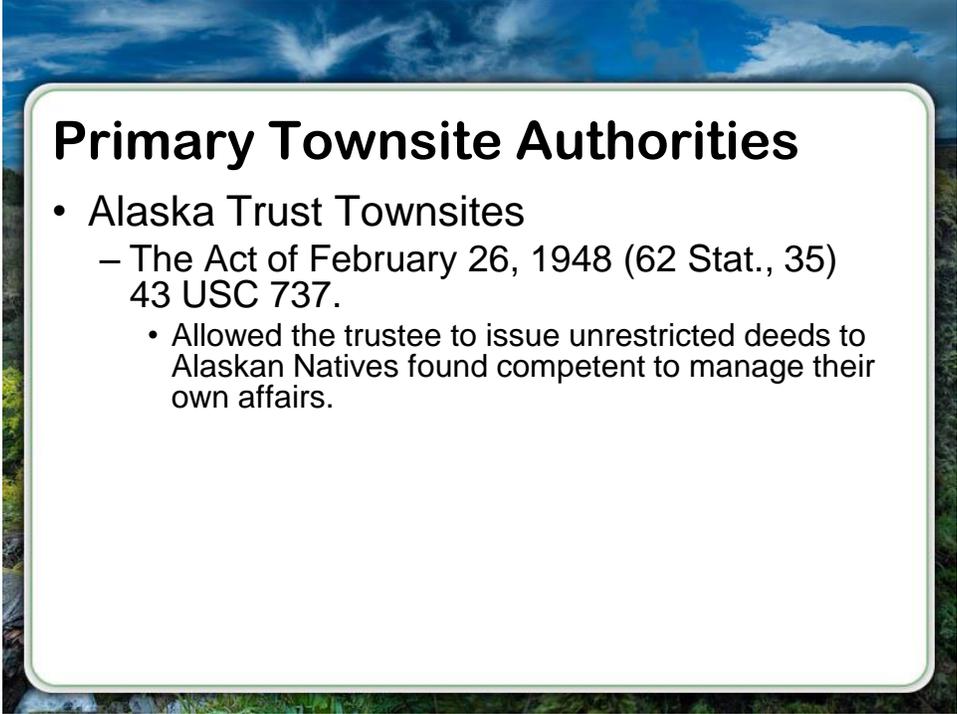
- Alaska Trust Townsites
 - Act of March 3, 1891 (26 stat., 1095) 43 USC 732.
 - Extended trust townsite laws to Alaska.
 - The Alaska Native Townsite Act of May 25, 1926 (44 Stat., 629) 43 USC 733.
 - Allowed the trustee to issue restricted deeds to individual Alaskan Natives.
 - Provided for all costs associated with surveying and platting to be incurred by the government.

We actually have some history and our townsite trustee's Al Brightsman and he talked about there is even some cases where they kind of went crazy. They had to deal with that. So, there is some interesting history there and I am not very familiar with the lower 48.

I am sure that there are some unique and interesting stories about what trustee's must have done. Okay so now we are on to the next slide here and we have got the Alaska Trust Townsites. These were extended as mentioned earlier in 1891, the Trust Townsites that were authorized in the lower 48 were extended to Alaska. A lot of people think they call the Native Townsites in Alaska and a lot of people think there is distinction between the two. But in reality the next act which was in 1926 what it did was it allowed for the government to transfer lands to the natives with a restricted title. But it was still under provisions of the Trust Townsite.

So this is just sort of a subheading under the Alaska Trust Townsites. Yeah and the other thing that this did was this act created, it put us into the business of surveying in sensible time because all of the costs associated within the surveys were authorized by the federal government to do that. So that act pretty much ensured that we were going to be surveying a lot of townsites in Alaska.

Then the next act that I talked about there is the Act of 1948 and that one basically allowed the Secretary to issue deeds to a Native that were fee instead of restricted.



Primary Townsite Authorities

- Alaska Trust Townsites
 - The Act of February 26, 1948 (62 Stat., 35) 43 USC 737.
 - Allowed the trustee to issue unrestricted deeds to Alaskan Natives found competent to manage their own affairs.

They had to prove some things. They went through the BIA but that ability existed. We've seen what about 6 authorities so far? Plus the special authorities that Congress might have created every now and then for specific townsites. So it's really important it seems to me when you're working in a townsite to know what authority it was created under and you can start figuring out what rules and how it operated.

Yeah I think so especially if we're going in and dealing with the lands that remain in that federal authority. I don't know about some of the townsites were the federal act that created them were 1810 and they were settled, I don't know how important that is but some people might be wondering how the townsite was established and how they entered onto the public domain.

Anyways, we're going to move back to the overhead again here. I was going to show you an example of an Alaska Trust Townsite, the ones that I'm more familiar with.



This is just the front page and what we're showing here is the tracts or the main blocks of land and within each one of these are subdivisions that occurred.

You can kind of see that it's a little different than the Presidential Townsite and everything even at the block level or the tract level doesn't look very uniform.

If we move to the next overhead. Alright this shows the subdivision which occurred inside the individual tracts of land and they are broken into blocks and lots. As you can see it's not very uniform and that's because the lands were already laid out and settled. I show a blow up down here where you can see the streets not even aligned, everything is offset.

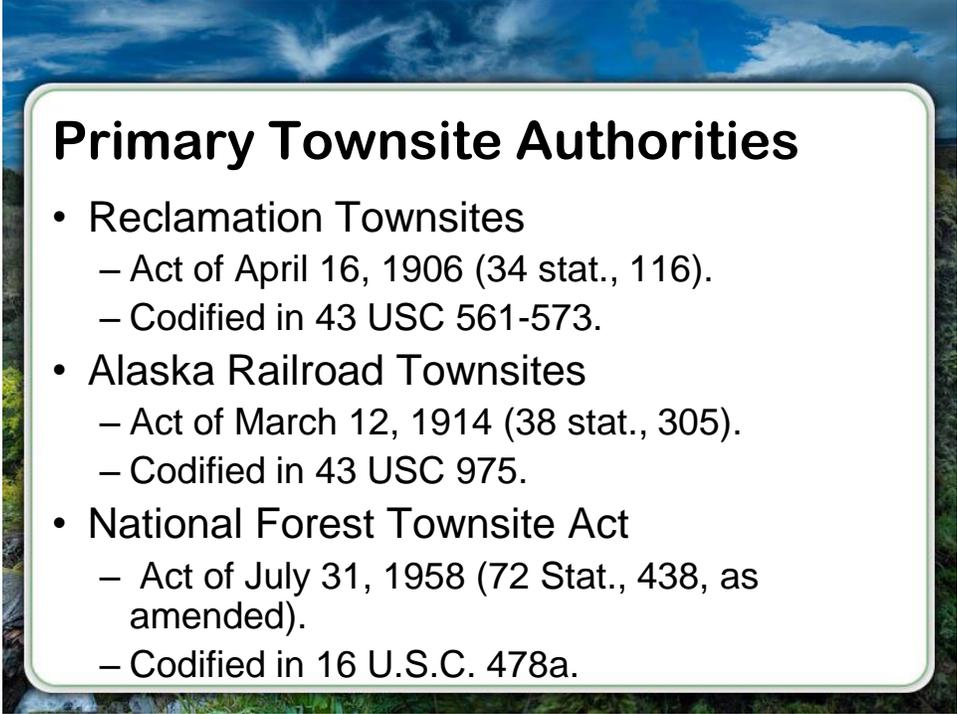


You can kind of imagine when you get into a resurvey of these things, things can get a little bit interesting because some of the principles that we applied to classical townsite subdivisions just don't imply a lot of times.

We notice that one of those streets is only twenty feet wide and it looks like there are some up there that may be only ten.

Yeah there are a lot of unique ways of getting around in Alaska. Sometimes they are using smaller vehicles and things like that. Another thing to note about the Alaska townsites I think is real important is the work that was done was incredibly tight. It makes for easier decisions most of the time because a lot of times you can use a different method but the result comes in so close to something else because the records were so well. I mean the monuments were so well established.

The townsites that I have been involved with in the Northwest, even though they are older, is similar. They were very accurately done. Okay so I'll move onto the next slide here.



Primary Townsite Authorities

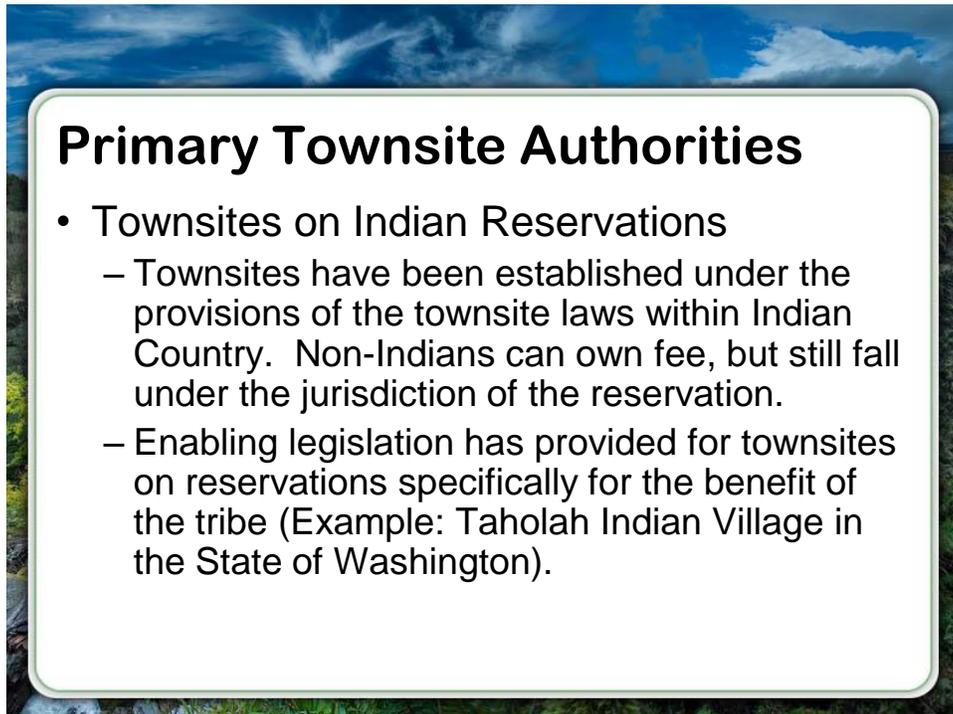
- Reclamation Townsites
 - Act of April 16, 1906 (34 stat., 116).
 - Codified in 43 USC 561-573.
- Alaska Railroad Townsites
 - Act of March 12, 1914 (38 stat., 305).
 - Codified in 43 USC 975.
- National Forest Townsite Act
 - Act of July 31, 1958 (72 Stat., 438, as amended).
 - Codified in 16 U.S.C. 478a.

Alright here we have the Reclamation Townsites and they were basically for the Bureau of Reclamation whenever they had a project going, this displaced people and allowed them to settle on new locations. I guess a dam would be a good example of that. I guess land was disposed of under the provisions of the Presidential Townsite. The next one is the Alaska Railroad Townsites. Good examples of these are Anchorage and Amana. I think the unique thing to them, they were usually established under a PLO or an executive order.

A PLO is a Public Land Order by the Secretary. Executive order is by the President. It was withdrawn basically. Large tracts were set aside for railroad purposes. It was to develop the railroad corridors. The rest of it was subdivided in lots, tracts, and urban parks and such. The last one we have here is the National Forest Townsite Act and you can see that one was fairly late on in 1958. of all of the acts that I have talked about it is the only one that has not been repealed yet. Also this isn't a classic townsite.

This was set aside for communities that are encroaching or getting close to the National Forest. It provided a way for the Department of Agriculture to segregate out up to 640 acres for community development. The way these were done is it was a Forest Service Surveyor that would survey out the tract of land and it was left to the community to do the development and subdivision of it. So you said all of the others have been repealed. So that means you're out of the townsite surveying business in Alaska but that doesn't mean we're out of the townsite resurveying business.

If we move on here I have the townsites on Indian reservations. I put this on because it ties together a little bit of history.



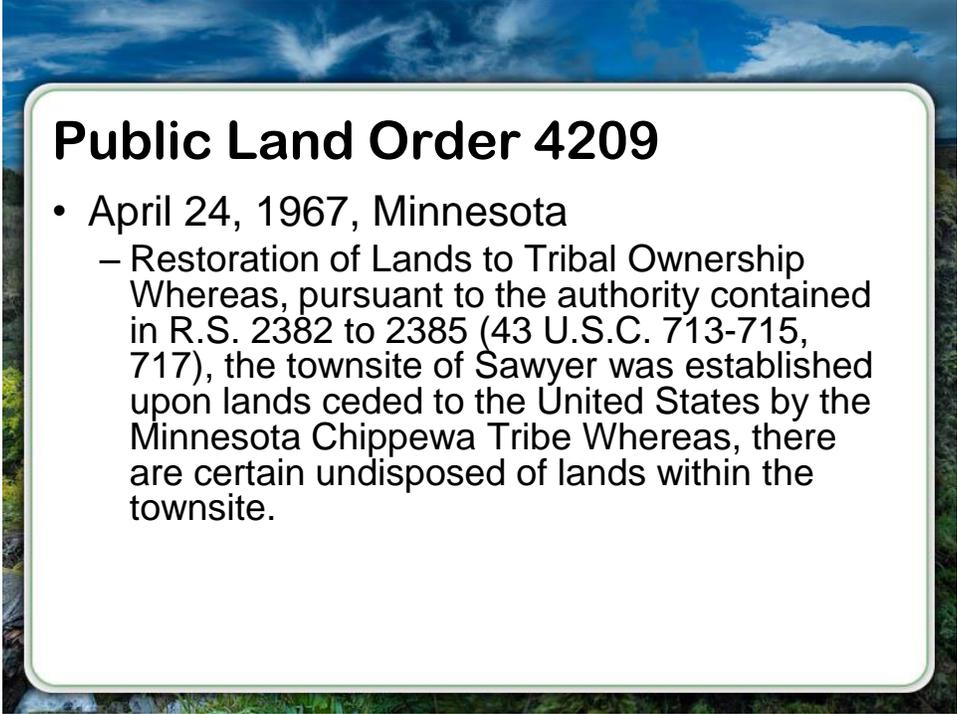
Primary Townsite Authorities

- Townsites on Indian Reservations
 - Townsites have been established under the provisions of the townsite laws within Indian Country. Non-Indians can own fee, but still fall under the jurisdiction of the reservation.
 - Enabling legislation has provided for townsites on reservations specifically for the benefit of the tribe (Example: Taholah Indian Village in the State of Washington).

Basically, when we think about that we, as federal surveyors in the lower 48 anyways, would get involved with. We would have two scenarios.

One where we're dealing with townsites on reservations and they were set aside for the Indians or there are actually townsites where the land at one point in time was taken away from the reservation. The townsite was established and then portions and parts of it were brought back into the reservation system based on the acts that occurred at the time.

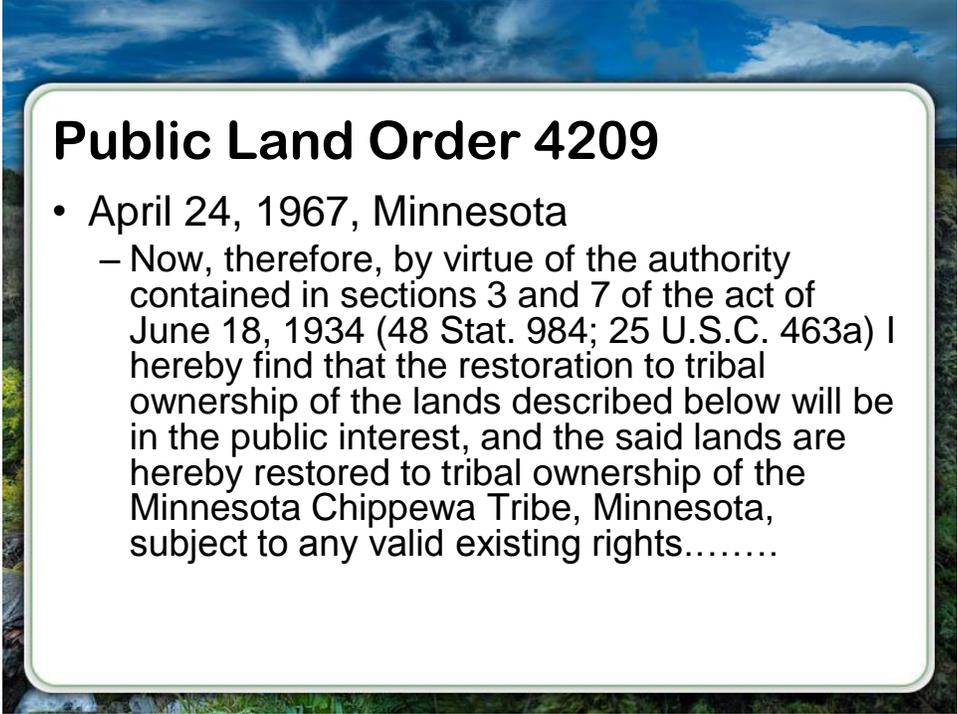
Mostly the Indian Reform Act. So you can imagine examples in fact the next overhead that I have might be a good segue way into that.

A graphic with a white rounded rectangle containing text, set against a background of a blue sky with clouds and a green landscape. The text is as follows:

Public Land Order 4209

- April 24, 1967, Minnesota
 - Restoration of Lands to Tribal Ownership
Whereas, pursuant to the authority contained in R.S. 2382 to 2385 (43 U.S.C. 713-715, 717), the townsite of Sawyer was established upon lands ceded to the United States by the Minnesota Chippewa Tribe Whereas, there are certain undisposed of lands within the townsite.

Examples of where you have a mixed ownership out there between fee and restricted or trust lands. This is an example of public land order in Minnesota where they actually talk about the land that was taken away from them and they were bringing it back in under the Indian Reform Act, they were bringing it back to tribal status. If you continue reading this PLO after it goes down here they actually identify individual lots within the townsite that are going to be brought back into the reservation system.

A white rectangular text box with rounded corners and a thin green border, set against a background of a blue sky with white clouds and a green landscape. The text inside the box is black and reads:

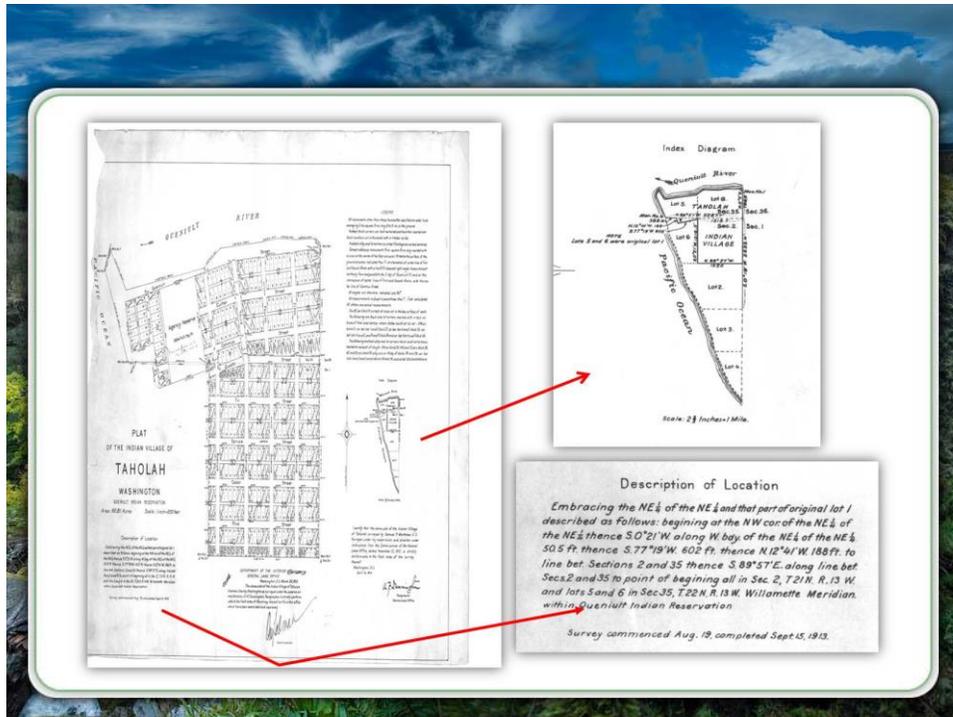
Public Land Order 4209

- April 24, 1967, Minnesota
 - Now, therefore, by virtue of the authority contained in sections 3 and 7 of the act of June 18, 1934 (48 Stat. 984; 25 U.S.C. 463a) I hereby find that the restoration to tribal ownership of the lands described below will be in the public interest, and the said lands are hereby restored to tribal ownership of the Minnesota Chippewa Tribe, Minnesota, subject to any valid existing rights.....

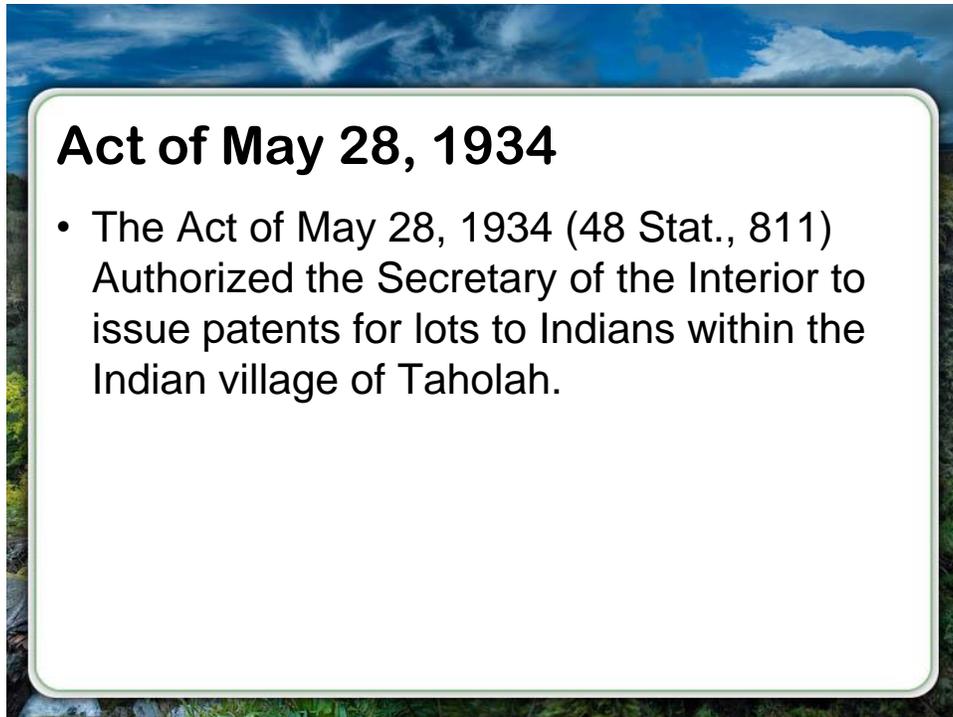
So we're going to, when we're done with that we're going to have some lots that are trust, and even reservation. Then we're going to have some lots that are fee. All of those people within that townsite fall under the jurisdiction of the reservation which is another kind of an interesting little deal.

Okay, so the next overhead shows another one of these townsites where I think we have high potential to get involved with and in fact this example here there is actually quite a bit of resurveys that are out there and actually some extensions and things that go on.

This is into Taholah, Washington and this was an actual townsite that was specifically surveyed to facilitate the settlement for the tribe.



As I read the act it provided for deeds to the individuals that read very similar to what we call our restrictive deeds in Alaska. One interesting thing on this one and it is probably true more of yours than it is ours in Alaska but it conforms to the rectangular system on the outside boundaries and depending on the land status of those boundaries you can get into some interesting resurvey situations. Double sets of corners and overlaps and stuff like that, potentially.



Most of the time when these townsites were surveyed, most of the time there was a lot of tribal land around them but that is not always the case.

We could have some individual allotments up against and you could get into some of those problems.

Regulations for Townsites

On the next slide, I'm starting off here with the regulations of townsites and these are dated all the way back through that history again and I'm not going to speak to them in this class much. I'm going to have this information up there and I'm going to toggle through two or three slides here fairly quickly.

We will have all of this information available for you on the resource material so you'll have a full digital copy of all of this and as the case may be when you need to really find out about a specific issue it'll be there for you as a resource.

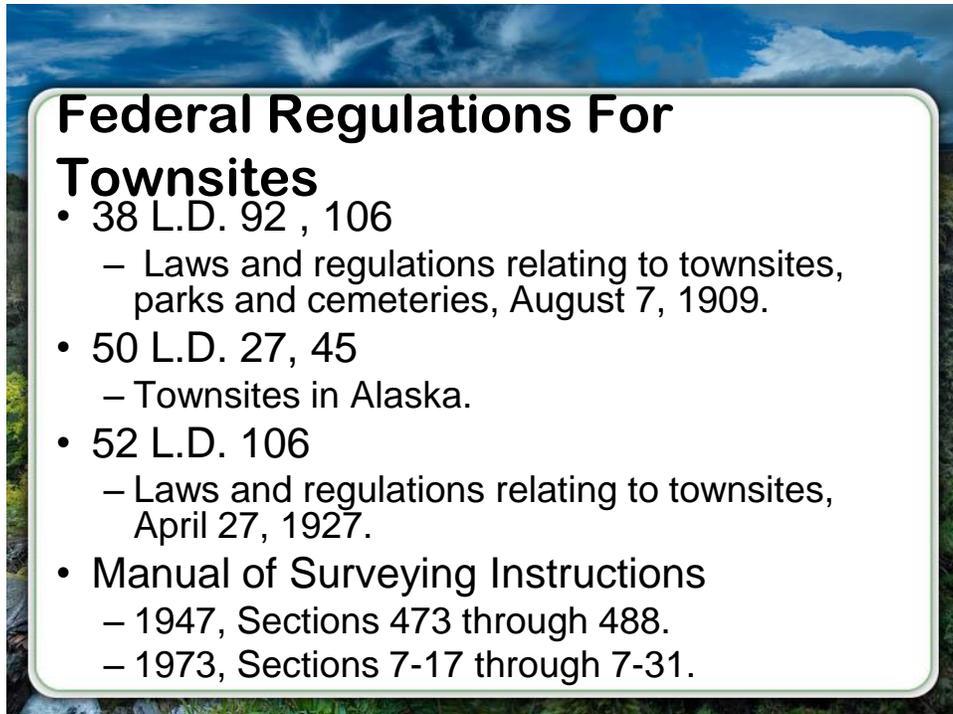


Federal Regulations For Townsites

- 12 L.D. 583
 - Non-mineral entries in Alaska, June 3, 1891.
- 5 L.D. 265 and 32 L.D. 156
 - Circular relating to the manner of acquiring title to townsites on public lands, July 9, 1886 and June 12, 1903.
- 22 L.D. 119 and 27 L.D. 560
 - Townsite entries in Alaska, May 6, 1895 and October 27, 1898.

Each of these all have good information and valid information and the one I pointed out for Alaska in particular is that first one 12 L.D. 583. I would even go so far as to say it would be a good supplement to the Manual for Alaska on some things because it gets into some real specifics on actual survey. At least it tells you what the regulations they were operating under.

On the next slide here we have more of a moving along and the one of note is 52 L.D. 106 and that one is fairly extensive circular that kind of went back and incorporated all of the regulations previous to that as well. So that might be a good one.



After that, as far as how we were told to do our work, we have the *Manual Surveying Instructions* and both the 1947 edition and the '73 edition cover this information.

They are pretty much the same with the exception of the '73 Manual which talks about photometric methods and it upgrades the monumentation, that '73 Manual does.

General notes they were to be surveyed at a precision of 1 in 5,000. Units were in feet. It talks about how we turn our curves and things like that. It is pretty general when you think about how to survey something. As complicated, as a townsite might get you after you read a couple paragraphs in the Manual.

So did you find some of these early circulars much more specific? I did, yeah. They gave specifics and it spoke to the time. I think maybe it is hard for a lot of surveyors to even conceive of doing an original townsite this point at this point in time and history. I think even the fact that all of our acts have been repealed, I can't imagine another one being enacted. We'll move onto the next slide.

Townsite Records

We have here is the townsite records. This is kind of the transition of the next part of the talk and I think most of us that are surveyors are pretty familiar with all of these records. I think cadastral surveyors in general maybe we don't deal with a lot of these things especially if we're dealing in more rural areas and stuff like that. This might be an area where people working inside of the city have a hand up on us.



Townsite Records

- Municipal/City Records
- Utility/Street Maintenance Records
- Local Museum (Historical Photography)
- Local GIS
- Local Surveyors
- Tax Records
- Land Owners

A good source of course would be the local surveyor but anyway we have municipal and city records. The utility and street maintenance records. A lot of times corners are pulled or taken out and they'll actually reference them and they will keep records of that. One of the ones that I found useful when I was doing townsite work up in Nome was the historical photography at the museums. I was dealing with some riparian issues and it really made the picture clearer. I guess I'm fortunate that most of the townsites came at a time where photography was available.

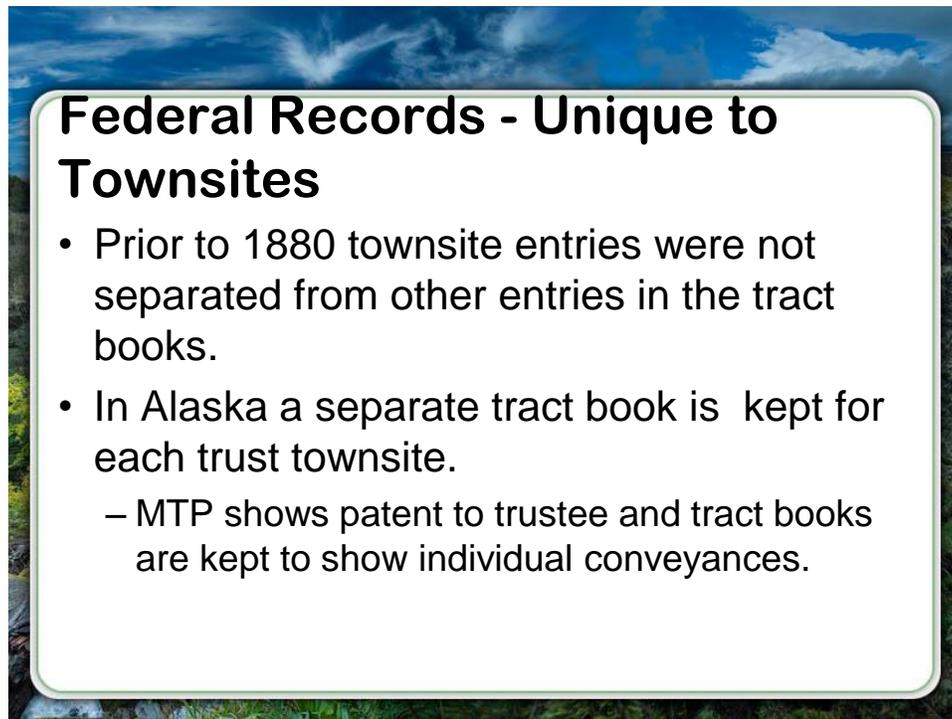
You're not talking about aerial photography you're just talking about photography, pictures.

Yeah, interesting they had this tower in the center of town that they use to crane equipment in from the shore, from the boats and the photographer who took the pictures climbed up on that thing and took pictures. It was almost like aerial views, almost had aerial photography.

Local GIS I guess is becoming more and more pertinent. Alaska, I don't have exposure to too much of that yet. As mentioned, the local surveyors I think would be invaluable if you're getting inside of these things and working with the specific lot in the area you could go talk to the surveyor you are seeing most of the records generated from. Tax records, if you're dealing with the restricted title issue then they may have limited value but you can still go on there and maybe find ones that fell out of restricted status if you are in taxing authority. They are also a great tool for finding out, contacting people ahead of time.

A lot of the times it takes you down a path, they'll take you down a path that you didn't expect to go down. It's helpful information. Then of course the landowners. So those that think are pretty much the general ones that the surveyors mentions over and over again.

Specific to federal records on the next slide, things that maybe are unique and I don't have a super good grasp on this stuff but as I understand prior to 1880, the townsite entries were not separated from other entries in the tract book.



Federal Records - Unique to Townsites

- Prior to 1880 townsite entries were not separated from other entries in the tract books.
- In Alaska a separate tract book is kept for each trust townsite.
 - MTP shows patent to trustee and tract books are kept to show individual conveyances.

I think what this means to a surveyor is you are going back to the archives. They have a specific section now that was set after 1880 that was set out for townsites. If you want to look for information prior to that date, you are going to go on there and be wading for stuff of multiple types of entries. I think prior to 1960 all of this information was put into tract books in the lower 48. Now are MTP's.

Those tract books are still available on film and the originals are still available in the archives, obviously. But that same information is supposed to be on the master title plat. All right so in Alaska we kept a separate tract book for each townsite and our MTP would only show the patent to the trustee.

It is kind of a good thing to know as an MTP because sometimes you'll see a townsite like the railroad townsite; in Amana, you'll see an individual patent for every lot. If you go to the next townsite down the river and there's one patent. You go okay here's the trust townsite. You know it's different authority usually, not in every case but usually. We're going to move on over to the overhead again here.

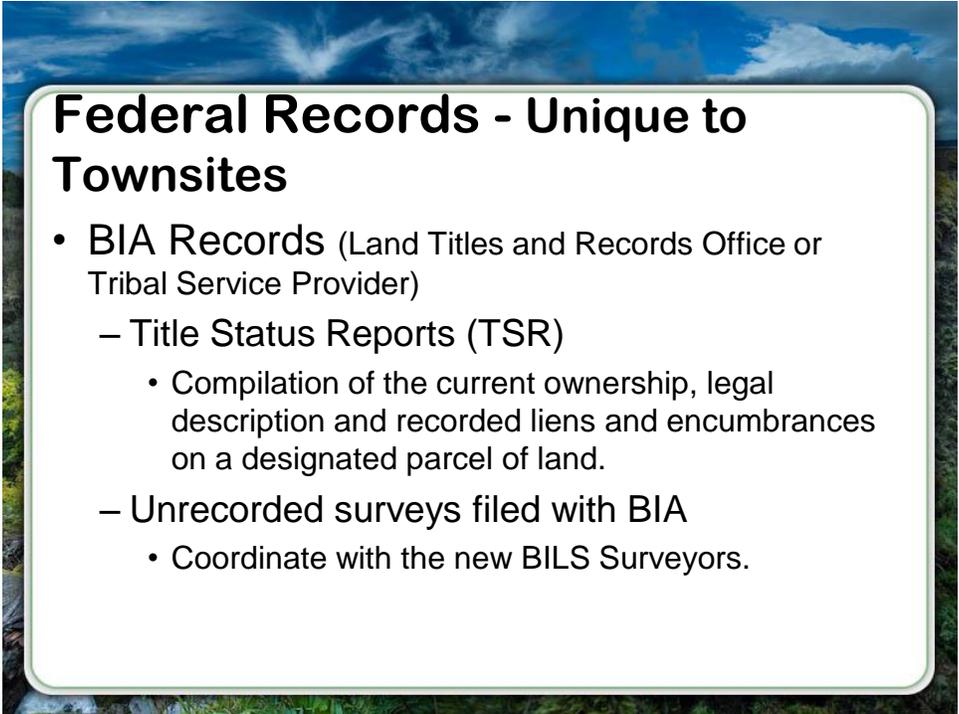
Alaska Trust Townsite Tract Book

Lot#	To Whom Deeded	EDK TOWNSITE Amount Paid	Receipt#	Type of Deed	Date of Deed	To Whom Delivered
<u>BLOCK 4</u>						
1	Garlie White, Sr.			5/25/26	03/31/88	Alaska Title Services Ctr.
2	Hetsr, Devisese, and Assigns of Jane Cleveland			5/25/26	04/15/88	Alaska Title Services Ctr.
3	Provincial Board of the Alaska Moravian Church	\$81.00	#34435	3/3/91		Recorder
4	Robert Green			5/25/26		Alaska Title Services Ctr.
5	Issac Hawk and Lucy Hawk (Husband and Wife)			5/25/26	5/7/86	AVCP - Bethel
<u>BLOCK 5</u>						
MUNICIPAL RESERVE City of Kek						
<u>BLOCK 6</u>						
MUNICIPAL RESERVE City of Kek						
1	MUNICIPAL RESERVE City of Kek			3/3/91	9/23/85	Dist. Rec.-Bethel
2	Jim White			5/25/26	5/7/86	AVCP - Bethel
3	Frank Brown Sr Mary Brown			5/25/26	12/11/85	Assoc. of Village Council Pres.-Bethel
4	Walter Carter & Pauline Carter (Husband and Wife)			5/25/26	5/7/86	AVCP - Bethel
5	Andrew Petlaska			5/25/26	12/11/85	Assoc. of Village Council Pres.-Bethel
6	William F. Brown & Franciosa J. Brown (Husband and Wife)			5/25/26	5/7/86	AVCP - Bethel

Unrestricted Deed

We're going to take a look at an example of, I'm going to have to widen out again, we're going to look at an example of a tract book in Alaska. The one thing I would note here is the act under the type of deed, it references the day that it was passed. If it was 1926 date it was a restricted deed and if it was 1891 date it was non-restricted deed and has fee status.

You can also key in that there's a cost associated with it and it also goes to the recorder's office instead of to the provider. The BIA service provider. So that's just a way to make sure what act we're talking about, what authority we're talking about.



Federal Records - Unique to Townsites

- BIA Records (Land Titles and Records Office or Tribal Service Provider)
 - Title Status Reports (TSR)
 - Compilation of the current ownership, legal description and recorded liens and encumbrances on a designated parcel of land.
 - Unrecorded surveys filed with BIA
 - Coordinate with the new BILS Surveyors.

We'll move back to the slides and we talked a little bit about the U.S. Survey portion and you mentioned the BIA records and the title status reports. At least in Alaska, I think these are real important because we have such a mixture of restricted and fee and some of those townsite lots could have never been fee as we saw on the tract, I mean restricted like we saw on the tract book, or they've transferred over to the fee status.

Now in one of the things, I don't think we have mentioned again here but you just mentioned it, these are all are they not all U.S. Surveys? So in the lower 48 they will be filed as townsites normally. In Alaska they will have a U.S. Survey number.

Which makes it pretty easy for filing, tracking, and making sure we don't lose things anyway. The other thing, this is really pertinent in Alaska is the honor court surveys that were filed with the BIA. I know a lot of the work you're doing with CFedS and everyone else is trying to address these issues.

But unfortunately when I was in the field surveying I wasn't aware of it as much as I should have been. I hope I never miss something. When I transferred into the review section, I became aware of them and I found deeds that were referencing plats that I couldn't find. Low and behold they would be at the BIA. Some of them were hard to come up with and I think our new BILS surveyors are making huge end runs in this.

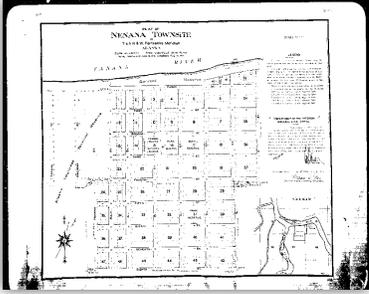
I do and they are working with them to try to get things recorded and they are also getting a handle on exactly what is there. Of course we still want everything recorded with the state or the county. That can't always happen and it doesn't always happen. The next best thing is with the Bureau of Indian Affairs Land Title and Records office, which is a place you can go to find them. But we've got some work to do there yet I think.

Yeah it's just something every surveyor, especially cadastral surveyors need to be aware of I think. Well, private surveyors too. It's not intuitive you think the federal records are at the Bureau of Land Management when it comes to surveying.

I think another point we might make right here is because townsites are unique, sometimes they are drawn on very large plats because of the detail that must be shown. So, they do not end up filed, they won't fit into a filing drawer so they end up being filed somewhere else. Sometimes finding the actual plat can be a problem and I know on the Port Angeles townsite that you talked about earlier, that's a huge plat. It's in a drawer over here.

Federal Townsite Plats

- Plats were often drafted on very large media. Reduced copies can be very hard to read.
- Full size official copies or the original plat can be very hard to locate.
- Some older plats only provide measurement data on the non-regular lots and blocks.
- Old surveys (pre-1890) may not clearly indicate that monuments were set.



As Ron just mentioned, they were often drafted on very large media. I have an example of one in Nome again this record, they didn't even know it existed and I just saw this thing that was ten feet high up in the corner and I unrolled it and it took up the whole room. We actually had photo copies of this document and you could not read the number and now I know why because it was reduced so far. I spent a whole day transferring numbers. Because this thing was not anything, you could put into a photocopier.

Another thing about them is that they can be hard to locate. I think we hinted on that too. The ones you need to be really aware of I think is those ones where the GLO went out and did the exterior boundaries and the subdivisions that occurred were by private surveyors or authorized by the jurisdiction at the time. Made to the jurisdiction to change at the time of the town being established. They didn't keep those tract records and maybe they are lost.

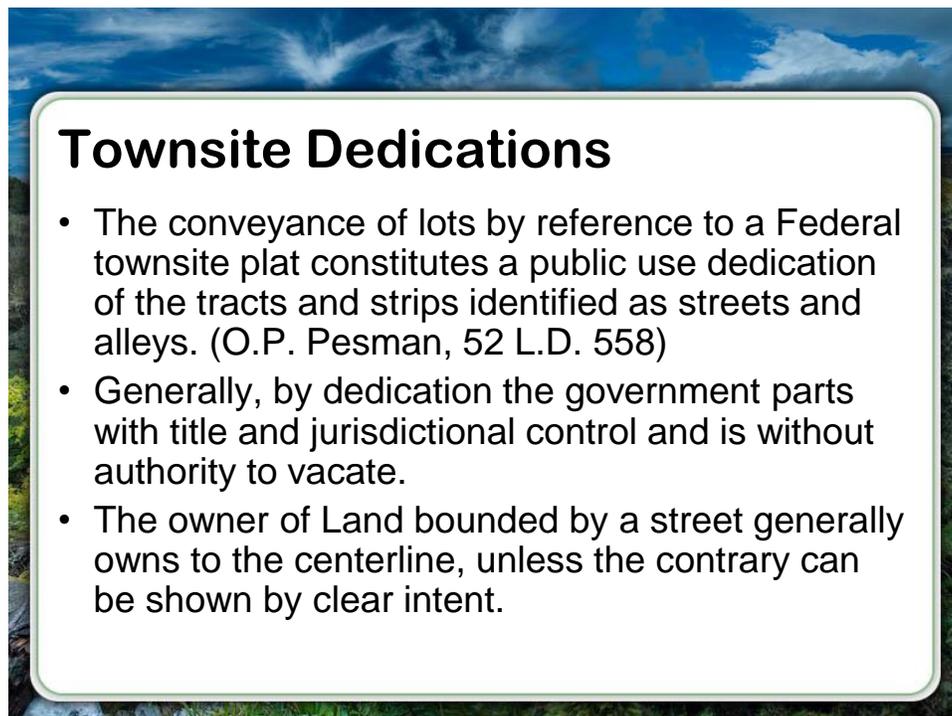
The other thing that I've noticed is at least with some of the older ones, it's difficult to tell which is the official, original copy. You might have four copies that all look the same. I haven't run

Specifically the ones that I'm familiar with from Alaska probably is what I'm showing an example of here. But I have read examples of field notes in every shape, form you can imagine. Some of them they would run around each block and then around each lot. We had to describe each one every time.

Predominantly, it's even true with the older plats, predominantly they would show the field notes with the exterior boundary. Then they would omit the subdivision data and say it was transferred to the plat. If you zoom in on this here, you can see where he's saying unless otherwise shown all street center line intersections are monumented with iron posts. So he's given a general description of the monument. A general description on how the blocks were laid out in the subdivisions. And that's the end of the field notes.

It's important with townsite plats to read all of the data that's on them because a lot of times there are little bits of information down here, there's something here, and there is statements here, and buried in that sometimes is the information we need to know about what monuments were used with the streets.

Make sure you have a copy of every page of your field notes. And every page of your field notes, yes. Much like the mineral surveys. The most important information is sometimes buried in the very back because they made a tie to it.



Townsite Dedications

- The conveyance of lots by reference to a Federal townsite plat constitutes a public use dedication of the tracts and strips identified as streets and alleys. (O.P. Pesman, 52 L.D. 558)
- Generally, by dedication the government parts with title and jurisdictional control and is without authority to vacate.
- The owner of Land bounded by a street generally owns to the centerline, unless the contrary can be shown by clear intent.

I've got the next one. It's on the slide here. Kind of bouncing back and forth. The townsite dedications. I originally wasn't going to speak of these but after running into it quite a few times I felt like it was important and it was primarily important for special instruction writers but also for the surveyor to be aware of what's going on.

The conveyance of lots by reference to a federal townsite plat, constitutes a public use dedication of the tracts and strips identified as streets and alleys. So even though we don't specifically note on our plats, these federal townsite plats, by virtue of them being on theirs and identify it as streets or public places of interest like a cemetery or whatever, makes them a dedication.

Most of them do not say that they are dedicated. With streets and alleys or whatever are dedicated or parks. It happens. As soon as we begin selling lots or conveying lots.

As I understand it, one of the only ways that it could be returned is if there is something specific in the legislation that enabled the townsite or specific on the plat itself that says otherwise. And another thing to point out on that is to remember that there are also federal areas set aside like for the railroad townsites, those are different.

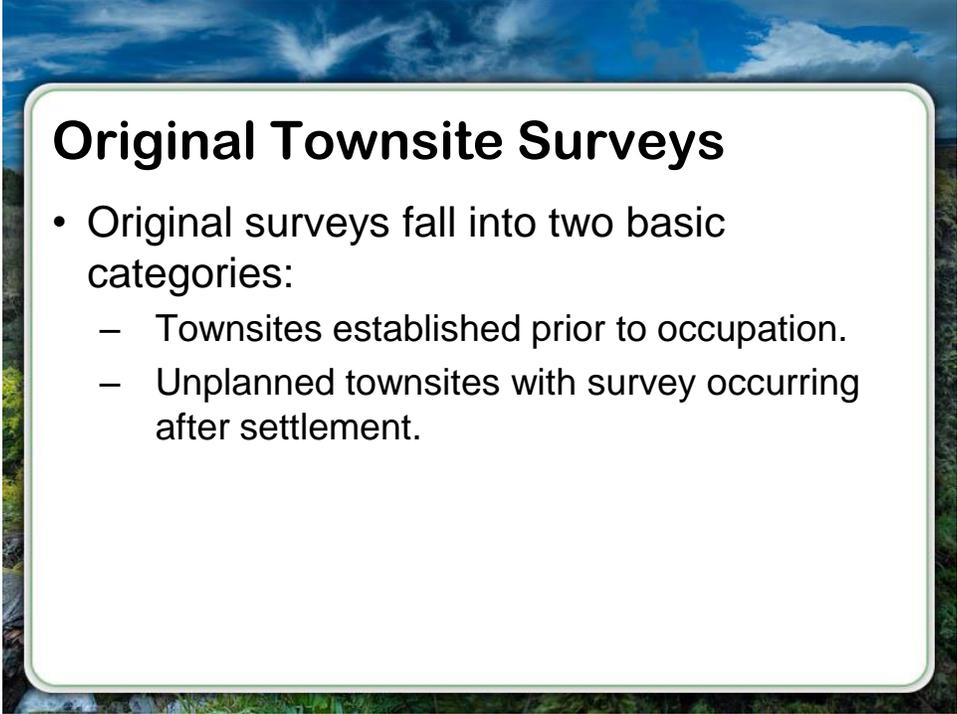
Basically the federal government was keeping it for a specific purpose.

I guess the thing I wanted to say about this is that's the fact and we're without jurisdiction or control to vacate these lands. The reason I'm saying this is because this is an example, we'll get requests for the conveyance of a road for a native entity or we'll get a request to give a whole chunk of a townsite to the Native Corporation in Alaska.

We'll write our specials and we'll go right across the roads and everything while we're making these tracts and we don't have the right to do that. The city would have to go through a vacation process. That's why I'm bringing it up.

Make sure that you really think clearly about who has the authority to vacate a road. Just because it's a federal townsite does not give us that authority because as we saw right here, once we begin to convey lots, those streets, parks, cemeteries, are dedicated and they are no longer does the federal government have authority of it.

We're going to start talking about original townsite surveys and as you can see from how they were enabling legislation, some of them were based on land that was never developed and some of them were based on places that had already been developed.



Original Townsite Surveys

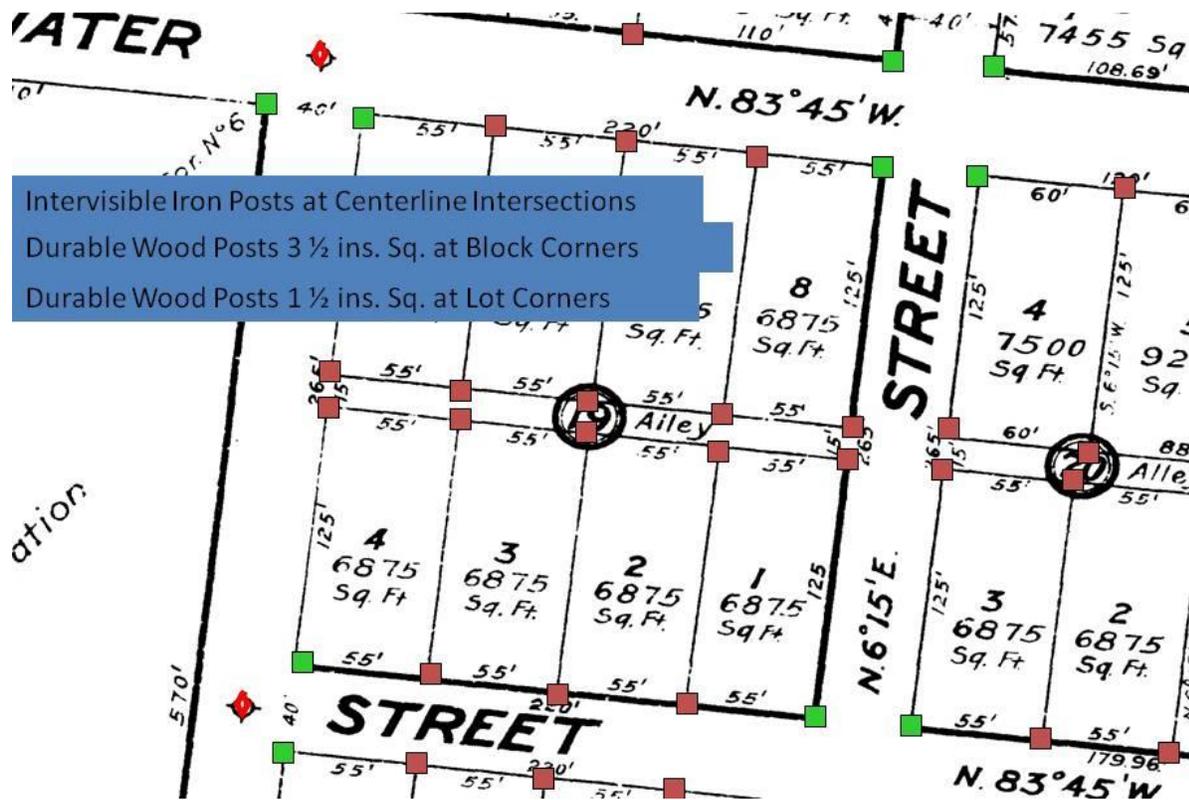
- Original surveys fall into two basic categories:
 - Townsites established prior to occupation.
 - Unplanned townsites with survey occurring after settlement.

So I put them into those two categories. Townsites established prior to occupation and then survey occurring after settlement. So you can imagine a lot of those townsites and we have it in spades in Alaska where there was no planning that went on or anything.

Yeah, it's a small village. Occupation has been there for a long time and now we're going to create a townsite that fits the village and probably really doesn't fit many standards for road width, lot size, a lot of those kind of things. Setbacks from existing houses, you can't do that because it is already developed.

In these next slides here, I've laid out some things based on how the special instructions were written for ones in Alaska and I also had the benefit of talking to some of the townsite surveyors. Like I said the last one was surveyed in 1987 by Mike Wilson. There's other folks that I've been able to talk to that were either assistants or played a part in the thing so I asked them how they would lay them out and what they did. In general, with these 1920 instructions, they were only required to set up a intervisible monumentation.

1920 Special Instructions



I found that to be true for most specials, when we had townsites in that time frame. We didn't necessarily set every centerline. Just here and here and we might go, if that's a straight road for a mile and there's no hills, they might have set another one a half mile away.

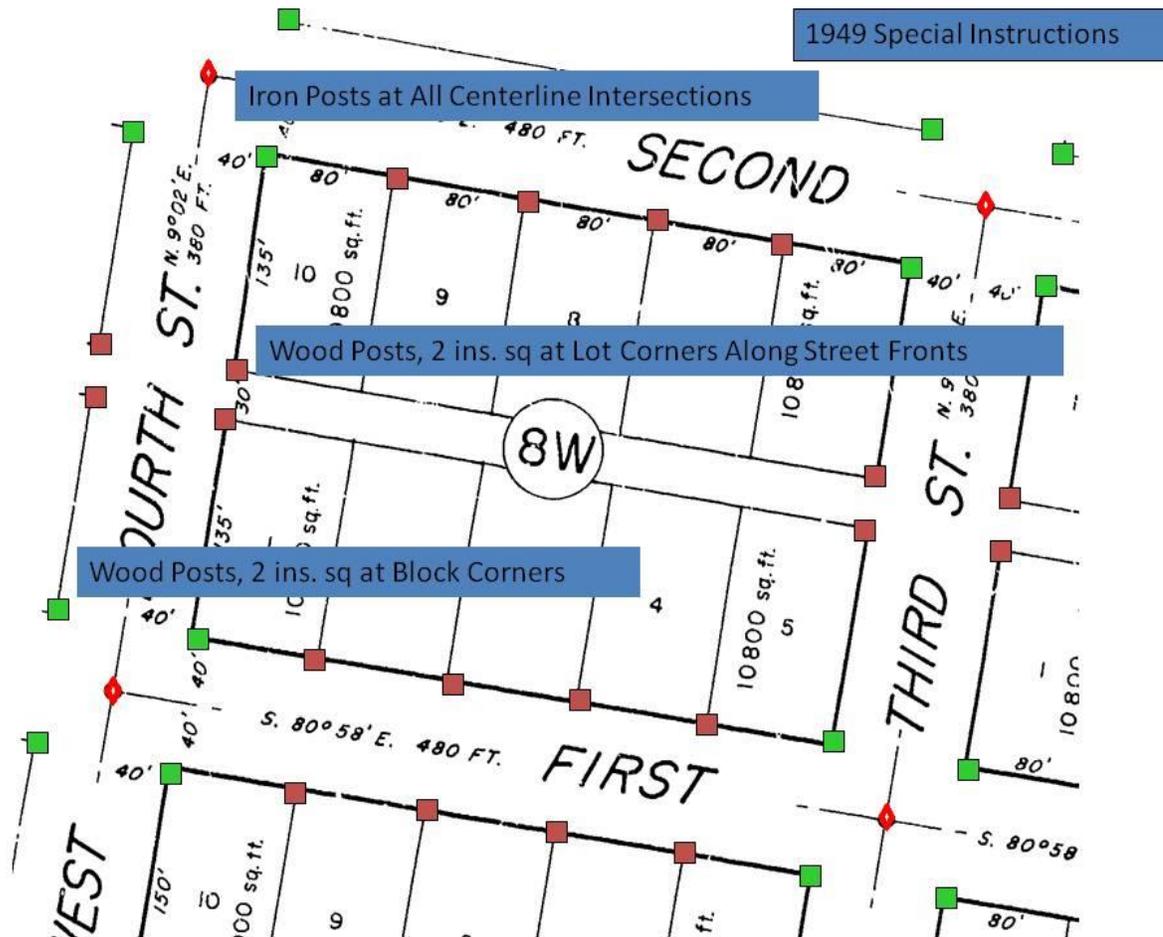
So in some places if there is no intervisibility you might have a monument at every road intersection but if they can see between them you might go several intersections before you get a monument.

To me that was too bad because the center-line monuments of those townsites were typically the most substantial. They usually varied and if they did have road development they were usually protected. They are the most important. Not only are they the most substantial but the most important.

As you can see they dropped all the way down to wood posts for the block corners even. After that they would drop down to even smaller wood posts for the lots. The one thing I noticed and I don't know if it was through those regulations I mentioned, I tried to find it and I didn't but most of the earlier specials they actually set the hubs at every lot corner. That later one becomes not true.

So read the field notes carefully, or look at the plat carefully to find out which monuments were actually set in the field. Another real interesting thing that I found out on these early ones, the surveyor, when you read the specials, they were very extensive. They were told to go out there and adjudicate. If there was a land dispute going on, they had to dispute it if they had Indian rights out there and everything else they were the ones that were told to deal with all of this.

Basically, they would have adjudicate in the field, of course that can always be challenged. But if they did a good job, then that saved a lot of work down the road. We didn't have to go back and hold up the survey and all kinds of things. Adjudicate it there, let them challenge it, if they don't like it then maybe we'll have to go back and fix it. Here is a 1949 set of specials.

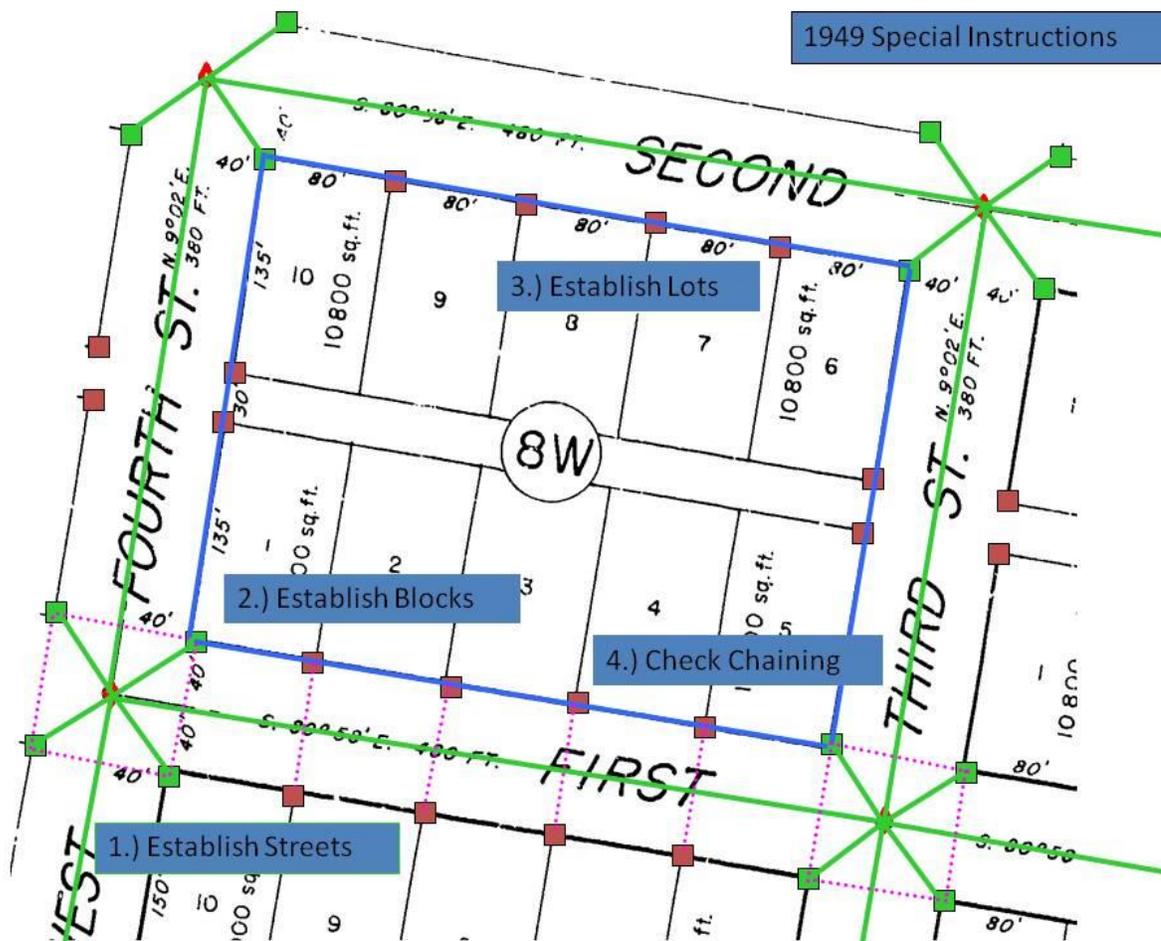


This is a toke and I guess I made an effort to show some of the more uniform type lot and block situations and townsites. We actually didn't put the wood posts along the back alleyways. Anyways, along all of the back alleyways we just run around the exterior of each block.

I think you'll find that in other townsites at different times through history. Sometimes we set the back corners, sometimes we didn't. So it seems to me that they took a step backwards. But they did up the setting at all center line intersections. Those are substantial monuments.

Going along with that thing, I kind of laid out the order in which they would do it. if you think about it it's the streets first. So they are going out and putting those in and if you think of a wooded area. Let me erase those there. If you think of a wooded area where you can see them running around those things and maybe doing side shots into there but the general lay out that they would run, they would go in and from those centerline monumentations, they would establish the block corners. From there they would establish the lots so they worked from that hole to the part. Good concept.

That gives us some information about later on when you're trying to reestablish those. It kind of sets up a hierarchy, what came first, what came second, and what came third.



If I'm resurveying these type of things I usually try to go in with an idea of what I think they did and I let the evidence prove that they did something. What was really done on the ground sometimes you can never figure out. But talking to a lot of the guys they would go in and they would check chain and everything. A lot of times, they would only occupy the lot corners and back site the other lot corner and then just lay out the corners. Then they would run up to the

next corner up in the Northwest corner. I would think you would have inner visibility. I couldn't imagine doing that in Southeast Alaska.

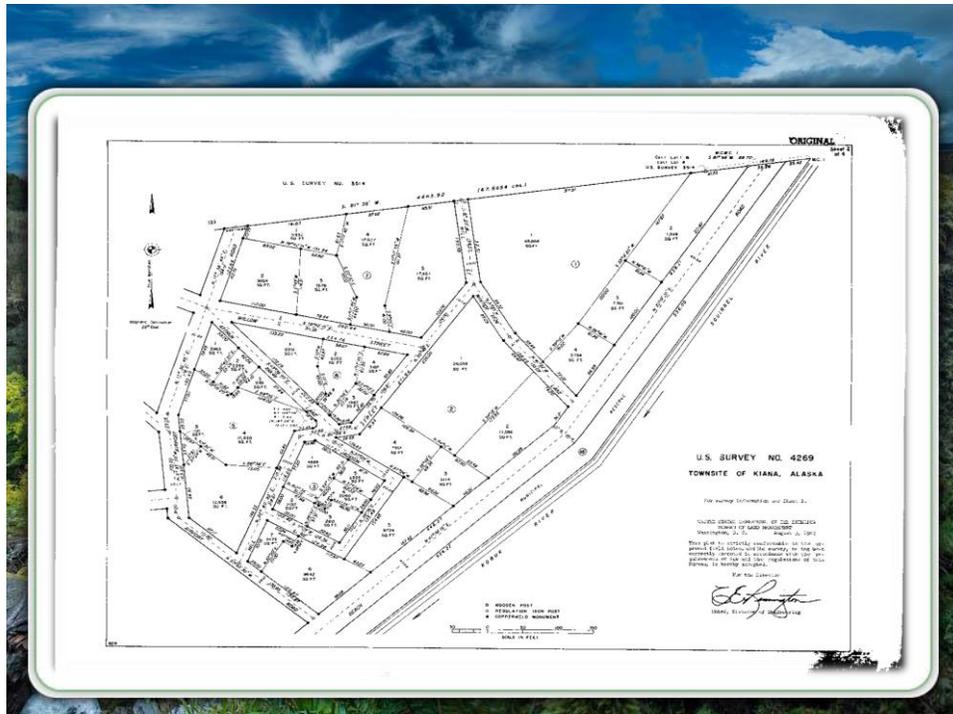
Alright we'll move onto the next slide here. This one shows the 1969 set of special instructions and we've moved into Alaska for sure at this point.

1969 Special Instructions



Basically, we used aerial photography and the resolution on the photograph isn't all that great. But basically what the surveyor would do is they would identify ownership, actually the adjudicators would. A lot of times, someone from cadastral and the adjudication and everybody would all travel out to the site with a BIA representative and everything else and they would do the groundwork.

Figure out what it was and they would have an aerial photograph and they would lay out the lines on the aerial photograph. A lot of times it wasn't controlled photography or anything like that. I talked to some of the surveyors who had come in and laid this stuff out and they would actually do scalings from the structures. Real specific to the area that they were working in. Figure out how much the line divided each structure and all of that stuff.



These are all villages where prior to these surveys, there really wasn't any ownership pattern, is that true? Yeah in a way, I think we were trying to fit a square peg in a round hole. It is the legislation that came around and that's how they dealt with these villages. Each individual was given their restricted title.

So there was also no real requirements about lot size, or set backs, or frontage, road widths. Just occupation. Predominant factor. As you can see, this just kind of shows the after math and it fits pretty well. The one point that I would make to anybody resurveying any of these townsites is if you get into an extensive lost corner situation, one record I want to make sure I get, is to get the photographs that they used. To lay out the original lines.

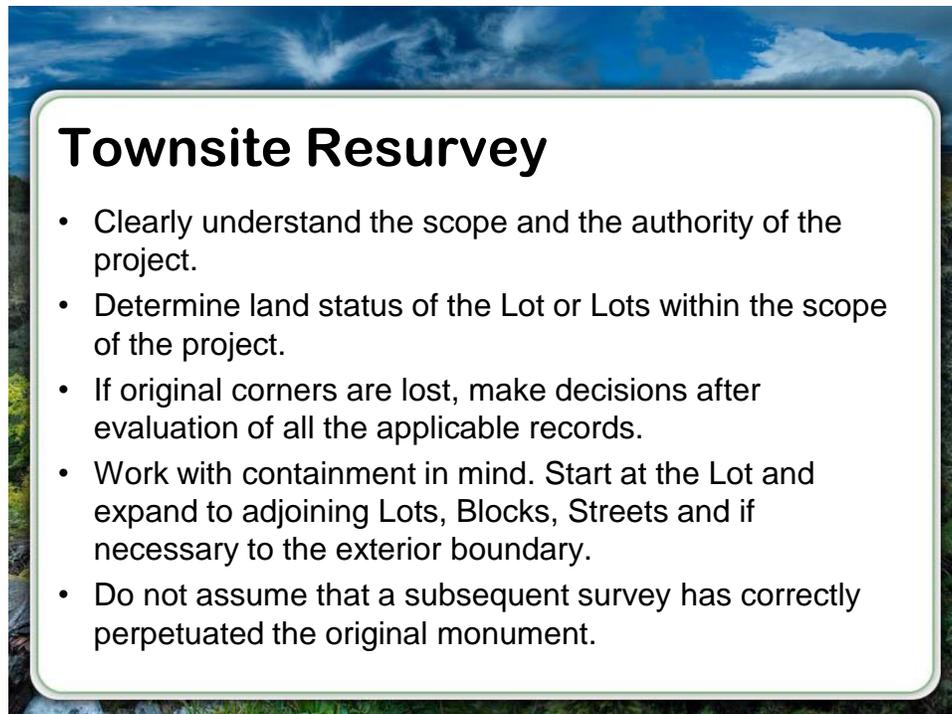
I think what you're saying is, the field surveyors generally try to put the special instructions diagram from that photograph on the ground. They really didn't have any points other than scaling out eh photograph and the visual picture. As I understand that is how they would lay them out. They would spend a lot of time figuring out exactly where they want to put a corner based on how those photo's were drawn.

You might reestablish these corners with compass rule or grant boundary or something. But you should also look to see how it fits the structures. Hopefully there are still some structures there that were there in those.

Right, with our capabilities today we can overlay a 2007 photo with the 1960 photo. You can actually kind of rectify things and your systems now. Think the tools that we have compared to what they had. I think it's a great evaluation tool if nothing else and if you had an extensive lost corner situation, which we absolutely have up there. A lot of these corners are disappearing pretty quick. Just something to think about.

You get back into them now for probably two reasons. One, there is some kind of an issue with ownership with somebody title wanting to transfer it or get a fee deed but you probably also get in there to subdivide some of those lots as well. Is that correct? Yeah kind of a little bit of everything. There's a lot of trespass stuff now with a lot of the CARs money that's being allocated for Alaska is going to deal with the issues with the parcels inside of these townsites.

But we can see there would be some unique issues with how to reestablish some of these corners. Let's go ahead and talk about some of those townsite resurvey situations.



Townsite Resurvey

- Clearly understand the scope and the authority of the project.
- Determine land status of the Lot or Lots within the scope of the project.
- If original corners are lost, make decisions after evaluation of all the applicable records.
- Work with containment in mind. Start at the Lot and expand to adjoining Lots, Blocks, Streets and if necessary to the exterior boundary.
- Do not assume that a subsequent survey has correctly perpetuated the original monument.

First thing with the townsites resurvey, you want to clearly understand the scope and the authority of the project. I bring this up primarily that land status knowing what you're asked to do. A lot of the BIA requests we've gotten in Alaska, hasn't been real clear exactly what is our task here. Are we supposed to just go out and identify a trespass on this one line? Are we supposed to survey the whole lot?

Sometimes that information didn't get transferred over to the special instruction writer and then it's lost to the field surveyor. Then we find out later that our scope was totally different than what it was intended.

Because there are mixed ownerships now, in the beginning everything was pretty much restricted title. As we get some fee title in there and we get different ownerships, we have to be really careful what we're surveying and where we have authority. We are surveying parcels that are restricted title. We may set some corners of fee title but we don't want to be going out surveying a bunch of them.

Possibly entering into something we never even imagined that's outside the scope of what we're supposed to be doing. Really our scope is controlled by two things. Authority, do we have the authority to survey here? And funding, what are we being funded to survey? Getting those two things correct each time is important, at the beginning.

Make sure it's clear at the beginning and if it's not get it clear before you proceed. Ron alluded to that and determined the land status of the lots. The lot and the lots within the scope of the project. Hopefully that's laid out at the special instruction level again. It plays into the decisions you're going to make. You may end up saying you know what, I'm not going to set a corner here because there are issues over here that has nothing to do with my authority.

The other danger is trying to be too narrow in our scope and not getting all of the information we need to resurvey the parcel that we're dealing with correctly. We have to be careful with that as well.

That goes to if you're dealing with reestablishing all of these controlling corners and you don't monument any of them. You're not laying a ground work for how you protected the lot that you've surveyed. Yeah, you can be too narrow for sure. If the original corners are lost, make decisions after the evaluation of all the applicable records. I think when you get into that lost corner situation, when you're inside these townsites you kind of stop and you start looking for more things that you may not have been aware of. That's what I wish I would have done.

I wish I would have called the BIA and said hey I'm dealing with something here and I'm wondering if you guys have any information. Work with containment in mind. Start with the lot and expand to adjoining lots, blocks, streets, and if necessary the exterior boundary. I think that goes without saying, it's kind of a reverse of the original survey process working from the hole to the part. Start with your scope and work out if you have to.

But then, as we start reestablishing things, once you've done all the research, then you kind of work back the other way. We'll talk about that in a little bit. Do not assume that subsequent survey is correctly perpetuated the original monument.

Simultaneous Subdivisions

- Original monuments set by the original surveyor and found undisturbed will control.

Boundary Control and Legal Principles, 3rd edition, section 6.13

- Where a plat delineates an actual survey, the survey, rather than the plat, fixes the location of the boundaries of the parcel.

Clark on Surveying and Boundaries, 6th edition, section 21.10, page 680

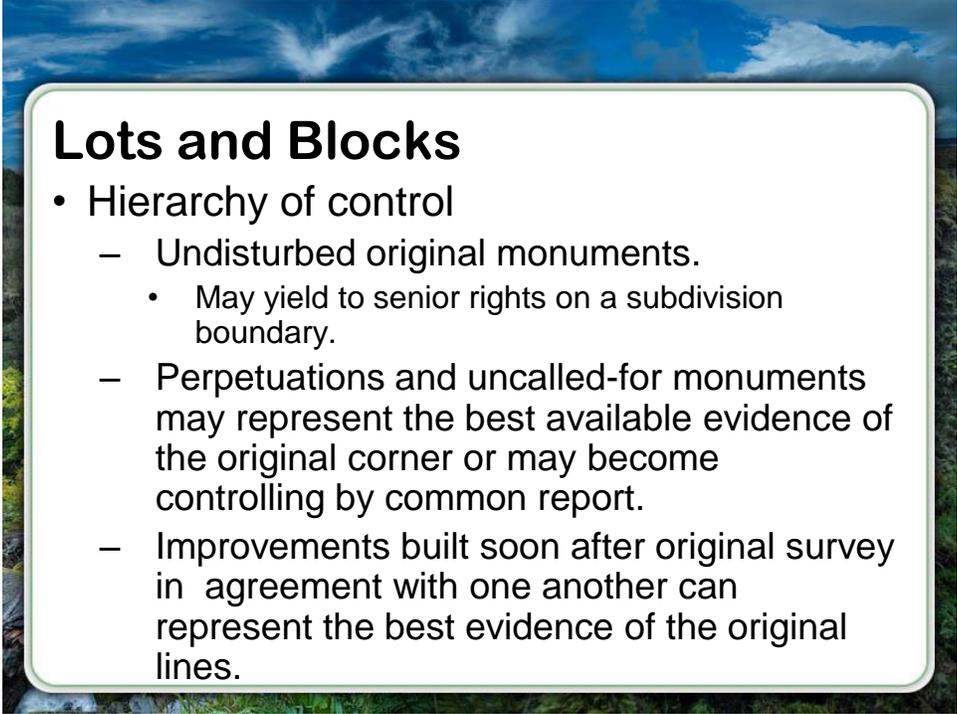
It's not a slant on the person who did it or anything else but I think people are all too quick just to say there's a piece of iron, and then they take it and run with it. Sometimes that's not the best idea.

That's kind of general to all resurvey. That's not specific to townsites, that's general, any kind of general resurvey.

You have to be careful of what monuments you take. Okay these are simultaneous subdivisions meaning we laid them all out at the same time, so that takes you to the next thought. These are not a lot different than our rectangular system as long as we're not getting into a junior/senior relationship on a boundary or something. The same concepts apply. First one original monument set by the original surveyor and found undisturbed will control. Where a plat delineates an actual survey, the survey rather than the plat fixes locations of the boundaries of the parcel.

That's kind of the same thing as the monument's control. On the ground, what was done on the ground and what people were relying on is what is going to control. I guess I put that second one because I think there is a tendency for people to think they own their fifty feet. And they forgot there is two block corners down the way.

Lots and blocks, hierarchy of control undisturbed original monuments as we just mentioned.



Lots and Blocks

- Hierarchy of control
 - Undisturbed original monuments.
 - May yield to senior rights on a subdivision boundary.
 - Perpetuations and uncalled-for monuments may represent the best available evidence of the original corner or may become controlling by common report.
 - Improvements built soon after original survey in agreement with one another can represent the best evidence of the original lines.

One thought there is they may yield to the senior rights on a senior subdivision, on the boundaries. In general, I think I've heard quite a few private surveyors say this, they hate when they get quotes for boundaries up against adjoiners. They like to be totally within the townsite. It makes sense.

At least they should be a little bit nervous when you get a quote for something that's butting up against an old, old survey. However, we have to be careful here of how strict of a standard we're holding them to as far as a junior, or a second survey of a senior line. Doesn't necessarily have to be perfect. We have to be careful with that.

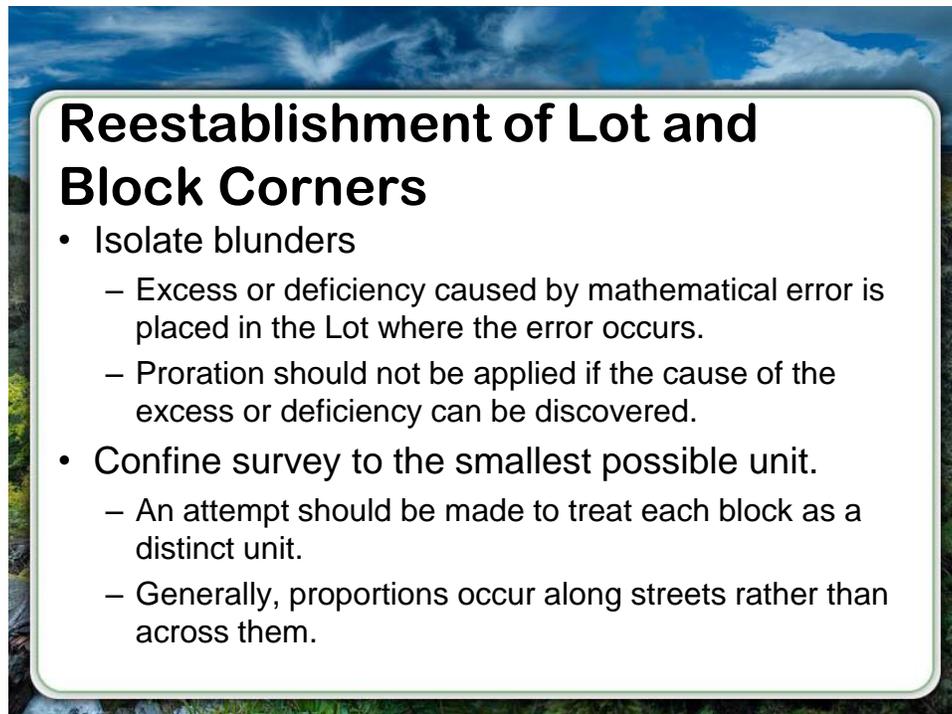
Perpetuations and uncalled for monuments may represent the best available evidence of the original corner, or may become controlling upon common report. These are all sounding fairly similar I think. Really with townsites because you have occupation of the lot. When you're doing a resurvey of rural land, a lot of times you don't have a lot of occupation. Here, almost all townsites you have occupation of the lot. So there is usually some kind of information even if the corners are gone that are going to influence your decision.

Yeah I guess the one thing to be careful with occupation is to make sure the occupiers are familiar with their boundaries and respected them. Because otherwise that location is without merit. The occupation doesn't define where the corners go but that's going to be additional information that influences or we have to consider.

That comes to the next one. Improvements built soon after the original survey that are in agreement with one another can represent that best available evidence as well. But don't necessarily. No, in fact if you got a fence line or if you got, a street is a good example. If the engineer is built to the survey, it's pretty good evidence. But if they didn't, (sigh).

Actually, I'm familiar with several, they're not townsites but they are housing projects done by HUD where the streets and the lots and the houses do not end up where the plan by HUD placed them. That causes some real problems. You can't rely on the houses and the lots as they appear on the ground.

We deal with quite a bit of that in Alaska as well. This next slide here is the reestablishment with lot and block corners.



Reestablishment of Lot and Block Corners

- Isolate blunders
 - Excess or deficiency caused by mathematical error is placed in the Lot where the error occurs.
 - Proration should not be applied if the cause of the excess or deficiency can be discovered.
- Confine survey to the smallest possible unit.
 - An attempt should be made to treat each block as a distinct unit.
 - Generally, proportions occur along streets rather than across them.

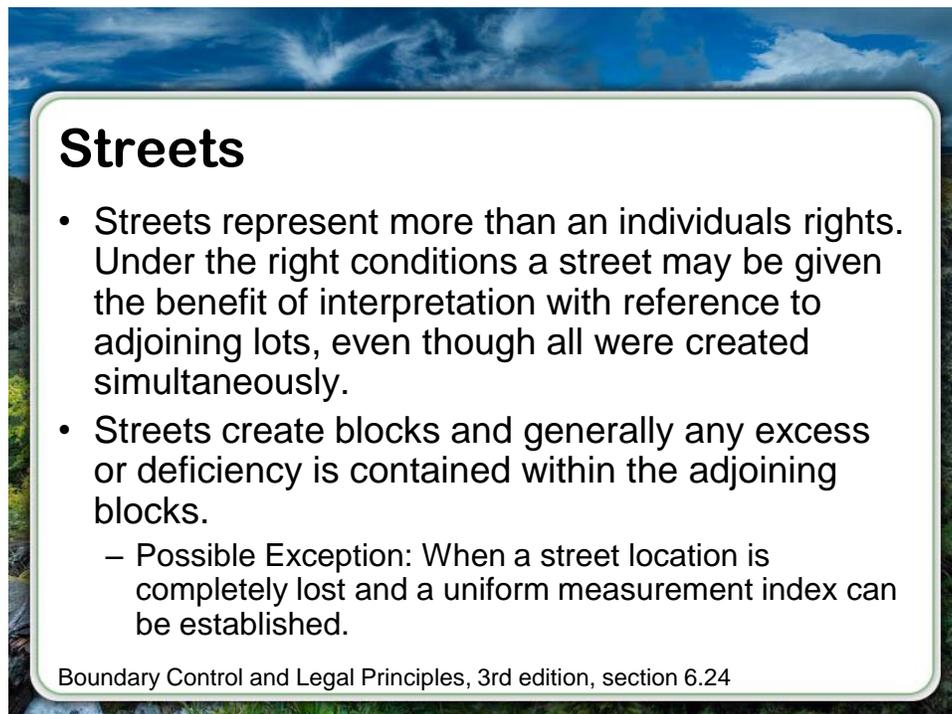
The one thing I mentioned is isolate the blunders. We kind of here that too in the rectangular system. Proration should not be applied if the cause of the excess or deficiency can be discovered. Also, excess or deficiency caused by a mathematical error in a lot should be isolated to that lot. It's nice to have some principles that you can follow to deal with lot and block situations. It's not just oh I'll go in and I'll do some type of a grant boundary, compass rule adjust something, put the corner back in, oh that looks good. There are some principles we need to follow.

I'm kind of laying these out and just for the audience here we'll get to an example where I'm going to ask you to come up with your way, kind of a little exercise. So I'm just laying out all of these principles. We'll go from there. The next one is confine the survey to the smallest possible unit. This is my own thoughts mostly and I keep going back to it but you don't want to go further than you have to. Once you have proved those original corners you don't want to get into a whole mess.

Generally, the proportions occur along streets rather than across them. That small area you're working within the block usually. If you have to cross the block, the next place you want to go is

the streets. You're not going to go to the next block corner over there, you're going to want to define the center lines of the streets. That's again sort of this hierarchy we talked about where you start at your lot and sort of work out till you find your control. But then, once you find everything you begin to work from your streets down, then back to your lot.

Academically it's always great to talk about but I'll always get surveyors that will come into my office and show me examples and every time it's like oh.



Streets

- Streets represent more than an individual's rights. Under the right conditions a street may be given the benefit of interpretation with reference to adjoining lots, even though all were created simultaneously.
- Streets create blocks and generally any excess or deficiency is contained within the adjoining blocks.
 - Possible Exception: When a street location is completely lost and a uniform measurement index can be established.

Boundary Control and Legal Principles, 3rd edition, section 6.24

Yeah so it's great to talk about all of these things but the principles are there and it's an attempt to apply them. You're going to have to deviate at times. Okay, streets, I think there is a lot of misconceptions about streets.

I think sometimes people aren't holding them in high enough regard but often times most people are giving them a weight even over an original corner in some cases. I think we're missing the point there.

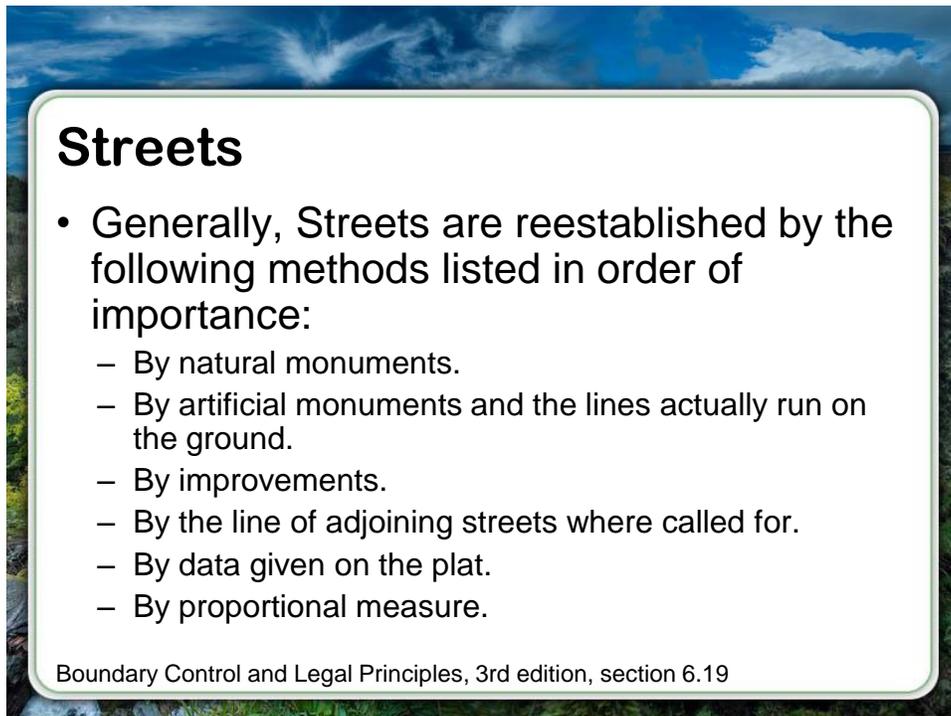
But streets do represent more than one individual's rights and under the right conditions a street may be given the benefit of interpretation. We're going to give it its full width of measure even if there is air between blocks and even if we have to cross the streets. That's a general concept and it's been held up in case law. So those streets create blocks and generally an excess or deficiency is contained within the block.

That would be a principle of why we don't want to proportion across streets. Because if you proportion across streets you are going to end up with some wider and some narrower. Yeah I think if you're stepping outside of your block the next place you're going is down the streets. How you reestablish those streets, you may be five blocks down. Find the centerline

monumentation. You may actually use the adjoining block. It may be the best available evidence. You're trying to reestablish a street to get the block.

Usually excess and deficiency is proportioned within the block, usually. I did put that exception when you've got an extensive lost situation where you can't pin down the streets. The engineers never built the roads to the streets. The adjoining subdivisions didn't pay attention to them. Now you're in a situation where you have no choice but to distribute the area equally among the whole.

In some situations you have streets that were never "built." They are there especially in some of those new examples where we do the as built. The street isn't an engineered and built street. Nope, correct. In general, I'd say most of the townsites in Alaska using an occupation and where the things are aren't as valuable to us as a well established townsite in the lower 48. I gave the hierarchy for the streets and I think it's very similar to any other thing and this came from boundary control and legal principles.



Streets

- Generally, Streets are reestablished by the following methods listed in order of importance:
 - By natural monuments.
 - By artificial monuments and the lines actually run on the ground.
 - By improvements.
 - By the line of adjoining streets where called for.
 - By data given on the plat.
 - By proportional measure.

Boundary Control and Legal Principles, 3rd edition, section 6.19

It's that number one natural monuments and then the artificial monuments and by the improvements, remembering that the improvements had to be paying attention to the boundaries of the street. I would say engineers using an actual survey. By the line of adjoining streets were called for by data given on the plat and then the last one is by proportional measurement. I think if you go to the rectangular system once again proportion and measurement is last resort.

That pretty much highlights all of the street information and then we were going to move to the elmo after that. I can put that up. Let me put this first slide up. This is our exercise. This first slide I'm just showing the found information. What our scope of work is as well. We are basically tasked with surveying out Lot 4 of Block 8W.



We found some sidewalk information out here and we have not yet proved if that information. I guess for the Exercise let's assume that it fits well with the recovered original corners. The red dots here represent all of the original corners we have found. The exercise is, given this information, and that is the sidewalks and fence agree very well and you have enough supporting evidence as to the location they represent, the boundaries. How would you go about establishing the corners to Lot 4? The other part of the exercise is what monuments would you set?

Let's have you just take a few minutes and work on that and then when you come back Mike and I will discuss it a little bit.

Exercise

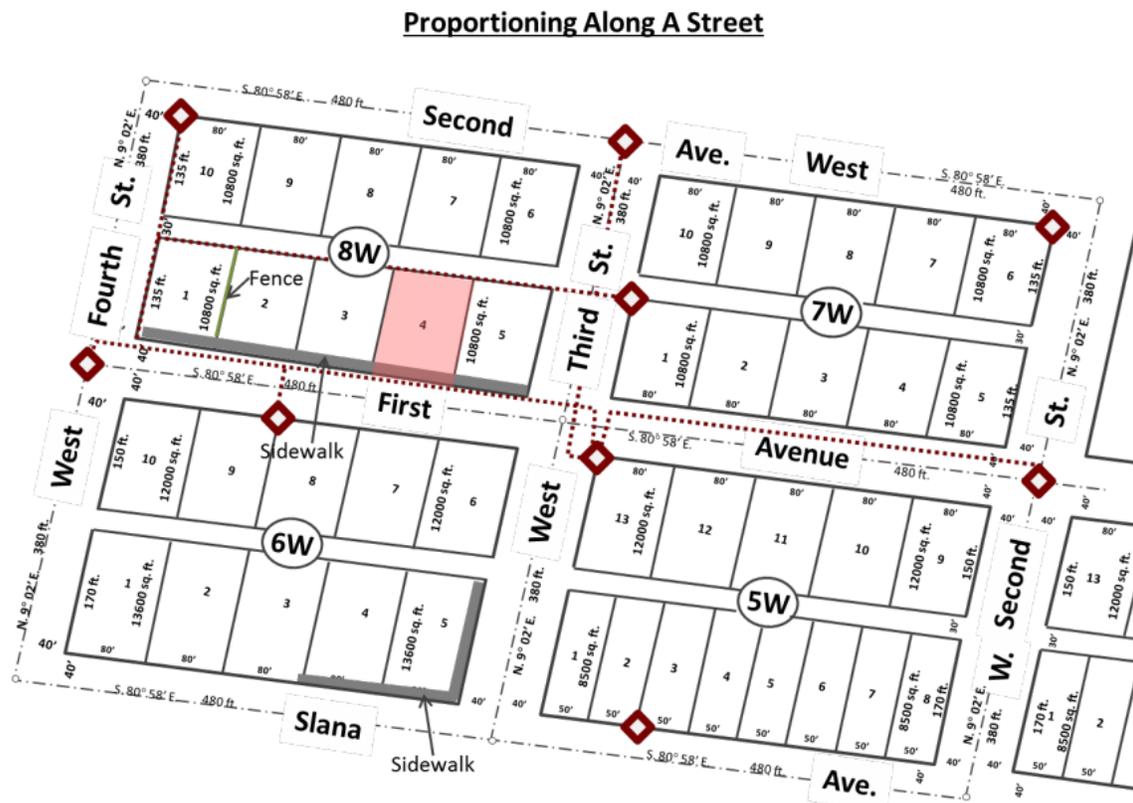
Townsite Surveys

Exercise #1

You are tasked with surveying out Lot 4 of Block 8W. We have found some sidewalk information. We will assume that it fits well with the recovered original corners. The red dots represent all of the original corners that were found.

Given this information that the sidewalks and fence agree and you have enough supporting evidence as to the location they represent (boundaries).

1. How would you go about establishing the corners of Lot 4?
2. What monuments would you set?



Townsite Surveys, Part 2

Now that you've had a chance to look this over, let's discuss it. Mike let's give us an insight on your thoughts on how you would approach this.

The first thought I had was that I didn't have very many corners on the block so I'm going to try to reestablish that block. I was going to go out to the streets and the first one I went to was the intersection of West Third Street and First Avenue. Single proportion is certainly an option there with confirmation with these other corners down here. As a way to get in there you can also end up doing some sort of resection if you thought that was the best way based on what's out there and how it's occupied.

I noticed you didn't start by trying to reestablish it by the found lot corner across the intersection. You did not try to reestablish the lot corner by going to the Northwest corner of Lot 5 there. Which is close because of the concept that we work from the streets down to the blocks, down to the lot. So we're not going to go to another, a block corner in a different block. We're going to try to establish the centerlines of the streets first and to street those monuments.

There might be a case where that would be your best evidence where you thought the street was. Especially with extensive obliteration for a long ways. What I'm shooting for is getting those centerlines pinned down. If I got centerline monumentation that is the best.

Now is there any evidence that the streets were only surveyed in one direction? Say they generally ran the streets, east/west centerlines of the streets and set all of the monuments in one direction and then came back to make ties to tie them together, north, south. Any insight on that?

Well the field notes I've dealt with I've never been able to tell that but I'm sure there are situations where that would play out and a lot of times just from your resurvey you may be able to figure that out. That, hey this guy is running consistently in this direction and all of his errors east/west because he was going north/south on the measurement.

So those east/west corners along the street may be in a nice straight line. When you go north/south, there may be some wiggle and that would indicate. Each one will play out a little different probably and the terrain is certainly going to play a factor. Anybody who has surveying in the rough terrain, surveyors can sort of get creative some times.

Anyways that's what I would do in this case and after I would get that corner established I've got this then I would go in and get full measure of the road. On this side so my 30 feet and 30 feet. That I would use as confirmation with that sidewalk. Same thing over here. It's starting to play in. If I had real good feeling, where that sidewalk is when I came in and did proportioning and stuff if the sidewalk deviated I certainly wouldn't use the sidewalk to hold in that case. It's just something to maybe feed some credibility to the other improvements.

Now you didn't talk about three-pointing that corner in. You talked about single proportioning it. Would you consider three pointing it?

The next one I would use is intersection. Bearing and Bearing. Resection, I wouldn't go into a cardinal equivalent three point, hope this and this for a centerline. Because what that would do probably is put some kind of a bearing break in that east/west road and may kind of push it out of the centerline of the two blocks as they were actually established.

So I guess if I had this centerline monument and these two, I would be going over here and looking at this stuff and seeing if I could reestablish the centerline first and then move through it. So maybe that's a case where you would hold that corner. If he's single proportion something and it came in over here because it was a blunder. Maybe you would say that's the next best one. Which tell us that there is not method. There are general principles to apply and there is a place to start and then we begin to work through and verify that it is a good method based on all of the evidence that we have.

Yeah I think you can look at it a lot like the rectangular. We say you double proportion it in a section corner but there are times that you don't. We can say that you proportion in along the front road frontage but there may be a case where there is evidence on the ground which tells you that you don't. I think that's the way you look at all of those things. Certainly, I think there is more ways to skin a cat in a townsite based on the way it was laid out.

The key is here to take the time to evaluate all of your options and really how all of the evidence might play in to getting you the best option. It seems to me that this is going to require good documentation. The longer it takes you to decide how to reestablish a corner point, the longer your documentation should be.

A good example of that is normally I'm going to try to get this thing established from the street. Maybe I have a corner here, and I can do a grant. Then I've got real good reason for doing it. But you're saying that that would be an option that you would look at after you have tried to reestablish the monuments in the street.

First you're going to try to reestablish the monuments in the street and for some reason that's not going to work, then you're going to look at trying to reestablish the block corners based on other block corners. Then work down to the lot.

I've got that centerline established and I'm putting in my block corners from all of the corners that go there. I'm thinking where do I want to go from there? I'm thinking I've got all of my block corners so now I'm going to apply the principle that I want to proportion along the street frontages. This next slide I'll go ahead and rotate it. This is a little hard to look at because the actual townsite is 9 degrees or something, right?

So you have to rotate it a little bit for it to look good. Anyways, so I'm proportioning along the street frontage here and I have proportioned along here. Notice that in this case, and I had this pointed out in one of the live classes that I proportioned across the alley. I set this point and now I'm proportioning along that and I'm using these corners to verify that my proportioning was good. I got some validity there. The person in the class noted that, shouldn't we be applying the same concepts to the street as the alley. At the time I felt yeah that's probably a good point and

maybe I should go in and get some other lot corners and try to reestablish the centerline of that alley. Ron has some thoughts to that.

Well if you look at the plat, really the alley is not established the way the street was. There are no centerline monuments on the alleys. They are established really as the lots. Even though they are an alley, they seem to be on the same level as the lots. The streets have centerlines on monuments and then we got the block corners. The alleys seem to be about on par with the lots. I think proportioning across is very valid.

I actually do too the more I think about it. A lot for that reason we laid out those streets and blocks and if you go back to our original survey how they laid them out. A lot of times they didn't even monument the back lines. They ran around the block supposedly.

The importance was placed on that. You got street frontage here. That street frontage is very clearly giving the importance and they are proportion that in the error amongst the street frontages. I think you can get into some sticky situations if you tried to contain error without going across. Especially with some of these townsites that have multiple alleys.

Anyways on this slide as well I show the monumentation that I chose to set. The number one is I thought I was going to get the street corners back in. Maybe this one can be debated and questioned because maybe I couldn't get enough stuff and I'm going outside my scope. Quite a bit of lost corners here obviously. If I'm going down here looking for things and not finding. I'm opting to set a few. In the example I was holding that fence as a controlling corner and I made that decision which I should document very clearly why and the evidence I used to determine that that fence was a valid location. But I should set some sort of monument there.

What kind of error are you talking about here? I have a feeling this was a pretty tight survey. This example is within under a foot. Positional error on some of this stuff, if you got a real sloppy situation, I've talked to people that hedges and fences become far and away their best evidence. They'll go out and topo everything and then they fit the blocks to fit and a lot of times low and behold they can graphically get everything to start fitting with the block based on how things were built.

Because it was not a tight survey to begin with. After that point, I set the two-fence pipe and of course I set the four corners to my survey and I made sure all of the block corners were set. I opted to set one out here on the exterior too. I think I'm pretty safe setting that one whereas if you get into ones here, if these were two fee lots and there was issues going on maybe that would be something that you would stay away from.

One of the methods you have chosen does, it protects the width of the street. The street still gets its full width. As far as going from centerline thirty feet over. If this block corner was over here and original corner, that protects the street width. It works from the streets down then it proportions out any minor errors that might be within that block, once the block corners are there.

That's pretty much it in a nutshell for me. Of course, it's over simplified when you're in a classroom situation. Sure, because each one is different. Each one is different. Well that concludes our discussion of townsites. I hope you found it interesting. Thank you Mike for your time and your expertise. We hope you will have good luck in your dealings with townsites if you ever venture into them.

Congressionally Designated Areas

Introduction

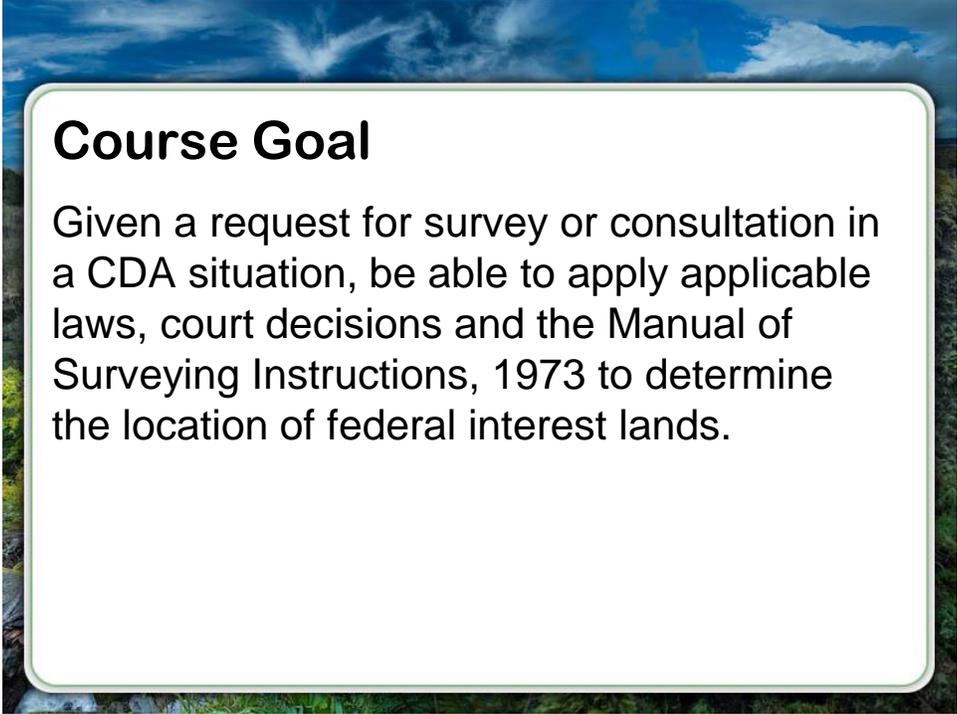
Well hello everyone. Welcome to another segment of advanced cadastral four, which is also a CFedS continuing education course. Dennis Mouland here back with you again this time to discuss a relatively short subject but a very important one.



I want to talk about Congressionally Designated Areas, or what we call CDAs, you know with the government you have to have an acronym for everything. Congressionally Designated Areas are lands where for the most part is federal lands on both sides of the line that is being established. Its been designated for some special purpose. Some special management a whole new set of rules and laws apply on one side that don't on the other and therefore the location of that becomes critical.

Course Goal

So let us set a goal for this course and that will be upon completion when you are given a request for a survey or consultation is a CDA situation, you will be able to apply applicable laws, court decisions, and the '73 Manual when that comes into play to determine the location of federal interest lands.

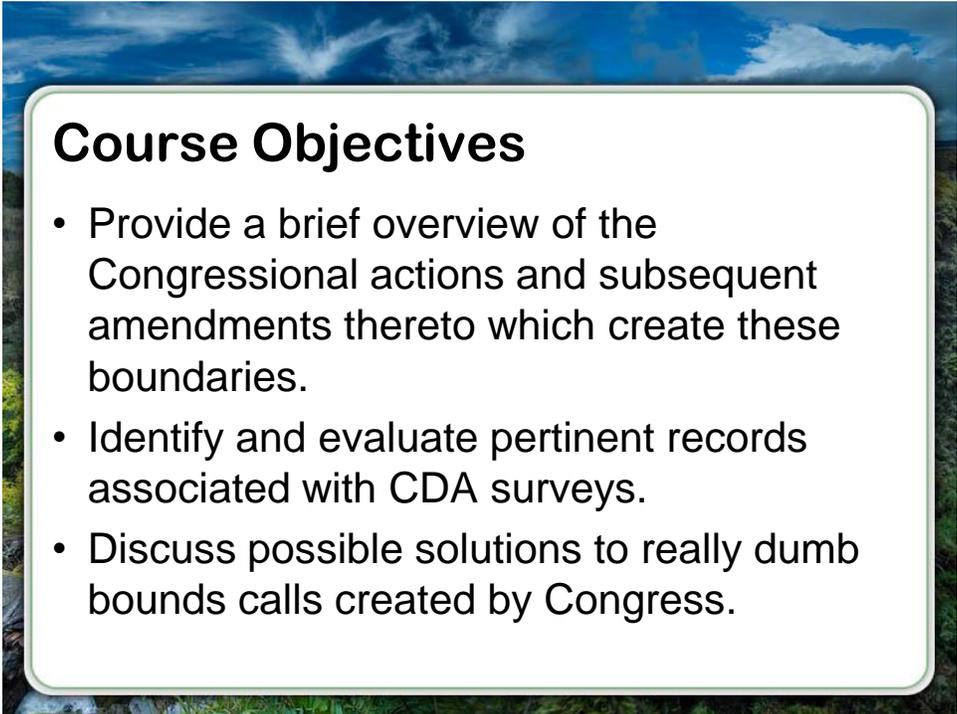


Course Goal

Given a request for survey or consultation in a CDA situation, be able to apply applicable laws, court decisions and the Manual of Surveying Instructions, 1973 to determine the location of federal interest lands.

Objectives

We need to set some objectives for this and that is simply this to provide a brief overview of the Congressional actions and subsequent amendments thereto which create these boundaries. Identify and evaluate pertinent records associated with CDA surveys.



Course Objectives

- Provide a brief overview of the Congressional actions and subsequent amendments thereto which create these boundaries.
- Identify and evaluate pertinent records associated with CDA surveys.
- Discuss possible solutions to really dumb bounds calls created by Congress.

They are pretty skimpy and hard to find and we will talk about that for a couple of minutes. Then discuss a few possible solutions to some of the really dumb things that Congress does with these CDAs.

I say that with all the respect that I can muster up for Congress, but frankly when you understand the process that these things have gone through you'll realize that man it's amazing that we get anything we can use and sometimes you don't get anything you can use. The whole idea here is that somebody on the ground usually, BLM, the Forest Service, or the Park Service or wherever some federal agency. They start working with some groups like the wilderness society or whoever and start proposing possible wilderness areas because that is the biggest CDAs that we have the most number of them or some other special management area.

You know people start meeting and they start drawing on USGS maps or looking at a GIS or some other sort of map source and they draw a picture of about where they want this to be. Then eventually if you can get a Congressman involved and he or she will introduce it and then there will be a map with it and then they put it to a subcommittee and then the House does something to it, changes the boundaries, and then the Senate does the same thing. Then they both pass it and get together in conference and change it some more, then there are land owners and other special interest groups that are all complaining and wanting their input.

All of this changing going on and eventually, you get a map that is very very poorly drawn. Very poor scale with a generic kind of a line on it and I will show you one here in a few minutes. That is what comes out of there and that is then attached to the bill that the President then signs. We have some others where the President may create these without Congress. Presidential proclamations decrees, some national monuments and a few things like that and sometimes those have the same problems.

A lot of times with the National Parks and Monuments they will follow the rectangular survey system that is in the area if it is in a public domain state or at least get as tight into it somehow. What you will find is an awful lot of the concepts of what people want with these CDAs are more generic. They are more (and I don't mean this to insult anyone) they are more feel good things. You know wilderness – we will feel good making that wilderness and setting it aside. Through that whole process, they don't really think about what you and I as land managers are going to have to do twenty-five or fifty years down the road.

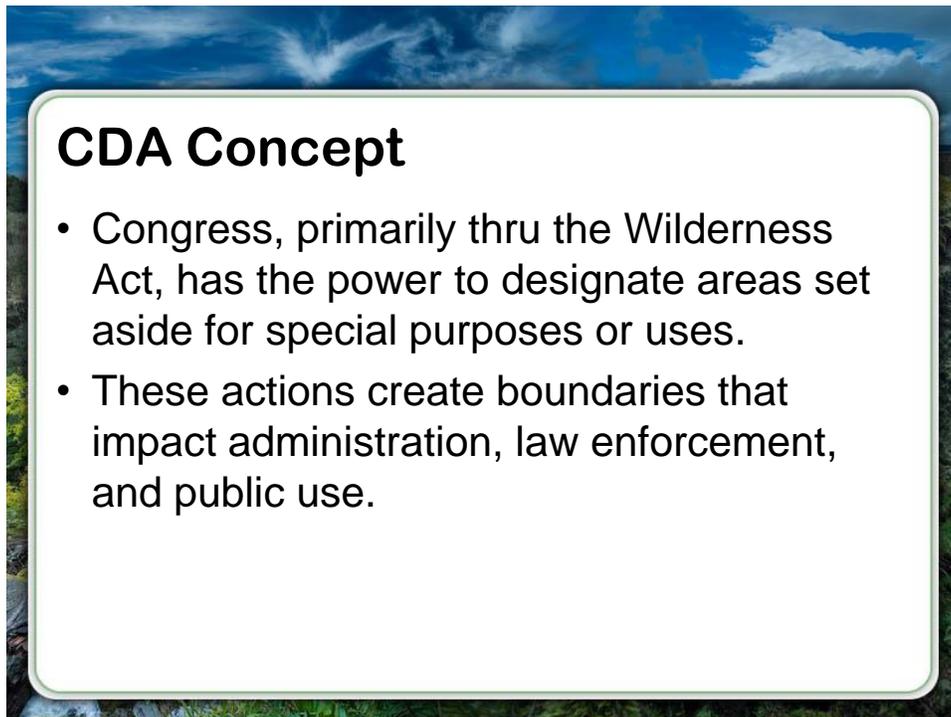
In defending that boundary backing up certain regulations and the laws and enforcement in those areas. Going after people who have violated the law there and just all of the management things that go with any other kind of a change in the land or a change in the management those come with these things whether Congress did it or the President did it. So here is all this smoke filled backroom wheeling and dealing that goes onto create these. By the time it all comes together and by the time it is produced into a document, the law -- the bill if you will.

What is attached to it is sometimes embarrassing and usually very vague and then they drop it in our laps and depending on what law it was done under, we have a year or two to produce a final map and a legal description of it. I have done a lot of those and I guess that is why I got chosen to do this segment for you.

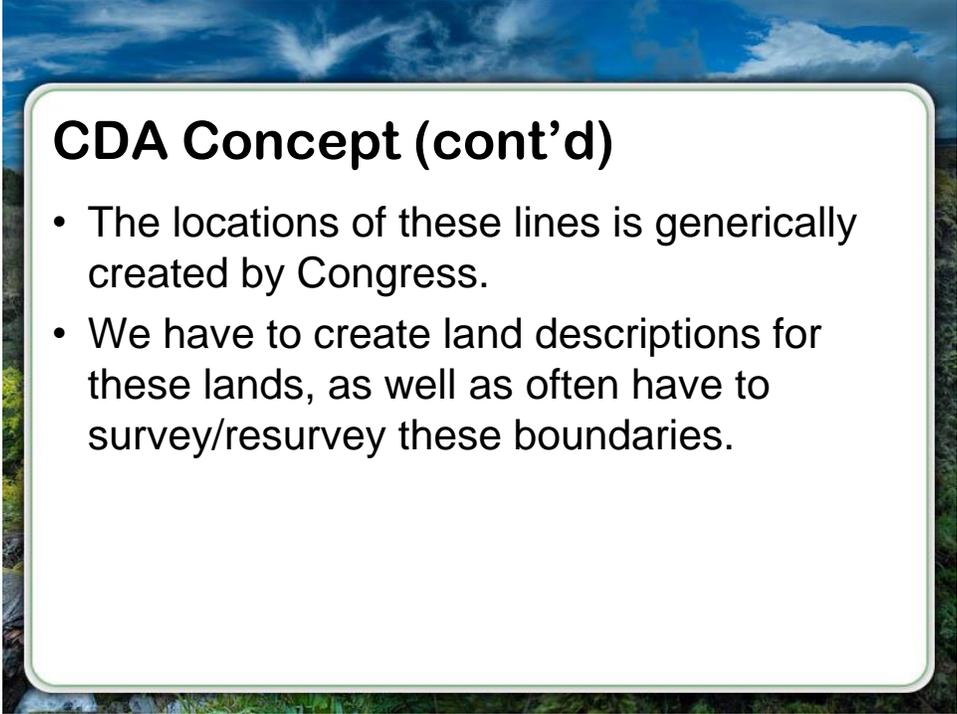
CDA Concept

So let's understand, the whole concept of congressionally designated areas is this (excuse me), Congress primarily through the Wilderness Act (that is the majority of these) has the power to designate areas set aside for special purposes or uses. These actions create boundaries that impact administration, law enforcement, and public use.

The locations of these lines is generically created by Congress. We have to create land descriptions for these lands, as well as often have to survey/resurvey these boundaries depending on what is going on.



I have heard people even with BLM and Forest Service who are probably impacted the most by these CDAs, say oh its federal land on both sides it doesn't matter – it is just a general thing.



CDA Concept (cont'd)

- The locations of these lines is generically created by Congress.
- We have to create land descriptions for these lands, as well as often have to survey/resurvey these boundaries.

You know some of the things that I have experiences where we are writing people tickets for trespassing in a wilderness. You know going in with a mechanized or motorized device we ought to have a pretty good idea of where that is.

I've got a story about that in a little while. If we are going to be harvesting timber up against a wilderness, believe me, the wilderness advocates will be more than happy to point out your mistake and even sue us if we cut into the wilderness which has happened a number of times in the West that I know and people expect that if you are going to have this law in this area that it should be protected as well as not slopped over. One of the things that I have seen that especially the Forest Service do with timbered area. There will be a wilderness boundary so they can't cut timber inside.

They go and say well we will stay 500 feet outside of it. Well that is the land manager's decision. I don't think that is a smart one because you left millions of dollars of trees there. There is a very specific boundary that is the wilderness. If you want to have a transition zone or a taper into that that is fine it is a land management decision but knowing where that 500 feet or 100 foot begins if that is all you are going to back off from it really pays off especially if you are in super vague areas. Frankly no matter how good the maps seems to be the maps we get from Congress are terrible they are from the President.

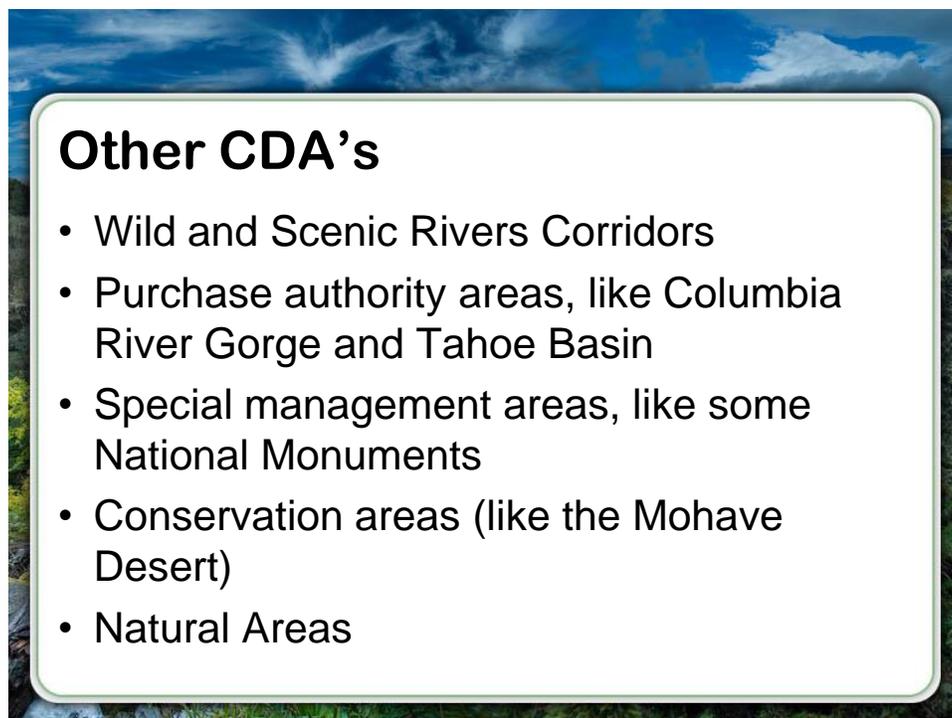
The maps those that get produced on the recreation maps like the 2 inch to the mile or even smaller scale, you know when you look at those they seem so finite but when you get out on the ground, there are a lot of situations that may not necessarily fit so, we want to treat these as a boundary but maybe in some areas where it is so rough and rugged that nothing is ever going to happen we don't need to worry about doing anything. We are never going to post it on the mark it, no one is ever going to be there.

In other places, I know of other places where natural areas have been set aside where it is like an experimental forest or something and people can cut firewood on the forest, but when they get to that boundary, they can't because we are doing experiments in there. They need to know where that is and it is not just some signs put up by some GS-3 technician you know just guessing where the lines are. If we are going to start citing people for things and truly manage that, we should probably know where it is.

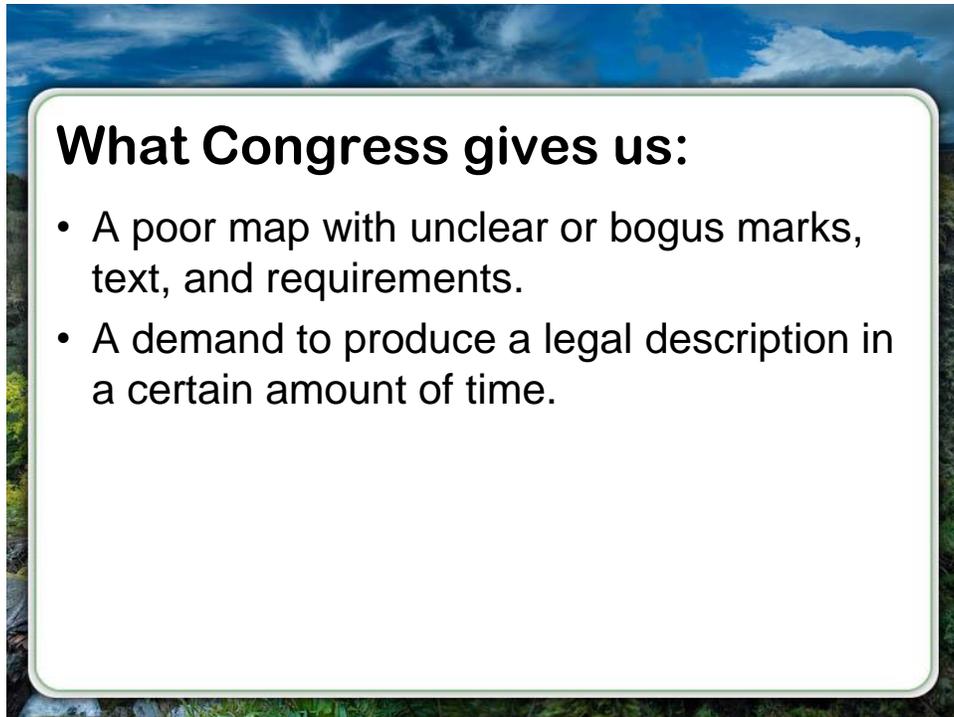
Other CDA's

Now there are some other types of congressionally designated areas besides the wilderness here is a listed of some of them. Wild and scenic river corridors, purchase authority areas like Columbia River Gorge or the Tahoe Basin. That is where the government can go in and purchase land and even subdivision lots.

Special management areas like some national monuments, conservation areas like the Mojave Desert conservation area and I just mentioned these natural areas or experimental forests.



You know as soon as I give you this list Congress will probably dream up another one so my point is this there is really an infinite number of possibilities of what congress wants to do depending on how they want to force some emphasis or management emphasis in an area such as wilderness or whatever else. We have these acts and these laws and these proclamations going on all the time but then again what do we get from Congress.



Here's all we get. A poor map with unclear or bogus marks, unclear or bogus text, and unclear, bogus and frankly impossible requirements.

Then a demand it's in the law usually to produce a legal description in a certain amount of time. I have always felt that a good map with that is also of help to us. So that is all we get, so I have got here a sample map that we want to look at and it is the same map that Ron Scherler showed in the Common Elements portion of this course. You may remember seeing it but I just want you to take a look at it and notice that this is the Hanford Reach National Monument.

you and I have to make the linkage between this mickey mouse map and reality on the ground so that the land managers can deal with it. Whatever we are doing some project you might be working on can deal with it, so that requires a much more definitive position.

If you are thinking about this or have dealt with these, you know there is a lot of (I don't want to call it wiggle room) but I think the intent of Congress is quiet vague in many cases and therefore allows us some leeway to make things a little bit better - definitely to try. I would never write the legal description using the soil types as that because as soon as I did someone a geologist or someone could go out there and say that soil type doesn't change here where you put the boundary, it changes 100 feet over there.

Even though that is the line some non-manager, someone who doesn't work in the resource and on the ground and really understand what it is about, that is where someone has just picked this line and assumed that you can manage to it, but you can't. And there is all sorts of other things and I have got a list for you here in a few minutes in what we , some of the things that Congress has put on those and I would say the majority of them are very difficult to determine. If you take the task that we are given and if you take the product that we are given that map you just saw an example of.

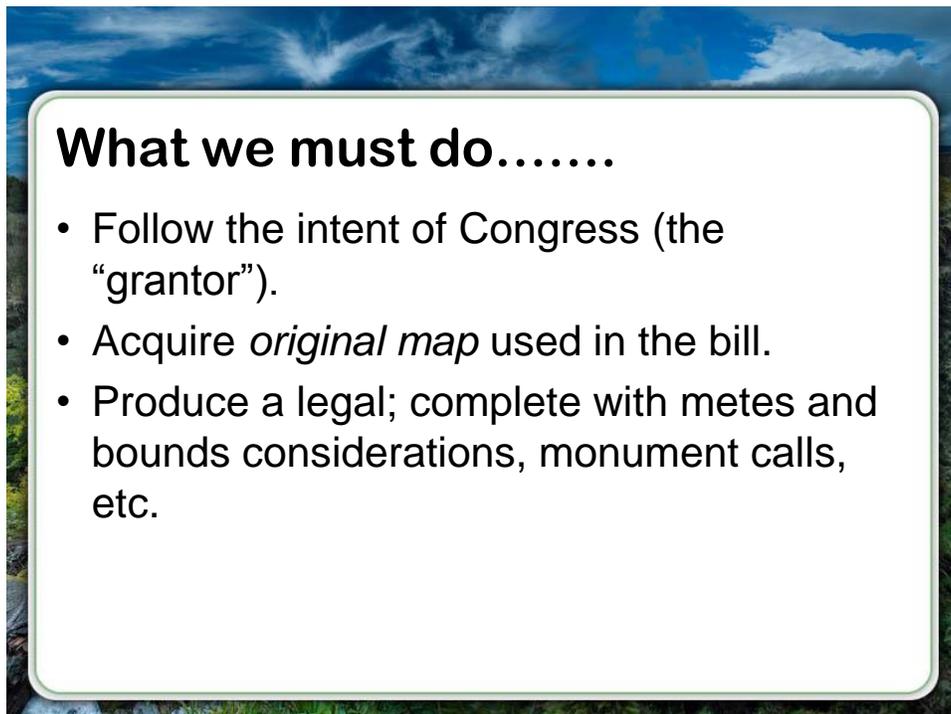
By the way that is an 8 ½ by 11 shrunk down version of probably three or four USGS quads – it is really shrunk down. That is what you got and that is what everybody decided on so what is it that we have to try to do to begin this process and make this work. Well don't forget what we talked about and I taught this portion of this course, is the general principles that we understand about land descriptions, land ownership and therefore in this case land management. We have to follow the intent of the parties.

Notice here that the grantor is Congress they are the ones that are going to grant if you will to the public that this piece of public land is going to be wilderness or wild and scenic or it is going to be something else and so we have to follow the intent of Congress. Just like with regular surveys, maps, and deeds, sometimes the intent is very vague and sometimes it is so generic and sometimes it is pretty loose and sometimes it is just very specific.

What Must We Do?

We want to follow the intent of Congress that is our charge and don't ever forget that. One of the most important things you will have to do is acquire the original map that we used in the bill. I will just use the one that we looked at a minute ago and Ron told me that that map there were three or four versions of that map that had been sent out from the Washington Office.

When they finally got the original map or a copy of the original map that was attached to the bill. President Clinton signed this and they got it from the Clinton library. When they finally got it – it was different from any of those other three or four maps and they were all different from each other too.



Just because somebody hands you a map that looks official and says in this case Hanford National Monument or the Dome Wilderness in New Mexico, that was one I did, or the Pecos Wilderness Additions in New Mexico. You know that doesn't mean that what you are looking at is the original intent and it could be quite different because right up to the last minute changes could be made that require you to fix this or fix that.

So this may seem like it is difficult but frankly it is probably one of the few cases where we actually have to go to the Presidential Library or the Library of Congress or somewhere specific to get that document or a copy of that documents, so that we know what to do. Because there are too many other versions floating around and everyone is assuming that. I know for a fact, that there are a number of places CDA boundaries have been mapped and written about, legal descriptions written and managed to where the line is thousands of feet from where the bill that

Congress and the President past where they signed said to put it. We need to be very careful of that.

Whether you are a federal employee or a CFedS who just got a project that is up against one of these things, you need to know where it is. Just telling you that you need to ask for help, go to your state office, go to the BILS, if you are a CFedS but you need to find out how to get the stuff. I cannot over emphasize that. It will be probably 8 ½ by 11 map once again. It will be “the” map.

You know if you have worked in old subdivisions in cities. You know what I am talking about because there will be joe blows addition to the town of whatever, and subdivision and you go and look at it and it turns out well the counties got one plat, the city has another plat of the same subdivision and the lots are numbered different or they are rearranged different, the dimensions are different and you know you look at some old deed and you don't know it may be a deed from 1910 and well which one was he looking at when he sold this lot.

What dimensions because it didn't tell us on the deed, it just says lot number, block number and so it is the same thing. It is the same thing where you have got to make sure that you have the document that law was passed on that the rights were passed on.

In our case, the grantor being Congress were passed on. The public being the grantee and in this case they are getting this special use or if you want to look at it from the other side of the coin there is a negative drawback on that land like on wilderness, there are things now that you can't do there that you use to be able to do. So but either way there has been a grantor and a grantee and we have to follow their intent exactly the same way we do with everything else.

After you require that original map, or what is a certified copy of that original map then you are going to produce a legal description. It will be probably a metes and bounds situation and you will have to think about all of the metes and bounds considerations, and how metes and bounds works including monument calls and bound calls. That sort of thing and some of those are real easy to figure out and others are extremely difficult to figure out what they wanted to do.

Now, some people as I mentioned don't consider wilderness boundaries or these other CDAs to be that hard and fast of a boundary, it becomes one as soon as you have any law enforcement activity. Others believe that well yeah it is a fixed boundary but it is loosey goosey we will just let it go, or we just worry about it later that is fine too, but I want to throw out an idea for you.

If you are one of those persons, if you are the surveyor whose been tasked with writing a legal description for a wilderness or perhaps one of the older wildernesses where the legal is terrible too. You been assigned some other surveying tasks that puts you up against the wilderness boundary maybe you are marking the wilderness boundary for a timber sale. Perhaps you have mining claims that have been more recently staked but portions of them appear to be going into the wilderness and we want to know what portions of that is in the wilderness because those are going to be null and void unless they predated the wilderness.

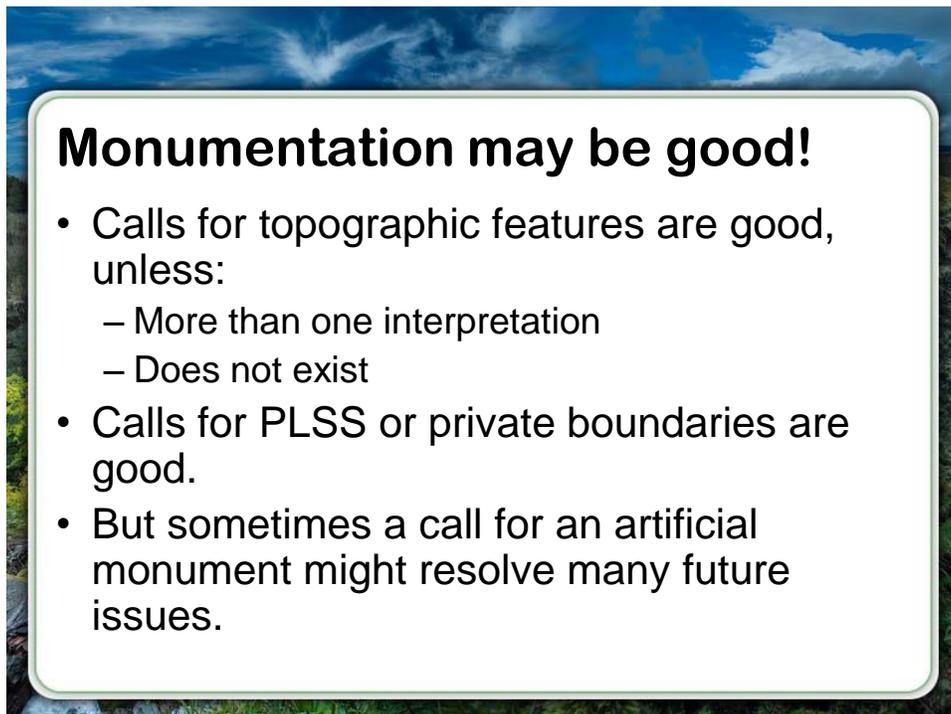
So I even dealt with a land exchange where we had to determine just about 1200 feet of it was just an odd shape wilderness boundary because we were doing a land exchange we were going to convey land of a private entity that went right up to the wilderness boundary. Of course I go out there and its following a river then goes to a junction with a creek and goes up that and I get out there and it is just a big flooded flood plain. Of course, it was winter and icy and I am trying to figure out where that is because it is real high value land up near Eagle Colorado. We are trying to figure out how to describe that and especially come up with acreage.

So there are cases, there are situations where it may be good because the language is either so vague or the land values are so high there may be situations where monumentation, I should say is a good idea.

Monumentation

Now there is a natural kind of monuments out there right. And there is an awful lot of wilderness that calls for topographic features and that is good unless there is more than one interpretation or it doesn't even exist as we have found on a few things.

If you can call for public land system lines or corners that is great, or where there are private boundaries and you go out and around there and you don't want to have a wilderness go across private land. Not that we can affect the private land, but it could create a cloud at least in some people's minds. Sometimes a call for artificial monument might resolve many future issues. Understand what I am saying here. A lot of topographic calls can be used in these but sometimes a call for an artificial monument or in other words something that you and I actually set would be better idea.

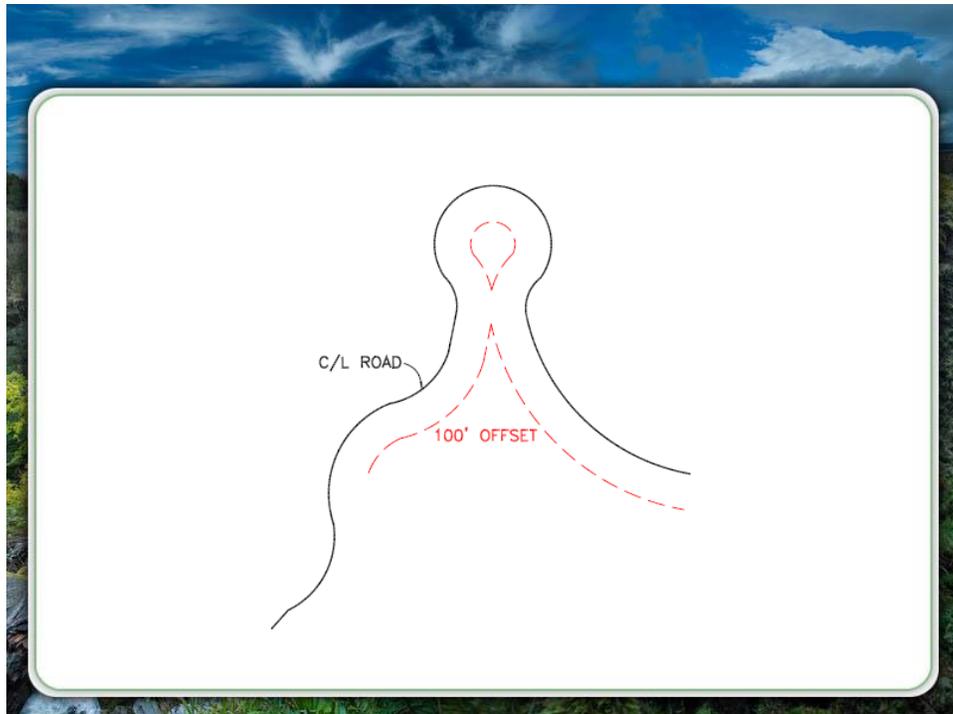


Monumentation may be good!

- Calls for topographic features are good, unless:
 - More than one interpretation
 - Does not exist
- Calls for PLSS or private boundaries are good.
- But sometimes a call for an artificial monument might resolve many future issues.

Now, I want to show you a few examples of how you could do this and so I am going to slide over here to the Elmo and I brought a USGS map down and I just made up a wilderness ok but this is very typical of how this would be.

You notice that I have drawn a line here and I will zoom in where I want to but this is supposedly wilderness. It is just like a lot of things that I have seen where I take what I have got from Congress and try to put it on here to start working with it to see what I can come up with.



Now I am going to zoom in on a very typical thing. Here is where the wilderness boundary goes, now remember this is my drawing here ok. The drawing that Congress gave me, the line that they drew is 1000 feet wide at this scale. You know it just kind of comes up on this hill somewhere and goes off and don't know that they want to go to the hilltop or not. I don't know for sure. I take some liberties in the fact that their intent is so vague that if it is within the limits of their vagueness then I am willing to do that so. This is a place that I would call for the hilltop itself.

In other words I am technically moving it. You can see this contour here. I don't know where the exact top of this mountain is. It could be a perfect cone on here, as it appears it is coming up flatter on this side, so maybe the actual peak is over to the northwest here. I don't know. I can call for this hill. The problem with the hill is – it doesn't have a name. There is no name on it. Of course you want to call for the name of hills and mountains and things that you are going to. There are some other ways. You can say this is a contour elevation here.

Let's see I should have my glasses on. Maybe if I zoom in here. That must be the 8800, that is 8982, and this is 9000 here. So you could say – this is how we do it by the way, this is a hilltop

with a contour elevation of we would say of 9000 feet because you don't know the exact elevation on top of this hill. So, with a contour elevation of 9000 feet. Now that is different from this hill here where I would say with a shown elevation. If this is the one they came to I would say with a shown elevation of 9170. So even though this mountain is not named, it has a shown elevation of 9170 so that makes it clear what hill I am talking about.

With this one, I have to give a contour elevation because I don't have a spot elevation. So I would have to give the contour elevation and then I would need to make sure that there is nothing else in this area that has a contour elevation that is the same. I could say well I am in section 20 and I could narrow it down that is to put me at the hilltop. Now if Congress' intent if it does not say on the map, hilltop or mountaintop or something. I am going to tell you that within their intent, you could even (think about how smart this would be) you could even drag this over to this triangulation station which is a monument that already exist on the ground. You may say you are changing their intent a couple hundred feet, whatever that scale is maybe 300 feet.

My answer is there line is a thousand feet wide I don't know. They didn't tell me to the mountaintop. They just had a line drawn here that was like that map I showed that was shrunk down to 1/100th of its original size so you might even if you are close to something like this call for that and now you have a fixed position on the ground and you can call for triangulation station overlook.

With the published elevation of 8982 located in section 20-township range, then you have made it very clear description of what that is all right. Now let's move on here we are following this line to the North, ok here is another one of these things where I don't know what they want, they come up and it looks like they hit the section line and follow it. Where they drew it is 2 or 300 feet off the section corner. I am the type of guy that is going to draw that and run it to that section line because I am still within the big old line that they drew that is off or curved and I am trying to fix positions on here. I would rather go to that section corner and thence down the section line. Then, up here and you can do that by saying to a point 300 feet east of this section corner and at least you have tied to a corner and were on a section line so that was a pretty fixed position.

If a lawsuit ever came up here, I wouldn't have any trouble placing that (if that is how you wrote it) or if you wrote it to the section corner, I wouldn't have any trouble with that, and I am not going to have any trouble with it going east because it is following the section line right. As I follow the section line that is a fixed position and even protracted section lines I don't have a problem with that is better than nothing. However, here is where it really gets into trouble. Where they come to a section corner and appear to go north, just a ways and then they get on a contour.

Now that is really one of the dumb calls I will mention later. They get to a contour elevation and they follow that contour. Now you and I are surveyors and let's face it an elevation a contour is a really dumb boundary. It really is because it is a horizontal representation of a vertical position. It has a billion coordinates along it, doesn't it because it is curved – it is following the ground.

Worse yet, you can have wildernesses that went to a certain elevation and then NGS changed the datum. So now, that elevation is at a different place.

The basic rules of legal descriptions say it is as of the condition at the time. But you know as the datum have shifted two or three times we start to lose those things and you've got forestry tech out there with a handheld barometer or altimeter and trying to cite people for this that and the other and I think that is pretty dangerous. Frankly as a surveyor, I would hate to have to put the six (or whatever that was) 6200 foot contour elevation for three miles down through the woods there and all that because you happen to run elevations and pretty good elevations. Then again this whole datum change thing.

What if (just a idea) What if you placed a monument at the approximate 6200 foot contour line and then that elevation that the monument is at is what controls the boundary not wherever the 6200 foot contour elevation is.

For instance, let's just take a look at the map again. So I came to the section corner here and it seems to go up the section line for a little ways and that is north along the section line. What I would do if it was in an area where there was some activity to see what there is a prospect right there. There is a trail that comes up here. There is activity going on here there may be other mining operations in here so I might go as best as I can to determine where the 6200 foot contour elevation is but rather than just leave it at that I just might set a monument there.

Then, at the approximate 6200 and thence continuing on the same elevation as that monument. Then you see what I have done is fixed where this is so there won't be any arguments or fighting where this is as to what elevation this should be at. I've taken away the what ifs with the datum and accuracy things. So then and you see this and I have had some wildernesses where every piece of it was following a contour line.

Now when we go down a little further here and I want to show you what they will do to you. You will be following this contour line and then suddenly when it hits a creek they go down from the creek. So once I set a monument on the other end of it up here then I have a fixed position really vertically where I can run all the way over here if I have to. You could set another monument there. You might create a conflict with the first one as far as the elevation goes or you can set a monument there that is simply marking where this leaves the creek and goes up to the contour if you want to do it that way. The point is, that is somewhat of a vague call isn't it. Then it goes down the creek where it meets another creek and then leaves. This is another example of that.

Where we come to this creek and where two creeks meet up, if it is in a well-defined channel like these are but they are pretty steep canyons. Well then, maybe that can be determined but then it seems to go up on the hill. I will use the hill and call for this as an unnamed hill with a given elevation of 6256. That puts it at the top of the hill wherever that spot elevation is taken. Do not need to monument it because I have a pretty specific position. That could be plus or minus a few feet if it is a flat top or round topped hill. You know that is the nature of it. We can't go out and fix all of these things. I am saying monument where there is something really critical.

Now I want to show you probably the worst thing that they could do to you. Then it follows down this divide. Those are the worst ones I think worse than contours unless it is some real sharp hogback kinds of a divide. I want you to know that it goes down the divide. They have of course drawn this and it might have a note on it that says down the divide. Notice the depth down the divide to this elevation down here. That could be here or over on this divide right you have another divide here.

It could be interpreted anywhere along here I supposed somebody wanted a big lawsuit maybe they have a mine here and they are fighting whether they are in the wilderness or not after the fact. They might come out and cross-section this and determine that the exact line is somewhere over here. We need to think about ways to make this as solid a call in our legal description as possible.

One of the ways that I have done that is once you leave here thence down the hydrographic divide that is what we generally call these in legal descriptions a hydrographic divide. Down here I would put another monument so that it was clear that it was down this divide, that it hits here and does not come down and then comes over but this is where it hits the 5800 or whatever the contour elevation is there. I want you to think about some of these things. How these work and this is very typical the line they drug off the contour and all that and you are trying to figure out what was their intent.

And last but not least, you will see these places where they will draw a circle around something and they might even have a number or note on the map that says avoid Springs. It doesn't tell you how far to avoid the Springs or which Spring. I don't know about you but you may not have time and I have worked on some wildernesses where there are a couple dozen of these things. I don't really have time or resources to go out and find all of these unless we have an activity or project right there to go look at every spring when I am writing a legal.

You know I would definitely look at this when I am writing the legal and I need to say well I am going to create a bubble and I want it to be a consistent radius and you notice that if says avoid springs it looks like there is one here and maybe another one up here, so which one am I to avoid. I need to make sure this spring is not in the wilderness but I don't have to necessarily center it on that, but I must decide on a radius that will go out around here and protect all of the springs at least shown on the map because that most knowledge that they have.

See there is another spring. So I need to do that and determine how I will do that and if it's really critical monument it or this or monument the center of the radius, or monument this one. Whatever it takes and that is my point. Is that you get a lot of strange stuff from them and you have to figure out what the best way for me to do that. I think one of the things you want to do is really think about it from the law enforcement point of view. What would it take to get that boundary safely on the ground described on paper on maps? That we could legally defend it and that is really, what it comes down to.

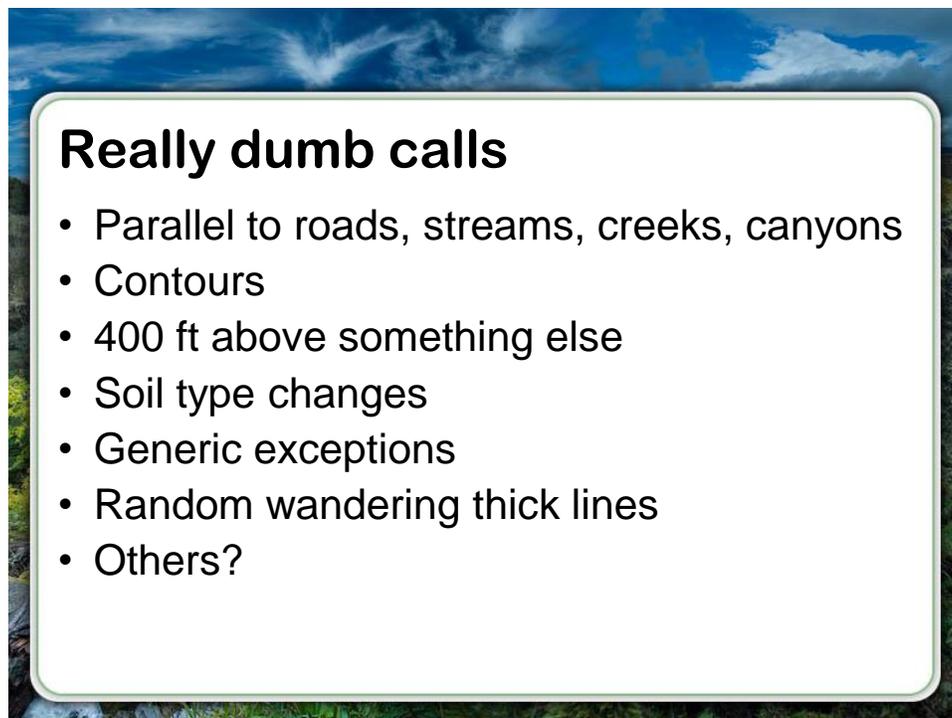
Now, there is one thing I didn't show you and that's and it's in the list of dumb calls it is where they have just drawn a line and I mean it is not following a ridge or anything, they just said well it's got big long curve or it just does this that and the other. You know what I have done with

those in most cases is digitize and come up with state plane coordinates or something for positions along there but kinds of average those out.

I don't know what else to do. I am not going to create something that has 21 million tangents that are a foot or two each as you go out around the thing they drew and I don't really like creating curves even though we did that with that cherry thing we had on there. They call them cherry stems in wildernesses that go up. A lot of times they will follow some road way up into the wilderness and cherry stem around. There is a mine or something up there. You can't put the end of the ruler, so sometimes you get curves but boy I try to stay away from that and create a series of cords or something that is more manageable and we can write easier and that we can do little pieces of if we have a management activity or law enforcement issue out there along that line.

Dumb Calls

Now, I've referred to it several times, so let's just look at these some really dumb things that I have seen ok.



Now parallel to roads, streams, creeks and canyons. Now that sounds good and you will see an awful lot of this but it will usually give you a distance. You know what happens and I already mentioned one of these earlier and that was where the parallel to road. Well is that side of the road or edge of road or the right of way of the road, or maybe it is just some BLM road or Forest Service road or something out there and it doesn't have a right of way out of there, so what do you do? You know what I do, I go from the centerline, isn't that what we do in the normal surveying. It is the same principle see from the metes and bounds discussion and the common

elements discussion. It is that same principle. Well if it is unclear which side of the road and we own all of the road, then go from the centerline.

Now, I have seen some wildernesses where Congress said 100 feet from the road. I go 100 feet from the centerline and it's where the road crew has gone out and made these lead off ditches that take water away from the road get them out where they will flow into the natural runoff and I have seen them where they go out beyond the 100 feet. All of a sudden we got our own grader operator going to trespass into the wilderness every time he wants or needs to do that. Either we need to post that and he stops doing that, or you stop him from doing it at all which isn't very good road maintenance. Or in some of those cases where I have seen that ahead of time or someone warned me about it,

I have to at least put the wilderness boundary 100 feet from the edge of the road. That gives us another 10 depending on the width of the road 10 or 20 feet to play with or from a right of way. If there is a right of way there but, you know I can't really change the 100 feet that is pretty clear congressional intent so those are some of the management things that you come across when you are doing these things. Same thing with streams or creeks you know. That is a narrow thin little line on a quad sheet and everyone felt good about it but you get out there and it's a braided stream where was it on the date the President signed the bill, I don't know and I bet nobody else knows unless you happen to have some aerial photography that was done relatively close to that time or to that date.

So you know streams and creeks that is one thing, and to say we are 100 feet parallel to it but will then that stream and creek could be doing a lot of this and is that really what the management boundary you want to have. Is that really how you want to do that? Same with canyons and things. Now I want to show you something else on the elmo and that's the (I just drew this to make the point).

Here's this road, wandering up the black is the road and the red is the 100 foot offset. Now notice, you need to really think about these when that maybe what Congress said but do you think that they really intended to do something like this? I don't think so. See where this is less than 200 feet, so its not wilderness but then out here it is wilderness. What a nightmare to manage that. See so I look for places where you have things like this and then I change the legal description to come to a point I look to something in here a road a section line and a contour. Anything I don't care what it is where I can call for a point to change direction then go up this way and not create these things. You will have plenty of opportunity to try to repair legal descriptions or to repair the intent of Congress with things like that and other dumb calls that just don't make sense.

Let's continue with my list here. Contours I have already mentioned that the problem with contours being that you have the potential of datum changes, of arguments and interpretation where things are. Somebody comes off one benchmark and another that comes off of a tri-station and there is a 10-foot difference between those. On the ground that makes a 50-foot difference horizontally, where that vertical position is because of the slope and so now we are arguing about that kind of stuff to find other ways to fix that or at least to mitigate it.

Here's one that blew my mind. We got this one I think I already left the **Cayabab Forest**, Roger Green replaced me there, so we worked on it together. This is up on the north rim of the Grand Canyon, and it's a wilderness and I think it was called the Snake Gulch Wilderness, might have been something else, but anyway. The legal description said 400 feet above the Canyon floor. Now we found out why they were doing that, the reason they wanted to do it was because there were uranium mines up on the top that had air shafts coming out into the canyon wall. These guys, Uranium miners said don't put this into the wilderness we already have mining claims here and we have air vents sticking out through the side of the wall of the canyon.

So somebody decided if you don't go anymore than 400 feet up the side of the canyon, then you will not get into that and you will leave that out. Think about how to determine that boundary. You would have to go down and run elevations down the lowest point of the canyon. So you would have to figure out where that is. It said the floor of the Canyon, so where is that. Does that mean the lowest point, the average, or up out of the creek but in the canyon itself.

What does that mean? See then we had places where the canyon walls dipped down below 400 feet high and then what. Well 400 feet above the Canyon floor went way out into a little valley there. I don't think that was there intent. They wanted to follow the canyon but all of a sudden the reality put it out somewhere else. There were places where the canyon would go up and back down and up again, so where is the 400 feet. Is it here or on this one because you are trying to get a horizontal position?

You can imagine all of the things so 400 hundred feet above something is not a very good solution and I frankly can't remember how we resolved that it was Roger's project and he probably figured something out. It was a dumb dumb thing probably one of the dumber things. The other is the one that Ron has which is the next one on my list, which is the soil type. Or any other digitized line coming off of a GIS come on give me a break. The only lines, the only things that we know for sure on the ground are section lines, property lines that kind of stuff. Mountaintops and peaks and real definitive ridges, very very definitive creeks, those are the only things and everything else you move away from those types of things and everything else becomes more and more difficult to manage and enforce.

I have seen generic exceptions. I just gave you an example of that. That is where the note on the map or Congress says avoid creek or avoid well or avoid springs and you have to figure out what that means. That is a very generic exception. I have already mentioned the wandering thick lines that just randomly go across the landscape there. Turn them into chords and come up with state plain coordinates or something. If one of them happens to cross real close to a section corner or quarter corner or even a 16th corner - hey call for that. That fixes it at least somewhere in there. You know the one thing I don't want to have to do if you can imagine I had one of these in New Mexico where it must have gone 7 miles of random lines, just whatever. I don't know what they were trying to do there were no notes no nothing. You know can you imagine needing to the resource manager comes in and says I need to know where this 500 feet on that line is.

For you to have to figure this out, you are going to have to go 3 miles here and 4 miles down there pick those up hopefully GPS. Then you are going to have to take however, the legal

description got written and adjust it because it doesn't close right. Do probably a compass rule adjustment then come in and fix. What a huge task. Wouldn't it be nice if you could break that up into 1-mile chunks. Maybe your cords are shorter than that but 1 mile or every mile and a half you hit some peak some mountaintop, some section corner, some 16th corner something that is out there that could be used as a monument or bound. That is really what we are talking about. Those random wandering thick lines can really be some of the tough ones.

I know we had one this was here in Arizona where the call was 1000 feet parallel to a road. But they didn't draw it that way. And so I wasn't sure do they want it where they drew it which was at about 200 feet, or do they want it at the 1000. Well it says 1000 so I am going to go with 1000 so that is what I did.

Of course I wrote the official legal description for that wilderness and it is 1000 feet and that is how it was all done. Some wilderness tech talked the law enforcement guy into citing a guy for camping. He was about 250 feet off the road see they are going and doing something different than what we even created. Because the darn map kind of showed it that way and they scaled it or whatever you know. These lines sometimes are not drawn very well, they don't correlate with the notations they give you if they give you any and so you just have to be real careful out there.

I will tell you another story this one is also parallel to the road – there had been a guy now think about this folks this is a great one that ties back into our basic surveying law principles. This is where it was 100 feet, there had been a guy and he had been camping in the same place for years and years and it is about 800 feet off the road and the wilderness boundary is 1000 feet so its outside of where he is. He is ok where he is because he has been camping there for years. Congress makes it a wilderness but he is still ok. 1000 feet off the road. The Forest Service went in and moved the road because it got washed out so they moved it away probably 3-400 feet to a better place for crossing, well again the law enforcement people who don't know anything about boundary law.

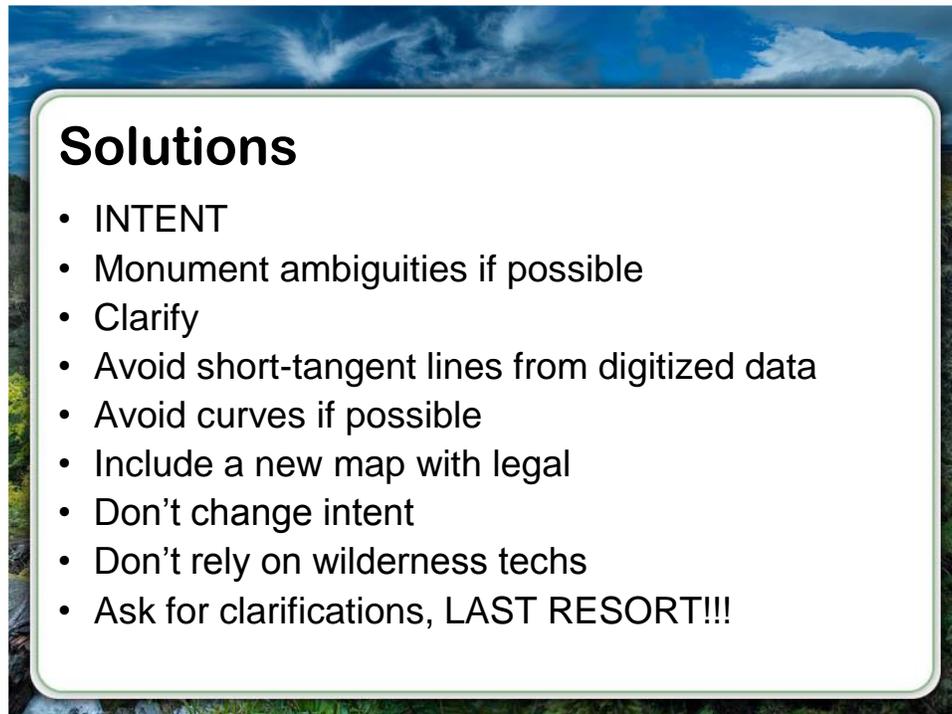
The wilderness technician and rangers who don't know anything about boundary law are out there citing this guys because they have moved the wilderness boundary with the road. See the road was here and we are 1000 feet up but the road moved 300 feet so they moved the wilderness boundary 300 feet. We as surveyors know that is not how it works. It is the conditions as of the moment that the grantor signed the deed (i.e., the President signed the law).

So that story is a real story. The point that I want to make out of it is please never forget that these are boundaries and don't set aside the basic boundary law and the basic principles that you and I understand because they are all we have to hang our hat on with these things especially with these things. So what you want to avoid is doing some willy nilly things how you did it and this side of the wilderness you were real careful and this side you were sloppy. No you need to be consistent you need to show professionalism and ethics in what you are doing and then well see how that works and how it comes out but they are all unique. They are all going to be unique but here is the bottom line. If you hang your hat on the principles of surveying, you should be ok.

And there was an example of that well come back to about moving the road. Oh that upset the ranger and all of these people that it is no longer within 1000 feet of the road they were referring to. So you got to stand your ground.

Solutions

What are the solutions to all of this stuff? I have given you a few practical things. What kind of solutions do we have?



Don't forget intent. Is that our guide post. If you can, monument the ambiguities. Try to call for something that is already out there if possible as a monument. Clarify certain things like avoid springs. Well you need to come up with state plain coordinates that are at the radius point or something. We can't just write a description that says and thence down here except for the springs cause that doesn't tell us how big that was or anything.

If you got digitized data, which you can off of any map or something avoid those short-tangent lines and all that stuff. Try to chord those out. Try to even it out where the acreage comes out the same so that acreage in wilderness is really important to the wilderness people more than just the exact location. They want or feel a lot more comfort and I am not criticizing this it is just the nature of the beast. They feel a lot more comfortable if Congress said there is 50,000 acres of wilderness there, there still is 50,000 more or less, you didn't short change the cords always on the same side where you made the acreage shorter.

Avoid curves if possible simply because they are very difficult to reconstruct out there on the ground. I mean if you ever worked in a subdivision you know it is a pain in the neck to put

together a series of curves that are just in a little lot where the record doesn't match the measured.

I have always said we should include a new map with the legal and what I have done is to take USGS quads and either draw on them and have them stamped or marked that they are the official ones. Or on a couple, I actually had Mylar's made of the USGS quads and inked it. Now we have a little more modern technology, capabilities, and stuff nowadays than I did back in the 80s when I did that. But I think we should include a new map and folks is this not true? When you write a legal description today for any kind of land transfer if you call for the map, does it not make the map and equal part of the deed as the Supreme Court once said it is as if the map is printed on the face of the deed. It is part of the deed. That is what I am saying. Do what the legal description – when we create the official legal description, create a map to. Put you know notations on it like some of the things we have done. Don't change the intent. But understand that there intent maybe vague or wide. Don't rely of wilderness technicians. They are good people with good hearts, but don't rely on what they say or how they interpret things it doesn't really matter.

Now here is one last point on this... you can ask for clarifications from Congress as to the intent. You can ask them what did you mean by this and it will go (your request if your agency allows it to go through) it will go to the subcommittee that put this together and agreed on it.

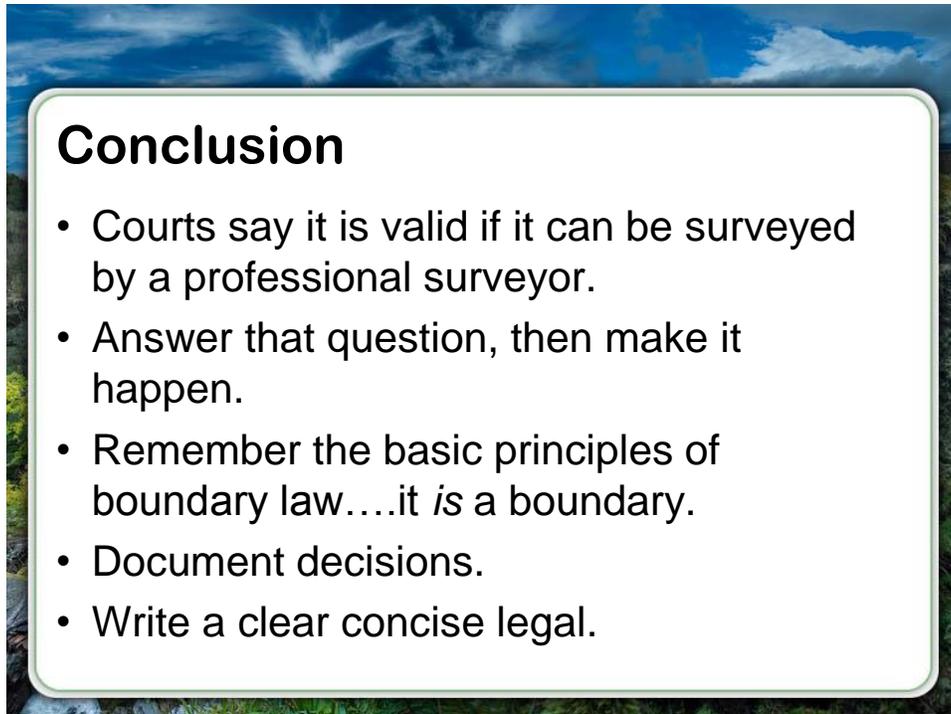
They will come back and I did that once. It takes many many months but it was on a situation that was so vague and that drastically affected where the wilderness was going to go. So you can do that. You can ask for clarifications. Of course the more time goes by like when the original wilderness act was like 1964 I think, so that is 40 years ago or more now so no one is on that subcommittee but they will still look at it ok but it has to be something pretty important.

If you are a non-federal person like a CFedS taking this course, then you know I would go talk to the BLM and your BILS and I would get some input from them. Because that really is asking for clarifications is really a last resort because first of all you can just imagine Congress and at least I hope they have more important things to be doing than fixing this but if it is such a bad situation, maybe that is what you need to do. I discovered that in almost every case in my career doing CDAs I discovered that I could resolve it using the principles of surveying, common sense and making sure that I never leave their intent but I recognize that their intent may be vague, it maybe wide and I don't take advantage of that but I do recognize that fact and use it to help solve the problem so that is kind of a brief look at these things.

It is always good to get the original language, original map and take a look at the thing. See what it is that they are doing with it. Don't rely on recreation visitor maps and that sort of thing. They have done their best but they are just digitized data and sometimes that is terribly inaccurate not just from a scale point of view but inaccurate from intent and that sort of thing. Start working on those things when you have the opportunities.

Conclusion

Here is what we have covered in this segment.



Conclusion

- Courts say it is valid if it can be surveyed by a professional surveyor.
- Answer that question, then make it happen.
- Remember the basic principles of boundary law....it *is* a boundary.
- Document decisions.
- Write a clear concise legal.

The courts have always said about any kind of deed that it is a valid deed if it can be surveyed by a professional surveyor. Consider CDAs to be the same thing. If it can be surveyed by a professional surveyor or competent surveyor then it is a valid description. That doesn't mean the description has to be perfect, doesn't have to close. There could be all sorts of things that could be wrong with it but a competent surveyor can get it on the ground then it is valid. Answer that question when you get one of these, can it be surveyed by a professional surveyor, can I figure out what to do with it and if you can, then make it happen.

If you can't you are going to have to go back for clarifications and I encourage you to choose A – answer that question and make it happen. Remember the basic principles of boundary law. This is probably the most common error that people make and that is that they forget that these CDAs or proclamations or however they come out they are boundaries. This thing you are dealing with is a boundary.

Law enforcement, management practices all kinds of issues will go up against that line and at some point in time, somebody is going to have to determine where that line is in a particular case. They will thank you if you had done it correctly, done a good job and left a good footprints. So that leads us to this next conclusion and that is document your decisions in a file, project file or group file whatever with the BLM so we know what you did, how you did it, what you considered. Because next time when we lose something in court or on appeal it is not because

we didn't make the right choice, its because we didn't document the choice we made. So document your decisions, then write a very clear concise legal description.

Just remember folks, it is a legal description, just like any other legal description so write it clear concise legal that has all the parts, caption, the body you know all of that stuff just like a regular legal description and then you will be fine. You know that is kind of your final product. If the project calls for it or if there is opportunity for you to suggest it, produce a map that is much better drawn that is more like the USGS that I was showing earlier but you have drawn it to the exact points you have chosen instead of the big vague line that Congress would draw that are 1000 feet wide at that scale covering up half the information. So there is lots of opportunity there. Make sure and I have already said this at the beginning. Make sure you have the right documents.

I was just remembering doing some for the Forest Service and they provided me some paper, USGS quads with all of these notes on it, and I thought well that is what Congress wanted and yet those were just the documents that the Forest had put together five years ago when they put this into a wilderness study area. The thing that Congress actually produced was different than that. You know when it said avoid this, 100 feet offset, Congress said something different and so I got trapped following documents that were actually prelaw documents so you want to be very very clear in your caption of your legal description.

You want to cite the fact that what law this was, what date it was passed by Congress and signed by the President , so that everybody knows what you are doing and make it a real professional job.

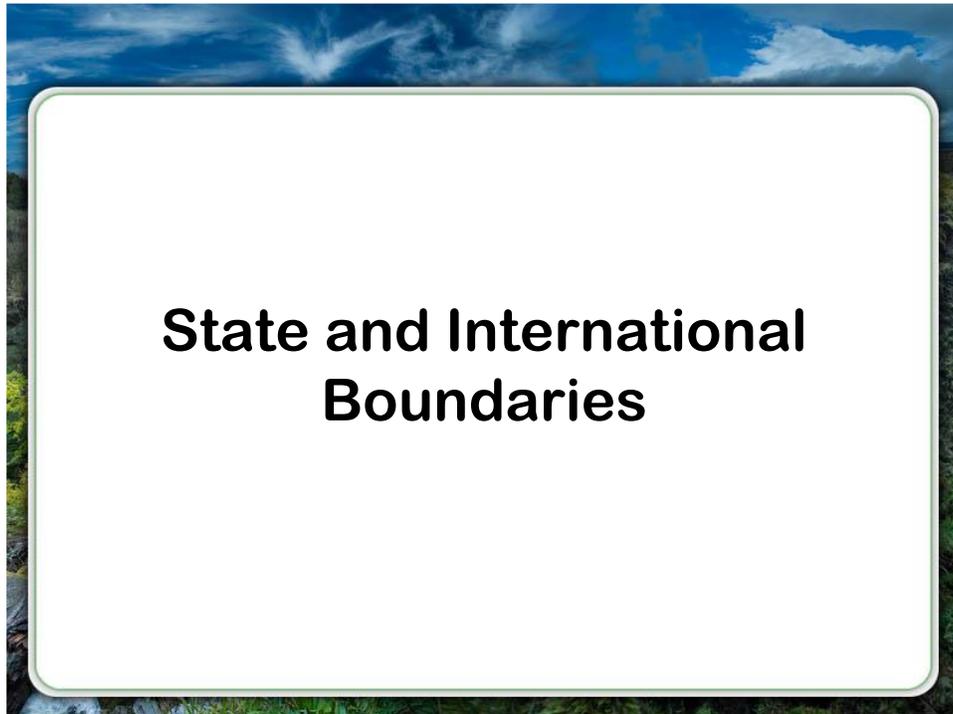
That is really it about Congressionally Designated Areas and I hope that you see that really we should not treat them much differently than anything else we so. You know sometimes they are a little more vague and can be a little more challenging but if we apply the principles we know, we should be able to resolve it.

Good luck with those if you are going to have to deal with them and good luck with the rest of this course.

State and International Boundaries

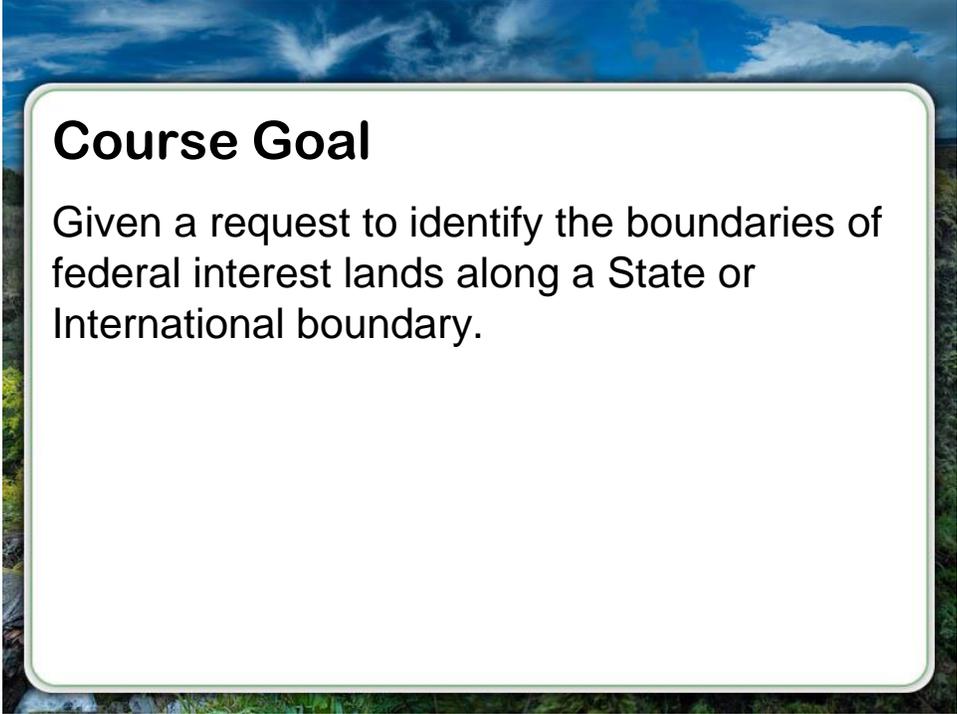
Introduction

Now we want to take a few minutes to talk about State and International boundaries. And really there is not an awful lot to talk about so this is going to be a rather short segment, but there are a couple of key points that we want to make. We want to make sure that everyone understands.



Course Goal

First of all our course objectives is given a request to identify the boundaries of federal interest lands along a State or International boundary. So, we always start out with that given a request. Someone has asked us to identify some land along a State or International boundary and here is what we need to know.

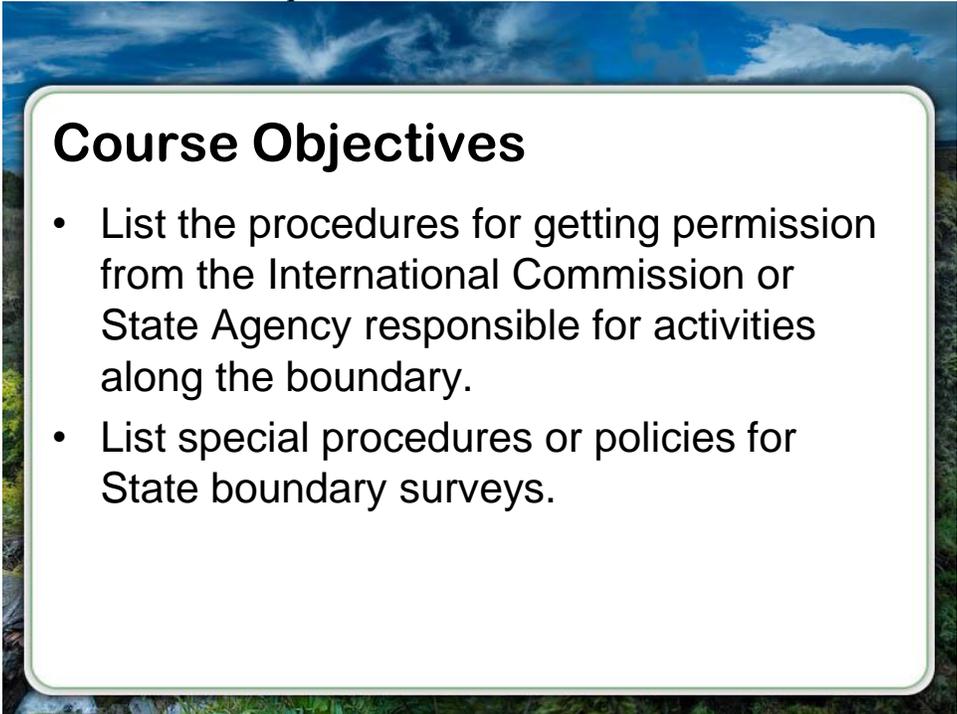


Course Goal

Given a request to identify the boundaries of federal interest lands along a State or International boundary.

Course Objectives

We want to list the procedures for getting permission from the International Commission or State Agency responsible for activities along the boundary. List special procedures or policies for State boundary surveys and this is something that has changed over time and we have the State boundaries which are kind of unique.



Course Objectives

- List the procedures for getting permission from the International Commission or State Agency responsible for activities along the boundary.
- List special procedures or policies for State boundary surveys.

We have some information in the Manual that talks about how we are supposed to treat state boundaries and we have some other information in the form of an instruction memorandum that tell us some other information. So, we want look at that and have a clear picture of really how the Bureau of Land Management treats state boundaries and how they treat international boundaries.

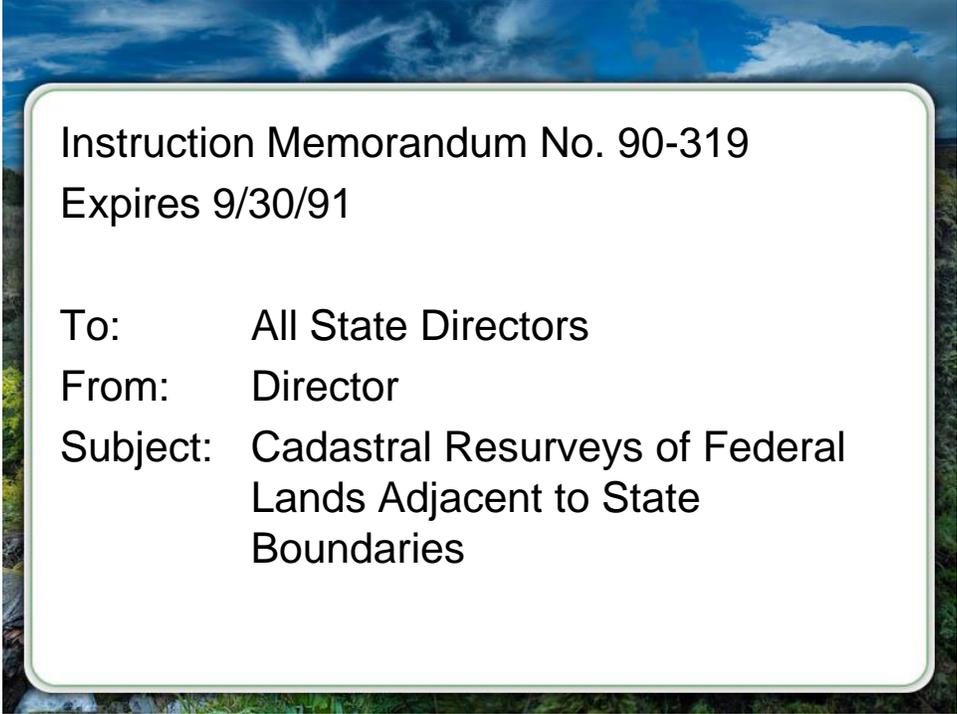
State Boundaries

So let us start with state boundaries. And, I want to read from an Instruction Memorandum. This Instruction Memorandum is dated 1990 and you will notice that it expires in September 1991. Well but Instruction Memorandums in our system do not really expire. It is still really the policy in effect. And here is just a little out of that Instruction Memorandum. And I want to talk about this and compare it to what the Manual says and again about how we are to proceed.

Ok, so this Instruction Memorandum says: The retracement and resurvey of State boundaries are authorized to the extent they are necessary to provide control for the survey/resurvey of the adjacent PLSS for the identification of Federal lands.

So it is telling us first of all that we can do retracement and resurveys along state boundaries. Then it goes on and it says - This includes (*and this is the really key part*) the reestablishment and remonumentation of Mile Posts on State boundaries (*Now it is just not saying that we can remonument found corners – it is saying we can reestablish Mile Posts on State boundaries*) and the establishment and monumentation of corners of minimum control along State boundaries.

Corners of minimum control, corners for one side only. Basically that is talking about is corners of the PLSS for the side that we are working on. This is the policy of the BLM at this time. And from 1990 to the present this is the policy that we follow.

An instruction memorandum titled "Instruction Memorandum No. 90-319" with a white background and a thin green border, set against a background image of a blue sky with white clouds and a green landscape. The text is as follows:

Instruction Memorandum No. 90-319

Expires 9/30/91

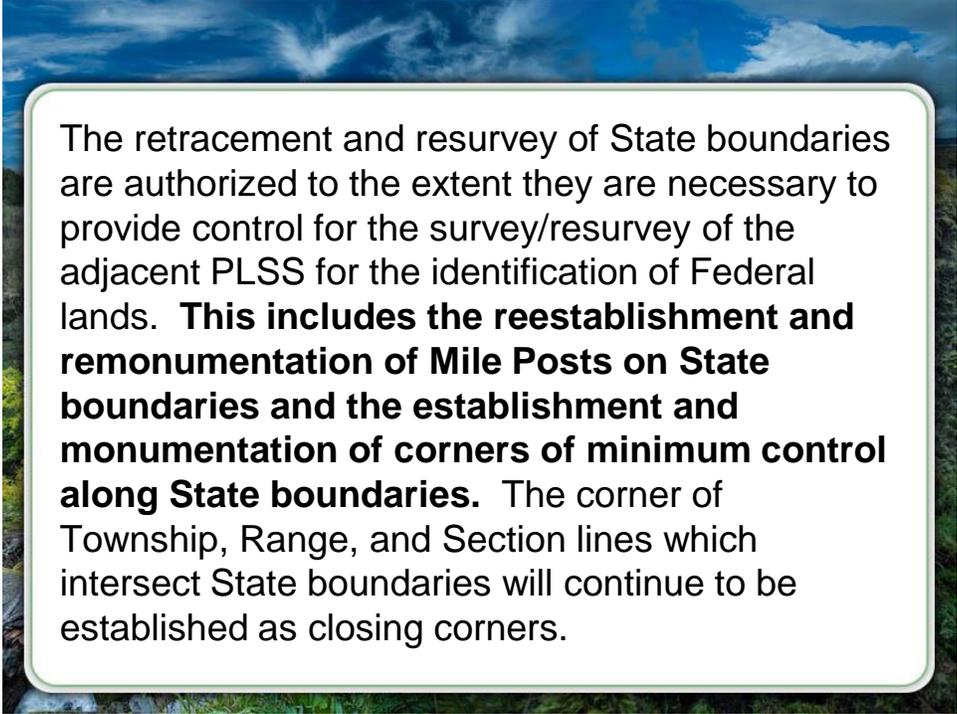
To: All State Directors

From: Director

Subject: Cadastral Resurveys of Federal
Lands Adjacent to State
Boundaries

Let us talk a little about the thinking here. It is not necessarily that we are resurveying the state boundary, which we are, but authority to determine state boundaries comes from Congress or from the states. What we are doing is indentifying the boundaries of the adjacent federal land.

If the state boundaries is the adjacent boundary to federal land we have the authority to survey that boundary. We have the authority to resurvey it to determine where that boundary is. Now if the states do not like where we put it, they can put the boundary somewhere else but that boundary as we survey it is the boundary of the public land survey system.



The retracement and resurvey of State boundaries are authorized to the extent they are necessary to provide control for the survey/resurvey of the adjacent PLSS for the identification of Federal lands. **This includes the reestablishment and remonumentation of Mile Posts on State boundaries and the establishment and monumentation of corners of minimum control along State boundaries.** The corner of Township, Range, and Section lines which intersect State boundaries will continue to be established as closing corners.

This was brought about because we had areas where it might be 15 or 20 miles between found state boundary corners.

The original mile posts of the state boundary and we were called upon over time to come back into those areas over and over again. Each time we would come back, we would have to tie to those monuments 15 to 20 miles apart to establish where the line was for the section we were doing. Finally the Bureau looked at it and said no, we are going to go ahead and reestablish mile corners, reestablish that line and survey the boundary up against it so that we aren't forever retracing that 15 miles of line.

This is the current policy. Now I want to look a little but at what the Manual says, because it really does not, it is a little different.

Section 3-69

Section 3-69 Closing corners are normally established at intersections with a surveyed reservation, grant or State boundary. The bearings and distances to the nearest corner or angle point of the irregular boundary should always be noted.

3-69

Closing corners are normally established at intersections with a surveyed reservation, grant, or State boundary. The bearing and distance to the nearest corner or angle point of the irregular boundary should always be noted.

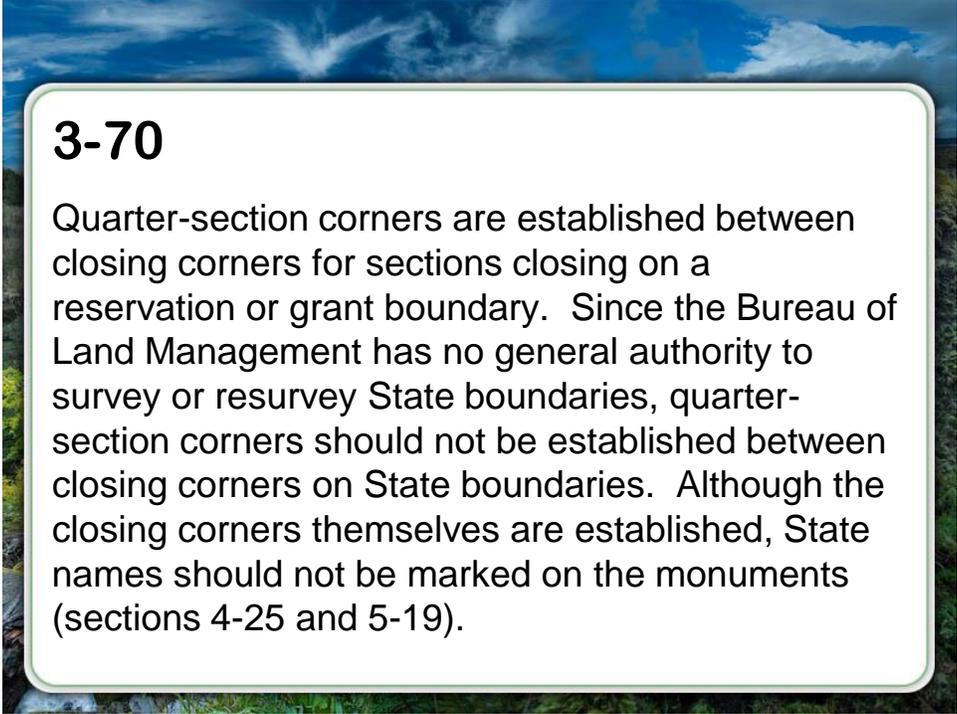
It is usually necessary to retrace the boundary to the nearest corners in each direction to ensure placement of the closing corners at the exact intersection.

So when we set the closing corner, we are going to tie each direction. It is usually necessary to retrace the boundary to the nearest corners in each direction to insure placement of the closing corners at the exact intersection.

That is fine we are still going to do that there is no problem there.

Section 3-70

Section 3-70 Quarter-section corners are established between closing corners for sections closing on a reservation or grant boundary. Since the Bureau of Land Management has no general authority to survey or resurvey State boundaries, so here it says we have no authority to survey or resurvey state boundaries. Quarter-section corners should not be established between closing corners on State boundaries. Although the closing corners themselves are established, state names should not be marked on the monuments.



3-70

Quarter-section corners are established between closing corners for sections closing on a reservation or grant boundary. Since the Bureau of Land Management has no general authority to survey or resurvey State boundaries, quarter-section corners should not be established between closing corners on State boundaries. Although the closing corners themselves are established, State names should not be marked on the monuments (sections 4-25 and 5-19).

So it is telling us that we have no general authority to survey or resurvey a state boundary so therefore don't do it. The only corners that you will establish on that State boundary are closing corners where the sections lines come up and meet the boundary. That is in conflict with what that memorandum said and we will come back and look at the memorandum again after we have looked through what the manual says. The thinking at this time was it is a state boundary, we have no authority to determine where the state boundary is only the states can do that therefore we have to be very careful about establishing monuments on that state line that the state may not think it is in the proper place.

Well if you think about it that doesn't allow us to identify the boundary of the federal land. If the boundary of the federal land is a state boundary then we have to survey the state boundary to identify the land and we definitely have the authority to survey the boundaries of the federal lands. The Bureau has made this memorandum that was signed and has been in effect since 1990. It seems to have worked fine, we haven't had any problems with it no one has challenged on that but it is at variance with what the current manual says.

Section 4-25

Section 4-25 of the Manual says closing township corners are marked cc on the half of which closing line approaches the monument with the township or range on the same half and the range, township, or sections in the proper quadrant. Also as far as known at the time, the township, range, section, or initials or abbreviations, reservation, grant or private claim upon which the township exterior closes. So generally pretty straightforward stuff. The name of the state is not placed on the monument of a closing corner even though the monument is intended to be placed on the state boundary.

4-25

Closing township corners are marked "CC" on the half from which the closing line approaches the monument, with the township (or range) on the same half, and the ranges (or townships) and sections in the proper quadrants; also (as far as known at the time) the township, range, and section, or initials or abbreviation of the reservation, grant, or private claim upon which the township exterior closes. The name of a State is not placed on the monument of a closing corner even though the monument is intended to be placed on the State boundary.

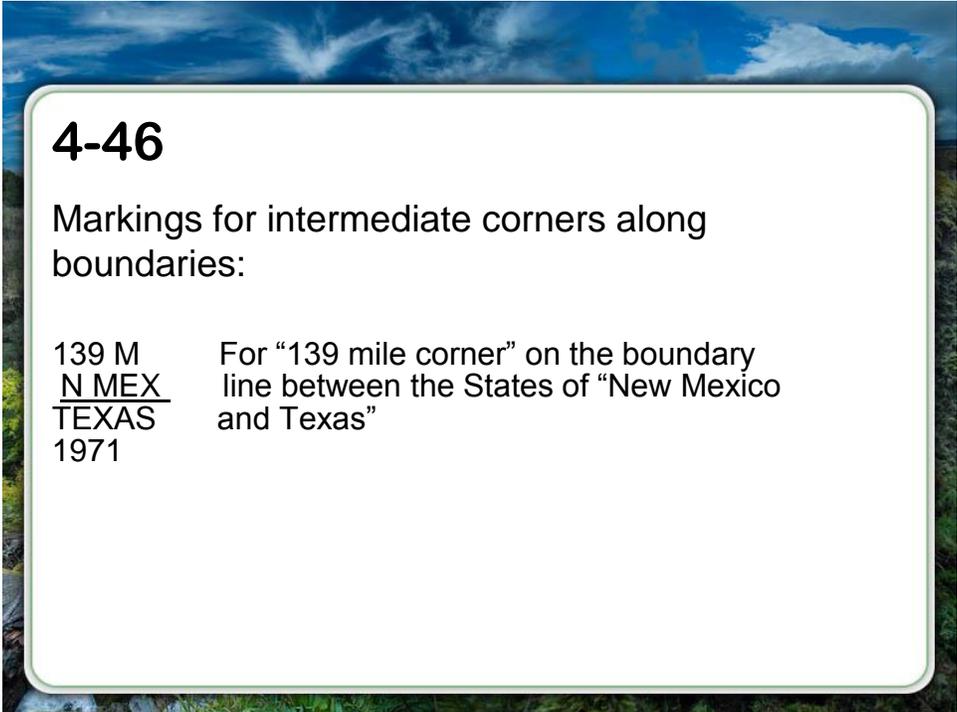
Ok now that still makes sense if it is a closing corner and a closing corner is an approximation of the state boundary then it makes sense not to mark the state name on there.

However if we have resurveyed the boundary, and we are marking where the section line intersects that resurveyed boundary then it makes sense to mark that as a corner of minimum control and mark the state names on there.

There has been several changes in thinking over time and the '73 Manual is sort of a snapshot of what the thinking was in '73. The '90 Instruction Memorandum is a snapshot of what the current thinking is.

Section 4-46

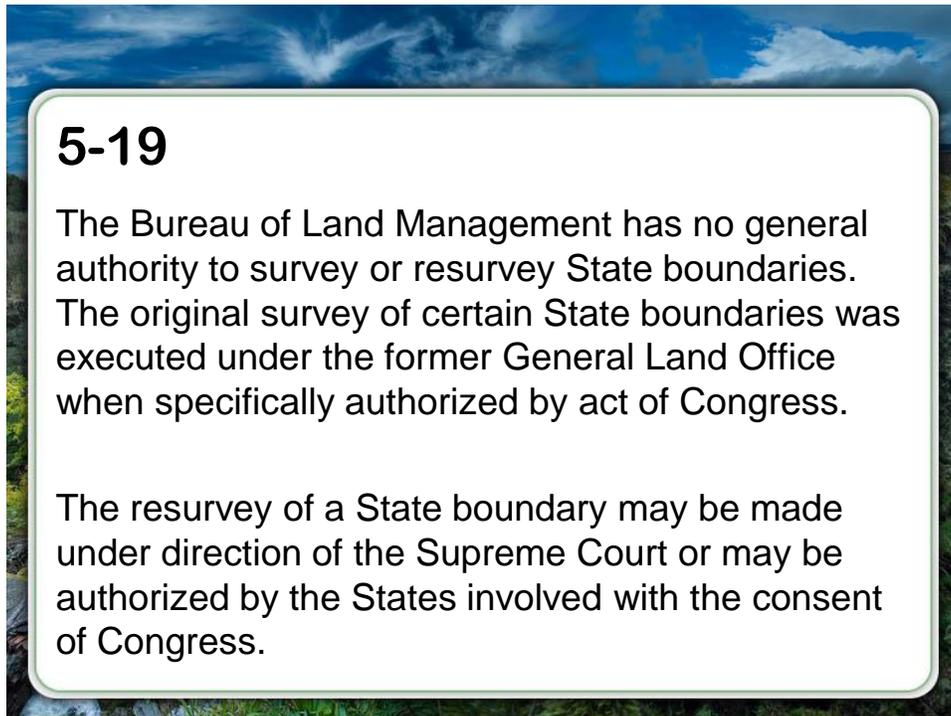
Let's go on a little farther here. It tells us how to mark in Section 4-46 how to mark mile post corners.



Remember the current manual tells us we can remonument milepost on a state boundary so it tells us we mark the milepost number, the state names and the date so it gives us direction there and that would still follow-through and be true under the current policy as well. That would not change how we might mark monuments.

Section 5-19

Section 5-19 the Bureau of Land Management again has no general authority to survey or resurvey state boundaries. The original survey of certain state boundaries was executed under the former General Land Office specifically authorized by acts of Congress.



The resurvey of a state boundary may be made under direction of the Supreme Court or may be authorized by states involved with the consent of Congress. In connection with a survey or resurvey of public lands it is proper (so here it is telling us what we can do when we are doing public lands) to resurvey or retrace as much of the state boundary as may be needed for a suitable closing.

5-19 (Cont'd)

In connection with the survey or resurvey of public lands it is proper to retrace as much of the State boundary as may be needed for a suitable closing. Closing corners are not marked as defining the State boundary.

Identified original State boundary corners may properly be remonumented but lost corners should not be restored unless this is specifically sanctioned by appropriate authority.

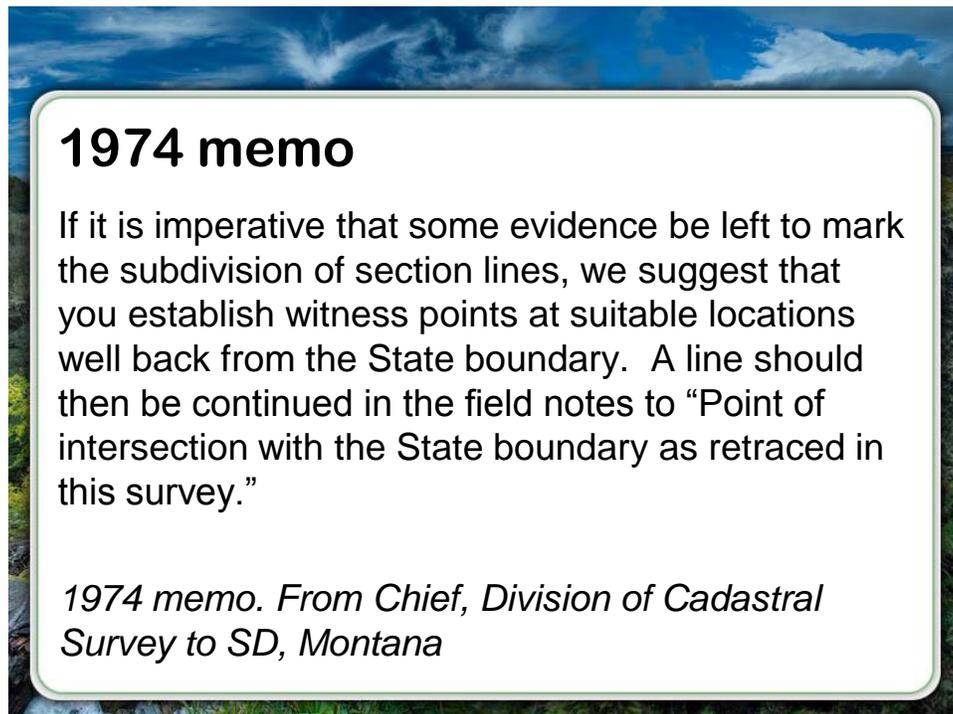
So it is telling us that we can only do retrace what we need, and that is only retrace. That is not setting any new monuments except the closing corners so we can only retrace.

Closing corners are not marked as defining the state boundary, identified original state boundary corners may properly be remonumented but lost corners should not be restored unless this is specifically sanctioned by appropriate authority. The 1990 Memorandum tells us that we can reestablish corners. Ok so at this point you might ask well, which is correct? And if we go back and look at the authority of the Manual and the authority of the Chief Cadastral Surveyor of the United States, and the authority of the Instruction Memorandum which was signed into the Secretary's authority.

Both the Manual and the Instruction Memorandum come from the same authority so it is therefore obviously clear that the Secretary can change a policy if that is all it is – a policy. The secretary can change that policy at any time they choose. In this case, the Secretary has determined that this is a policy issue not a legal issue, we did have the authority to do this and now that policy is changed since 1990 and we are going to resurvey state boundaries when we deem it necessary.

1974 Memorandum

Let's look at one more thing which is kind of a historical thing. This is a Memorandum written just after the '73 Manual but it was from the Washington Office, Division of Cadastral Surveys to the State of Montana and they had asked a question about – they were subdividing some sections and they were asking questions about how to monument again along the state boundary. Here is the answer. If it is imperative that some evidence be left to mark the subdivision of section lines, we suggest that you establish witness points at suitable locations well back from the state boundary. A line should then be continued in the field notes to the point of intersection with the state boundary as retraced in this survey. What they are saying here is that we are subdividing a section.



Let's say the northeast quarter of the section is against the state boundary therefore we need a monument there at the 16th corner, they are saying don't monument that. Set a witness corner on the subdivision of section line but off the state boundary. It says well off, so a considerable distance off that marks the line, then you project the line on through the intersection. Well if you think about it that doesn't tell a manager where the boundary is, that tells the manager where one of the lines is but it doesn't tell him where the corner of the parcel is and really doesn't mark the boundary of the line.

This was a policy for awhile. This was sort of the thinking we don't need to have any authority to get close to that boundary so be careful. Again the '90 memo changes that. Let's go back and look at that '90 memo again just to clarify. This is our current policy.

The retracement and resurvey of state boundaries are authorized to the extent and it says resurvey that means we are setting new monuments to the extent that they are necessary to provide control for the survey or resurvey of adjacent to the public land survey system for the identification of federal lands. We can do that to identify federal lands and then it says this includes the reestablishment and remonumentation of mileposts or state boundaries, and the establishment and monumentation of corners of minimal control along the state boundaries. We can reestablish mileposts. The corner of township, range, and section lines which intersect state boundaries will continue to be established as closing corners. That is the current policy, that is what BLM is expected to do.

Let's speak a little bit to the private sector now. If you are called upon to perform an administrative survey for a federal agency of federal land adjacent to a state boundary, what practice might you employ?

I think the monumenting of the corners on the boundary of the federal parcel definitely you want to do. The federal government has every right, and you have every right as a surveyor under contract for that federal agency to monument the boundaries of their parcel. If you need to retrace that line to establish corner points that define the federal land I think you have every right to do that. BLM is going a step farther with our authority to actually reestablish monuments along the line.

As a private surveyor working under state authority, I think I would probably hesitate to go that far. This is the policy and it gives you just a little bit of history. I think it is important when you are working along a state line, depending on your state organization and how your state is organized you generally will have some kind of a surveyor that you can go to and talk with about this.

Some places like the Department of Natural Resources. Different states are organized differently I would suggest you do that as well. It's better to make sure that we got everything covered up front than to get part way in a survey and realize that we are roughing someone's feathers.

The 1990 Memorandum is the policy and that is what we are going to do as a BLM surveyor to survey federal lands, but we should also coordinate that with the state and make sure that they are on board and make sure we don't have any issues that we aren't thinking about.

International Boundaries

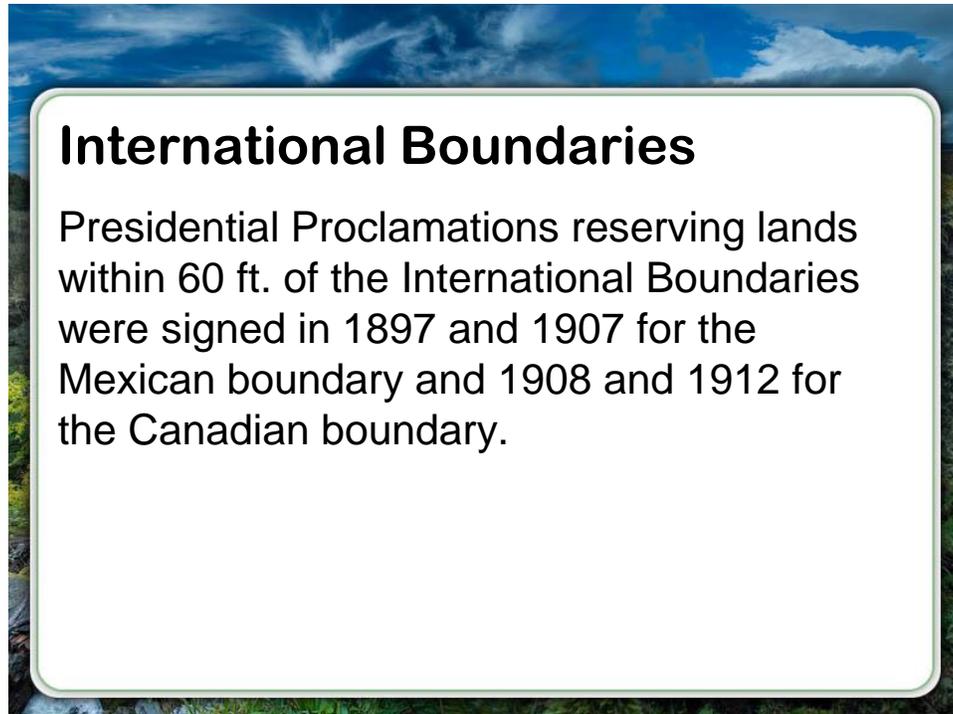
Now, let's talk about International boundaries for just a minute. These are a little different and there is nothing really special here. But, I want to talk about, the key point which is you contact the proper authority to get authority to work on International boundaries and that is just really important. There are places especially on the Canadian border that are very isolated and you may think well I really don't need to do this – but it is important that you do.

It doesn't matter if you are in Alaska , it is important that you contact the proper officials and that you get authority and generally that you notify local law enforcement authority that you are

going to be working along there. That is important as well and so we just want to talk a little bit about that.

A little bit about the history of the surveys of the boundary because there are a couple interesting things there. First of all, by Presidential Proclamation, there was a reservation of 60 feet along the international boundaries and but it wasn't in the beginning. It didn't start until 1897.

In 1907 on the Mexican boundary and 1908 and 1912 on the Canadian boundary, so it was a while before these reservations actually came into effect.

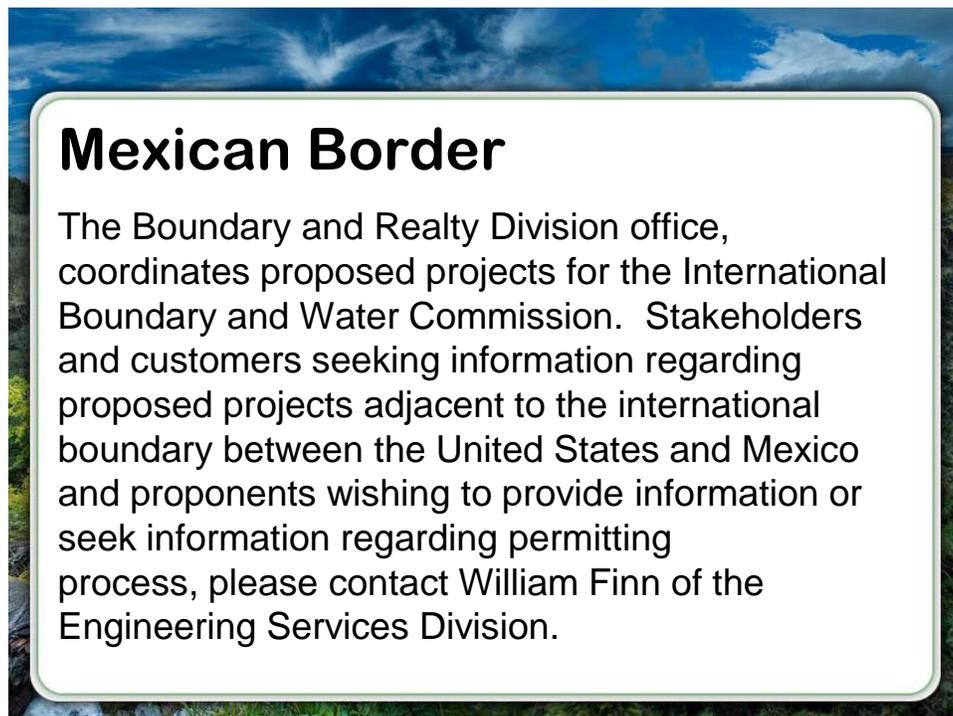


So we have surveys and plats before that and you will see and I will show you some of those pretty soon where the 60 ft isn't there and later we have plats where they are.

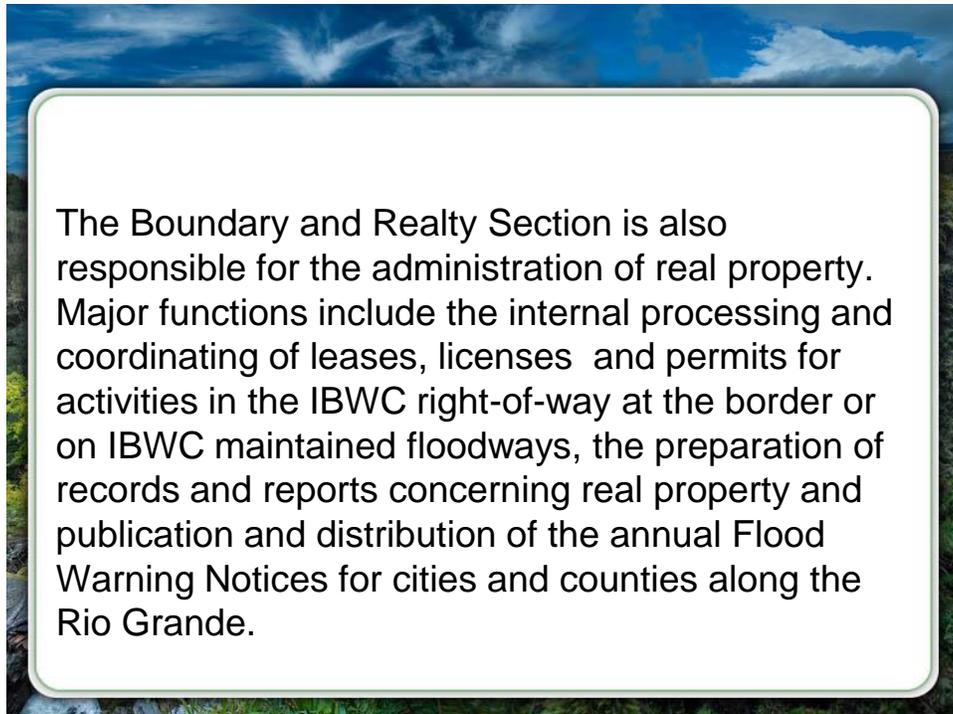
Mexican Border

On the Mexican border, the boundary and realty division office of International Boundary Water Commission are the people you want to talk to. And this information here on this slide comes from their website. They have a good website.

They say stakeholders and customers seeking information regarding proposed projects adjacent to the International boundary between the United States and Mexico and proponents wishing to provide information, or seeking information regarding promedic processes, please contact the Engineering Services Division. So that is who you want to talk to.



The realty section is responsible for the administration of real property, major functions include internal processes, coordinating of leases, licenses and permit activities, and it goes on to explain all of that they do there. So it is clear that this is the group you need to talk to any time you are going to be working anywhere close to the International boundary.

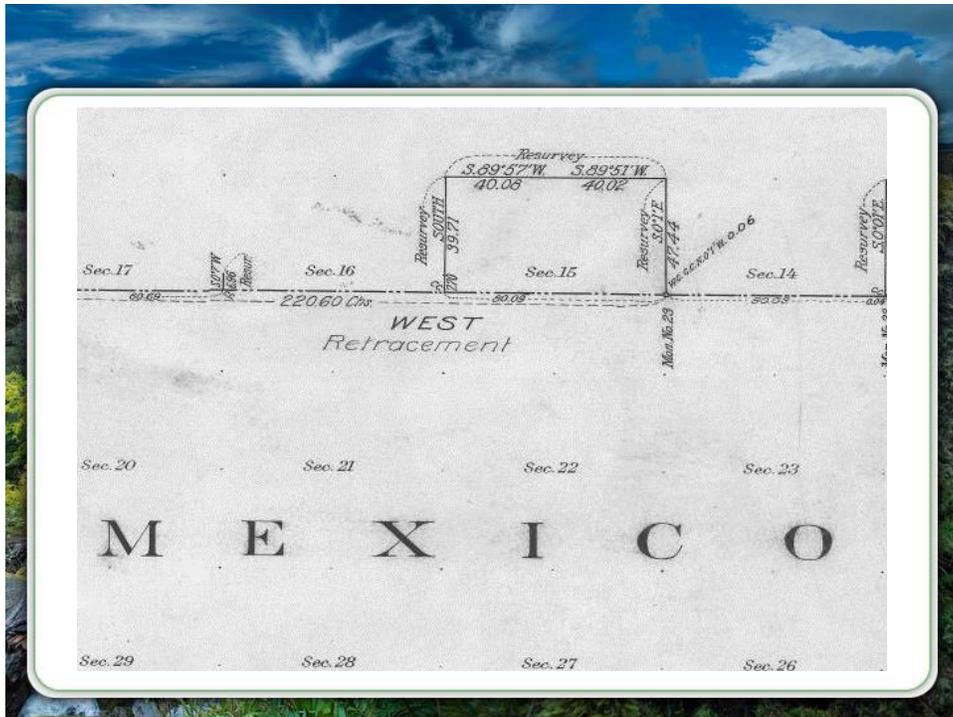


The Boundary and Realty Section is also responsible for the administration of real property. Major functions include the internal processing and coordinating of leases, licenses and permits for activities in the IBWC right-of-way at the border or on IBWC maintained floodways, the preparation of records and reports concerning real property and publication and distribution of the annual Flood Warning Notices for cities and counties along the Rio Grande.

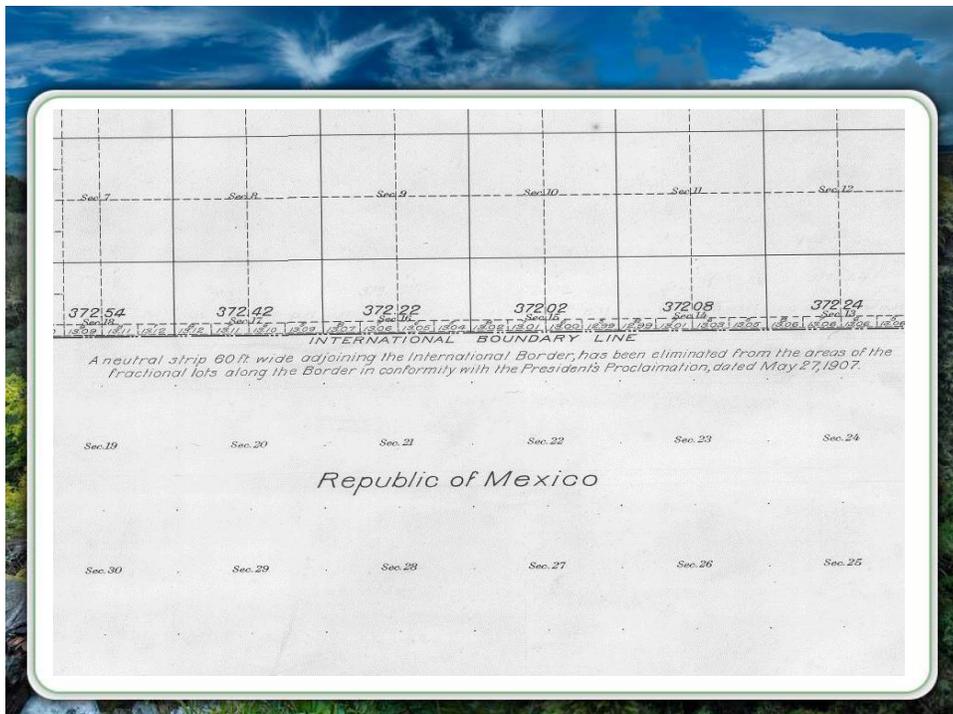
This is where you want to go. You want to talk to these people, make sure you get permission if you are working along that Mexican boundary.

The other thing is, your local law enforcement, be sure and notify them that you are going to be there and that you have permits and permissions.

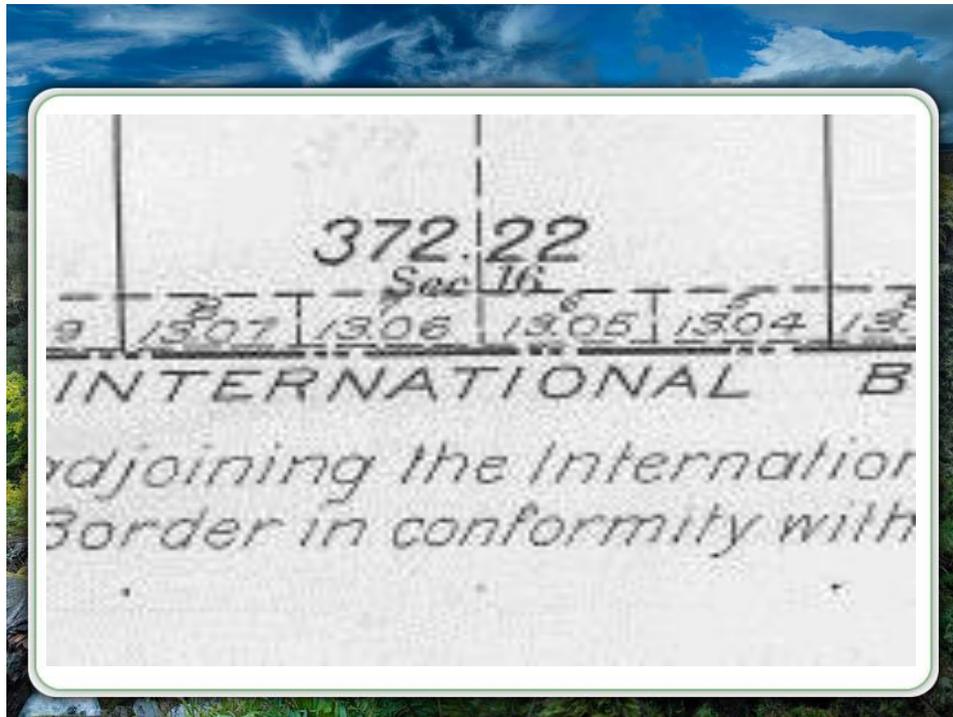
Let's look at a couple of those early plats. This is one prior to the withdrawal the 60 ft withdrawal. On this plat, the boundary of Section 15 is the Mexican border. The land goes right up to the border and so any patents that were issued based on this plat would go all the way to the border.



If we look at this next one, on first look it looks like the lots go all the way to the boundary. If we look a little closer and it is hard to see, there is a dashed line just North of that boundary of the International boundary.



What they did here is created lots 5, 6, 7 and 8, and they go to a line that is 60 feet North of the International boundary and then there is no designation for the land in the withdrawn area.



So this is one way that they show these. The lots go almost to the boundary, but see there is a dashed line across there showing that the withdraw is there. Another way is a plat like this where they actually lotted and if you look at the lots down on the bottom, they actually lotted this withdrawn area and the east half of this section is the withdrawal is in effect.

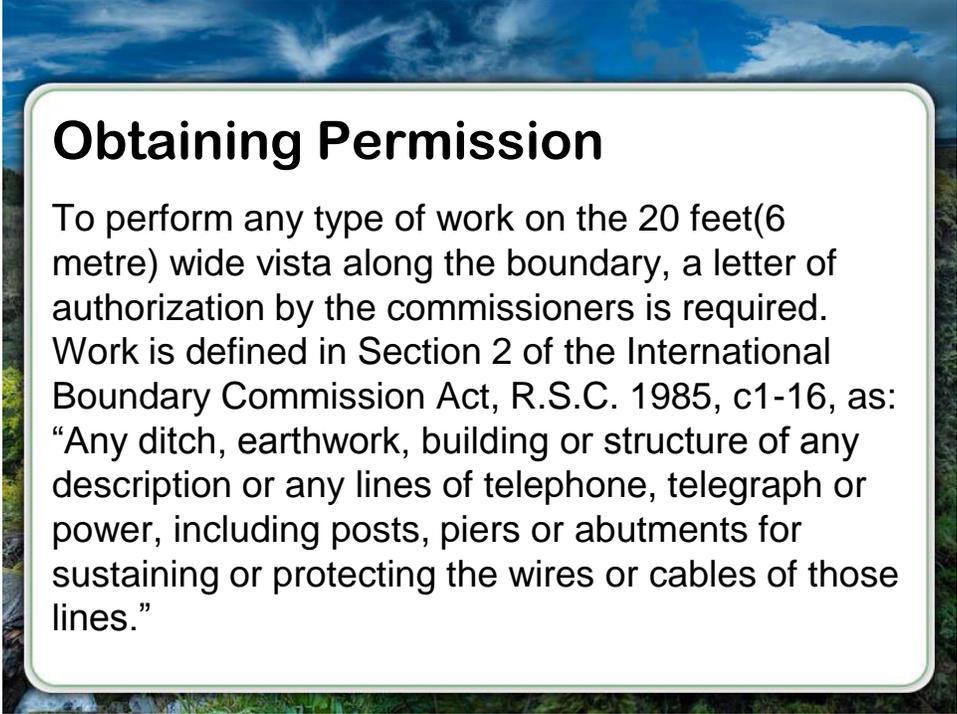
Canadian Border

Well let's talk just a little bit about the Canadian border and this is information on how to contact and who to contact there. There is a Canadian section in the United States section so these are the people who you want to contact when working on the Canadian border.



Many of the same issues again make sure you contact, make sure you contact law enforcement. There is a 60-foot buffer there as well. Here they say obtaining permission for construction to perform any type of work – any type of work on the 20 feet 6 meter wide vista along the boundary a letter of authorization by the Commissioner is required.

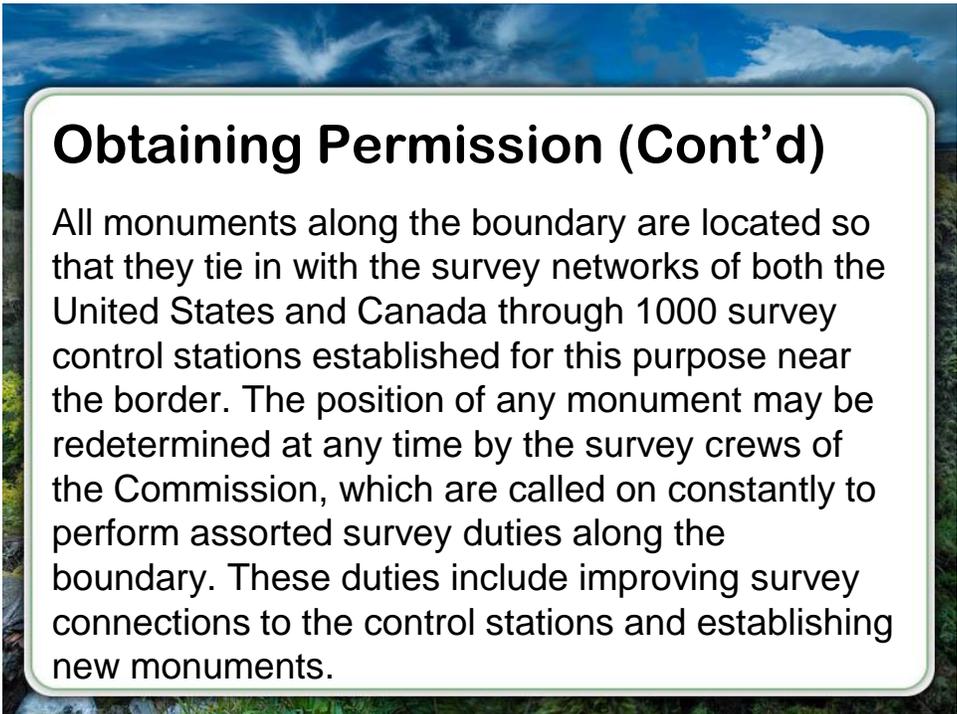
Work is defined and they define it here as any ditch, earthwork, building or structure or any description of any lines of telephone, telegraph from power including posts, piers, adjustments to sustain or protect the wires, cables of those wires. Well obviously, surveying is going to fit into all of this. If you are up there doing anything along that boundary, you need to talk to them and let them know what is going on. There is another issue as well.



Obtaining Permission

To perform any type of work on the 20 feet(6 metre) wide vista along the boundary, a letter of authorization by the commissioners is required. Work is defined in Section 2 of the International Boundary Commission Act, R.S.C. 1985, c1-16, as: “Any ditch, earthwork, building or structure of any description or any lines of telephone, telegraph or power, including posts, piers or abutments for sustaining or protecting the wires or cables of those lines.”

All monuments along the boundary are located so that they tie in with the survey network of both the United States and Canada through a thousand survey control stations established for this purpose near the border. The position of any monument can be redetermined at any time by the survey crews from the Commission, which are called on constantly to perform assorted survey duties along the boundary.



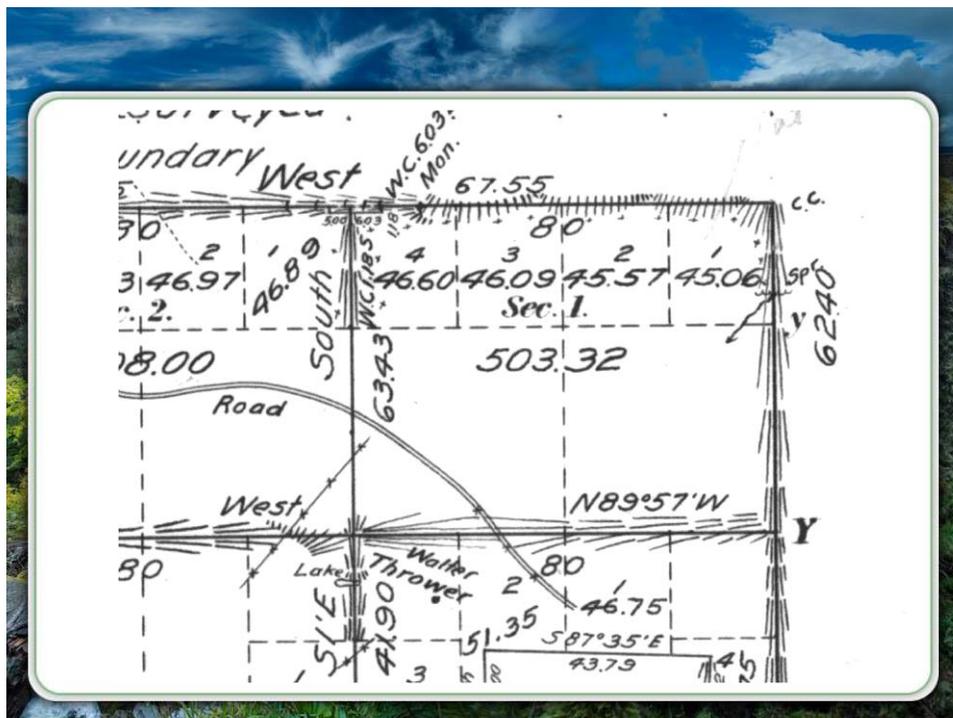
Obtaining Permission (Cont'd)

All monuments along the boundary are located so that they tie in with the survey networks of both the United States and Canada through 1000 survey control stations established for this purpose near the border. The position of any monument may be redetermined at any time by the survey crews of the Commission, which are called on constantly to perform assorted survey duties along the boundary. These duties include improving survey connections to the control stations and establishing new monuments.

These duties include improving survey connections to the control stations and establishing new monuments.

So, the Commission has a survey crew as well and part of their job is reestablishing monuments and working along that boundary. So any time you are going to be working along that boundary make sure you talk to the Commission and make sure you understand what the survey crew is doing out there and they may be able to give you some real good advice so that is what you need to do along that boundary.

This is the Canadian one plat and you will notice here that the lots extend all the way to the boundary again this was before the proclamation.



Here is one where lot 1 was patented prior to the proclamation so it extends all the way to boundary. Lot 5, 6, and 7 were not patented so there is that 60-foot buffer there and the buffered area is not given any designation it is just there.

Now, let's look at a few of the monuments and these are just things that came directly from the website but they will show some different monuments and different areas and give you some information about them.

Along the boundary between New Brunswick and Maine small granite monuments and taller cast iron posts mark the boundary. This picture is an example of a cast-iron post.



Later we have these big discs. These are down in the ground but really substantial.

Bronze disks set in concrete cylinders flush with the ground can be seen along the Quebec-Maine highlands south of the St. Lawrence River valley.



Here we have 1 ½ meter or 5 ft high granite monuments so those are monuments that are going to be really substantial and should be easy to find.

Further west, along the New York-Québec boundary 1.5 metres or 5 feet high granite monuments are set. This picture shows an example of such a monument.



Along the shorelines of the waters connecting the Great Lakes conical concrete monuments reference the boundary course. This picture is of a monument along the St.-Mary's river which is 0.6 metres or 2 feet in diameter.



Concrete monuments, here these are bronze small bronze posts. Again these should be easy to identify. Again, cast iron monuments along this section.

From the Northernmost point of Lake of the Woods to Lake Superior and along the Portland Canal, small bronze posts 0.20 metre high are set in concrete.



On the Prairies, the original mounds of sod have been replaced by cast iron monuments which are now replaced by stainless steel posts of the same dimensions, 1.5 metres or 5 feet high.



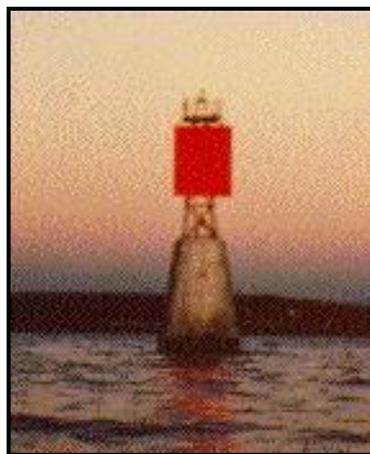
Aluminum bronze monuments and of course the other thing that you here is the right of way that has been cleared out along the boundary so it is pretty easy to identify where the boundary is.

Through the Rocky Mountains aluminum-bronze monuments are used.



Here we have some lighted steel towers (6-27 meters or 20 to 90 feet high) and that is interesting for water boundaries.

On the west coast, lighted steel towers, 6 to 27 metres or 20 to 90 feet high, provide range marks for the water boundary.



Here in Alaska some more really substantial monuments. This is information on the website it is just kind of interesting to see that really a lot of work has been put in to these monuments.

Along the Alaska boundary, most monuments are 0.8 metre or 2.5 foot cones of aluminum-bronze, shown left, are set in concrete bases or occasionally cemented into rock.



Here is another one in town in a city area.

At major boundary road crossings large concrete monuments with pebbled finish mark the boundary line.



Here is one on an overpass or a bridge.

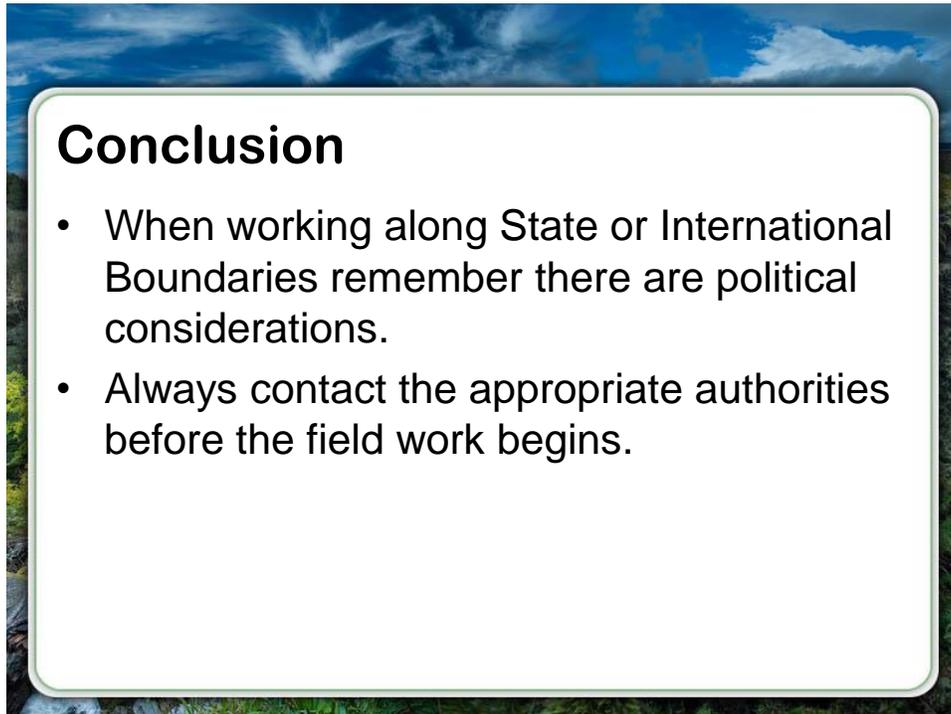
The boundary line on a bridge or tunnel is marked by a tablet.



It is interesting to see what is out there. And it is very clear that an awful lot of information and an awful lot of work has been done to identify the boundary to keep the boundary well identified and well marked.

Conclusion

If you are going to be working along that boundary, make sure you contact the boundary commission, make sure you contact local law enforcement. That goes for both Mexico and Canada and you know the time it takes to do that is well worth the hassle you might avoid if you chose not to do that. So that is all we really have about international boundaries.



Conclusion

- When working along State or International Boundaries remember there are political considerations.
- Always contact the appropriate authorities before the field work begins.

The state boundaries, we just wanted to take a few minutes to cover a few key things. The memorandum for the state boundaries is part of your handouts so you have that entire thing, you can read through or keep it for a reference. The international boundaries websites both for the Canadian and the Mexican side are really helpful and you should go to those if you are going to do work along that boundary. And that concludes this session – thank you.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240



IN REPLY REFER TO:
9614 (720)

February 6, 1990

EMS Transmission 2/9/90
Instruction Memorandum No. 90-319
Expires 9/30/91

To: All State Directors

From: Director

Subject: Cadastral Resurveys of Federal Lands Adjacent to State Boundaries

The policy of the Bureau of Land Management, Cadastral Survey, concerning the survey/resurvey of State Boundaries has been consistent for many years. The Manual of Surveying Instructions, 1973, Section 5-19, clearly states that the Bureau of Land Management has no general authority to survey or resurvey State Boundaries and that surveys and resurveys of State Boundaries may be undertaken when specifically authorized by the Supreme Court or the States involved with the approval of Congress. However, our authority to survey/resurvey Federal Lands includes those Federal Lands which are adjacent to and abut State boundaries.

The policy in effect for many years has been that retracements of State Boundaries could be undertaken when necessary to establish/reestablish closing corners of the surveys/resurveys of the Federal Land. During the course of the retracement of those portions of the State boundaries necessary to complete the Federal Land survey work, no mile posts were authorized to be reestablished. Where mile posts were conclusively identified they could be remonumented.

Monuments of the Public Land Survey System (PLSS) were not to be established on State boundaries except closing corners established at intersection of the PLSS and State boundaries. All 1/4 section corners and minor subdivision corners were to be established as closing subdivision-of-section corners if section subdivision lines were run. If the subdivision of section lines were not run, minor subdivision corners were not authorized to be established on State boundaries.

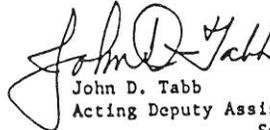
Where it was deemed necessary to reestablish mile posts on a State boundary during the course of a survey/resurvey of adjacent PLSS lands it has been the policy to contact the adjoining States. Notification consisted of providing the appropriate Attorney Generals of the adjoining States with a letter of our intent and desire to resurvey a portion of their State boundary. We then asked for their concurrence and agreement to reestablish lost mile posts which identify the common State boundary. If they so desired to have a representative present during the resurvey, during the actual setting of the monuments, or simply to be provided with copies of the resurvey following approval; we have complied with their wishes.

It is a prime responsibility of Cadastral Survey to ensure that boundaries are identifiable, usable, and locatable as a result of our survey efforts. Based on this responsibility, policy amendments on the surveys/resurveys of State boundaries are necessary.

The retracement and resurvey of State boundaries are authorized to the extent they are necessary to provide control for the survey/resurvey of the adjacent PLSS for the identification of Federal Lands. This includes the reestablishment and monumentation of Mile Posts on State boundaries and the establishment and monumentation of corners of minimum control along State boundaries. The corners of Township, Range, and Section lines which intersect State boundaries will continue to be established as closing corners. This amendment to the policy does not require the notification of adjoining States of our intent to resurvey a portion of their State boundary, but does not preclude State Offices from doing so. However, upon approval and official filing of the resurvey plat copies of the plats and field notes will be provided to the appropriate State officials with a letter stating the purpose of our resurvey effort.

This amendment to the policy does not extend to or provide authority for the resurvey of State boundaries where there is no concurrent survey/resurvey of adjacent Federal Lands. Where the survey/resurvey of a portion of a State boundary is requested without a request for adjacent PLSS work the provisions of Section 5-19 of the Manual of Surveying Instructions, 1973, must be followed.

If there are any questions on this policy, please contact Keith Williams of our Division of Cadastral Survey, at FTS-653-8798.



John D. Tabb
Acting Deputy Assistant Director,
Support Services