

# Certified Federal Surveyors Certification Program



## Course 3 Survey Evidence Analysis

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## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

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**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 1 (44 minutes)

ICON LEGEND

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING OF CORNER EVIDENCE – PART 1

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2009

**BLM MANUAL** Before you begin this course, take a few moments to read Chapter 4 and 6 of your 2009 BLM Manual.

### Introduction

Hello I'm Stan French and I'm here to discuss evaluation of corner evidence. My current title is Chief Cadastral Surveyor for the state of Idaho. I'm with the Bureau of Land Management.

I've been with the bureau about thirteen years in my career. Sandwiched in between there I have thirteen years with the Forest Service on the Mark Twain Natural Forest in beautiful southern Missouri. I am also licensed in the state of Missouri and have had the opportunity to work with a lot of private surveyors in that sector.

Most of my field experience in the examples that I'm going to draw from for this presentation are from the Midwest and the Great Lakes portion of the United States. My examples are primarily with the public land survey system, however the principles really apply to the broad spectrum of boundary surveying. Evaluation of corner evidence, this is a very subjective topic, there are no black and white answers.

We rely on general principles, these principles are gathered from common law and accepted principles of survey practice. The format of what I'm going to do with this presentation, I'm going to use some overheads here. I'm going to use some Power Point. And we may even discuss some case studies from court cases in the Interior Board of Land Appeals. And doing this presentation, I typically do it to a live audience and I had one gentlemen tell me; an elderly gentlemen afterwards he came up and told me he said "Young man I enjoyed your topic." He said "At least for the parts where I was awake." So, I hope you can stay awake and I think we'll enjoy this evaluation of corner evidence.



**HANDOUT** A copy of Stan's presentation that he uses during topics 1-5 can be found in the Handout section at the end of this study guide.

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### Course Objectives

I want to give you an overview of the course, let me go through the outline. First we're going to talk about the general concepts and principles of evaluation of corner evidence. Then we're going to talk about the classification of corner points, existent, obliterated, and lost. Then we'll discuss the basic survey procedures and what we do in each step of the way in the evaluation process. Let me go over the objectives that I hope to accomplish with the evaluation of corner evidence.

First, I want to reinforce some principles that will assist you in the evaluating evidence for its ability to serve as proof of a corner point. And I want to help you determine a couple of questions. What is the best evidence of a corner point? How much evidence is enough?

Second, after evaluating the available evidence at a corner point according to principles of evidence for your geographic area. That's an important point-your geographic area. You will state whether the corner point should be classified as **existed, obliterated or lost**. And you'll understand why these terms are used.

Third, when the original monument and it's accessories are gone you will consider all means for ascertaining the location of the corner point by listing six general elements of **collateral evidence**. And we'll be discussing these six general elements of collateral evidence at length. Collateral evidence that should be evaluated for their ability to serve as proof of the corner point before determining the corner point to be lost.

Fourth, you will author corner descriptions and field notes that more thoroughly describe and document all of the elements of evidence you found and utilized to determine the corner point and which demonstrate your reasons for rejecting **conflicting evidence**.

Finally, an all encompassing objective you will be able to evaluate evidence and determine the most defensible position for an original corner point that is based on common law principles of evidence and its convincing to others and a court of law that you are right.



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### Basic Legal Principles

I'm going to cover some fundamental **statute law** and **common law** principles. Let's mention statute law here.

Statute law is written law that is established by legislatures of the state and Congress. Statute law created the public land survey system. It is statute law that tells us that corners are immovable. One of the sources that I use for statute law and what it says and how it's interpreted is the United States Code.

The US Code is the official restatement and consolidation and codification in convenient form of the general and permanent laws which are statutes of the United States. And here we have an example of title forty-three, public lands and it has codified the act of 1805. The act of 1805 is statute law and it tells us that the corner points are immovable.

Common law is legal decisions that are rendered by the court systems to settle civil disputes. It is common law that provides us principles on how to evaluate evidence and serve as proof of a corner point. Common law sort of gives surveyors the road map on how to evaluate evidence. We have some kind of landmark decisions; one of those is the Supreme Court in **Cragin v. Powell** that was way back in 1888. It was this Supreme Court decision that coined the phrase "follow the footsteps of the original surveyor".

Many of us thought that those words came from some famous surveyor but we get that right from the court. Another court case that I'll mention is **U.S. vs. Doyle** and that was in 1972. That court said "for corners to be lost they must be so completely lost, not just a little bit lost but completely lost that they can not be replaced by reference to any existent data or other sources of information. And before courses and distances can determine boundary, all means for ascertaining location of the lost monuments must first be exhausted.

I want to talk about evidence we just covered statute and common law and as we get into surveying, **resurveys and retracements**, we are looking for evidence of the original survey. Here we have a definition of evidence. In law, evidence is material that is legally presented at a trial as a means of ascertaining the truth or falsity of an alleged matter of fact under investigation.

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Now, what we want to look at, what is evidence? What constitutes evidence in a boundary survey? Well in the case for corner recovery it is any information that surveyors utilize to form the basis of their decisions about the correct location of a corner point.

Looking from **BLM's glossary of survey and mapping terms** it says "evidence includes testimony, physical objects, marks, traces of former objects or relationship between any of these." Now what is the method of showing relationship between those objects? Then it says "which may furnish proof or part of a proof of a corner location or line location."

### Categories of Evidence

So, let me show you some general categories of evidence and examples that as it would relate in our retracement surveys.

There are four general categories of evidence: **real evidence, written evidence, oral evidence and judicial notice.**

Real is evidence that is a tangible thing, physical objects that you could touch or feel. So in the survey arena those naturally would include monuments and accessories. Common usage is another form of evidence that we'll discuss. These may be things like rectangular road patterns where the road itself is that best evidence of a corner point. Occupation such as fences, hedge rows those kinds of things. And topography, topography that was called for in the general land office notes or in a deed description, anything that leads us to where the line is on the ground. These could be water courses, bluffs any topographic feature.

Second there is written evidence and we're going to call these just records these are the field notes and plats of surveys any other documents deeds, descriptions, maps and I would also add aerial photos as a form of a record.

Then there is oral evidence, this is the evidence that is given by witnesses and for our course here I'm just going to call that testimony evidence. Finally there is judicial notice.

Judicial notice is evidence that is in the form of knowledge, commonly accepted facts, the meanings of English words or phrases and laws of nature. For example, we know it's a law of nature that wood posts decay. And wood posts were often used as monuments to a corner point. The word obliterated as used in the survey arena to define the status of a corner

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point doesn't mean wiped from the face of the earth but it means the original monument and the accessories aren't there but there's are other indicia that lead to the corner point.

So, when we say or hear obliterated in terms of say boundary survey **litigation** it has a different meaning then what Webster would have. Another example for the laws of nature in boundary surveys we know that river banks erode, rivers are ambulatory. And finally, we have mathematics. Mathematics forms the foundation of measurements so I'm putting measurements as a form of evidence under judicial notice.

For instance, two plus two equals four, that's a law of mathematics. Unless of course you have a good attorney and he'll argue that two plus two equals something else.

Next, I want to talk about **collateral evidence** and define what that is. I'm going to be talking about evidence quite a bit and I'm going to emphasize collateral evidence and we want to define that. Just remember that the primary evidence of the corner point is the actual monument and the accessories.

Collateral evidence is any other form of evidence that is in addition to the primary evidence. Something I want to emphasize is that when the primary evidence is missing or destroyed, the remaining forms of evidence considered collaterally might be the best indication of the corner.

And again, we can see a definition here that collateral evidence is the acts or testimony of interested land owners, competent surveyors versus the incompetent surveyors, other qualified local authorities and acceptable record or any other indicia that leads to the original corner location.

The Manual, the BLM Manual of Surveying Instructions at 7-21 says "*the rules for the restoration of lost corners should not be applied until all original and collateral evidence has been developed*". In other words, if you don't have the original monument you don't just throw up your hands and proportion like crazy.

Measurements by revealing relationships to other elements of evidence and the original record play an important role in the decision to utilize collateral evidence to prove a corner point. Measurements are very important they show up relationships. Corners should be restored by the nearest to the most reliable of the available collateral evidence.

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Collateral evidence in surveying might be similar to circumstantial evidence in law. By itself it may seem insignificant but an abundance of it could be convincing. By itself a fence corner might be insignificant or even misleading but if the adjoining landowners know how the fence got there and can state that there was a monument there then we start to hone in on the corner point.

So, we've defined what evidence is and the kinds of evidence that we can use in boundary surveying and I want to emphasize those here. Direct evidence is the original monument and the **accessories**. We're gonna see some examples of these later. Sometimes if the testimony is powerful enough and convincing enough it can serve as proof the corner point by itself.

Also the records, if they relate, if we have a chain of records going back to the time of the original survey they can be powerful enough that they serve as tangible and convincing at face value. This evidence can stand on its own, it's direct evidence. We get down into collateral evidence and these are the things that we just talked about. Collateral evidence assists in confirming a corner point.

Several of these elements may be use to corroborate with each other to confirm a corner point. We are going to discuss at length testimony, records, common usage, topography, occupation and measurements. Remember these; you're going to remember those things when you're done with this course.

I want to make a few a comments about the law of **boundary evidence**. I'm not an attorney or anything like that, I'm a surveyor. But here is what Curtis Brown and the BLM Manual have to say about the law of boundary evidence. "It's a relative thing, it states general principles.

These principles have flexibility depending on the circumstances. The courts accept the premise of preponderance of evidence which is not the same as beyond a reasonable doubt". This is from evidence and procedure for boundary location. The Manual says "No set rules can be laid down as to what is sufficient evidence. Much is left to the skill fidelity and good judgment, the professional judgment, of the land surveyor.

Bearing in mind the relation of one monument to another". Here we see that again, relationship of one monument to another and the relation of all the

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recorded natural objects in items of topography. This judgment business, the surveyor is the one that judges the evidence of the corner point. The surveyor should be the one that is on the ground making that evaluation. You don't send out your technicians and tie in iron pins and come back and plat it. The surveyor should be making those professional judgments.

As a surveyor we are the judge of the evidence and I think that's where the term quasi judicial comes from where we puff up and say as land surveyors we have quasi judicial powers. Well, that applies that we are the first initial judge of the evidence. But you still have to be able to explain your evaluation and be able to explain the evidence to a judge and also to your peers. I think that's very important.

I want to quote just something that Curtis Brown says in his book talking about the law of evidence. He says "the only correct location for a written deed is in the position that a court of competent jurisdiction would decree to be the correct location. But it's up to the surveyor to compile the evidence and first evaluate it". Curtis also says "understanding the significance and value of particular piece of evidence is just as important as understanding the statutory and common laws that pertain to boundary location".

Further he says "disagreement based on stupidity, lack of knowledge, or plain contrariness is undesirable." Now I know we've all been in discussions and debates based on contrariness.

### Surveyor's Responsibilities

It has been said that the surveyor has a responsibility to more than just their client. The surveyor also has a responsibility to the **adjoiner** cause after all every boundary survey affects the adjoiner.

And in the case of the public land survey system, for example, one section corner casts its affect on at least four sections. And if you have lost corner points there could be miles and miles of boundary affected by one section corner. We have a responsibility to the client, to the adjoiner and we also have a responsibility to society.

They expect us to know the pertinent statute laws and the common law principles. And that carries into our other responsibility to the courts. The courts expect us to know what constitutes evidence of a boundary so we can present it before them. So we have a lot of responsibilities there when we evaluate and gather evidence.

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Let's look at evaluation of corner evidence. The surveyor should value and weigh the available evidence in order to come to conclusions of proof from that evidence that would place the corner in its original location and again be prepared to convince a court of law.

Here we have these are not the scales of justice these are scales that weigh evidence. The evaluation is guided by general principles derived from common law interpretation of how recovered evidence serves as proof of a corner point. We get these general principles, as I mentioned, from leading court decisions both federal and state. And we also get them from the Interior Board of Land Appeals.

The Interior Board of Land Appeals is the administrative hearing process that the Department of Interior employs. And I think it's basically to reduce the case load on the civil court system. But the Interior Board of the Land Appeals (IBLA) they hear a lot of boundary cases especially as they apply to the public land survey system and federal lands. We also have opinions from the U.S. Attorney General, and we have approved surveying practices that we get from professional societies and each of the state boards.

Even the Manual itself, the BLM Manual, is a book that compiles leading decisions for us. And if we follow the Manual we're basically following common law because the Manual follows leading judicial opinions and survey practice. Now I want to quote something here from Curtis Brown. Curtis Brown says "common law evolves to meet civil and economic needs of society and common law varies geographically".

But the admonition here is the evolution of any common law as it pertains to boundary location is nearly imperceptible. We naturally want boundaries to be stable; the principle is that they don't move. In fact, we have statutory laws that say boundaries are unchangeable. So as time goes by the original surveys were done beginning in the 1800's these monuments and accessories decay and become tougher to find with age.

So because of that, collateral evidence is going to accrue more weight. And we are going to have to recognize it and use it as proof of the corner point and the courts recognize this. And so there are elements of collateral evidence that we will gather and we'll use them to serve as proof of our corner points.

Also I want to point out that the evaluation of evidence is unique for each

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corner point in each different township in each different geographic area. There are no formulas there is only professional judgment. So you don't want to go from one geographic area or from one state to another and apply your principles of evidence that you were comfortable with in your area and go to another state. It may be in the prairie states that the fences are the best evidence of the corner point.

However if you go to a more mountainous state, fences may not be good evidence of a corner point. You need to get familiar with the conditions of each geographic area. Also the common law principles may vary from state to state and geographic area. So there are no formulas, there is only professional judgment.

### Corner Classifications

Now I want to get into this business of classifying corners as existent, obliterated, and lost. This is best demonstrated by some examples of looking at actual evidence but I want to first go over the definitions here.

Existent, obliterated or lost these are evidentiary classifications for a corner point based on the relative amount and quality. The relative amount and quality of available evidence and these are used by the courts in boundary matters.

So the courts use these terms existent, obliterated and lost. Let's look at the term **existent corner** as the Manual in section 6-11 describes it "*it is one whose position can be identified by verifying the evidence of the monument or its accessories.*"

Existent corner you verify evidence of the monument or its accessories. It could also be located by a acceptable supplemental survey record or some physical evidence or testimony but those would have to be very convincing for them to be classified as existent.

Let's jump down here to **obliterated corner**. This is where it starts to get a little tougher. It says an obliterated corner is one at whose point there are no remaining traces of the monument or its accessories. And we just mentioned that obliterated as the Manual describes it and as it applies to boundary survey evidence is different from Webster's definition.

There are no remaining traces of the monument or its accessories but whose location has been perpetuated or the point for which may be recovered

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beyond reasonable doubt by the acts and testimony of the interested land owners, competent surveyors, other qualified local officials or witnesses or by some acceptable record evidence.

Its goes on to say that a position that depends upon the use of collateral evidence can be accepted only duly supported generally through proper relation to known corners. This proper relation to known corners is why measurements are a form of evidence.

Measurements tell us relationship between known corners and other elements of the record. Measurements tells us distances to natural objects, stream crossings, line trees, offline tree blazes and positions determined by testimony.

Finally we get to **lost corner**. Lost corner is a point of a survey whose position cannot be determined either from traces of the original marks or from acceptable evidence. If there is some acceptable evidence of the original location of the corner that position will be employed.

The decision that a corner is lost should not be made until every means has been exercised that might aide in identifying its true original position. Determining a corner to be lost and then applying proportionate methods of restoring it is the surveyors' last resort. And too often we surveyors turn to it because it is a quick and easy solution and it's mathematical. But the courts over and over have admonished surveyors for being too quick to turn to proportionate measurement. They tell us, over and over to find all evidence, every shred of evidence, before we say that the corner point is lost.

Let me review basic survey procedures. First we're going to conduct **research**, then we're going to do our **investigation**, evaluation and then documentation. But let's look at research. This is where we really start to do our homework. Realizing that the plat, the survey notes, or the land description that creates the parcel or the original survey is our baseline evidence. All of our evidence has to relate to our baseline evidence.

We can look to the instructions with the deputy surveyors in the case of the general land office surveys to see how they were supposed to conduct their surveys. How did they mark their monuments? How did they mark their accessories? What things were they supposed to tie in along a major line such as topography. We will research subsequent surveys from the county recorders office or they county's assessor's office wherever they exist.



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We'll query other private surveyors. We'll query adjacent landowners for unrecorded surveys. Also aerial photos, maps and I threw in GIS here.

This is kind of a recent tool, GIS, and surveyors you know, we think it's the bane of surveying. GIS can be misused but it is a wonderful, wonderful way to look at digital aerial photography to see lines of occupation and maybe even superimpose on top of that a mathematical rendition of the survey lines that you're trying to retrace.

So I think GIS is a good form of evidence and we should use that in our research.

### Investigation and Evaluation

Next is the investigation phase. This is where we get to go on the land and I got to tell you this is the portion of surveying that really got me into the profession. Everyday was a new adventure. We got to see some new land, some new country everyday. So this is where we want to first find the existent corner points.

This is where we can make a start, we know we're in the right place now we can extend these survey lines to recover the whole bounds of the scope of the project that we're after. So, first we want to find the existent corners and when you do this pay attention to what they look like. How were the marks made on the stone? How were the trees scribed? This is also where we seek witnesses and testimony and this in its self can be an adventure.

Because you can bet anytime you have a boundary line someone on one side or the other is going to be very concerned. This is where we make measurements, we'll gather all the other collateral evidence, and we'll locate the topography. We'll also do trial mathematical proportions to experiment with where that corner point may be. If the monument and accessories are missing we're going to do some mathematical experimentation on where the point may be, where we should be looking and focusing on the ground.

Third, we do our **evaluation** after we've been to the field, we've done our research it's time to a decision. This is where we make the professional decisions to determine the corner point decisions according to the best available evidence. Decisions must be based on statute law, common law principles of evidence and approved survey practices.

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This is what separates the survey professional from the survey technician. The technician is working for his employer; the professional is working for his client, adjoiner, for society and is responsible to the courts. This is where the surveyor earns their pay.

After we make our evaluation we have one thing left and that's the documentation. And I don't care where you practice in the country, if you're in the private sector, if you work for government, surveyors always put off this documentation. You've done the research, the investigation, the fun stuff and now its time to sit down and document. But you know it has been said that "if you don't document it, you didn't do it". So surveyors we've got to do a better job of documenting. So, document all the elements of evidence and the survey procedures that define the corner points.

You prepare those in the form of a plat and survey notes and then be prepared to defend that against all challenges. So, the job isn't done until the documentation is done. I'm going to put a little quiz in front of you. It's a scenario from the restoration of lost or obliterated corners pamphlet that the BLM puts out. And it puts a scenario here on the ground for us.

So, we've stated our baseline evidence. Are the survey notes that created the land description or the parcel on the ground? So we're going to refer to the survey notes here and we're going to be looking for a section corner. We've determined that the section corner is in the locus of this fence corner. We have a fence line that runs north a half mile to another fence corner and continues to run north.

Over here we have the farmer and fences running west, east and south also. By referring to the notes that the deputy surveyor that conducted the general land office survey from 1869, from the general notes we see that he planted a marked stone.

We searched the area and find no marked stone that matched the dimensions that he placed at the section corner. However, he also marked a pine tree north twenty five degrees east, thirty links. And I've highlighted a pine tree where we've found some stride marks. He also marked an oak tree south forty-five east, twenty five links and in the general area we have a stump.

To the southwest he marked another oak tree and we see some scribe marks there. To the northwest he called for a large boulder and said he marked an X and we look around and we find that X. So, we have positive evidence of the accessories of the corner point. We don't have the actual monument but

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we have the accessories that the original surveyor marked and we know this by referring to the original notes. When we measure back from the pine tree and the boulder and the oak tree we come to the fence corner. So, based on that, what type of a corner point do we have? Is it existent, obliterated or lost?

Well when we think about the definition of existent it says we have a "positive verifiable proof of the corner point". Well, we have positive verifiable proof of the corner point because we have recovered the accessories. We have recovered three of the four original accessories to this corner point. So this would be classified as existent.

Let's go back to the diagram and here I'm going to change the scenario a little bit. I'm going to take away the pine tree and the oak tree and the stump is gone also. All we have left is the X on the boulder. And when we measure back from the X, guess what? We've come back to the fence corner.

When we measure out to check for the pine tree, the oak tree all we find are stumps. So, what kind of corner point do we have here? Well, we still have one original accessory and that's confirmed by the remains of the other three accessories to the corner point and when you pull of them you still come to the fence corner. So I think we have still have an existent corner point.

Now of course I'm going to take away the X on the boulder and the three trees. Now we have a dilemma, we have a problem. So what are some things that we can do here to determine where this corner point is? Well we could quickly jump to the conclusion that corner point is lost and just do a mathematical proportionment and double proportionate that's based on measurements to the next found corner to the corners in the north, east south and west.

But the courts have told no, before you do that you have to look for collateral evidence you have to use all means to recover that corner point before you determine it's lost. So what are some things we can do in here? Well we have the farmer over here in the diagram, let's go talk to him. Ask him if he knows how this fence corner got in place. And you might ask him about all these fences in the area that seem to be in the locus of the section lines. And he might tell you when the fence was put up, he might tell you that "yep my father, my grandfather put that fence corner there back when there use to be a marked stone."

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In this case we don't have evidence of the original monument. We didn't have the accessories but we have the testimony, we have a fence and if you look at an aerial photo you might see that lines of occupation are showing up that tend to conform to the rectangular pattern of the public land survey system. And then finally we're going to make measurements, actually make measurements to the other adjacent corners to see how this fits.

And we may decide that the fence corner is the best evidence of the corner point. And in which case we would have an obliterated corner based on the testimony of the farmer, based on the fences, the long standing geographic habit of putting fences on the section lines. And measured relationships to other found corners tell us that we have an obliterated corner point. It's still based on evidence but we didn't have the monument or the accessories and we can put that corner back where it belongs.

Now let's do one more scenario involving this stump here. Let's say we have this stump and on the bottom of the stump you see some marks that look like scribe marks in the wood on this stump. And we have a stump for the pine tree and a stump here but we can't find any X on the boulder.

When we pull back from the stump we come to this X right here. Now we have a problem. What are we going to do here? Are we just going to take the fence corner because that will keep the landowners from getting upset? Are we gonna use the evidence to put the corner back here where it belongs? Well that answer might vary geographically but I think if you have scribe marks on a stump, you have confirmative evidence of the corner point and the corner point would go here.

However, if you have no marks on the stump you might have to look at the fence corner as best evidence. So these are some examples of how you're going to have to weigh the existing evidence, talk to the adjoining, make some measurements, make your evaluations and decide if the corner point is obliterated and put it back where it belongs before you proportion that corner point.

This is the first part of my presentation of evaluation of corner evidence. We've gone over our objectives, we have talked about the terms existent, obliterated and lost. And we're going to pause here and then come back and dig into some other forms of evidence in more detail.



**HANDOUT**

# Objectives

For

## Evaluation of Corner Evidence

Reinforce some principles that will assist you in evaluating evidence for its ability to serve as proof of a corner point, and help you determine:

- What is the best evidence of a corner point?
- How much evidence is enough?

After evaluating the available evidence at a corner point according to principles of evidence for your geographic area, you will state whether the corner point should be classified as **existent**, **obliterated** or **lost**, and understand why these terms are used.

When the original monument and its accessories are gone, you will consider **“all means”** for **ascertaining the location of the corner point** by listing six general elements of collateral evidence that should be evaluated for their ability to serve as proof of the corner point before determining the corner point to be lost.

You will author corner descriptions and field notes that more thoroughly describe and document all the elements of evidence you found and utilized to determine the corner point and which demonstrate your reason/s for rejecting conflicting evidence.

You will be able to evaluate evidence and determine the **most defensible** position for an original corner point that is:

- Based on common law principles of evidence.
- Convincing to others and a court of law (that you are right).

## STATUTE LAW

Written law established by legislatures (Congress).  
Declares the location of original corners shall not be changed.

UNITED STATES CODE (USC) is the official restatement, consolidation and codification in convenient form of the general and permanent laws (*statutes*) of the United States. **U.S. Code Annotated** includes annotations from both **Federal and State Courts**.

### Title 43 - Public Lands

#### Chapter 18 - Survey of Public Lands

##### Section 752 - Boundaries and contents of public lands; how ascertained.

“The boundaries and contents of the several sections, half-sections, and quarter-sections of the public lands shall be ascertained in conformity with the following principles:

First. All the corners marked in the surveys, returned by the Secretary of the Interior or such agency as he may designate, shall be established as the proper corners of sections, or subdivisions of sections, which they were intended to designate; ....

Second. The boundary lines, actually run and marked in the surveys returned by the Secretary of the Interior or such agency as he may designate, shall be established as the proper boundary lines of the sections, or subdivisions, for which they were intended...”

Derivation - Act of 1805.

## COMMON LAW

Legal decisions rendered by the court systems to settle civil disputes.  
Provides principles on how to evaluate evidence to serve as proof of a corner point.

U.S. SUPREME COURT in *Cragin v. Powell*, 128 U.S. 691 (1888):

*“A resurvey, properly considered, is but a retracing, with a view to determine and establish lines and boundaries of an original survey...”*

*“...follow the footsteps...”*

U.S. v *Doyle* 468 F.2nd. 633 (1972):

*“For corners to be lost, they must be so completely lost that they cannot be replaced by reference to any existing data or other sources of information, and before courses and distances can determine boundary, ALL MEANS for ascertaining location of the lost monuments must first be exhausted.”*

# Evidence

In law, evidence is material that is legally presented at a trial as a means of ascertaining the truth or falsity of any alleged matter of fact under investigation.

In the case for corner recovery, it is any information that surveyors utilize to form the basis for their decisions about the correct location of a corner point. “*Evidence includes testimony, physical objects, marks, traces of former objects or **relationship** between any of these, which may furnish proof or part of a proof of a corner location or line location.*”

*From BLM Glossary of Surveying & Mapping Terms.*

---

## General Categories of Evidence

### 1. Real Evidence – i.e. physical objects

*Monuments and accessories*

*Common usage* - rectangular road patterns

*Occupation* – fences, hedgerow

*Topography* – watercourse, bluff

### 2. Written Evidence

*Records* – field notes and plats, documents, maps

### 3. Oral Evidence

Evidence given by witnesses - *Testimony*

### 4. Judicial Notice

Evidence in the form of knowledge, e.g. commonly accepted facts, meanings of English words or phrases, laws of nature - *Measurements*



## COLLATERAL EVIDENCE

The primary evidence of a corner point is the actual monument and its accessories. **Collateral evidence is any other form of evidence** that is in addition to the primary evidence and which supports or reinforces the location of the original corner. When the primary evidence is missing or destroyed, the other remaining forms of evidence, considered “*collaterally*”, may be the best indication of the original corner position.

Collateral evidence may be in the form of acts or testimony of interested landowners, competent surveyors, other qualified local authorities, an acceptable record or any other indicia that leads to the original corner position.

Manual 5-21. *The rules for the restoration of lost corners should not be applied until all original and collateral evidence has been developed.*

- Measurements, by revealing **relationships** to other elements of evidence and the original record, generally play an important role in the decision to utilize collateral evidence to prove a corner point.
- Corners should be restored by the nearest and most reliable of the available collateral evidence.
- Collateral evidence in surveying might be similar to circumstantial evidence in law - *by itself, it may seem insignificant; but an abundance of it could be convincing.*

## Elements of Boundary Evidence

<p>Direct Evidence</p> <p><i>Tangible and convincing at face value; can generally stand on its own.</i></p>	<p><b>Original Monument</b></p> <p>and/or its</p> <p><b>Accessories</b></p> <p>sometimes</p> <p><b>Testimony Records</b></p>
<p>Collateral Evidence</p> <p><i>Usually assists in confirming a corner point. Several of these elements are generally used to corroborate with each other to confirm a corner point.</i></p>	<p><b>Testimony Records</b></p> <p><b>Common Usage</b></p> <p><b>Topography</b></p> <p><b>Occupation</b></p> <p><b>Measurements</b></p>

# Law of Boundary Evidence

The law of evidence is not an exact law but is a relative thing stating general principles that may have flexibility, depending on the circumstances. In questions of civil litigation, under which land disputes fall, the courts accept the premise of the “preponderance of evidence,” which is not the same as “beyond reasonable doubt.” *from Evidence and Procedures for Boundary Location, 2<sup>nd</sup> Ed., 2-42.*

No set rules can be laid down as to what is sufficient evidence. Much must be left to the skill, fidelity, and good judgment of the surveyor, bearing in mind the relation of one monument to another and the relation of all to the recorded natural objects and items of topography. *from Manual 5-7.*

# Evaluation of Corner Evidence

The surveyor should value and *weigh* the available evidence in order to come to conclusions of proof from that evidence that would **place the corner in its original location, and be prepared to convince a court of law.**



The evaluation should be guided by *general principles* derived from common law interpretation of how recovered evidence serves as proof of a corner point. The general principles are derived from:

- 1) **Leading court decisions (federal and state).**
- 2) **Interior Board of Land Appeals decisions**
- 3) **Opinions of the U.S. Attorney General**
- 4) **Approved surveying practices**

“Methods described in the 1973 Manual for the restoration of lost and obliterated corners follow leading judicial opinions and approved surveying practice.” *from Manual 5-1.*

“*Common law evolves to meet civil and economic needs of society*” (Curtis Brown) and *varies geographically.* **BEWARE:** The evolution, if any, of common law as it pertains to boundary location is nearly imperceptible; however, **as direct evidence deteriorates with age, elements of *collateral evidence* may accrue more weight as proof of a corner point in the eyes of the court.**

**The evaluation of evidence is *unique* for each corner point, in each different township, in each different geographical area.** There are no formulas, only professional judgment.



# Existent, Obliterated or Lost?

Terms of evidentiary “classification” for a corner point based on the *relative amount and quality* of available evidence that are used by the courts in boundary matters.

## Existent Corner

*Manual 5-5.* An existent corner is one whose position can be identified by **verifying** the evidence of the monument or its accessories, **by reference to the description in the field notes**, or located by an acceptable *supplemental survey record*, some *physical evidence*, or *testimony*.

Even though its physical evidence may have entirely disappeared, a corner will not be regarded as lost if its position can be recovered through the *testimony* of one or more witnesses who have a **dependable knowledge** of the original location.

## Obliterated Corner

*Manual 5-9.* An obliterated corner is one at whose point there are **no remaining traces of the monument or its accessories**, but whose location has been **perpetuated**, or the point for which may be recovered beyond reasonable doubt by the *acts and testimony of the interested landowners, competent surveyors*, other qualified local authorities, or witnesses, or by some acceptable *record evidence*.

A position that depends upon the use of **collateral evidence** can be accepted only as duly supported, generally through **proper relation to known corners**, and agreement with the field notes regarding *distances* to natural objects, stream crossings, line trees, and off-line tree blazes, etc., or *unquestionable testimony*.

## Lost Corner

*Manual 5-20.* A lost corner is a point of a survey whose position cannot be determined, beyond reasonable doubt, either from traces of the original marks or from acceptable evidence or testimony that bears upon the original position, and whose location can be restored only by reference to one or more interdependent corners.

*Restoration of Lost and Obliterated Corners & Subdivision of Sections (suppl. to Manual):* If there is **SOME** acceptable evidence of the original location of the corner, that position will be employed.

**The decision that a corner is lost should not be made until every means has been exercised that might aid in identifying its true original position.**

U.S. v Doyle 468 F.2nd. 633 (1972):

*“For corners to be lost, they must be so completely lost that they cannot be replaced by reference to any existing data or other sources of information, and before courses and distances can determine boundary, ALL MEANS for ascertaining location of the lost monuments must first be exhausted.”*

# Basic Survey Procedures

## Research:

- Plats, survey notes, land description = BASELINE EVIDENCE
- Instructions to Deputy Surveyors
- Subsequent surveys - county, private, etc.
- Adjacent landowners
- Aerial photos, maps, GIS

## Investigation - "*Go on the land*":

- Find existent corners
- Seek witnesses and testimony
- Make measurements
- Gather collateral information
- Locate topography
- Trial mathematical proportions

## Evaluation:

Entails a thorough analysis of all the findings from the **Research** and **Investigation** in order to make professional decisions to determine the corner point positions according to the best available evidence. Decisions must be based on statute law, common law principles of evidence and approved survey practices.

## Documentation:

Documentation of the elements of evidence and survey procedures that defined the corner points is prepared in the form of **survey notes** and **boundary plat**. Decisions must be defended against challenges.

# Identification of Monuments

*Manual 5-7.* After making allowances for natural changes, a monument to be identified from the record should not differ significantly from the following:

1. The character and dimensions of the monument in evidence should not be widely different from the record.
2. The markings in evidence should not be inconsistent with the record.
3. The nature of the accessories in evidence, including size, position, and markings, should not be greatly at variance with the record.

**Accessories are considered as part of the monument; their identification, without finding the monument can fix the position of the monument and restore a corner to its original location. A search for monument should include a search for all accessories.**

---

## Perpetuations of the Original Corner Position

*may have varied forms of monumentation*

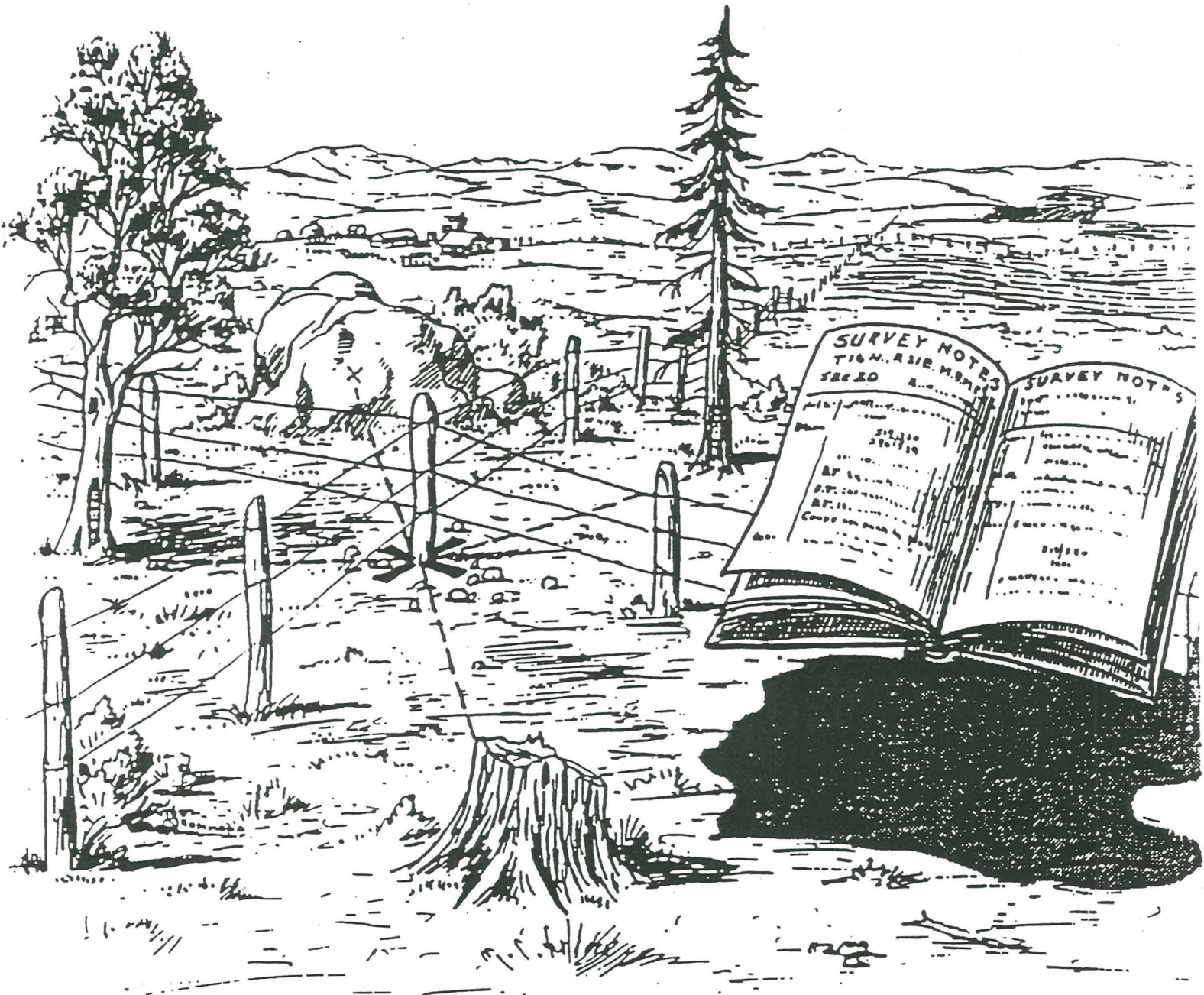
- Federal and State regulation monuments w/stamped caps
- Iron pipes & pins
- Railroad spikes
  - Rebar
  - Spike nails
  - Wood stakes
- Axles
  - Stones, mounds of stones
  - Fences constructed when other monuments existed
  - Roads
  - Retaining walls
  - Other constructed improvements
- Practically anything that can be driven/buried in the ground

Etc.

Etc.

Etc.





The position for a corner of the public land surveys may be recovered by reference to the record bearing trees or bearing objects.





## TESTIMONY

The original location of a corner may be restored at a position pointed out by a person who saw the original corner or has reason to know its location. The evidence testified to should be given no more weight than would be given in court.

Weight will be given to testimony according to its completeness, its agreement with the original survey, and the steps taken to preserve the original location. Such evidence **must be tested and confirmed by relating it to known original corners and other calls of the original field notes** (Manual 5-11).

Guidelines (Manual 5-11):

- 1) Witness must be duly qualified - information should be first hand, complete, and *not personal opinion*.
- 2) Testimony should stand appropriate test of its bona fide character, i.e. it is honest, in good faith, genuine, without fraud. *Testimonial evidence given by disinterested parties is often more reliable than that which is given the adjacent landowners.*
- 3) Must be sufficiently accurate for what is required in normal surveying practice.

**Corroborative evidence is necessary in direct proportion to the uncertainty of the statements advanced.**

Include the following information when obtaining data from a witness concerning a corner point location:

- Name.
- Age.
- Address.
- How long at that residence.
- When they first acquired knowledge of the corner position.
- A photograph, showing the corner point and the witness, with the date, photographer and witnesses signatures.
- **An actual signed statement from the witness.**

## Testimony (cont')

- Cannot overcome the original monument or its accessories as to the location of the original corner.
- If strong enough, can be used alone to determine the original corner point.  
*however, it...*
- Most often is used to corroborate other collateral evidence to support your determination of the original corner point.
- Must generally be related to other calls and corners of the original record.
- Best when based on personal recollections.  
*however,*
- Hearsay is sometimes allowed in boundary cases.
- **If you do not accept a testimony to locate the corner and use another location, be prepared to impeach it!!**
- **Caution:** The witness may mistakenly confuse evidence of a property boundary or unwritten right with evidence of the original survey (or written title line). Surveyor has to distinguish between the two.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

CHAINS

AFFIDAVIT

I, Monico Candelaria

address [REDACTED] Grants, New Mexico

do hereby certify that I am a lifelong resident of the  
area and landowner of property adjacent to the corner of  
sections 20, 21, 28 and 29, Township 9 North, Range 9  
West, New Mexico Principal Meridian, New Mexico. To the  
best of my knowledge and belief, the nearest true position  
for the corner of sections 20, 21, 28 and 29 would be  
located in the remains of an old fence line extending  
North, South and West.

Monico A. Candelaria  
Signature

5-10-79  
Date

Witnessed by \_\_\_\_\_

Witnessed by \_\_\_\_\_

Witnessed by \_\_\_\_\_



# RECORDS

Pertaining to records created subsequent to the original survey, which purport to document the location of an original corner in some way - such as a perpetuation or ties to other original corners or features. **The records must be authentic in relation to the original notes and plat.**

Where an acceptable map or plat shows the found location of the original corner, the corner, if obliterated, should be relocated by said map or plat. City, county, state, utility companies, railroads and private surveyors often have maps or plats which include vital information concerning the condition and location of an obliterated corner.

Records:

- Create a *chain of recovery history* by documenting the existence and location of a corner at the time the record was created.
- Document *new evidence* that is in addition to the original evidence, e.g. a new, more durable monument, or new ties to additional features or accessories, which can then be used to find an original corner point that has thus been perpetuated.

**\* There must be a correlation between both the written records and the physical evidence so there is an uninterrupted *chain of evidence*.**

**Aerial Photos** are Records - as they show at a certain date the physical features on the earth's surface that may be evidence of a corner point or boundary line, e.g.:

- Lines of occupation (fences, hedgerows, fields).
- Roads, canals, ditches, power lines and other cultural features.
- Topographic features.

Aerial photos taken through subsequent years reveal a *chain of land use history*, such as a long history of occupation lines. They are especially important in riparian boundary matters.

## *a few* Records Sources

1. Private (local) surveyors.
2. Appropriate state agencies.
3. County Surveyor or County/City Engineer.
4. County Clerk and Recorder.
5. State and County Highway Depts.
6. Railroads.
7. Abstract and Title Companies.
8. Logging companies.
10. Historical societies and libraries.
11. Archives:
  - National Archives – Washington D.C.
  - Seattle
  - San Francisco
  - Denver
  - Kansas City
12. Federal agencies:
  - Forest Service Supervisor's and District Offices
  - BLM State and District Offices.
  - Bureau of Indian Affairs
  - Geological Survey
  - National Park Service
  - Bureau of Reclamation
  - National Geodetic Survey
  - Fish & Wildlife Service
  - Army Corps of Engineers

CERTIFIED LAND CORNER RESTORATION

State of Michigan }  
County of Ontonagon } ss.

I Donald D. Lappala, do hereby certify that on the 14th day of October, 1969, I found evidence of the quarter section corner of section 28 and 29 Township 48 North, Range 43 West, Michigan Meridian, as described hereon; and that from this evidence I established a new monument and accessories as described hereon to perpetuate the original location of this corner:

Description of original monument and accessories and subsequent restorations:  
Corner established by Austin Bart, U. S. Deputy Surveyor, in 1848.  
Original bearing trees:

Yellow Birch	20°	S. 15° E.	40 links
Sugar Maple	10°	N. 6° W.	40 links

- What was looked for

Description of corner evidence found:

Restored corner position at record bearing and distance from the original bearing trees. The first one is a 33" live yellow birch with scribing visible. Found stamp hole of the sugar maple bearing tree.

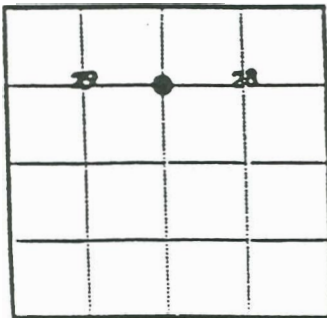
- What was found

Description of monument and accessories I established to perpetuate the original location of this corner:  
At the corner position I set a 2 inch inside diameter by 5 foot long, concrete filled, galvanized iron pipe, capped with a 3" circular bronze tablet which reads: T. 48 N., R. 43 W.; 1/4; S-28, S-29; E. L. S. 12585; 1969, from which I established the following new blazed and scribed bearing trees:

5"	Yellow Birch	N. 50° E.	8.5 feet (12.9 links)
6"	Sugar Maple	S. 49° E.	16.1 feet (24.4 links)
6"	Sugar Maple	S. 28° W.	9.7 feet (14.7 links)



- How it was perpetuated



● - Corner monument restored  
□ -

Resident witnesses \_\_\_\_\_

Dated at Bergland Michigan, this 14th day of October 1969

Signature Donald D. Lappala Title Cadastral Surveyor  
(County Surveyor, Registered Land Surveyor, or other duly authorized official)

Surveyors Registration No. 12585

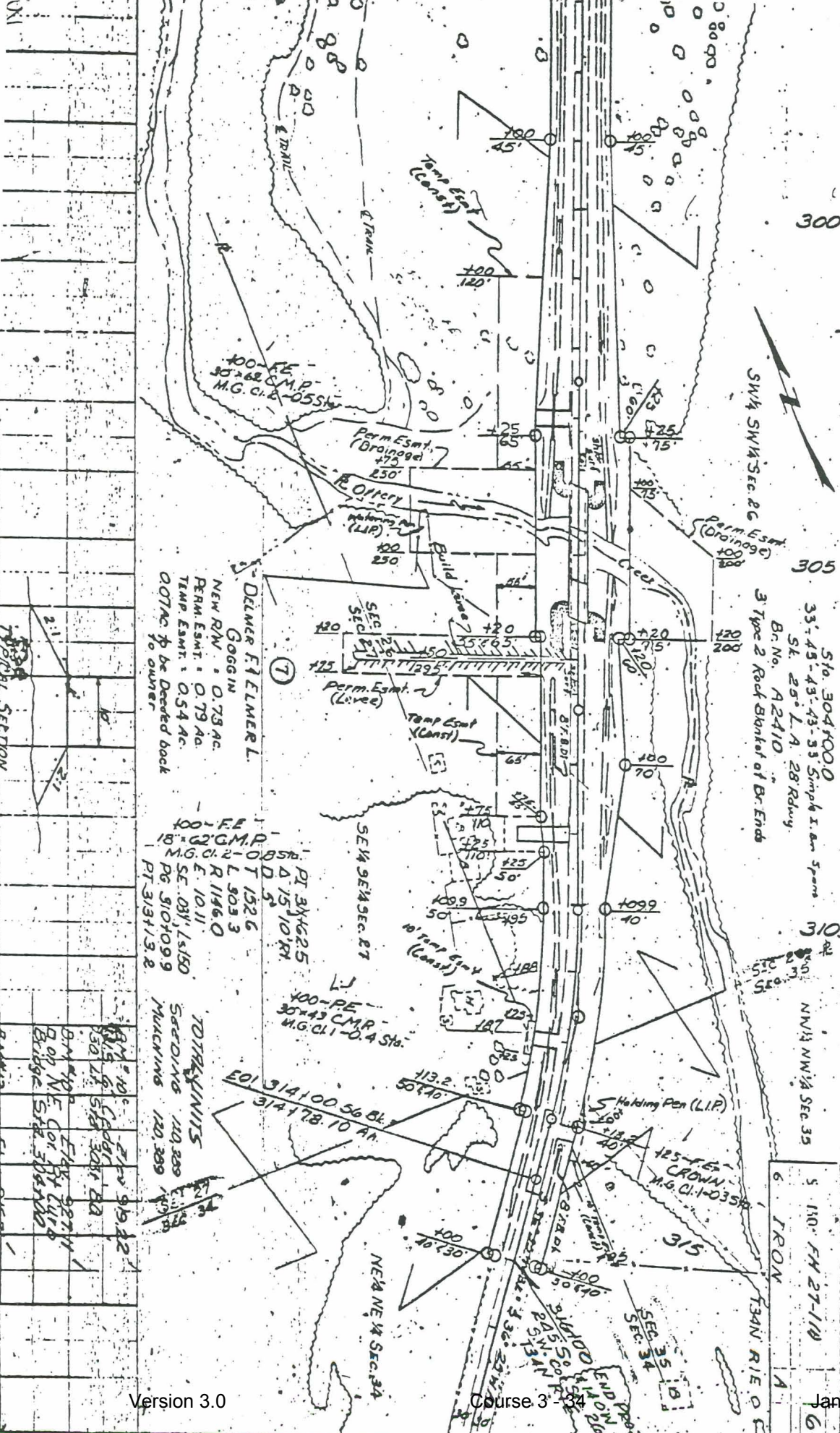
Office of Register of Deeds County of Ontonagon

I hereby certify that the within instrument was filed in this office for record on the 12th day of May 1970, and was filed in Book No. \_\_\_\_\_ Page No. I-9 of County Records.

Signature Charles A. Reuben Title Register of Deeds

Township 48 North Range 43 West Section \_\_\_\_\_ Index No. I-9 Page No. \_\_\_\_\_





Ditcher Filmler L  
 Goggin  
 NEW RW : 0.73 AC  
 PERM. ESMT : 0.79 AC  
 TEMP. ESMT : 0.54 AC  
 0.07 AC to be Deeded back  
 to owner

100-FT  
 30-43 C.M.P.  
 M.G. CL. 1-0.4 Sta.  
 18" G.C. 2-0.08 Sta.  
 D 152.6  
 L 305.3  
 R 1146.0  
 E 10.11  
 SE .031' L 150  
 PG. 910709.9  
 PT. 313113.2

TOTALS  
 SEEDING 110,289  
 MULCHING 120,389



Sta. 304+00.0  
 33'-45"-43'-43"-33' Simple I. on Spans  
 SE 25' L.A. 28 Rdy.  
 Br. No. A2410  
 3 Type 2 Red Bunkel of Br. Ends

NW 1/4 NW 1/4 SEC 35  
 5 150' FH 27-118  
 6 IRON  
 7  
 8

FINAL PLANS



## COMMOM USAGE

a.k.a. Common Report

Under certain conditions a corner location can be proved by common usage or *reputation* of a point.

In some locales, highways, fences or other cultural features were placed on section lines or property lines. Where a road or fence has been commonly accepted as the section line and **there is no better evidence to the contrary**, the road or fence monuments the section line by common report. **In the absence of other means**, an obliterated section corner can be restored at the centerline intersection of two such roads or intersection of fences that are commonly reported as being the section lines in question. In some situations, it may be better to accept a long-standing fence corner commonly accepted as the section corner than to establish a different position by proportionate measurement based on far-away positions.

The acceptance of these common usage points that are understood to be the corner point by the adjacent landowners may provide the only remaining evidence of the corner point. However, **the location must in some way be reconciled by the original record.**

An historical pattern of land use can often be seen on *aerial photos and old maps*.

**Caution:** The *custom of the area* concerning how the fence lines and/or roads were established and the value of the land should be considered.

Common Usage is generally used collaterally with other evidence, e.g. *testimony, measurements, records*.

**The location must not be superseded by evidence of a higher order.**



CORNER RECORDATION  
Group No. 24, Missouri  
T. 35 N., R. 1 E., 5th P. M.

CHAINS

The 1/4 sec. cor. of secs. 14 and 15, determined longitudinally by the center of a graded gravel road extending N. and S., and latitudinally by the projection of fences and old tree lines extending S. 86° E. and N. 86° W. This position falls on a road fill which crosses a stream branch, as verified by the following County Surveyors;

1865 and 1872, George C. Breckenridge - recorded cor. as "pile of rocks in edge of branch".

1900, H. Hawkins - called for position of the S 1/16, "cor. in the road".

Aerial photos dated 1939, 1967 and 1986, show the rectangular pattern of roads and fences in the area and prove their long-standing existence.

At the cor. point

Set a Copperweld, 30 ins. long, 9/16 in. diam., 12 ins. below the surface of a graded gravel road, with a "DEEP-1" over it, and cap mkd.

T35N R1E  
1/4  
S15 | S14  
1987

from which

An "X" chiseled on top of a concrete railing on the E. side of a bridge, bears N. 12° E., 51.4 ft. dist.

An "X" chiseled on top of a concrete railing on the W. side of a bridge, bears N. 13° W., 45.9 ft. dist.

## TOPOGRAPHIC CALLS

The found topographic calls of the original field notes may fix the position of a line or corner beyond reasonable doubt. They *may also be used to fix a position of a missing corner in either latitude or departure*. Topographic calls in the vicinity of a corner can be the necessary support to prove otherwise meager corner evidence. When items of topography are **found where described** by the original surveyor in a particular township, they may substantiate the reliability of similar calls for items of topography *by the same surveyor* elsewhere in the township.

To avoid misapplication in the utilization of a topographic call to fix the position of a corner or line, **1) The determination should result in a definite locus within a small area, 2) It must not be contradicted by evidence of a higher order or by other topographic calls, and 3) Should have only one reasonable interpretation** (*Manual 5-16*). In the absence of other collateral evidence for support, it may be better practice to turn to suitable means of proportionate measurement when the specific topographic call is questionable.

**Caution:** Topographic calls may have been made on the random line rather than the true line between corners.

Generally, if the restoration of a corner is dependent upon items of topography alone *and appears to be questionable* - don't use it!!

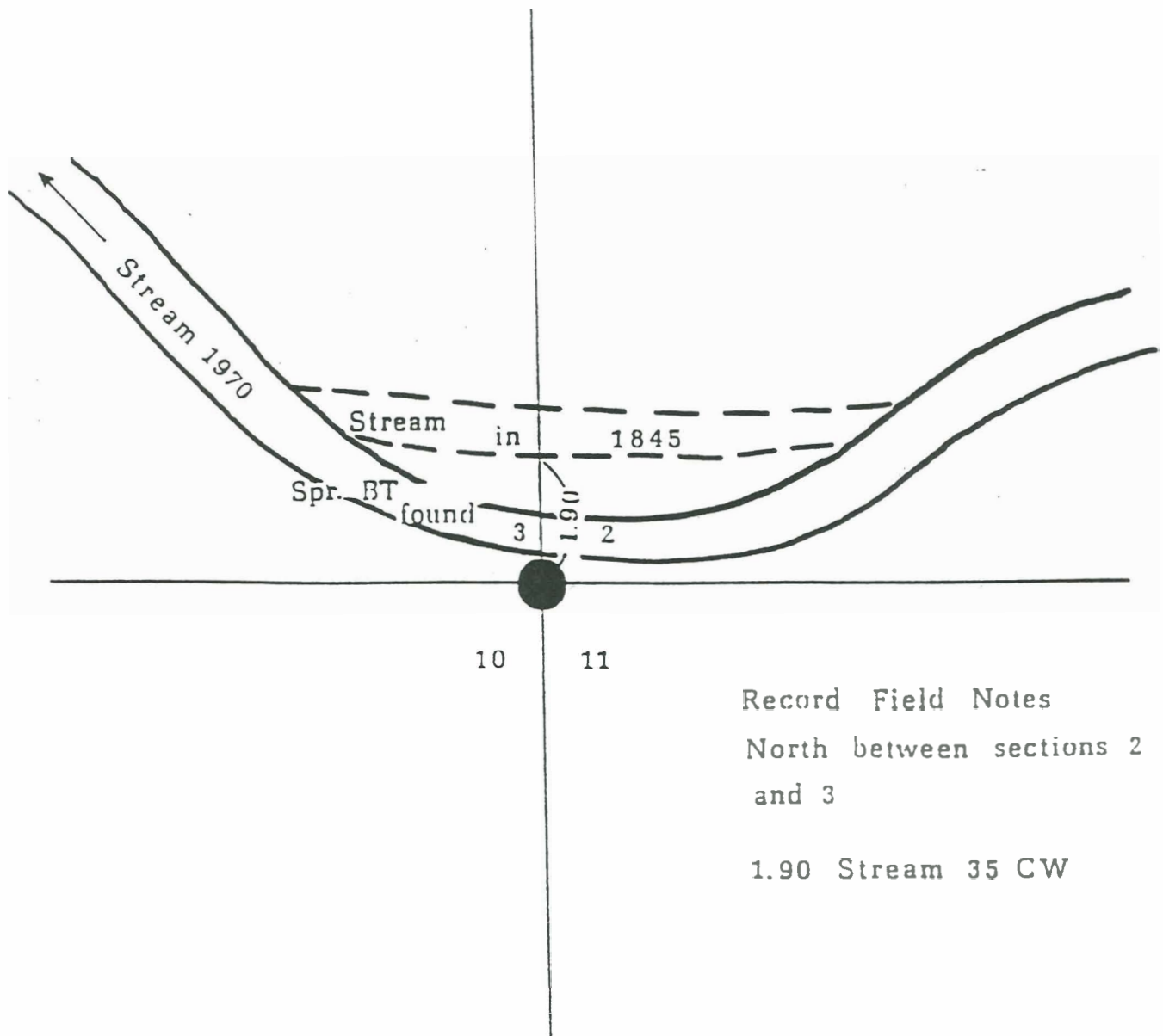
A check should be made to determine whether the results of restoring a corner from topographic calls are harmoniously related to the original and concurrent surveys.

Note the precision with which the calls were originally recorded, e.g. nearest whole or half-chain?

Distinct v. Indistinct features: "Enter swamp/marsh" - location could fluctuate and be subject to more than one interpretation, while "A rock ledge" location is stationary.

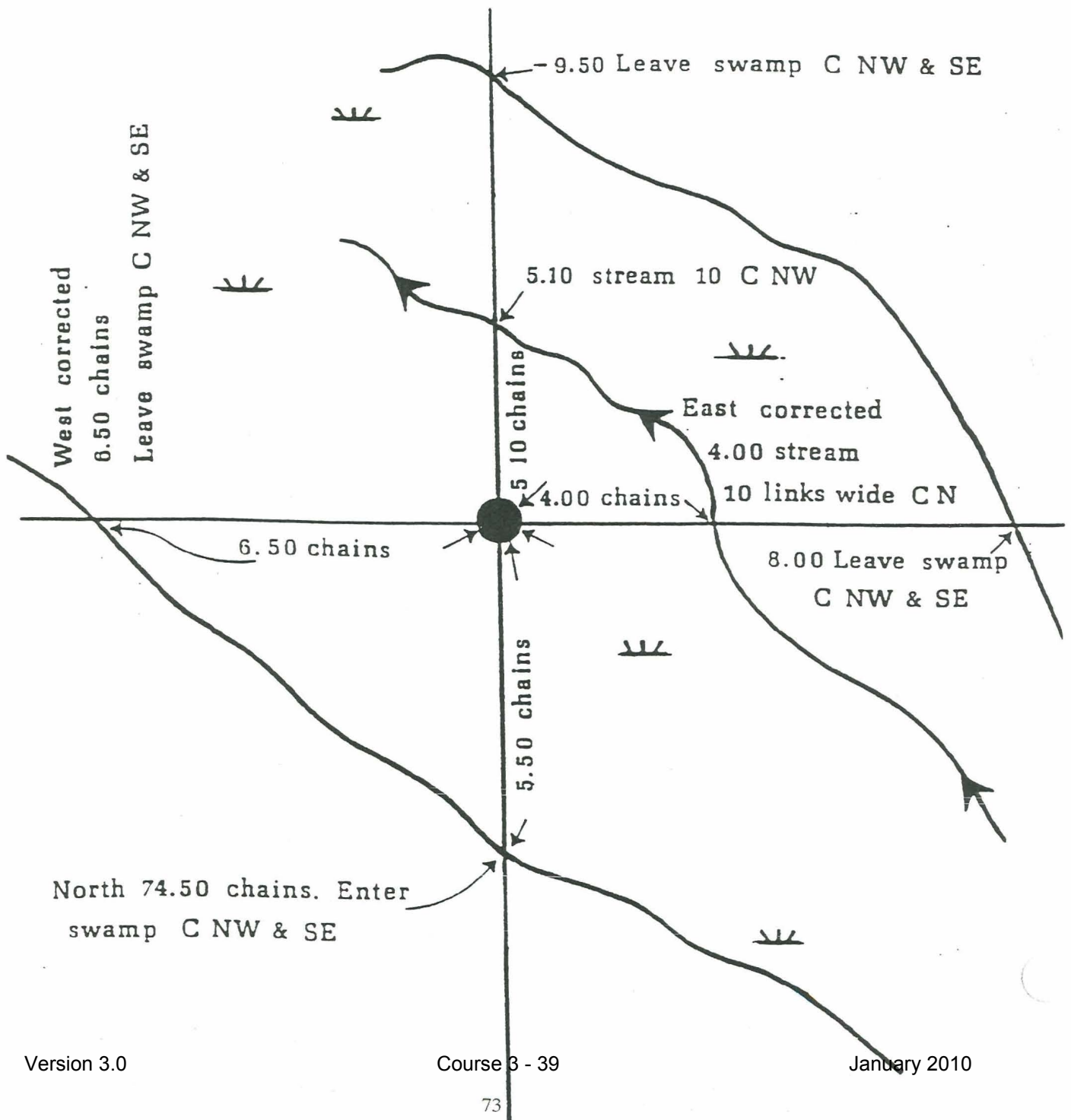
Must be in the same location as the time of the original survey - rivers move and earthquakes change shoreline locations, e.g. Alaska.

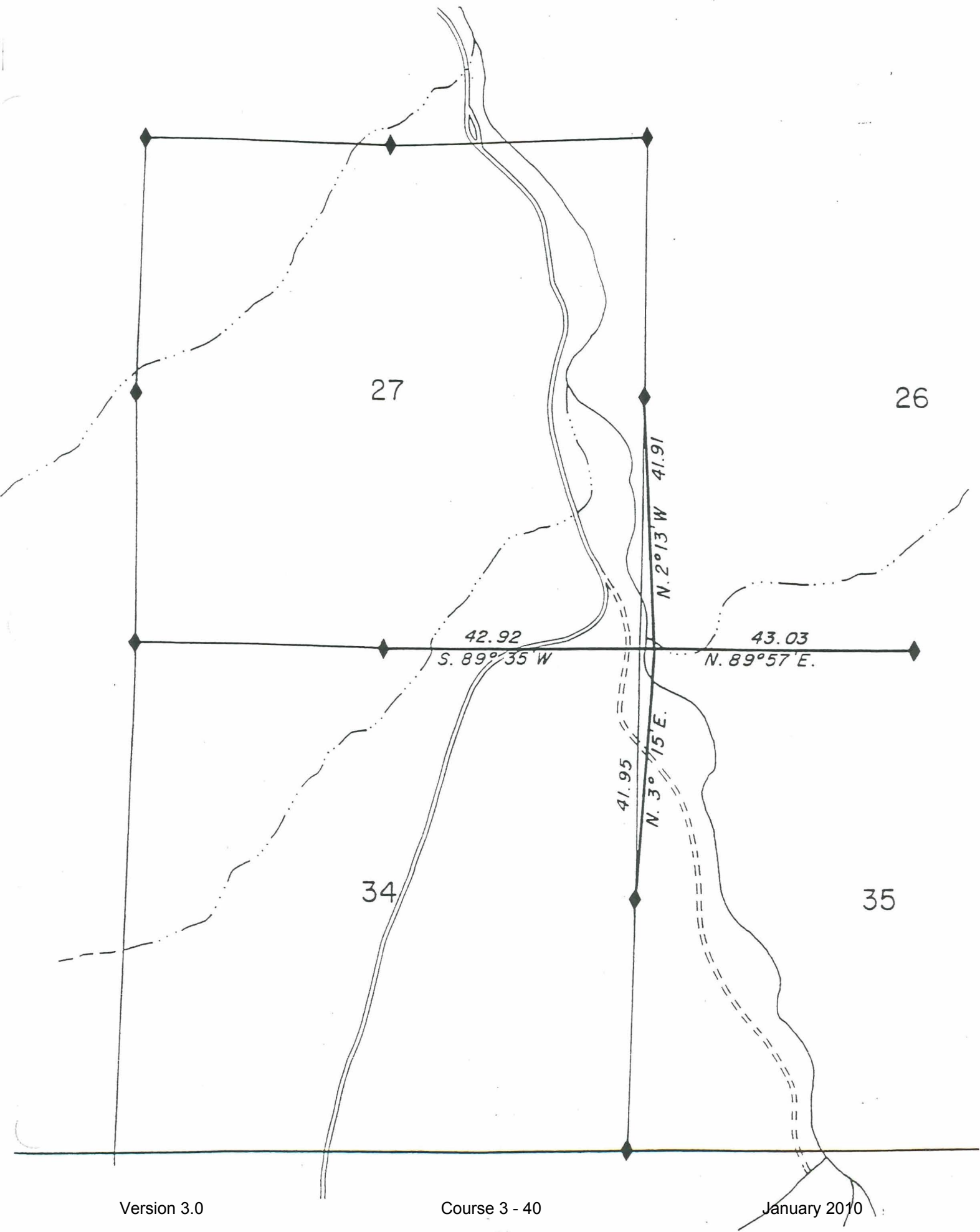
# STREAM BEDS AND CORNER LOCATION



Note: Corner recovered 1.90 chains south of old stream bed as per record notes of original Government Survey.

# CORNER RESTORATION FROM NATURAL FEATURE CALLS





"Nearby Topographic Call For Corner Restoration" (A11-1)

Solution

No other line between recovered corners of the subdivisional lines resulted in a heavy northwest bearing. Nearly all of the lines have northeast bearings, with only a few having not more than one degree of northwest bearing. All of the resurvey measurements are nearly 4 chains of excess and average roughly 2 chains long per half mile. Thus there developed a clear indication that the original surveyor ran to the right and chained long. The original measurements were unreliable over any significant distance.

Section 5-16 of the Manual of Surveying Instructions, 1973, describes the use of topographic calls for restoring an obliterated or lost corner. Only those calls which are nearby and definite may be used, and the reliability of the topographic calls should be proven. The corner of sections 26, 27, 34 and 35, could not be restored solely on the basis of topographic calls. The combination of the nearby call to Craine Creek for the longitudinal position and a proportionment between the nearest found corners to the north and south for the latitudinal position was used. Double proportionment would have placed the corner on the wrong side of Craine Creek.

The procedure which was used placed the section corner at midpoint on line between recovered  $\frac{1}{4}$  section corners to the north and south. The resurvey field notes reveal that the record distance (1.50 chains) from Craine Creek was actually used for the longitudinal position, even though the result on the final plat appears to be only a single proportionate measurement between recovered corners to the north and south.

Figure 4 is a copy of the plat of the dependent resurvey which was accepted April 14, 1964.

DEPENDENT RESURVEY, PORTION OF THE NORTH BOUNDARY,  
(STANDARD PARALLEL NORTH).

T. 16 N., R. 21 W., 5TH P.M., ARKANSAS

CHAINS

Set an aluminum post, 30 ins. long, 2 1/2 ins. diam., 24 ins. in the ground, over a "DEEP-1", in a collar of stone, with aluminum cap mkd.

S C  
T17N R21W  
1/4 S35

1992

from which

A red oak, 10 ins. diam., bears N. 57° E., 17 lks. dist., mkd. S35 at breast height, BT at base, with nail in base.

A red oak, 10 ins. diam., bears N. 36° W., 85 lks. dist., mkd. S35 at breast height, BT at base, with nail in base.

Standard Parallel  
Righter 1831

From this cor., a gravel road, 30 lks. wide, extending N. 26° E. and S. 26° W., bears West, 24 lks. dist.

56.45 Dry creek, 10 lks. wide, drains S. 56° W. (Record: 56.70 chs.)

→ 62.85 Dry creek, 10 lks. wide, drains S. 6° W. (Record: 62.80 chs.)

→ 68.70 Dry creek, 4 lks. wide, drains S. 4° W. (Record: 68.73 chs.)

79.86 Point for the stan. cor. of secs. 34 and 35 only, T. 17 N., R. 21 W., at proportionate dist.; there is no remaining evidence of the orig. cor.

Set an aluminum post, 30 ins. long, 2 1/2 ins. diam., 28 ins. in the ground, over a "DEEP-1", in a collar of stone, with brass cap mkd.

S C  
T17N R21W  
S34 | S35

1992

from which

A cedar, 14 ins. diam., bears N. 17° E., 33.5 lks. dist., mkd. S35 at breast height, BT at base, with nail in base.

A cedar, 6 ins. diam., bears N. 66° W., 34 lks. dist., mkd. S34 at breast height, BT at base, with nail in base.



DEPENDENT RESURVEY, PORTION OF THE SUBDIVISIONAL LINES,  
T. 16 N., R. 21 W., 5TH P.M., ARKANSAS

CHAINS

T16N R21W  
S1  
1/4 ———  
S12  
1992

E-W  
Subdivisional Line  
Lafferty 1843

from which

A pine, 12 ins. diam., bears S. 67° W., 2.645 chs. dist.,  
mkd. S12 at breast height, BT at base, with nail in base.

A pine, 22 ins. diam., bears N. 23° W., 4.10 chs, dist.,  
mkd. S1 at breast height, BT at base, with nail in base.

- 46.00 Left bank of Buffalo River, bears S. 10° E. and N. 10° W.;  
river flows S. 10° E. (Record: 57.00 chs.)
  - 46.90 Right bank of Buffalo River, bears S. 10° E. and N. 10° W.  
(Record: 58.50 chs.)
  - 64.10 Right bank of Buffalo River, bears N. 21° E. and S. 21° W.;  
river flows N. 21° E. (Record: 60.50 chs.)
  - 65.15 Left bank of Buffalo River, bears N. 21° E. and S. 21° W.  
(Record: 61.00 chs.)
  - 68.65 Top of bluff, 75 ft. high, bears N. 25° E. and S. 25° W.  
(Record: 67.00 chs.)
  - 82.22 The cor. secs. 1, 2, 11 and 12.
- 
- N. 0°45' W., bet. secs. 1 and 2.
- 19.96 From this point, a mound of stone, 24 ins. diam., 18 ins. high,  
bears East, 75.5 lks. dist.
  - 40.27 Point for the 1/4 sec. cor. of secs. 1 and 2, at proportionate  
dist.; there is no remaining evidence of the orig. cor.  
  
Set an aluminum post, 30 ins. long, 2 1/2 ins. diam., 30 ins.  
in the ground, over a "DEEP-1", in a collar of stone, with  
brass cap mkd.

T16N R21W  
1/4  
S2 | S1  
1992



TOWNSHIP 16 NORTH, RANGE 20 WEST  
FIFTH PRINCIPAL MERIDIAN, ARKANSAS

CHAINS

Dependent Resurvey, Portion of the North Boundary,  
(Standard Parallel North),  
T. 16 N., R. 20 W., 5th P.M., Arkansas

(Restoring the Survey executed by N. Rightor in 1831)

Beginning at the stan. 1/4 sec. cor. of sec. 36 only,  
T. 17 N., R. 20 W., monumented with a mound of stone, 18  
ins. diam., 7 ins. high; from which the remains of an  
orig. bearing tree:

A stump hole, bears S. 42° E. 13 1/3 lks. dist.

N. 89°04 W., on the S. bdy. of sec. 36.

10.73 Creek, 8 lks. wide, flows S. 3° E. (Record: 10.80 chs.)

39.795 Point for the stan. cor. of secs. 35 and 36 only,  
T. 17 N., R. 20 W., at proportionate dist.; there is no  
remaining evidence of the orig. cor. Not monumented.

From this cor., a cor. of fences extending N. and E.,  
bears N. 72°43 W., 109 lks. dist.

From this same cor., a mound of stone, 30 ins. diam., 18  
ins. high, bears N. 69°34 W., 133.5 lks. dist.

N. 89°04 W., on the S. bdy. of sec. 35.

39.795 Point for the stan. 1/4 sec. cor. of sec 35 only,  
T. 17 N., R. 20 W., at proportionate dist.; there is no  
remaining evidence of the orig. cor. Not monumented.

→ 49.48 Creek, 6 lks. wide, flows N. 4° E. (Record: 49.75 chs.)

→ 55.18 Creek, 10 lks. wide, flows N. 40° E. (Record: 55.40 chs.)

→ 56.71 A cave entrance, 30 ins. diam., 30 ft. deep. (Record:  
57.00 chs., 40 ft. deep). This point now becomes an angle  
point. Not monumented.

CORNER RECORDATION  
Group No. 21, Missouri  
T. 32 N., R. 1 W., 5th P. M.

CHAINS

The cor. of secs. 4, 5, 8 and 9, determined longitudinally on line bet. the 1/4 sec. cor. of secs. 8 and 9, and the orig. closing cor. of secs. 4 and 5; latitudinally at record dist. (24.85 chs.) northerly from a perpendicular rock bluff (Record, "a bluff about 40 feet perpendicular"). This position is further substantiated by other topographic calls of record, and are as follows:

N. 0°40.5' E., 5.56 chs.-left bottom extending NE and SW. (Record dist., 5.50 chs.)

N. 85°45' E., 8.45 chs.-left bottom extending NE and SW. (Record dist., 8.50 chs.)

S. 86°03' W., 5.07 chs.-left bottom extending NE and SW. (Record dist., 5.10 chs.)

At the cor. point

Set an iron post, 30 ins. long, 2 1/2 ins. diam., 22 ins. in the ground, in a collar of stone, with brass cap mkd.

T32N R1W  
S5|S4  
S8|S9  
1985

from which

A hickory, 8 ins. diam., bears N. 44° E., 14.5 ft. dist., mkd. BT at base and breast height.

A sycamore, 11 ins. diam., bears S. 16° E., 28.3 ft. dist., mkd. BT at base and breast height.

A sycamore, 12 ins. diam., bears S. 53° W., 25.8 ft. dist., mkd. BT at base and breast height.

A sycamore, 7 ins. diam., bears N. 55° W., 52.7 ft. dist., mkd. BT at base and breast height.

From this cor., a 3/4 in. iron pipe projecting 1 in. from a collar of stone, bears N. 24° 10' E., 46.1 ft. dist., falls in the remains of an old fence extending E. and W. St. Joe Minerals Corporation records dated 1966 reflect the existence of the fence but no reference is made of the iron pipe. From which local bearing trees:

A hickory, 18 ins. diam., bears S. 9° E., 13.4 ft. dist., mkd. with 3 hacks.

A black walnut, 16 ins. diam., bears S. 64° W., 7.0 ft. dist., mkd. with 3 hacks.

# Shoreline as Evidence

*From: Public Lands Surveying – A Case Book, Fundamentals of Corner Restoration, pg. A1-3.*

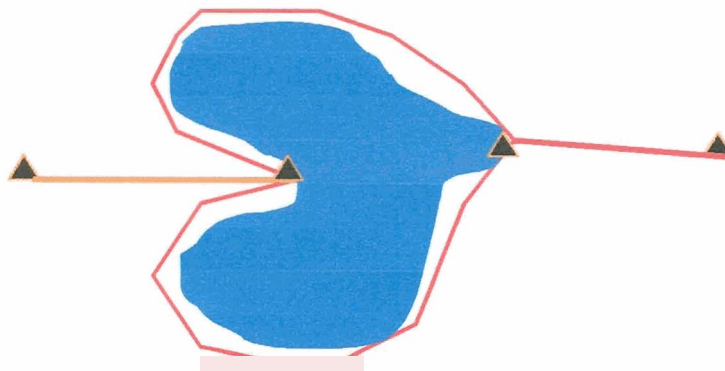
Where the official record of a government survey shows that a meander line coincides with the shoreline of a lake, as in the discussion regarding County Ditch No. 67, Murray County, 1922, 186 N.W. 711, 155 Minn. 292, it is prima facie evidence that the meander line marks the actual shoreline.

**When the evidence is sparse or nonexistent, the actual shoreline that approximately conforms to the original meanders may be the best available evidence or collateral evidence necessary to reestablish an obliterated meander corner.**

Using the actual shoreline, when proven to be located approximately where the original surveyor described it, coincides with the principle of following the footsteps of the original surveyor.

The shoreline as direct evidence is more conclusive where it follows a well-defined bank or the distance from a surveyed line crossing or meander corner to a definite bend is relatively short. **Conclusive evidence may also be provided where the line crosses a well-defined short leg (or point) of water or land (e.g. an island).**

**Caution: This alternative for possible corner restoration is often overlooked.** The use of this method should be in harmony with the original survey, concurrent survey, and the other methods of restoring corners.



# OCCUPATION

Occupation, especially when long continued, *MAY* afford satisfactory evidence of the original boundary **when no other evidence is attainable**. The presumption could be that the occupation evidence was constructed upon some information or assumed knowledge of the actual line. The surveyor should inquire when the evidence of occupation (fence, tree line, hedge row, field, etc.) originated.

Unless it can be proven otherwise, and lacking evidence of a higher order, occupation evidence which could have originated when the original corners still existed should be considered as *possible* evidence of the location of original corners that have become obliterated. **This evidence should be accepted only when it can be reasonably reconciled with the original record and other evidence of the original survey.**

**Caution:** It is often the case that occupation evidence was placed for convenience and does not conform to original survey lines, e.g. fences may have only been approximated.

**A challenge to the surveyor is to distinguish when occupation is merely evidence of a potential unwritten right (e.g. adverse possession) versus evidence of the original survey (title) line.**

*"Land lawfully gained by unwritten means extinguishes the old written title, but does not alter the position of the original survey lines."*

(therefore)

*"Title lines and survey lines are not necessarily coincident."* - Curtis M. Brown, in "Fence Lines and Written Title Lines", 1972.

## Selected Court Cases

"It is a well settled law in this state that, where two adjoining properties are divided by a fence which they suppose to be the true line, each claiming only to the true line, they are not bound by the supposed line, but must conform to the true line when ascertained." *Jacobs v. Moseley*, 91 Mo. 457.

"Failure to dispute the location of a fence is not necessarily acquiescence in a boundary since a fence may be placed for purposes other than fixing the boundary." *Cothran v. Burk*, 234 Ga. 460.

"Fence does not establish a boundary line when it does not conform to the true line, even though property owners thought that it was the boundary." *Pilgrim v. Krupero*, 209 Mont. 177.

# "WEIGHT OF EVIDENCE"



## CHAINS

The cor. of secs. 20, 21, 28, and 29, monumented with a charred pine knot in the center of an embedded mound of stone, 18 in. base, 3 ins. high; from which the remains of the orig. bearing trees:

A stump hole, bears S.  $67^{\circ}$  W., 97 lks. dist.

and an unrecorded bearing tree:

A white oak snag, 25 ins. diam., bears N.  $12^{\circ}$  W., 15.5 ft. dist., with an open window scar 3 1/2 ft. up from the base.

At the cor. point

Set an iron post, 28 ins. long, 2 1/2 ins. diam., 22 ins. in the ground, over a "DEEP-1", in a collar of stone, with brass cap mkd.

T33N R3W  
S20|S21  
S29|S28  
1988

from which

A pine, 13 ins. diam., bears S.  $54^{\circ}$  E., 53.5 ft. dist., mkd. BT at base and breast height.

A pine, 8 ins. diam., bears S.  $85^{\circ}$  W., 39.0 ft. dist., mkd. BT at base and breast height.

A white oak, 12 ins. diam., bears N.  $61^{\circ}$  W., 16.5 ft. dist., mkd. BT at base and breast height.

This cor. is located at the cor. of old fences extending N., E. and W.

From this cor., an iron pipe, in a collar of stone, in the cor. of new fences extending N., E. and W., bears N.  $25^{\circ}39'$  E., 25.2 ft. dist.

Reset charred pine knot alongside the post.



# MEASUREMENTS

Measurements are a specialty of the surveyor, and *knowledge of their use as evidence* is as important as making and analyzing them. In ranking conflicting evidence for boundary determination, the courts have generally relegated measurements below more tangible elements such as monuments. However, surveyors commonly use measurements to assist in proving the validity of collateral evidence at a corner point by its *relationship* to other original corners. Measurements are evidence that can be used to determine a corner is obliterated rather than lost. They are the method of “linking” (tying) the “footsteps” (collateral evidence) of the original surveyor.

Measurements:

- Yield the **relationship** of all record calls and corners of the original record, as well as elements of any subsequent record. They demonstrate good vs. poor relationships when evaluating conflicting evidence.

Show characteristics and “trends” of the original survey and facilitate the development of patterns and “indexes”.

- Enable the development of trial proportions, i.e. one, two, three and four point control solutions.

A position based on collateral evidence should be duly supported, **generally through proper relation (harmoniously related)** to known corners, and in agreement with the field notes regarding distances to natural objects, stream crossings, line trees and off-line tree blazes, etc., or unquestionable testimony.

**Caution:** Although technology makes it simpler to “create” a mathematical position for a corner point than to search and evaluate physical evidence, **evidence of measurement is incompetent to prove an original monument in error.** When called for in a deed, evidence must prove where the monument was as of the date of the deed, *not where the measurements say it ought to have been set.*

**GPS is merely a measurement tool and coordinates are measurement derivatives.** GPS does not find monuments, evaluate evidence or make any surveying decision. It does not change or enlarge any legal boundary principle.

CORNER RECORDATION  
 Group No. 24, Missouri  
 T. 35 N., R. 1 E., 5th P. M.

CHAINS

The 1/4 sec. cor. of secs. 8 and 17, perpetuated and recorded in 1867 by George C. Breckenridge, County Surveyor; cor. falls in a recent clearcut where there is no remaining evidence of the orig. cor., nor the bearing trees recorded by Breckenridge. Cor. was reestablished in 1984 by Richard Stewart, LS 1793, by distance-distance intersection using Breckenridges' distances from the found cor. of secs. 7, 8, 17 and 18, and his cor. for the center N 1/16 sec. cor. of sec. 17. An index correction factor, found by measuring bet. Breckenridges' cors. at the NE 1/16 sec. cor. of sec. 18 and the center N 1/16 sec. cor. of sec. 17, was applied to his recorded distances. This position is accepted as the best attainable evidence of the orig. cor. position. Monumented with an aluminum post, 2 1/2 ins. diam., firmly set, projecting 4 ins. from a collar of stone, with cap mkd.

T35N R1E  
 1/4 S8  
           S17  
 1984 LS 1793

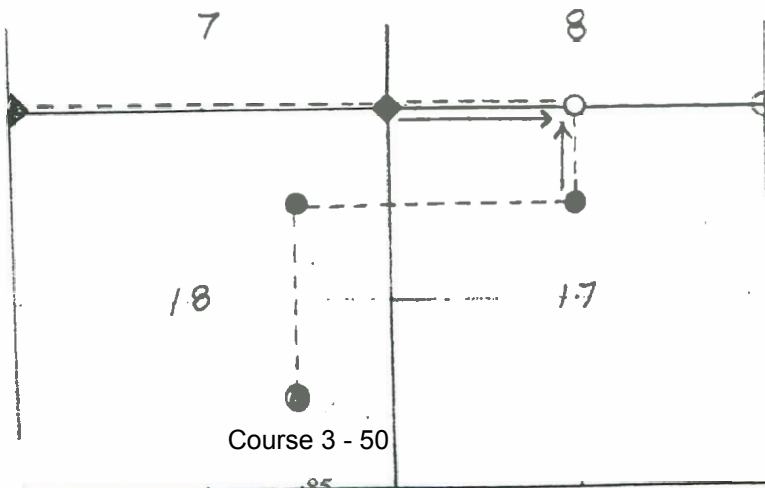
from which Stewart's bearing objects:

A metal fence post, projecting 6 ins. above the ground, bears N. 17° E., 30.3 ft. dist.

A metal fence post, projecting 6 ins. above the ground, bears S. 55° E., 35.2 ft. dist.

A metal fence post, projecting 6 ins. above the ground, bears S. 47° W., 32.0 ft. dist.

A metal fence post, projecting 6 ins. above the ground, bears N. 34° W., 21.0 ft. dist.



CORNER RECORDATION  
 Group No. 24, Missouri  
 T. 35 N., R. 1 E., 5th P. M.

CHAINS	<p>The cor. of secs. 14, 15, 22, and 23, was recorded by the following County Surveyors:</p> <p>1872 by George C. Breckenridge .</p> <p>1892 by Thos. H. Holman</p> <p>1900 by H. Hawkins, who also calls for an existing N-S road at the 1/16 cor. N. of this sec. cor.</p> <p>1913 by R. E. Hutchings</p>																
RECORDS →	<p>The cor. point and vicinity has recently been obliterated by the construction of the Council Bluffs Reservoir overflow spillway. Aerial photos dated 1939 and 1967 show the existence of a N-S gravel road and E-W fence lines/occupation lines emanating from the locus of the sec. cor. Local residents and U.S. Forest Service personnel state that an old rusted corner tag, facing E., was attached to a large white oak located on the W. shoulder of the road at the fence line extending W. Thos. H. Holman, in 1892, resurveyed the S. bdy. of sec. 14 and reestablished the lost 1/4 sec. cor. at midpoint bet. the found orig. sec. cors. This resurvey has recovered Holman's 1/4 sec. cor. and the orig. cor. of secs. 13, 14, 23 and 24.</p>																
COMMON USAGE →	<p>The cor. of secs. 14, 15, 22, and 23, is determined from Holman's measurement of the S. bdy. of sec. 14, as supported by the projection of the center line of a graded gravel road from the N. and old down fence lines from the E. and W. The cor. point falls in spillway where it is impracticable to establish a permanent monument.</p>																
TESTIMONY →	<p>From the true point, the point selected for the witness cor. to the cor. of secs. 14, 15, 22, and 23, bears S. 85° 30' E., 10.0 ft. dist.</p> <p>Set an aluminum post, 30 ins. long, 2 1/2 ins. diam., 22 ins. in the ground, over a "DEEP-1", in a collar of stone, with aluminum cap mkd.</p> <div style="text-align: center;"> <p>WC</p> <table style="margin: auto;"> <tr><td></td><td>T35N</td><td>R1E</td><td></td></tr> <tr><td></td><td>S15</td><td>S14</td><td></td></tr> <tr><td></td><td>S22</td><td>S23</td><td></td></tr> <tr><td></td><td></td><td>1987</td><td></td></tr> </table> </div> <p>from which</p> <p>An "X", chiseled on the top of a concrete retaining wall on the E. side of the spillway, bears West, 3.0 ft. dist.</p> <p>This cor. is located on the E. landscaped bank above the Council Bluffs Reservoir spillway.</p>		T35N	R1E			S15	S14			S22	S23				1987	
	T35N	R1E															
	S15	S14															
	S22	S23															
		1987															
MEASUREMENTS →	<p>State Plane Coordinate Position for the True Point          (For Mapping Purposes Only)          Missouri Coordinate System                      Zone: East          X: 381,166.93                                      Y: 692,825.28          Coordinates derived by adjusted traverse from          U.S.C.&amp;G.S. triangulation station "JOHNSON", 1956;          using the coordinate position determined by a 1986 U.S.</p>																



## CONFLICTING MONUMENTS

CHAINS  
FEET

The 1/4 sec. cor. of sec. 34 only, T. 35 N., R. 1 E., monumented with an embedded mound of stone, 24 in. base, 6 ins. high, from which the remains of the orig. bearing trees:



A dim stump hole, bears S. 4° E., 5 lks. dist.

A stump hole, containing wood fragments determined by the Forest Products Laboratory to be pine (record species), bears N. 12° W., 46 lks. dist.

At the cor. point

Set an aluminum post, 30 ins. long, 2 1/2 ins. diam., 23 ins. in the ground, in a collar of stone, with cap mkd.

T35N R1E  
1/4 S34  
T34N R1E  
1986

from which

A black oak, 7 ins. diam., bears N. 51° E., 31.5 ft. dist., mkd. BT at base and breast height.

A red oak, 7 ins. diam., bears N. 68° W., 18.4 ft. dist., mkd. BT at base and breast height.

From this cor., a mound of stone, bears S. 64°05' E., 143.1 ft. dist. Wood samples taken from deep within a stump hole located at record bearing and dist. from this mound were determined by the Forest Products Laboratory to be oak (record species was pine). A metal location tag, mkd. "Probable 1/4 corner", on a white oak, 18 ins. diam., bears S. 15° E., 10.5 ft. dist.

"Use all means"

CORNER RECORDATION  
 Group No. 25, Missouri  
 T. 33 N., R. 3 W., 5th P. M.

CHAINS

The 1/4 sec. cor. of secs. 21 and 22, perpetuated and recorded in 1971 by Kenneth West, LS 1339; monumented with a concrete post; 5 ins. sq., firmly set, projecting 6 ins. from a collar of stone, with brass cap mkd.

T33N R3W  
 1/4  
 S21|S22  
 LS 1339 1971

from which the orig. bearing trees:

A white oak snag, 21 ins. diam., bears S. 58° E., 35 lks. dist., with an old scar. (Record: 25 lks.)

A white oak, 22 ins. diam., bears N. 63° W., 22 lks. dist., with an old scar.

and West's bearing trees:

A pine, 11 ins. diam., bears N. 86° E., 33.7 ft. dist., mkd. with a blaze.

A black oak, 11 ins. diam., bears S. 25° E., 29.0 ft. dist., mkd. with a blaze.

A red oak, 10 ins. diam., bears S. 31° W., 31.0 ft. dist., mkd. with a blaze.

A pine stump, 8 ins. diam., bears N. 48° W., 33.2 ft. dist.

INCONSISTENT  
 WITH THE RECORD

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:









- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments

**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 2 (34 minutes)

ICON LEGEND							
 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ

## EVALUATING CORNER EVIDENCE – PART 2

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### Introduction

We've covered some basic principles of evidence. We've talked about evidence evaluation. What is evidence? And we've covered at length the terms existent, obliterated and lost. Before we leave those terms I want to discuss them one more time.

In my formative years as a surveyor, I felt that between existent and obliterated it's just a grey area. It really doesn't matter, you're using evidence to put the corner point back where it was originally. So, the grey area between existent and obliterated it doesn't matter you're using evidence to put it back where it was.

I use to think that between obliterated and lost that it was black and white. If it's obliterated you have evidence, if you have no evidence then you proportion it because it's a lost corner point.

### A Grey Area

However as we go through this course I'm going to demonstrate to you that there is a grey area between **obliterated and lost**. For example, a corner point may be lost in the latitudinal concept but longitudinally we have evidence to put it back or vice versa.

It may be lost **longitudinally** but **latitudinally** we have some evidence to put it back. So, don't think that I'm on drugs or anything like that; I'm going to present some examples to you that demonstrate that it is a little bit gray between obliterated and lost.

We're going to change gears a little bit and I'm show you some examples, some slides of original evidence, original monuments and accessories to those monuments. The Manual talks about the identification of monuments, Manual section 6-15. "After making allowances for natural changes, a monument to be identified from the record should not differ significantly from the following - the character and dimensions of the monuments in evidence should not be wildly different from the record." In general terms the monument should approximately agree with the dimensions that the original surveyor described it. Say he had dimensions written down as a marked limestone, ten inches by fourteen inches by eight inches.



**HANDOUT** A copy of Stan's presentation that he uses during topics 1-5 can be found in the Handout section at the end of the Evaluating Corner Evidence – Part 1 study guide.

## EVALUATING CORNER EVIDENCE – PART 2

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Don't be disturbed if you find a marked limestone that's nine inches by eight inches by six inches. It's a few inches off in the dimensions but it's a marked stone. Don't let that be the foundation to reject the stone as evidence of a corner point. It also says "the markings in evidence should not be inconsistent with the record." Again in general terms that's a pretty good statement but veteran surveyors know that you can find the original monument and the markings may not be exactly like the deputy surveyor described them in the notes.

Finally "the nature of the accessories in the evidence including size position and markings should not be greatly at variance with the record." Well again this is a good state but there are exceptions and remember I told you nothing is black and white. So you might have, you might want to verify the monument at the corner point and measure out to an accessory.

But if the accessory is down a forty-five degree incline and you try to hold that tape level and find that it doesn't agree with the distance as written in the original notes you might try sloping the tape down to the tree and see if that agrees. So keep those kind of things in mind.

The important thing here is that they accessories are considered as part of the monument. Their identification without finding the monument can fix the position of the monument and restore a corner to its original location. A search for the monument should include a search for all accessories. While we are talking about monuments we have perpetuations of the original corner position.

And quite frankly surveyors have always used any kind of durable material, and this is limited only by your imagination, and I have a partial list here of the typical monuments that you find. You find aluminum monuments, iron pipes, iron pins, railroad spikes, rebars, wood stakes, axels, mounds of stone, fences, roads, etc, etc, etc. So, perpetuations of an original corner point may not be, the corner point may not be the original monument it may be a perpetuated monument.

Let's look at some slides of some original evidence. Here we have the scales of justice as they are commonly known but for our course these scales weigh the evidence. The original evidence, the original monument and accessories will carry more weight than testimony. Legal principles of corner evidence we talked about statute law and common law principles and here we are in the court of law and the judge says "by law the corner

## EVALUATING CORNER EVIDENCE – PART 2

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point is fixed by the original survey or the document that created it.” The final authority on the location of a corner is a court of proper jurisdiction.

Ok, for example lets look at the scheme of marking monuments that the deputy surveyor may have used. Here we have a stone monument and here we have what are called notches and these are grooves. The scheme of marking these notches and grooves are thus: this is the section corner in the township that the deputy surveyor wants to identify.

Lets note that this monument is going to be one, two, three miles from the East boundary of the township. That corresponds with one, two there we go, three notches on the East side of the monument.

Correspondingly we have from the South boundary of the township one, two, three, four miles. So on the South edge of the monument we have one, two, three, four notches. Ok, same principles applies to the grooves on this monument. We are two miles; one, two from the East side of the township and there two grooves right there.

From the South boundary of the township we are one, two, three miles that corresponds with one, two, three grooves. And this is the general scheme for marking a section corner in a GLO surveyed township. Now correspondingly the quarter corners might be marked with a fraction of one fourth, one slash over a four.

Now there are a lot of different kinds of corner points in the public land survey system; meander corners, closing corners, sections corners, quarter corners all of these things and all of these will be marked correspondingly. Now you need to check the original notes and examine those for how the deputy surveyor said that he marked those.

Here is a stone that is actually marked. Now those really aren't much more than cat scratches on there with two cat scratches on the South side and a four on the East side. And I don't want you to think that these kinds of stone monuments just jump out and say “here I am”. These are tough to find and locate, there is lichen and moss that has grown over to hide those notches and grooves.

So you have a couple of tools of the trade here and I want you to note the wire brush right there and look at the gloves there. These are very important tools of the trade. And the gloves as you can see the fingertips are worn out from rubbing lichen and moss and dirt away from the stone



## EVALUATING CORNER EVIDENCE – PART 2

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and examining it to find those very discreet marks on a monument sometimes.

When this one was found, it was actually laying down in partially buried under the leaves and the other stones right in here. So you have to know where you are looking and where to start digging in those leaves and start looking for the marks. Again, this is another stone that was found and almost discarded because these marks right here were very indiscernible and it took some water from the canteen and gently using the wire brush and wearing out a pair of gloves to find the marks on that stone. We felt it was the right stone because of the dimensions and measurements brought us into the general location of where that stone should be. And we finally found where that is there.

Quarter corners. Here's two different quarter corners with the little bit different nature and its different parts of the country.- one in the Midwest and one up in Idaho.

This quarter corner right there has distinct one – fourth marked on it but that stone was completely buried in the dirt and the leaves and a lot of scuffing had to be done to dig it up. And quite frankly it was found only because we found the pine stump accessory and we measured back from and knew where to dig for this one quarter stone.

Now conversely this one over here, this was out literally kind of a boulder field and you look for that stone its quite large-over two foot tall. And again the marks on there do not really jump out at you, you've really got to take your finger tip and rub the dirt off in there to look for those marks.

### Wood Posts

Ok, wood posts. A lot of the GLO land surveyors used wood posts whatever was handy and native to the area. Here we have a wood post that is, you can see both scribed, and there is an eight, and down here is the remnants of an S way down there. But it also has notches kind of like a stone would've been right along there.

So, the wood posts you just have to look in the notes and check the notes for how they're marked. And of course one of the problems with wood posts is that wood decays. And here we have a wood post that was, looked liked it had been supported in a collar of stone but its fallen over its started to be covered up with leaves and in few more years its going to be

## EVALUATING CORNER EVIDENCE – PART 2

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rotted and gone. But you can see some of the remnants scribed marks from that wood post and without seeing that the wood post just would've kind of been unremarkable in this area.

Well like we said the law of nature is that wood posts decay. So, some surveyors might think what's the point in looking for them? Well we still have avenues that we can use and one of the things is that often times they'll leave their decayed remains in the ground or underground.

Here we have a wood post that the bottom of it remains underground and if you're ever in a marsh or wet area that's perpetually wet you might reach down in there and pull out the point of a wood post if you know exactly where to look. This is actually a corner point, there was a wood post right in here and its certainly gone. It is completely decayed now but underground there was the soft remains of where that wood post was planted in the ground.

There were plenty of stones in the area so the deputy surveyor took stones to help prop up the wood posts. Alright here's a wood post that is completely decayed and this is all that remains right there. And this was the wood post and actually it was located because there was a stone memorial that the notes said was just to the North, right in this area that referenced the original corner post. So the stones were found and to verify that there was a wood post around there this surveyor scraped away the dirt and found the remnants of the wood post.

So if the wood post is completely decayed or gone or the stone is such that you can't find the marks, what do you do? Well the law says that the accessories are part of the corner point and here we have a tree that is a, shows how the corner accessories were marked for a quarter corner. And we see one quarter S BT and note that the BT here is at the bottom near the base of the tree in this one. And that's a good thing because when these trees are cut off; often times you can find remains, maybe the scribe remains, right at the base of the stump.

Here is a pine tree and here we have window scar where this bearing tree accessory was blazed and scribed and now it's partially healed. And if you like right in here you would see portions of the scribe mark where the deputy surveyor got in there and marked the tree. This is a tree that hasn't completely over grown. This is another pine tree accessory and I want to point this out to show you that every deputy surveyor has their own set of characteristics. He may have been working under different instructions, a

## EVALUATING CORNER EVIDENCE – PART 2

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different Manual but every surveyor has his own fingerprint that he applies to his survey.

In this one, we have a deputy surveyor that marked a tree in 1865 to reference a section corner that was on a township line. Then a number of years go by and the rest of that township is surveyed and in 1875 this deputy surveyor came in and he marked the tree right here. Now what he did is this was a closing corner that was about thirty links away from the other tree that was marked in 1865 and this surveyor thought he would take the same tree but you can see different characteristics. This blaze is higher than this one. This is closer near the bottom. And I've had surveyors say "Oh, we're going to reject this one because it should be marked down here." That's not necessarily true.

So one of the things that you need to do is get familiar with the characteristics and the marks that the deputy surveyor in your area of the survey, get familiar with the marks that he made on his monuments and also the marks that he made on his accessories. And you can do this by going to the courthouse somewhere and doing research on fine corner points that have been perpetuated by other surveyors. And actually go out there and look at those and see what the evidence looks like.

Here we have a tree and the original blaze and scribe marks are completely healed over. The annual growth rings have actually covered up the marks on that tree and this is where experience, there is no substitute in this area, experience will allow you to discern that there is a blaze right there on that tree. And that it might underneath there contain the scribe marks that the deputy surveyor left.

This is a cross section of a tree trunk that demonstrates how trees grow annually. You can see that you have these annual rings here- one ring for each year the tree grows just like that. And if the tree is marked or in this case scarred by a fire but if its marked right there, subsequent annual rings will grow like this and eventually will cover up that blaze. And after a while you can't even really see it but if your doing retracements of old surveys this is part of science that you need to be aware of and understand that even though you can't see the scribe marks it may be in there, inside the tree.

So applying that to our evidence of trees and when they're sawed off, here we have the stump of an original pine tree. It was this tree was marked, when it was about seven inches diameter-like that. So a hundred and some

## EVALUATING CORNER EVIDENCE – PART 2

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years later the tree has grown this much but we can still see the scar right here that's left by that blaze. So an experienced surveyor knows what to look for and will eventually find this mark.

Sometimes it might be necessary to block out the tree to verify that it has been marked and this is an example of an oak tree that was blocked out. We took an axe and cut into it, right in here, we felt that there was evidence of a scar right there so we cut into. Unfortunately the tree was hollow but cutting into it on one piece down here there is reverse scribing right in here. So what happened is this tree, the annual rings grew around and it filled in the grooves from the scribe marks. Then as the tree decayed from the inside, the overgrowth, the more gnarly wood was the last to decay. And it indicates the reverse scribe marks as seen in this specimen right down here in the bottom right. Looking a little closer in here on how a surveyor here chopped in towards the center of the tree in an attempt to find scribe marks.

Now the center of the tree is kind of dark in here but in here you can see the one quarter S in there. So the surveyor was able to verify this corner point the original monument was gone, it was a wood post that decayed and long gone. So the only way to verify this corner point was to verify the marks inside this tree.

It's not recommended that you go around cutting into every tree of the locus of a corner point. You need to be able to recognize the exterior indications that the tree was marked and may be over grown. Cut into only as a last resort. Some other things that you can do is to take a core drill and core into the tree to determine its age.

Maybe if you find out that the tree was too young it was only two inches at the original time that the original surveyor would've been there you could rule it out as being an accessory to the original corner point. In this case Mark has drilled into the tree and pulled out a core right here and he can count the annual rings on this core to determine how old that tree was and if it might date back to the time that the GLO surveyor would've marked it.

Actually in this case he's coring the tree to see how old it is and this tree is located on an island he's trying to determine if the tree can indicate if the island was in existence a hundred and fifty years ago. But this gets into riparian boundaries and we won't be delving into that too deeply in this course.

## EVALUATING CORNER EVIDENCE – PART 2

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Often times the best material to serve as an accessory isn't a tree but a boulder in this manner. But even at that this X was pretty tough to distinguish and we had to get our main tool here, the gloves and wipe away a lot of the lichen and the moss from a lot of boulders and finally found the X on this particular boulder. So since we found that X we now have our original corner point because we found this original X mark on the boulder.

An **accessory** doesn't only have to be a tree or a boulder it can be any object whether its man made or not that references the corner point. So in this case the northeast corner of an old cabin up in the mountains referenced this original stone monument. This stone monument was kind of located out in a stone field, a boulder field. It would've been almost impossible to check all of the stones in there and find the grooves that were on that stone but we pulled off the corner of that cabin measured out and it helped to locate that stone.

The courts have told us that a definitely identified **line tree** is monument of the original survey and it's treated just as a recovered corner. Now a line tree, you have to refer to the original field notes to determine where they are and where you should look for them. So here we have a specimen line tree and it is marked with two hack marks. So if we were going to looking for something like this in the field, here we have a pine tree that has the two hack marks. Now you really have to know what you're looking for because these could be mistaken for just a scar on the tree or where a branch is broken off the tree. So you need to refer to original notes and measure down the line and look for that line tree and hopefully you'll find something with a couple of hack marks in this manner.

One of the problems we have to deal with today, being a retracement surveyor, is that evidence of the original monuments and the accessories is disappearing. So we're having to deal with fragmentary evidence with portions of trees that are decayed, wood monuments that have decayed, stone that monuments that are buried in dirt covered with lichen and moss. This is a situation where the corner point was a marked wood post but having surveyed in the area quite a bit I knew that the wood posts were often supported in this rugged rocky terrain in a collar of stone.

So when corner points were found often you were just finding the collar of stone that actually supported the original wood post. And the same goes for this decayed black oak tree. The black oak tree it's fallen over, it

## EVALUATING CORNER EVIDENCE – PART 2

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occupied a position at the actual GLO record bearing and distance from the mound of stone. You can see that there is area of decay right in here where the scribe marks would've been. So we are dealing fragmentary evidence here, a mound of stone and a fallen decayed tree but they agree, they still agree, with in some respect the GLO notes. So one of the things you don't want to mistake the mound of stones as a fire pit from deer camp. That's been done too. So we can see that the evidence of the original survey is disappearing due to the effects of time and the acts of man.

Here we have a very large pine tree that has been cut down during a logging operation but even with that if you're in the area searching for remote corner point evidence you need to be looking at some of these dead and downed trees. And also there will be the stump remnants of this tree that might have indication that this tree was an accessory to an original corner point.

Alright the ravages of nature in the Midwest, the area in Missouri where I surveyed is sometimes known as tornado alley. The tornados come through or just even a wind storm uproot a lot of trees in a wide swath of area. So here is a tree that is completely blown over and the root contains all this dirt right here. Now this tree we can still find the scribe marks where it was but imagine the affects of this tree along time down the road say fifty years, a hundred years down the road from now.

As this tree decays where does all of this dirt go, it drops straight down and creates a mound of dirt. And then over here, over in this area you're going to have a pit. So you'll have a mound of dirt and a pit and that's what we call a **wind thrown bearing tree**. If you're in the locus of corner point and you have this kind of situation just knowing geographically what kind of things have happened the best evidence of this witness tree might be a mound of dirt.

### Evidence and the Urban Interface

Alright, urban interface. More and more the evidence is being obliterated and it disappears because of development. Here we have the window scar on an original pine accessory and actually I tell people that this is the backyard of a retired cadastral surveyor who enjoyed his job so much that he just wanted to sit out his retirement days looking at the original scribing on that bearing tree.



## EVALUATING CORNER EVIDENCE – PART 2

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But in actuality this tree references a corner point that is out in the intersection of a road. Even though you're out in urban America it might still pay to look for those bearing trees in the backyard so to speak. So we're left looking for fragmentary evidence, the best evidence may be the decayed stump remains perhaps even the reverse scribing laying there on the ground.

I want you to remember this stump for later reference and the ramification that the scribe mark that was right in there, you can see the bottom of the BT scribed in that stump. See the affects that it had on a timber trespass. When the direct evidence of a corner is missing or destroyed other remaining forms of evidence, considered collaterally, maybe the best indication of the original corner position. We are going to pause here at this point of the presentation.

This is going to conclude the slides and the discussion of the direct evidence, the original monument and the accessories. We're going to get into a serious discussion on collateral evidence when we come back.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 3 (90 minutes)

**ICON LEGEND**

 <b>WEB COURSE</b>	 <b>EXERCISE</b>	 <b>DIAGRAM</b>	 <b>READING ASSIGNMENT</b>	 <b>PROBLEM</b>	 <b>HANDOUT</b>	 <b>2009 BLM MANUAL</b>	 <b>QUIZ</b>
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## EVALUATING CORNER EVIDENCE – PART 3

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### Introduction

We're going to jump into discussing **collateral evidence** and we're going to discuss six main elements of collateral evidence: testimony, records, common usage, topography, occupation and measurements.

Now we're going to jump into the top one on the list being testimony.



**HANDOUT** A copy of Stan's presentation that he uses during topics 1-5 can be found in the Handout section at the end of the Evaluating Corner Evidence – Part 1 study guide.

### Testimony

Testimony is one of those things that is very powerful sometimes in convincing a judge or a jury when a corner point is litigated. Some basic principles in regarding testimony, the original location of a corner may be restored at a position pointed out by a person who saw the original corner or has reason to know its location.

The evidence testified to should be given no more weight than would be given in court. Well that's a tough thing for a surveyor to know. The Manual goes on to say "weight will be given to testimony according to its completeness, its agreement with the original survey and the steps taken to preserve the original location." Such evidence must be tested and confirmed by relating it to known other original corners and other calls of the field notes. Again, we see the mention of relationship in regards to collateral evidence.

Testimony is one of those things that it seems like surveyors would prefer not to do it. They don't want to talk to the adjoining landowners; they don't want to talk to individuals that may have knowledge of the corner point. It's either because we're shy or we think that they're going to be upset at where the boundary location is ultimately going to be.

But testimony evidence in the eyes of the courts is very powerful and it can actually be used to determine the corner point. The Manual in section 6-20 has some guidelines that are but pretty good but are quite general.

Guideline number one says "the witness must be duly qualified. Information should be first hand, complete and not personal opinion." This would be an instance where you're conducting your survey and your

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trying to get information at the corner point and an adjoining landowner basically says “Well I think that corner point should be right over there because you know we built that fence five years ago, we’ve all been agreeing to it and I think that should be the section corner.” Well some statements like that should tip you off pretty quick.

So when you’re relying on testimony I think it’s always a good idea to have done your research and maybe made some measurements to know that general relationship of the corner point in question to other corner points. I’ve had discussions with a landowner who was really trying to convince me that a certain fence corner was the section corner. I was sort of dubious to it because I thought the section corner was more in the order of about a hundred feet away.

And it was a hundred feet in a direction that would’ve favored the landowner but he was very adamant that the fence corner was the section corner. So I told him a little bit about our survey and that I had reason to suspect that the actual section corner was a hundred feet further east. And he immediately saw how that was going to favor him and he sort of did this and said “Well, you know young man, you may be right.” So testimony, you always want to be able to test it with other elements of evidence.

Number two, testimony should stand appropriate tests of its bona fide character. It is honest, in good faith, genuine without fraud. Well, I don’t know, but I don’t have a lie detector that I can carry with me along with my other equipment so sometimes it’s hard to know if it’s honest and in good faith.

Testimonial evidence given by disinterested parties is often more reliable than that which is given by adjacent landowners. And I just gave you an example of that. Landowners have often times have too much at stake.

Number three, testimony must be sufficiently accurate for what is required in normal surveying practice. Sufficiently accurate. Well, if you had a landowner, farmer or rancher that said “Well, I know for a fact that my grandfather told me that the quarter corner is up there on top of the hill.”

Well, if you have a hilltop that’s a broad sweeping hilltop it helps you define the general location but you haven’t gotten testimony that is sufficient to show you that the corner point is right here at this exact

## EVALUATING CORNER EVIDENCE – PART 3

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location. Now, if your evidence or if your restoration process of the corner point led you somewhere off of the hill then you might have concern. But its got to be good enough to say that it is right here. I once had a section corner where it was in a rural farm area and it was kind of in the front yard of a farm house and it was our search area.

We looked around we didn't see anything there. We talked to the person that lived there who was the son of the actual landowner and we finally hooked up with him one day and he gave us a very interesting story. He said "See that big bowl there in the yard." Yeah, yeah. "That use to be a great big white oak tree and it was hollow on the inside." And he said "We use to store shovels and other tools and stuff inside that hollow tree." He said "My grandfather told me that tree was a government tree." In other words it witnessed the actual corner point. Now that's pretty convincing testimony and it's pretty specific and I actually used that bowl shaped depression in the ground, coupled with the testimony to determine my corner point. So, that would be pretty good testimony but I still had measurements and other things to bring me into the locus of the corner point.

Another very good statement is "**Corroborative evidence** is necessary in direct proportion to the uncertainty of the statements advanced." Well, I like I just said I think you need to always be prepared to have other evidence, measurements other landowners what do they have to say about the corner point.

I remember one time where we had a another section corner that we were trying to determine and in the area of the section corner but it was a mound of stone. Now in this area, and it was in Missouri, a mound of stone is often indicative of a corner point. But in this case the mound of stone we've made measurements into it and it seemed to be too far east. And it also didn't agree with a topo call, which was a creek call, two chains.

Creek call is supposed to be two chains east of the section corner. Well, this mound of stone was only about thirty feet west of the creek call; it should've been about two chains. There was an old house down the road and everyday as we drove into the survey project there would be two gentlemen in a rocking chair sitting on the front porch.

The first time we stopped to get permission to do work in the area to cross their property and ask them if they had any knowledge of the section

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corner. And at the time they kind of looked at each other and shook their heads “Well no, we’re not sure where that’s supposed to be.” So, after analyzing all of it we decided that the section corner is going to be further west and about two chains from the creek. And we were going to reject this mound of stone.

And I went to talk these two individuals and I remember the conversation very distinctly because as I told them very kind of apologetically that “I’m sorry but you know there’s a mound of stone there in the creek area.” And they said “Yeah we know that mound of stone.” And I said “Well you didn’t tell me about it earlier.” And he goes “Well we just wanted to see if you knew what you were doing.” I said “Well the corner is going to go further West up the hill.”

They looked at each other and had a good chuckle about then and they said “Yeah, we created that mound of stone and it use to be further up the hill.” So you kind of want to know what you’re doing when you talk to some of these folks because they may be testing to see if you know what you’re doing.

When you are doing a resurvey and testimony is going to be important to confirming your corner point you might actually want to get a witness statement from the person attesting to the corner. You can include the following information; get the name, age, address, how long have they been at that residence, when did they first acquire knowledge of the corner position.

How did they acquired knowledge of the corner position is pretty important if you go into litigation because juries and the courts seemed to empathize with how knowledge or the memory of where that corner point is was obtained. You might get a photograph showing the corner point and the witness with the date, the photographer and witness signature.

And in this day and age with digital cameras, that’s kind of an easy thing to do. And you might want to get an actual signed statement from the witness. Sometimes if you can get a statement that’s good but I’ve had it where you’ve set them down to sign a statement they start to get nervous and they’re worried they’re signing some document and they can get upset with that. And if that’s the case they don’t want to sign the statement just get it into your field tablets documented and for me when I’m discussing this with the landowner or somebody that has knowledge and I’m going to rely on their testimony I like to have somebody with me



## EVALUATING CORNER EVIDENCE – PART 3

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that can witness the statements that were made.

I have an example of a witness statement from Monica Candelaria and she's certifying that she's a lifelong resident of the area, landowner of property adjacent to the corner of sections twenty, twenty one, twenty eight, twenty nine and she says "to the best of her knowledge and belief the nearest true position for the section corner would be located in the remains of an old fence line extending North, South and West."

So, now we have a statement from Monica, we have fences that extend north south and west and have measured relationship coming in to confirm the location relative to other corner points. So I think we have a pretty good statement that will really help bolster the corner point.

I want to cover just a few more things regarding testimony in general terms. I want to reinforce again, testimony can not overcome the original monument or its accessories as to the location of the original corner. If the testimony is strong enough it can be used alone to determine the original corner point. However most often it's used to corroborate other collateral evidence to support your determination of the original corner point.

Most generally testimony should be related to other calls of the record and corners of the original record. Testimony is best when it is based on personal recollections. However hearsay is sometimes allowed in boundary cases. And I've just given you a couple of stories of where hearsay came into play on the corner point. And here is another very important item, if you do not accept a testimony or a witness statement to locate the corner and use another location be prepared to impeach the testimony.

In other words be prepared to cast doubt upon the testimony. You need to be prepared to say "Well, yeah I know they said this but for these reasons I felt the corner point is somewhere else." And we're going to discuss a case here in a minute that demonstrates the importance of that. And then a final caution, the witness may mistakenly confuse evidence of a property boundary or unwritten right with evidence of the original survey or written title line.

As a surveyor we have to distinguish between the two and fences are a difficult piece of evidence sometimes that really give us a hard time to determine whether it's just a fence line of convenience and not really evidence of a section line or was it actually built on the section line. These

## EVALUATING CORNER EVIDENCE – PART 3

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are tough things to determine.

### Case Law

At this time, I want to introduce the case of **United States v. John Citko** and others. This is, to me, and intriguing boundary case that I first read again when I was in my formative years of the early 1980's.

When I first read this case I was outraged. I thought the Judge made a terrible determination and I read it several times again over the years. I hope when you read it that you recognized all the elements of boundary evidence and I suspect you either really agreed with the Judge's decision or you really disagreed. I've discussed this with a lot of surveyors and opinions are usually strong and they tend to be varied.

I'm going to try to get you oriented. I have this diagram here you might want to keep it in front of you as we talk about the case but I'm going to introduce it using this diagram. We have a section line between sections twenty-four and twenty-five. This is the line right here. At each end of the section line are found original corners this corner point is found and this section corner point is found, they are original.

At issue is the quarter corner in the center between the two section corners. The ownership is the United States to the North, the United States to the Southwest and Mr. Citko to the Southeast. The area of the quarter corner falls in kind of a marshy area and historically there was an old road to the West of the corner point it has been variable called a tote road, a haul road but there is a road over here West of the corner point. Along this road there is a pile of rocks or a mound of stone, depending on who you want to talk to, and this pile of rocks is North forty-four feet and west one hundred fifty-five feet from a proportion point of the quarter corner which would be midpoint between the two section corners.

Evidence was introduced and one of those pieces was an old highway map. The highway map indicated distances from something of 2,837 feet East and 2,510 feet West and depending on how you wanted to interpret that, it was interpreted to be either from the quarter corner or from the highway. Well the relationship of the mound of stone relative to the highway tie is somewhat similar. The mound of stone was 2,508 feet East of this section corner over here. And 2,819 feet to this section corner and some in the case felt that these two sets of distances correlated well and that the mound of stone was the intended quarter corner.



**HANDOUT** A copy of U.S. vs. Citko can be found in the Handout section at the end of this study guide.

## EVALUATING CORNER EVIDENCE – PART 3

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The surveyor for the USA made a thorough search of the area, looked for the original accessories which were tamaracks and I could tell you in the lake states, and this case is from Wisconsin, that tamaracks are very long lasting. They have very dense tree rings and they are very pitchy and they are very durable they last a long time. The original monument was a wood post and we know that wood posts decay right? Ok, so this sets the backdrop of the situation. You can see that the mound of stone favors Citko and naturally he would be in favor of that as being the corner point.

So, let's discuss a few things in regarding this case. I've tried to set it up for you graphically now I want to discuss some of the basic principles of the case and the issue. I think the issue was that the evidence of the one quarter corner was insufficient enough to justify whether or not to reestablish it by proportionment.

The United States contended that the one quarter corner was lost. The Citko's contended that the quarter corner is not lost, it's obliterated and it exists at the mound of stone. Now in reading the case you noticed that in the synopsis of the case, the judgment over Title 43 of United States Code Section 752 and we did that at the beginning. That is the statute that says that the original corner points are immovable. The judge also discussed the United States v. Doyle which is a common law case and we mentioned that is the case that says surveyors must use all means to determine the corner point before saying that the corner is lost.

The court also established that Wisconsin law follows federal law and that Wisconsin had adopted the BLM Manual of Surveying Instructions in 2009. Then the court, as did we earlier, went into an extensive definition of existent, obliterated and lost; how about that?

I want to review the evidence that the United States entered in and felt was compelling then we'll review the evidence that the Citko's introduced that was compelling and then we'll go through all of this by iterating the findings of the court. So, the USA contended that the rock pile was five feet by three feet by twenty inches high. And the USA surveyor said that is uncharacteristically too large for a monument to a corner point. He also said there is absolutely no evidence of the original bearing trees, the stumps or the roots.

The USA also contended that there is a fence on the North South center line of the Northeast quarter of section twenty five. Yes. There is a fence line on the North South center line of the Northeast quarter and it was

## EVALUATING CORNER EVIDENCE – PART 3

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from 1941. They said its midway between the proportion point for the one quarter corner and the section corner to the East. So in essence they're saying that a sixteenth corner that is supposed to at midpoint between a quarter corner and a section corner doesn't fit with the rock pile.

Now we're going to see where that was a little bit of a fatalistic presumption considering that fence line. The USA also contended that the highway map from 1935 shows ties to quote "verified section corners to the East and West" but depicted the one quarter corner as quote "unverified". They said that the ties were from the highway itself.

There was previously in 1971, and this case was tried in 1981. In 1971 there was a surveyor by the name of Arnot who quit the services of the Citko's he could not agree with them on the location of the one quarter corner or perhaps he wasn't paid. But surveyor Arnot used a right of way deed which placed the quarter corner one hundred feet north of the governments' proportion quarter corner point. Aright let's consider this. The surveyor used a right of way deed which placed the corner one hundred feet North of the proportion point.

And let's recall that in highway maps, highway construction, don't they use 100 feet stationing? Was maybe the hundred feet stationing a little off here? Placed the corner a hundred feet north of the proportion point. Maybe a consideration, maybe I'm just trying to defend the governments' position.

Lets talk about what the Citko's contended. They brought forth a witness by the name of Kadubick, and by the way if you can pronounce all the names in this case, Sacankinski, Nanusanis, Kadubick and others, you're doing pretty good.

But anyway Kadubick is a life long resident and he testified that he saw a fence which ran East from the highway over the rock pile in 1960. The Citko's had witnesses as early as 1968, they had Kowalski statement in 1974 but they did not inform the government surveyor. But they contended that the government surveyor didn't ask them for information or witness statements. The Citko's didn't have any luck with surveyor Arnot so they hired another surveyor, Harrison, who found some soil discoloration which he says could've resulted from disintegration of a wood posts.

However, he says his opinion is based largely on the testimony of the

## EVALUATING CORNER EVIDENCE – PART 3

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local residences. Sacanski testified by a written deposition, a deposition is where they don't testify in the actual court hearing but their testifying with their Attorney and the opposing side's Attorney and making statements to an account that would be admitted as evidence to a court. So, Sacanski testified that the fence running over the mound, he testified that the fence running over the mound of stone was built in 1937.

The fence between he and Citko was built in 1941 and replaced the fence from 1931 that was thirty feet further West from the new one. So, remember what I said about the sixteenth corner fence, let's go back to the diagram. Sixteenth fence line running North and South between Citko and Sacanski. Now the United States contended that the 1941 fence fit right at midpoint between the section corner and the quarter corner. And so USA felt that bolstered their decision to use the proportioned position of the quarter corner. Well that supposition kind of gets blown out of the water because Sacanski said that this fence from 1941 replaced a fence that was further West from 1931. And he also said that this fence was built by a one point control by coming record distance from this section corner to the sixteenth fence. That's kind of tough on the USA stance.

So, the new fence or the 1941 fence was surveyed in from the East only. Then there was a resident by the name of Newscanwitz, he testified that he saw a wood post at the claimed corner in 1930. Then we get to the crucks of this case, Colwell Crowski. Colwell Crowski testified twice by deposition. In the first deposition in 1979 he simply stated he saw two posts at the sight of the claimed quarter corner in the 1930's.

Well then the second deposition taken in 1980 he went into detail describing the events which kept his memory fresh in mind. The memory involved a deer hunt from 1927 and he was 13 years old. Now for those of us that hunt we certainly know when and where we got our first deer. He and his brother were resting after dragging a deer that his brother had killed while resting along the tote road they saw the corner post and two dead tamaracks with markings in them. One cedar post had the numbers twenty-four and twenty-five marked on them. So this is the testimony that kind of clinched it for the Citko's.

Well now let's talk about what the court determined and look at what they said and how they analyzed some of this evidence. The court said the mound of stone marks the corner point, case closed. The court however praised the government surveyor in his thorough search which determined that the corner was not existent. The court praised the surveyor for his

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thorough search which determined that court was not existent. However the court said “Wait a minute, we still have to determine if the corner is obliterated or lost.” What did I tell you about that? The court said the highway ties were similar to distances from the mound of stone and we went over those distances here they are circled right here and here.

The court observed that the North South fence at the sixteenth, that’s this infamous fence right over here, was here in 1931 and thirty feet to the East in 1941. Said that that fence was further West until the newer one was built in 1941 and the surveyor who set the location of the fence worked from the East only and did not use the quarter corner. So that fence can not serve as evidence.

The court observed that Arnot, he’s the surveyor that used the highway deed, said that Arnot’s right of way survey supports the proportion point. But in itself does not lead this court to support the determination that the corner is lost. This is where it gets fun. The court observed that the deposition evidence was unfair to the United States because the witnesses were not disclosed to them until the court action. But they said the failure to ask for testimony evidence was the government’s surveyors fault. He should’ve asked.

The court said the Sacanski and Newscawitz testimony didn’t help much, they were the two who just said “Yeah we saw a post there” and the other said “Yeah there was a fence running over post at that location.” The court said that Colwell Colski’s second deposition was very persuasive they said his memory was much clearer after help from Citko’s legal council, they acknowledged that. However the court is still convinced it is truthful. They say the testimony, and this is very important, the testimony was corroborated by other evidence. And they also observed that there was a fence running over the mound of stone since 1930.

So in conclusion, the court said the evidence supported the testimony and although the government surveyor did an impeccable physical search he failed to seek witnesses before concluding the corner was lost.

So, I have a few questions for contemplation here. There was a mound of stone there along the road, why wasn’t the corner point considered existent? Well that’s because there was no direct evidence of the wood post or of the original accessories that were the tamarack trees.

How about harmonious relationship? Did harmonious relationship or lack

## EVALUATING CORNER EVIDENCE – PART 3

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there of, of the rock pile, did it play in this case? Well actually the rock pile doesn't relate very well to the found original section corners. But this is a case where the evidence out weights the measured relationship. The court said the physical evidence especially when corroborated holds over harmonious relation. The testimony in support of the mound of stone, weighed more than its poor relationship with the section corners. In this case the testimony weighed more than the poor measured relationship.

Do you think in reading this case that the rock pile would've served as the corner point if there was no testimony to support it? Well in that case if there was no testimony to support the rock pile than the measured relationship, the poor measured relationship, might've factored in helping its rejection.

Now let's say that you are the government's surveyor that made the determination the corners lost and you proportioned it. Would you have changed your mind if you had heard all the testimony before making your decision? Well you might've reconsidered, you would've found out that the sixteenth fence was only one point control and you'd have to consider it relative to the Colwell Colski deposition.

Now each side used the highway map, how do you think the highway map helped factor into this case? Did it harm the determination that you should proportion the corner or did it bolster your proportion corner? Because the ties were ambiguous but there was other collateral evidence that pointed towards the ties being to the mound of stone.

So, I tell you, when I first read this case I jumped up and down had a fit and said "what a terrible decision." In subsequent years as I went back to it and gained more experience I've started to think that maybe the court given the evidence maybe had no other choice. And it almost got the tone that the court was sympathetic to the government surveyor's situation, almost sympathetic that he didn't have the chance to get the testimony but then said you should've went and asked. That's what the court said, you should've asked for that information.

I'm going to flip through the actual case and you have it in hand and try and emphasize some key points. If you go to page five you see that the court recites precedents on boundary law and evidence and it says for a corner to be lost it must be so completely lost it can not be replaced by reference to any existing data or other sources of information. The court acknowledged on the bottom on page five there is no clearly defined rule



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for the acceptance or non acceptance of the testimony of individuals. It may be based on unaided memory over a long period or upon definite notes and private marks.

The witness may have come to his knowledge casually or he may have had a specific reason for remembering as in this case. Corroborative evidence becomes more necessary in direct proportion to the uncertainty of the statements advance. There they are quoting the BLM Manual which has also been adopted by Wisconsin. Let me see if I can find some other highlighted evidence. They mention the map on page eight. The highway map was apparently made in 1935 it shows an unverified quarter corner just East of the highway and it also states distances from the Northern section to tie.

And granted it looks to say unverified but their saying in conjunction with all the other evidence in the statements maybe it becomes more convincing. Again the government surveyor based his decision on three main things the rock pile was too far away from a proportioned position, the highway map only showed the section corners as found didn't show the quarter corners found and quite frankly I'm very sympathetic to him in that situation and then the sixteenth corner, he used that to support his position but then that position backfired.

The court acknowledged that there is an understanding in the community that fences are used as boundary lines and are corners set by stone in talking about the mound of stone. And then on page seventeen, in the middle of the page, the courts kind of admonishing the government surveyor. However, it was the government surveyors ignorance of the existence of Citko's witnesses was partially due to his failure to ask the Citko's if they knew the witnesses. As a professional surveyor it was incumbent upon him to make diligent effort to find witnesses. We got to do it folks. And it's interesting reading where they acknowledge that Mr. Colcowski, his second deposition was bolstered by coaching from the legal council but they said it still convincing.

The U.S Attorneys that represented the government in this case as Attorneys tend to be they're poor losers. And of course they blamed it all on the surveyor and so they issued some statements to government surveyors that, I guess as instructive. They say that "the result while adverse to government should prove highly educational in highlighting certain home truths about government survey approaches. "We've been trying to get this across for many years" they say. "These turn on the need

## EVALUATING CORNER EVIDENCE – PART 3

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to affirmatively seek out and preserve local witness testimony and affidavits at the time of the survey, whether positive or negative as to corner existence.” They note, as did the court that the government made a thorough search they found all the evidence, they did not get the testimony evidence but he did a pretty good job the court said in finding the evidence but you know what? You didn’t evaluate it properly. And then they also say “while it is important even vital to employee, good trigonometry and accurate closure limits, it’s even more important in supporting litigation to seek out the Colowski’s at the time the decision is made on a corner point.

If a negative statement had been taken from Colowski in this instant that at the age of 13 he was only interested in girls or model airplanes and couldn’t tell one tree from another his testimony might’ve been impeached.”

How about that? Well I thought that would be the job of the attorney to impeach opposing testimony? But it’s a surveyor’s job. “If he had made even half the persuasive statement to the surveyor that he made to the court about reading the figures twenty-four and twenty-five on the later vanished witness trees he might’ve been taken seriously.” I wasn’t going to do this but I’m going to do it but I’m going to quote one last final statement.

“There seems to be a strong tendency by both BLM and Forest Service surveyors, and in quote I speak with some background as to both of these to turn to quickly to the neat mathematical solutions of double proportionment and single proportionate measurement for lost corners because this represents an element of certainty and precision in an uncertain world. This may be gratifying as a professional working device but it doesn’t work in litigation as too many cases have established.”

Case closed, lesson learned. After this we’re going to discuss some more collateral evidence we’ll go to records.

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### The Records, Again

We're running down our list of collateral evidence we just discussed at length testimony and we're going to jump right into records. Records are very important to the survey profession especially in the area of boundary surveying and when I say records I'm talking about the records that are created subsequent to the original records or the GLO records that created the Public Land Survey System. I'm talking about the records that private surveyors, the county surveyors have recorded and placed for us to research. These records perpetuate the original corner points.

I want to discuss a few key points in regards to records. Were an acceptable map or plat shows the found location of the original corner the corner if obliterated should be relocated by reliance upon said map or plat. City, county, state, utility companies, railroads and private surveyors often have maps or plats which include vital information concerning the condition and location of an obliterated corner.

Now the most important thing about records is that they create a chain or recovery history. They document the existence or the non-existence and the location of a corner at the time that record was created. So, for instance, if you had the GLO survey, the original survey that was done in the 1850's and then in 1905 along comes the county surveyor and he finds that original corner point and documents that and perpetuates it by placing another perhaps more durable monument that replaces a wood post that decayed. And then he might take new accessories, new bearing trees that help to perpetuate that corner point.

Then we have a record that we can rely on and then let's say another fifty or sixty years later in 1950 a private surveyor researches the county survey records and realizes that he has the original section corner that has been perpetuated by the county surveyor. He goes out and looks and finds the evidence that was left by that county surveyor. So he has the original corner point even though all the traces and elements of the original survey are gone. So records create a chain of recovery history and like I mentioned also in my example is records document new evidence that can be used that is addition to the original evidence. New more durable monuments.

One thing that we want to remember in records is that there should be a correlation between the written records and the physical evidence so that we have an uninterrupted chain of evidence. An uninterrupted chain of

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history that takes us back to the original survey. I want to mention here also the virtues of using aerial photos.

I classify aerial photos as records because they go back to the mid 1930's are when we started having aerial photos. And they show at a certain point in time the physical features that are on the Earth's surface. And they show us lines of occupation such as fences and hedge rows they show us roads, canals and ditches and all the topographic features so if we look at aerial photos that may have been taken say every ten or fifteen years there we have a chain of land use history and that land use history shows us the occupation lines and the occupation lines might be built on title lines or lines of the original survey.

But I want to mention here, and I tend to get up on my soap box sometimes regarding records, land surveyors in this day and age tend to not want to record their surveys. So you have to ask the fundamental question, how can surveyors from the next generation and the next era correctly restore prior surveys without access to those prior records that are not recorded? And I think that this is a problem in our profession because we'll have a hard time fulfilling our duty and responsibility to our client, to the adjoiners and to society and to the courts. If we are unable to follow the foot steps of the subsequent surveys that perpetuated the original surveys.

Curtis Brown in his book talks about the virtues of recordation and he again says "how can surveyors correctly retrace prior surveys without access to private records?" He says that "if the surveyor is delegated the privilege of remonumentation of deteriorated corners he or she should be delegated the responsibility of perpetuating the evidence." He goes on to talk about a California recordation act that places the responsibility of perpetuating discovered evidence on the private practitioner. "If evidence of monument position is preserved by public records and if new monuments are set with a continuous chain of evidence from the time of the original monuments the problems of future location of land are greatly diminished." And of course there is always the cost of doing that. He says "the ultimate public advantages far out way the complaint of increased costs."

So let's talk about records a little and maybe the records of file and record. I think we've all seen say a fundamental survey plat that might look like something like this. Here's survey plat of section eight and the section corners of section eight this surveyors says he has a set IP we have

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and FND IP we have an IP and we have a set stone. Just a couple of weeks ago in our office we were looking at old survey record and looking at ok, did this surveyor set a stone at the corner point or did he find a set stone from the original survey?

We have a problem with the semantics there. An IP, well we surveyors know that probably stands for an iron pin. FND, ok, did he find an iron pin there? That's probably what happened. Over here he says he set an iron pin but down here we only have an iron pin. Did he find it? Did he set it? What went on there?

In further, at the section corner we don't know what he looked for. Did he look for the original monuments? Did he look for the accessories that perpetuate the original monuments? Is he replacing these monuments with these iron pins? It tells us nothing about the corner point itself and we have no history of perpetuation and so if we as surveyors are going to go back in and do some survey work in section eight, we're probably going to want to verify these iron pins and that they actually are placed at the point of the original survey and the original section corners or at least I think I would.

So, I think I want to from here on out, start emphasizing the importance of documentation and doing a better job of documentation by virtue of better records that we create for the next era and the next generation.

Here we have a certified land corner restoration and it is from the state of Michigan. The print is kind of small here but you can see that it's a thorough form that is recorded and now surveyors that are researching survey records can go in here and they know what this surveyor looked for. He was looking for the corner established by deputy surveyor Austin Burke who determined the original corner point in 1848 and he lists the original bearing trees that he's going to look for at the section corner. Then, next in this record we have what was found.

This is what surveyor found and this is what he did he says "I restored the corner position at the record bearing and distance from the original bearing trees. The first one is a thirty-three inch live yellow birch with scribing visible. I found the stump whole of the sugar maple bearing tree." So he has a direct link back to the original corner point and now, he did this in 1969, and now today I can go research this and I know I have a direct link to the original corner point. Next, this surveyor talks about how he perpetuated the corner point. "At the corner position I set a two

## EVALUATING CORNER EVIDENCE – PART 3

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inch inside diameter by five foot long concrete filled galvanized iron pipe.” This kind of tells me it’s in a marshy area where he had to really sink it down deep.

But we got a good, durable monument that’s going to be there the day when we go to look for it. Also he has taken three new accessories in the form of bearing trees that I can also look for to find and make me know that I am on the right section corner point. So, here we have very good documentation, very good documentation of this section corner point. I would certainly like to see more of those in day and age.

A few record sources. One of the things the surveyors, we surveyors, really need to do is get familiar with all of the record sources in our geographic area. This includes the private survey records; the local survey records where we can go retrieve them. The appropriate state agencies, the county surveyors, the county and city engineers have records that we need to research and look for, the county clerk, the county recorders. How about state and highway departments? Those highway maps have unsundry corner ties, some good some bad. Railroad ties, when they were constructed they also tied corner points.

Abstract and title companies or land descriptions that tell us where corner points may have come from, they can give us additional measurements to look for. Logging companies, museums and historical societies that may have indications of where old land records might be. And then of course, if you are working in or around federal land you should consult and go research at the appropriate federal agency.

Also I have to make a pitch to always go to the BLM state office and check the public room or wherever they have those General Land Office records and where they keep there resurvey records and make sure that you get that information. But this is just a short list of where those records might be. You need to get familiar with where those records area where those records are in your geographic area where you practice.

Mentioned highway ties for corner records and I have here an example of a highway map and I’m not going to expect you to be able to read this too thoroughly. But I’m going to give you a chance to peruse this here. This is a copy of the actual highway map and it really, the original document wasn’t that clear in itself but my mission was to find a section corner that was in or near this highway. And I got this record, it was in the county recorders office of a poor county, a poor rural county back in a vault

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where they had a bunch of rolled up surveys and a bunch of plats. And I had my crew go in there on a rainy day and check literally everyone because they weren't indexed and this is one of the things, one of the documents that they produced this highway map.

In fact when we check further the Department of Transportation could not produce this map from their records. So we have this and I have looked at it several times and I just couldn't find where it was going to give me any information that would take me back to original corner point. I did notice though, right off the bat that they did have some projected lines on here that indicated the section corner. And, we have this line here and they're indicating the sections here thirty-five and here's section thirty-four.

So, when intersecting this it indicated that the corner point was somewhere right in here. This general location agreed with my measurements that took me into the location of this section corner. I had measured from adjacent found corner points and after looking at this half a dozen times, I started to think well maybe this isn't going to help me actually locate this section corner. And then I had glanced at some numbers that jumped out at me and right down here, and I'll zoom in on this, it said "station 316 plus zero zero and project 245 feet South and 140 feet West of the Southwest corner of section 36.

Well hallelujah, there's a direct mathematical tie that tells me this is what they thought was the section corner. Now unfortunately it doesn't tell me why they thought it was the section corner. Was there an iron pin? Was it a fence corner? Is it a marked stone?

We don't have any of that and that is often the case with highway maps sometimes we get a little bit critical with these Departments of Transportation. So now, we have this tie and I have one more problem left though in using this tie and that has to do with the coordinate system.

We all know that the Department of Transportations sometimes have their own coordinate systems or maybe they use a local coordinate system. So how do I take this, it's a South and West tie, put it on the proper coordinate system? Well, also notice here in this general area of where this tie was we have a bearing and it is South thirty-six degrees, twenty-five minutes West and this is the center line bearing for this segment of the highway.

So what we did is located, we had the right of way monuments here and



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here and here and here, sided between the midpoint between each of those to get our azimuth to get our basis for bearing. Then calculated the bearing to go on this corner move and turn the angle and went the distance and it put us back up in here where the corner point would be.

Since that position agreed generally with where my measurements to adjoining corner points said it ought to be and also going back to the map here, I'll zoom out here a little bit. Also if you note in the area of this section corner, the GLO had topographic ties to this river to the creek over and this is an easterly direction to the creek.

Now the construction and occupation in here could've moved the bank of the creek but it generally agreed this topographic call from the section corner to the river bank agreed within in twenty links of record so I felt pretty good about that. There was also another tie coming up the section line North to this but in this area the river you could tell it had been in several different places and may have been re-channeled to get it through this.

But using this highway tie it took me to a definitive location within the highway and since it agreed with everything else I used that actual tie to say this is my section corner. As shown on highway plan A dated 1966 so on so forth. So here's an example of using collateral evidence this is a record that used with other collateral evidence helped get me back to the corner point.

As we get into other elements of collateral evidence you're going to see some examples of how I documented the corner description and put it all on there using all elements of the corner record. And you know I've been harping about how we need to create better records, better descriptions, better documentation of the surveys we do so that we can link back to the original corner point.

And I have an article that I kept by Joel Leninger, he wrote in *Professional Surveyor* back in 1996. And he's kind of talking this tendency of surveyors not wanting to document and record their surveys. And he saying surveyor's ignorance of principles is manifested by a lack of documentation in our surveys and I'm going to read a couple of blurbs from his article. He says "Many surveyors traditionally have omitted conflicting boundary evidence on boundary plats. Why is that, to eliminate clutter? I don't think so. I believe it is because they have been insecure about their decisions and did not want attorneys and others

## EVALUATING CORNER EVIDENCE – PART 3

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second guessing what they decided.

The premise being the less everyone knows the less they can question.” And let’s, come on, let’s get right down to it that’s why many of us surveyors don’t want to record our work. We don’t want it scrutinized. “Have these surveyors good reason to be insecure? You bet for in the course of defending their position they would have to expound on underlying theory and principles and they would have been unable to do so.

When pressed to the wall over why something was done the non professional will not have a good reason.” He goes on to say “An ignorance of underlying principles manifest itself when unusual situations are encountered. Executing empirical solutions such as proportionment for lost corners when the situation is common is easy. But what about unusual situations? Procedural solutions break down when this occurs and professionals must resort to the underlying principles to devise a solution. Non professionals can only muddle through and hope the issue gets forgotten.

A solution will be rendered even when based on a misunderstanding of the principles involved. This is where the client is harmed and where credibility of the surveying profession at large is damaged. Our clients, their attorneys are completely dependent upon our understanding of the issues. If you do not understand the principles you can not fully understand the issues and you are flattering yourself to consider yourself a professional.” Bam. Those are some hard hitting words by Mr. Leninger but I think that it’s appropriate.

### Common Usage

I’m going to move on from records and jump into collateral evidence element that I call “common usage.” Common usage this term is also known as “corner by common report” it’s also known as “corner by reputation”. But this corner element, this doctrine says that under certain conditions a corner location can be proved by common usage or reputation of a point.

In some locals, highways, fences or other cultural features were placed on section lines or property lines. Where a road or fence has been commonly accepted as the section line and there is no better evidence to the contrary the road or fence monuments the section line by common report. Going

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on down in some situations it may be better to accept a long standing fence corner, commonly accepted as the section corner, than to establish a different position by proportionate measurement based on far away positions. Again don't just throw up your hands and start proportioning like crazy from far away positions.

You have to look and consider collateral evidence at all the intervening corner positions. And again I want to bring up the use of aerial photography in these kind of situations. A historical pattern of land use can often be seen on aerial photos and on old maps. But let's be careful here the custom of the area concerning how the fence lines or the roads were established and the value of the land should be considered. I tell you I've practiced in a lot of geographic locals where the fence lines just meandered all over the place and they were not considered to be on the property boundaries or on the section lines.

Common usage is generally used collaterally with other evidence such as testimony, measurements and records. And again the location must not be superseded by evidence of a higher order. Some examples here are roads that were laid out in the prairie states, say Iowa and Nebraska. They have a rectangular pattern and that's because these roads were often laid out right on the section lines and the subdivision of section lines. So, the roads may have torn out the corner point, or the monuments of the corner point but they then become a monument to the line.

Fences could also have the same rectangular pattern in some of these locals. I was working up in Minnesota and noticed that on the topo map and on the ground that there were these drainage ditches, these canals and they tended to follow the section lines and sometimes subdivision of section lines.

But there was no documentation of that, so in course and I also noticed the roads in these local were constructed on the Public Land Survey System. And a county surveyor kind of tuned me into you know "Check the county recorders vault and you'll see a box of township road orders." And sure enough in going in there we found this box of slips of paper that were called township road orders and were it directed the county surveyor to go out and layout some roads down the section lines.

So now these road intersections and the roads themselves become a monument to the section line. Well in looking for these township road orders I noticed another box of documents "Judicial Ditches" and guess

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what? In the same manner these ditches were laid out like the roads on section lines and subdivision of section lines often times by the county surveyor. So these documents proved to be prima facie evidence that I could use to say that the road intersections and the judicial ditches were the best evidence of the corner points. So again these are examples of getting familiar with the conditions in your geographic area.

I'm going to go into example that I have of using the principle of common usage and I'm going to show you how I documented the evidence in this case using elements of collateral evidence. We're trying to restore a quarter corner. The quarter corner is not existent, we couldn't find the original monument or the accessories and partially that's because there is now a North South road going across the quarter corner on the North South section line.

But I have other indications of where that quarter corner is, and on this graphic we have the location of the quarter corner, the X and we have fences that emanate from that quarter corner in the easterly and westerly directions. The fences deviate because of drainage and we have a creek and in this part of the country it's called a branch, southern Missouri it's a branch. We have this branch flowing through here and there's a kind of a little draw a little bit of a small valley here and so we have bridge and some fill here.

So that area has obliterated the quarter corner we also have a matured tree line extending easterly and westerly and the tree lines and fence shows up on the old aerial photography going back to the 1930's. We also have some county surveyors, county records and in 1865 and 1872 county surveyor George Breckinridge he recorded the corner point as a pile of rocks in the edge of a branch.

Now in this area of the country, the original monument was a wood post but the wood posts that were set in 1821 have long decayed and disintegrated but what you often find is the stone, the mound of stones that were used cause there's plenty of rocks in this country were used to stack up around the wood post to hold it upright because you sure couldn't dig a hole. So the old county surveyors would find those mounds of stone in perpetuating. But this county surveyor in 1865 and 1872 he said he had a pile of rocks in the edge of a branch. So, you'll notice that the corner point is on the South edge of the branch.

Subsequently in 1900 county surveyor H. Hawkins he called for the

## EVALUATING CORNER EVIDENCE – PART 3

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position of the South sixteenth down here as corner in the road. So Hawkins was establishing the south sixteenth and how do we establish the South sixteenth? They are between the quarter corner and the section corner. So he established the South sixteenth and he said that corner is in the road. Well to me that bolsters my case that today that the corner is in the road.

So let me go to my corner point documentation. And let's zoom in on this and look at this documentation. I say that the one quarter section corner is section fourteen and fifteen is determined longitudinally by the center of a graded gravel road extending North and South. And latitudinally by the projection of fences and old tree lines extending South 86 East and North 86 West.

Now before you get all flustered and say "Well that's four degrees from West and four degrees from East." That is the typical direction in this township of the East West section lines. They were about four degrees to the left of the cardinal, that's the way this township was originally surveyed for various reasons. So the fences in the tree line reflect that. I go on to say in my corner description, "This position falls on a road fill which crosses a stream branch as verified by the following county surveyors." Here's our 1865 and 1872 county surveyor, pile of rocks and edge of a branch.

And here's our 1900 county surveyor, South sixteenth corners in the road, alright? But there is more evidence here. Aerial photos dated 1939, 1967 and 1986 show the rectangular pattern of roads and fences in the area and prove their long standing existence. And then I go on to set my corner point and state what I did. I take new bearing objects which I used the railings on the bridge to perpetuate my corner point. So, here you see an example of documentation of using the principle of common usage, using old records that didn't get me definitively to the corner point, but as you consider them collaterally they all take me back to the road, to the branch, to the creek and the photos all put it right in there. So we used the center of the road and the fence line intersections to determine that quarter corner.

Now let me ask a question here, how would we classify this corner point? Is it existent, obliterated or lost? Well, I already told you that it's not existent we didn't have the original monument or the accessories. If it was lost, what would I have done? I would've done a single proportion between the section corners but now that's a last resort. I did a trial

## EVALUATING CORNER EVIDENCE – PART 3

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proportion of the quarter corner to see where it put me and fortunately it put me in the locus in the general area of the fence intersections in the road.

So in this case I felt the evidence was better, I'm supposed to use evidence before proportioning anyway. So I classified this corner as obliterated. Now we could complicate this situation and say "What if we found a mound of stone or something off of the road and somewhere located out here elsewhere" then I think we would have conflicting evidence and we would have to consider that but in this case there was no other conflicting monuments. So there are some examples of documentation using common usage, records and aerial photos.

Before I leave common usage I want to make one more important point and that is that common usage can be superseded by evidence of higher order. So in other words if you have evidence of the original monument and accessories then the roads and fences would have to yield to that. And to kind of ram that point home, I want to read a blurb *from Evidence and Procedures for Boundary Location* and this is the section edition on what they have to say about common usage or also known as corner by reputation, corner by common report.

"All surveyors at times except monuments and use monuments that can not possibly be proved by direct evidence or chain of history evidence to be in their original position. Reputation evidence is important to prove monuments that are not originals but are accepted as replacements of the originals. After a monument has been used by numerous surveyors the proof of their location must be conclusive not just surmised. The mere fact that all surveyors use a monument without additional proof does not and will not make it correct by continued use. The monument must be initially correct."

Then they're going to tell a little, talk about a little case here, a Superior Court case in Alpine, California. It that was shown that at an early date the state highway surveyors, here we go with one of those highway ties. The state highway surveyors tied in a fence corner and for some unexplainable reason described it as section corner. A later surveyor in 1928 accepted the fence corner and set numerous corners from the accepted section corner. Up until 1950, some ten or fifteen surveyors filed maps and accepted the old fence corner as correct.

When surveying an old holding, dating back to 1900 another surveyor

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found that fences did not fit the proclaimed section corner. In a routine check it was discovered that the original government field notes, the original government field notes, stated “Set a rock mound three feet south of a twelve foot high boulder.” Well not only was the twelve foot high boulder found but also a witness testified that in 1898 he had seen a stone mound just south of the boulder. All the expert testimony, reputation and the recorded plats could not overcome the fact that the true corner seventy feet east of the accepted fence corner.

The best available evidence was the written government field notes, the written government field notes, and it prevailed. Reputation evidence does not overcome contrary proof, but the contrary must be proved not just surmised. As a sideline on that Alpine case those with substantial enclosures were awarded top title as based on unwritten occupancy rights. And said occupancy was described from the original location of the section corner.

Reputation is resorted to only when other means of proof are lost because of a long lapse of time. The necessity of such evidence can only arise from the lack of better evidence. Common usage arises from the lack of better evidence. Don't just take the roads, don't just take the fences until you look for and find the original corner point if it's there. So kind of a tough lesson in that case.



**EXERCISE** Before moving on to the next topic, complete the “Corner Evidence Classification” exercise which can be found in the Exercise section at the end of this study guide.





## **EXERCISE**

## Exercise Three – Corner Evidence Classification

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As a review, match the described evidence with the appropriate classification of evidence condition:

Conditions:

1. Existent
2. Obliterated
3. Lost
4. Need more info

Evidence Situations:

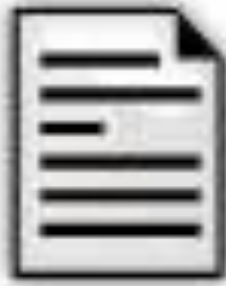
- A. Found one remaining bearing tree of the four set by GLO
- B. The State DOT has remonumented a section corner, and has records of the GLO evidence they found
- C. A pipe of unknown origin that seems to relate to the original
- D. A pipe of unknown origin that does not seem to relate to the original
- E. A properly proportioned corner with no original evidence present
- F. An undisturbed GLO stone
- G. A witness who saw original evidence and knows exactly where it was located
- H. Found several monuments of unknown origin, with no record for any of them
- I. Found a pipe for a section corner used by surveyors working in all four sections
- J. A witness who was told about original evidence and knows exactly where it was located
- K. Nothing found
- L. A fence corner, no remaining GLO evidence found, does not relate to the original very well
- M. A road intersection, no remaining GLO evidence found, relates to the original
- N. Wood post remains
- O. Evidence of pits found
- P. Memorial glass found
- Q. Old ties by County Surveyor to GLO evidence
- R. Found two accessories, do not come to the same place
- S. No corner evidence but have good topo calls in 3 of the 4 directions, within 2 chains.

## Exercise Three – Corner Evidence Classification - Answers

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We realize that some of these situations could go “either way” between two conditions, but have attempted to give guidance in the course (and here) as to where the situation may most often fall. In reality, the records research, evidence search, and analysis of any evidence situation is the most serious and complex task facing the modern retracement surveyor. If you disagree, we understand; the goal here is to get us thinking about all the possibilities, and how complicated it could get.

- A. Found one remaining bearing tree of the four set by GLO (1)
- B. The State DOT has remonumented a section corner, and has records of the GLO evidence they found (1)
- C. A pipe of unknown origin that seems to relate to the original (2)
- D. A pipe of unknown origin that does not seem to relate to the original (3)
- E. A properly proportioned corner with no original evidence present (2)
- F. An undisturbed GLO stone (1)
- G. A witness who saw original evidence and knows exactly where it was located (1)
- H. Found several monuments of unknown origin, with no record for any of them (4)
- I. Found a pipe for a section corner used by surveyors working in all 4 sections (4)
- J. A witness who was told about original evidence and knows exactly where it was located (2)
- K. Nothing found (3)
- L. A fence corner, no remaining GLO evidence found, does not relate to the original very well (3)
- M. A road intersection, no remaining GLO evidence found, relates to the original by proportion (2)
- N. Wood post remains (1)
- O. Evidence of pits found (1)
- P. Memorial glass found (1)
- Q. Old accessories by County Surveyor to GLO evidence he found (1)
- R. Found two accessories, do not come to the same place (4)
- S. No corner evidence but have good definite topo calls in 3 of the 4 directions, within 2 chains, comes to a small corner locus (1)



**HANDOUT**

1 of 1 DOCUMENT

**UNITED STATES of America, Plaintiff, v. John and Florence CITKO, Defendants**

**No. 77-C-292**

**UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF WISCONSIN**

*517 F. Supp. 233; 1981 U.S. Dist. LEXIS 12983*

**June 10, 1981**

**COUNSEL:** [\*\*1]

Barbara B. Berman, Assistant U.S. Attorney, Milwaukee, Wisconsin, for plaintiff.

Charles H. Barr, Menomonee Falls, Wisconsin, for defendants.

**OPINION BY:**

WARREN

**OPINION:**

[\*235]

**MEMORANDUM AND ORDER**

In this civil action, plaintiff United States of America ("Government") seeks quiet title to several acres of land located in Forest County, Wisconsin. The Government is the owner of numerous parcels of land in Forest County. Defendants John and Florence D. Citko ("Citkos") own land adjacent to one of the Government's parcels of land. The dispute between the parties is over the location of the quarter corner which marks the boundary between their adjoining parcels of land. A four-day court trial was commenced on January 19, 1981. This memorandum and order constitutes the Court's findings of fact and conclusions of law.

**I. Background**

The locations of the land owned by the parties is not in dispute. The Government is the owner in fee and is entitled to full possession of the following parcel of land:

The Southeast Quarter of the Southwest Quarter (SE 1/4) of Section 24, Township 37 North, Range 15 East, in the County of Forest, State of Wisconsin,

containing 40 acres, more [\*\*2] or less, acquired by deed dated March 15, 1935, from Goodman Lumber Co., as U.S. Tract 740-B, recorded in the Office of the Register of Deeds for Forest County, Wisconsin, on March 27, 1935, in Volume 59 of Deeds, page 649.

The Southeast Quarter (SE 1/4) of Section 24, Township 37 North, Range 15 East, in the County of Forest, State of Wisconsin, containing 160 acres, more or less, acquired by deed dated November 8, 1935, from Curtis-Jones-Sell Land Co., as U.S. Tract 15-C, recorded in the office of the Register of Deeds for Forest County, Wisconsin on November 16, 1935, in Volume 62 of Deeds, page 337.

The East Half of the Northwest Quarter (E 1/2 NW 1/4) of Section 25, Township 37 North, Range 15 East, in the County of Forest, State of Wisconsin, containing 80 acres, more or less, acquired by deed dated December 2, 1936, from D. C. Hess, as U.S. Tract 870, recorded in the Office of the Register of Deeds for Forest County, Wisconsin, on December 2, 1936, in Volume 64 of Deeds, page 53.

The Citkos are joint owners in fee and are entitled to full possession of the following parcel of land:

The Southwest Quarter of the Northeast Quarter (SW 1/4 NE 1/4) of Section [\*\*3] 25, Township 37 North, Range 15

East, in the County of Forest, State of Wisconsin.

The Northwest Quarter of the Northeast Quarter (NW 1/4 NE 1/4) of Section 25, Township 37 North, Range 15 East, in the County of Forest, State of Wisconsin.

The Citkos acquired their land on August 15, 1959 from Helen and George Kline.

The dispute here concerns the boundary between the western edge of the Government's land and the eastern edge of the Citkos' land. Specifically, the dispute is over the correct location of the quarter corner on the north line of Section 25, Township 37 North, Range 15 East, Forest County, Wisconsin.

In their joint final pretrial report, the parties set out the issue to be decided by the Court:

Whether the evidence of the original location of the quarter corner on the north line of Section 25, Township 37 North, Range 15 East, Forest County, Wisconsin, is insufficient to determine the location of said original quarter corner, thereby justifying restoring and re-establishing the position of said quarter-corner by means of proportionate measurement between section corners as located from original evidence. (Joint final pretrial report, p. 2)

The [\*\*4] Government contends that the location of the original quarter corner is lost. The Citkos maintain that the original quarter corner is not lost. They argue that witnesses' statements, the location of a rock mound, the location of a fence, and several pieces of documentary evidence can be used to establish its location.

## II. Applicable Law

The guiding legal principles for locating and establishing quarter corners are not in [\*236] dispute. Title 43 U.S.C. § 752 provides, in relevant part:

The boundaries and contents of the several sections, half-sections, and quarter-sections of the public lands shall be ascertained in conformity with the following principles:

First. All the corners marked in the surveys, returned by the surveyor-general, shall be established as the proper corners

of sections, or subdivisions of sections, which they were intended to designate; ...

Second. The boundary-lines, actually run and marked in the surveys returned by the surveyor-general, shall be established as the proper boundary-lines of the sections, or subdivisions, for which they were intended, and the length of such lines, as returned, shall be held and considered as the [\*\*5] true length thereof. \*  
\* \*

Other than this statute, federal law sets forth no rules which help resolve this dispute. Where there is no controlling federal legislation or rule of law, questions involving ownership of land are determined under state law, even where the government is a party. *United States v. Doyle*, 468 F.2d 633, 636 (10th Cir. 1972), citing *Mason v. United States*, 260 U.S. 545, 558, 43 S. Ct. 200, 203, 67 L. Ed. 396 (1923). Therefore, the Court must turn to Wisconsin law.

Wisconsin law provides that resurveys of public lands must follow the rules established by the federal government. *Section 59.62, Wis.Stats.* (1979). The federal rules to be followed are contained in the Manual of Instructions for the Survey of the Public Lands of the United States (1973) ("Manual"). See *Wis. Atty. Gen. opinion*, August 29, 1977. See also *Doyle*, 468 F.2d at 636-637 n. 4. The Manual has been supplemented by a pamphlet entitled, *Restoration of Lost or Obliterated Corners and Subdivision of Sections* (1974 edition) ("Restoration"). Both the Manual and Restoration were published by the United States Department of the Interior, Bureau of Land Management.

The original government [\*\*6] rectangular surveys referred to in 43 U.S.C. § 752, platted public lands into townships, each comprised of 36 sections. Section corners, and quarter-section corners between section corners, were located and monumented. These original corners of townships, sections, and quarter-sections must stand as the true corners whether in the place shown by the field notes from the original survey or not. *Restoration*, supra, at 6.

The original survey as it was actually run on the ground controls. *United States v. State Investment Co.*, 264 U.S. 206, 212, 44 S. Ct. 289, 290, 68 L. Ed. 639 (1924), cited in *Doyle*, 468 F.2d at 636. It does not matter that the boundary was incorrect as originally established. That the inaccuracy of an original survey will set awry the shapes of sections and subdivisions does not affect the conclusiveness of the survey. *Doyle*, *Id.* at 636.

A corner is either existent, obliterated or lost. The different classifications are defined in the Restoration as follows:

An existent corner is one whose position can be identified by verifying the evidence of the monument, or its accessories, by reference to the description that is contained in the field notes, or where [\*\*7] the point can be located by an acceptable supplemental survey record, some physical evidence, or testimony. Restoration, at 9.

An obliterated corner is one at whose point there are no remaining traces of the monument, or its accessories, but whose location has been perpetuated, or the point for which may be recovered beyond reasonable doubt, by the acts and testimony of the interested landowners, competent surveyors, or other qualified local authorities, or witnesses, or by some acceptable record evidence. Id. at 9.

A position based upon collateral evidence should be duly supported, generally through proper relation to known corners, and agreement with the field notes regarding distances to natural objects, stream crossings, line trees, and off-line tree blazes, etc., or unquestionable testimony. Id. at 9-10.

[\*237] A lost corner is a point of a survey whose position cannot be determined, beyond reasonable doubt, either from traces of the original marks or from acceptable evidence or testimony that bears upon the original position, and whose location can be restored only by reference to one or more interdependent corners. Id. at 10.

For a corner [\*\*8] to be lost it "must be so completely lost that (it) cannot be replaced by reference to any existing data or other sources of information." *Doyle*, 468 F.2d at 637, citing *Mason v. Braught*, 33 S.D. 559, 146 N.W. 687, 689-690 (1914). The decision that a corner is lost should not be made until every means has been exercised that might aid in identifying its true original position. Restoration, supra, at 10. Even though the physical evidence of a corner may have entirely disappeared, a corner cannot be regarded as lost if its position can be recovered through the testimony of one or more

witnesses who have a dependable knowledge of the original location. Manual, supra, Sec. 5-5. See also Clark, supra, § 281.

There is no clearly defined rule for the acceptance or non-acceptance of the testimony of individuals. It may be based upon unaided memory over a long period or upon definite notes and private marks. The witness may have come by his knowledge casually, or he may have had a specific reason for remembering. Corroborative evidence becomes necessary in direct proportion to the uncertainty of the statements advanced. Manual, supra, § 5-11.

### III. Review of the Evidence

At trial, [\*\*9] the Government presented three live witnesses and one deposition witness. The Citkos presented three live witnesses and three deposition witnesses. The Court received twenty-two exhibits by stipulation. Before making its findings of fact, the Court will review the testimony of the witnesses and the most relevant exhibits.

#### A. The Government's Case.

The Government's primary witness at trial was Gene Resvick, the United States Forest Service land surveyor who determined the claimed quarter corner was not the original quarter corner. Mr. Resvick gave a detailed explanation of the steps he took in searching for the original quarter corner. He stated he began his search by consulting the original field notes for the location of the disputed quarter-corner. Using those field notes, he and two assistants set out to find the two tamarack trees which the notes indicated marked the corner. They were unable, however, to locate the tamarack trees or any other signs of a corner at the location described by the original field notes.

In searching for the original quarter corner, Mr. Resvick and his assistants traveled to the site of the claimed quarter corner. There, Mr. Resvick found a [\*\*10] rock pile and fence post just east of an old tramway. The rock pile, according to Mr. Resvick, was five to six feet long, three to four feet wide and 20 inches high. Despite having previously observed rock cairns, Mr. Resvick did not consider this rock pile to be a cairn.

Although the original field notes did not indicate that the original quarter corner was in the area of the claimed quarter corner, Mr. Resvick and his assistants spent over forty hours in that area searching for the tamarack trees which marked the original corner. During that search, Mr. Resvick found no evidence supporting the Citkos' claim. He found no discoloration of soil or depressions in that area. Nor did he find any stump evidence or other evidence of tamarack root patterns.



The lack of any physical evidence supporting the Citkos' claim was instrumental in Mr. Resvick's ultimate decision. Another instrumental factor was the location of a north-south fence on the sixteenth section line between the Citkos' property and their neighbor to the east. That line, which was set by a private surveyor in 1941, is midway between the northeast section corner and the spot where Mr. Resvick set the new quarter corner [\*\*11] by single proportionate measurement.

[\*238] Mr. Resvick's rejection of the Citko corner was based to a great extent on the lack of physical evidence at the claimed quarter corner and the location of the fence along the sixteenth section line. However, he also relied on maps, plats and other documentary evidence. The Government placed many of the documents into evidence at trial. Two of those documents merit discussion.

Exhibit BB consisted of a packet of notes taken by Civilian Conservation Corps workers in 1934 while they were locating section corners and quarter section corners. Each slip in the packet described a worker's summary of his search for a particular section corner or quarter section corner. The slips were designed so as to allow the person searching for the corner to state what the corner consisted of, its condition, its dimensions above ground, and the markings and location of bearing trees. The slips also asked whether the searcher believed the corner to be a genuine Land Office Corner. On the back of each slip, the searcher was to describe the location and distance to the corner from a metal location poster placed to mark his work.

L. M. Gibson, the [\*\*12] junior forester who filled out the slip for the quarter corner in question, did not state the condition, dimension or type of marker used to mark the corner. Yet, according to his slip, he located a genuine Land Office quarter corner which checked with the southeast corner of section 24. Mr. Gibson placed his metal location poster on a lone spruce tree on the west side of an old railroad grade. He did not state how far the metal location poster was from the corner, although he did state that distance on every other slip he filled out. Because Mr. Gibson did not identify a section corner marker or the distance from the corner to his metal location poster, Mr. Resvick concluded Mr. Gibson did not actually locate the original corner.

Another piece of evidence Mr. Resvick relied upon in making his decision was exhibit M, a plat of traverse used in the construction of highway 2159, the highway which lies 75 feet west of the claimed quarter corner. The map, which apparently was made in 1935, describes the area surrounding highway 2159. It shows a unverified quarter corner just east of the highway. It also states distances from the northern section corners "to tie." (Ac-

ording to [\*\*13] the witnesses at trial, the phrase "to tie" could denote the distance to a tree, a rock, a road, another corner or some other identifiable object.) The distance listed on the traverse from the northeast corner to tie was 2837 feet. The distance listed from the northwest corner to tie was 2510 feet. Because the plat showed the quarter corner to be unverified, Mr. Resvick understood "to tie" to mean the distances between the section corners and highway 2159, and not the distances from the section corners to the claimed quarter corner or some other marker.

During his testimony, Mr. Resvick mentioned three considerations upon which he based his decision. First, Mr. Resvick believed the original quarter corner had been placed on the line between the section corners rather than 44 feet north of that line at the claimed quarter corner, because the distance between the located section corners was only 6.8 feet more than the distance listed in the original field notes. Second, Mr. Resvick concluded that the parties who drew up the map were unable to locate the corner because the road survey (exhibit M) indicated the section corners had been verified but the quarter corner had not. Third, [\*\*14] Mr. Resvick concluded the claimed quarter corner was not used to determine the sixteenth corner because the fence running south from the sixteenth section corner was not midway between the claimed quarter corner and the northeast section corner.

The Government's second witness was Thomas Arnott, a surveyor hired by the Citkos in 1971 to help them convince the Government that the claimed quarter corner was the original quarter corner. Mr. Arnott's service for the Citkos was short-lived apparently either because he did not agree with their position or because he was not paid. Mr. Arnott testified he searched the area around the claimed quarter corner [\*239] and found no evidence of tamarack stumps or evidence that tamarack trees ever grew there. He also testified he attempted to locate the original quarter corner by using exhibit I, a 1935 right-of-way deed involving a strip of land along highway 2159. The right-of-way deed describes the measurements used to reach the quarter corner in question from U.S. Highway 8. Mr. Arnott followed the measurements and directions and, instead of arriving at the claimed quarter, reached a point 160 feet east of the claimed quarter corner [\*\*15] a point exactly 100 feet north of the quarter corner set by Mr. Resvick. Having failed to find physical evidence to support the Citkos' position, and having failed to reach the claimed quarter corner by following the measurements on exhibit I, Mr. Arnott concluded there was insufficient evidence to establish the claimed quarter corner as the original quarter corner.

The Government's final witness was Victor Hedman, the Regional Land Surveyor for the United States Forest Service. Because Mr. Hedman was not involved in Mr. Resvick's field work, he could not testify as to Mr. Resvick's surveying techniques or conclusions regarding the claimed quarter corner. Consequently, his testimony is of no value in helping the Court determine whether the claimed quarter corner is the true corner.

The Government also submitted into evidence the deposition of Webster Intermill, the district ranger who supervised Mr. Gibson and the other civilian conservation corps workers who compiled the slips which constitute Exhibit BB. Mr. Intermill also supervised the construction of Highway 2159. The Court has reviewed his testimony and has found nothing in it to refute or support either party's position. [\*\*16]

#### B. The Citkos' Case.

As their first witness, the Citkos presented Arthur Kadubek, a neighbor of the Citkos who has lived in that area of Wisconsin his entire life. Mr. Kadubek testified he first saw the rock pile at the claimed quarter corner in the early 1960's. In addition, he said there is a fence which runs easterly from highway 2159 past the claimed quarter corner to the sixteenth section corner. Finally, he testified there is an understanding in the community that fences are used as boundary lines and corners are set by stone.

John Citko was the next witness. He testified that he purchased his land in 1959. He said that the first time he saw the rock mound at the claimed quarter corner was when Mr. Resvick took him there to search for the quarter corner. In addition, he stated that the rocks which form the rock pile at the claimed quarter corner do not resemble the other rocks on his farm.

During his testimony, Mr. Citko also discussed the timing of his disclosure to Resvick of his witnesses. He said that during their first trip to the rock mound he did not tell Mr. Resvick he had witnesses and Mr. Resvick did not ask him if he had any witnesses. Mr. Citko said he [\*\*17] first learned John Nuszkiewicz would speak as a witness for him in 1968. He learned Frank Kowalkowski would be willing to speak as a witness prior to 1974. Although Mr. Citko knew both these men could speak as witnesses for him prior to 1974, he did not relate their names to Mr. Resvick until after he commenced this action in 1977.

The Citkos' final live witness was Norman Harrison, a land surveyor who also searched the area of the claimed quarter corner for evidence supporting the Citkos' position. Mr. Harrison testified he did some digging at the site of the claimed quarter corner and found some soil discoloration which could have resulted from disin-

tegration of a wood post. It was his opinion that the rock pile had not been dumped at the claimed quarter corner site but had been constructed there. He also stated the rock mound did not resemble a second rock dump which was located one hundred feet south of the claimed corner. Based on his search and the statements of defendants' witnesses, he concluded the claimed quarter corner is the original quarter corner.

On cross-examination, Mr. Harrison admitted he had never looked for root systems [\*240] at the locations where [\*\*18] the bearing trees allegedly had stood. He also stated he never measured the distance between the fence and the section corners. Finally, he stated that his opinion that the claimed corner site was the true corner was based largely on the living witnesses' testimony. He said his opinion would be affected if their statements were found to be questionable.

The Citkos also introduced the deposition testimony of three individuals into evidence. Their first deposition witness was Joseph Cichonski, the owner of the farm to the east of their farm. He testified that, to the best of his recollection, the fence that runs over the claimed corner to Highway 2159 was constructed in 1937. He also said that the fence along the border between his property and the defendants' property was built in 1941 or 1942 after a local surveyor had determined the location of the sixteenth corner. The fence replaced a fence erected in 1931 or 1932. According to Mr. Cichonski, the 1931 fence was located approximately thirty feet to the west of the 1941 fence. Mr. Cichonski also testified that the United States Forest Service set a sixteenth corner at a location south of the sixteenth quarter corner set by [\*\*19] a private surveyor.

John A. Nuszkiewicz, the Citkos' second deposition witness, owns a farm one-half mile from the Citko farm. He testified he has been on the land in dispute many times since 1930. He said he first saw a post at the claimed quarter corner while walking down the tote road in 1930 and assumed it was a corner post. Although he thought it was a corner post, Mr. Nuszkiewicz could not testify that the post was located at the exact site of the claimed quarter corner.

The Citkos' final witness, Frank Kowalkowski, gave deposition testimony twice. His first deposition took place on November 8, 1979; his second deposition took place on July 11, 1980.

In his first deposition, Mr. Kowalkowski, who is also a neighbor of the Citkos, testified he first saw two posts at the site of the claimed quarter corner in the 1930's. In addition, he said he saw rocks piled in a ring at the claimed quarter corner in 1931 or 1932.

In his second deposition, Mr. Kowalkowski went into great detail describing the events which kept his memories of the claimed quarter corner fresh in his mind. He discussed in vivid detail a deer hunting incident which occurred in November of 1927. Mr. Kowalkowski [\*\*20] was thirteen years old at the time and was hunting with his older brother. His brother shot the deer and wounded it. The brothers did not bag the deer that day but returned the next day to get it. When they found the dead deer the next day, they put a rope around it and began to drag it south toward what is now the Citko farm. When they reached the tote road which lies just to the west of the claimed quarter corner the brothers rested. Mr. Kowalkowski testified that while resting he saw two corner posts about twelve feet away from him. He said that there was one tamarack tree north of the posts and a second tamarack tree south of the posts. He walked up to the trees and saw markings on them twelve to sixteen inches long. Both trees were dead. Mr. Kowalkowski also said one of the cedar posts was marked "24" on one side and "25" on the other.

In addition to recalling the quarter corner from the deer hunting incident, Mr. Kowalkowski stated he could recall the claimed quarter corner because he saw the post numerous times while walking along the tote road in 1927 and 1928. The last time Mr. Kowalkowski recalled seeing the post was in 1938 when he was planting trees for the United [\*\*21] States Forest Service.

#### IV. The Court's Findings

After carefully and thoroughly reviewing the testimony of all witnesses and after studying the exhibits in evidence, the Court finds that the claimed quarter corner is the quarter corner established in the original survey in 1865. Therefore, the Government's complaint will be dismissed.

The Court can find no fault with the physical search performed by Mr. Resvick. It was remarkably thorough and professional [\*\*241] in every aspect. Based on Mr. Resvick's physical search, the Court finds that the original quarter corner is no longer existent.

Neither the surveyor's nor the Court's inquiry ends, however, with the determination that the corner is no longer existent. It is still necessary to determine whether the corner is lost or merely obliterated. To make this determination, it is necessary to ascertain whether the location of the corner has been perpetuated by the acts and testimony of interested landowners, competent surveyors, or other qualified local authorities, or witnesses, or by some acceptable record evidence. Restoration at 9.

Relying upon the lack of physical evidence supporting the Citkos' position and certain [\*\*22] documenting evidence, Mr. Resvick concluded the original corner was

lost rather than merely obliterated. The Court will discuss the evidence Mr. Resvick relied upon and give its reasons for rejecting the conclusions he drew from that evidence.

The first factor relied upon by Mr. Resvick was the distance between the section corners. Because the distance between those corners (5326.5 feet) was less than 7 feet more than the distance stated in the original field notes (880.6 chains equals 5319.6 feet), Mr. Resvick believed that the original quarter corner was set somewhere along the line between the corners. The problem with his conclusion is that the distance between the northwest corner and the claimed quarter corner, when added to the distance between the northeast corner and the claimed quarter corner, is 5327 feet only 8 inches more than the distance between the corners when measured along a straight line. Given the poor quality of surveying equipment in 1865, it is reasonable to conclude that the measurements from the section corner were to the claimed quarter corner.

The second factor relied upon by Mr. Resvick was the road survey. Because the road survey did not show that [\*\*23] the quarter corner had been verified, Mr. Resvick assumed that the distances listed on the map "to tie" were distances from the section corner to Highway 2159. As the Citkos brought out at trial, however, the distances "to tie" were very close to the distances from the established section corners to the claimed quarter corner. (Northwest to tie 2510 feet, northwest to claimed corner 2508.5 feet. Northeast to tie 2837 feet; northeast to claimed corner 2818.5 feet.) Thus, rather than refuting the Citkos' argument, the road map offers support to the Citkos' argument that the claimed quarter corner is the true quarter corner.

The third factor Mr. Resvick relied upon was the location of the north-south fence between the Citko property and the Cichonski property. The location of that fence is exactly midway between the northeast section corner and the quarter corner as established by Mr. Resvick. It was Mr. Resvick's position that the fence would not have been exactly midway between the two points had the claimed quarter corner been the true quarter corner. There are two problems with that reasoning. First, up until 1941, the fence was, in fact, further west. Second, the surveyor [\*\*24] who set the location of the fence worked only from the eastern side of the section and did not utilize the quarter corner in controversy to set that line. Thus, the location of the fence cannot be used to defeat Citkos' arguments.

Finally, Mr. Resvick relied upon the notes prepared by Mr. Gibson. Although it is clear from Mr. Gibson's notes that he only approximated the quarter corner location, it is also clear that the marker he used to set the

quarter corner was west of an old railroad grade. Because the claimed quarter corner is east of the tramway, it cannot be said that Mr. Gibson was searching for the corner in the area of the claimed quarter corner.

Having rejected the evidence supporting Mr. Resvick's finding, the Court is left with only Mr. Arnott's trigonometric survey. Although that survey is supportive of the Government's position, in light of the evidence presented by the Citkos, it cannot by itself lead the Court to accept the Government's argument that the corner is lost.

[\*242] Because the evidence relied upon by the Government does not support its conclusion that the original corner is lost, the Court finds that the Government has failed to carry its burden [\*\*25] of showing by a preponderance of the evidence that it could not establish the location of the original quarter corner by reference to any existing data or other sources of information. Moreover, on the basis of the evidence put forth by the Citkos, the Court finds that the claimed quarter corner is, in fact, the original quarter corner.

The Citkos based their argument, in large part, on deposition evidence. To an extent, this was unfair to the Government and, in particular, to Mr. Resvick because the Citkos did not disclose the identity of these witnesses until after they commenced this action long after Mr. Resvick determined the corner was lost. However, Mr. Resvick's ignorance of the existence of Citkos' witnesses was partially due to his failure to ask the Citkos if they knew of any witnesses. As a professional surveyor, it was incumbent upon him to make a diligent effort to find witnesses before determining there were none, especially when dealing with people who probably did not know they could use witnesses to bolster their position.

Although the deposition testimony of Joseph Cichonski and John Nuszkiewicz and the first deposition of Frank Kowalkowski did little to bolster [\*\*26] the Citkos' claim, the testimony of Frank Kowalkowski in his second deposition was very persuasive. His memory was much clearer than during his first deposition. Although this may, in part, have been due to reviewing his testimony with the Citkos' counsel prior to the deposition, the Court is convinced he was truthful. It is not hard to imagine a young thirteen year old boy having

vivid memories of one of his first successful hunting expeditions. Nor is it difficult to believe that a young boy would be familiar with the well-worn path he took to work.

In addition, Mr. Kowalkowski's testimonial evidence is corroborated by other evidence. The distances from the section corners "to tie" on Exhibit M support his assertion that there was a post at the site of the claimed quarter. The rock pile, while not particularly significant in and of itself, takes on more significance because the rocks were placed there by hand and were of a type unlike other rocks in the area. Obviously, the rocks were placed there for a special purpose. It is reasonable to infer that the special purpose was to mark a corner.

Another factor supporting the Citkos' position is the location of the fence. That [\*\*27] the fence runs over the claimed corner and has been in that location since the 1930's lends support to the Citkos' claim that the fence was a boundary fence.

Finally, another factor which has little significance by itself but becomes more significant when considered with the other evidence is the use of tamarack trees as bearing trees. Although tamarack trees are occasionally found in high areas, they are usually located in low lying areas. Thus, it is reasonable to infer that the original corner was located at the site of the claimed quarter corner because it is a low lying area.

Based on Mr. Kowalkowski's testimony and the evidence that supports that testimony, the Court finds that the claimed quarter corner is the original quarter corner.

#### V. Conclusion

The decision reached in this case was reached after great consideration. As stated earlier, the Court believes that Mr. Resvick did an impeccable job in his physical search. He failed, however, to seek out live witnesses before determining the corner was lost. Had he consulted the witnesses and reexamined the survey testimony and other evidence in light of that testimony, the cohesive theory put forth by the Citkos may have [\*\*28] become apparent to him.

Based on the foregoing, plaintiff's complaint is dismissed.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









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**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 4 (85 minutes)

ICON LEGEND

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 4

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### Topographic Calls

Alright, we'll move on to topography. Topography as collateral evidence and we're going to spend some time on topography probably more than is merited. But a lot of time is going to be cautioning maybe against using topography alone to restore a corner than using it. However I'm going to give you some examples of corner points where did I use topography to restore them but I'm going to qualify it and all the way through this I'm going to talk about the dangers of using the topography.

Topographic calls. The found topographic calls of the original field notes may fix the position of a line or corner beyond reasonable doubt. They may also be used to fix the position of a missing corner in either latitude or departure. Now I'm going to give you an example so don't get just to shook up just yet. Topographic calls in the vicinity of a corner may be the necessary support to prove other wise meager evidence. When items of topography where described by the original surveyor in a particular township they may substantiate the reliability of similar calls of topography by the same surveyor elsewhere.

So, topography is best used to help substantiate a corner point. Finally let's go to see what the BLM Manual says about topographic calls. I think the BLM Manual probably captures the best topographic guidance on topographic calls that I have found in the references. And there are three basic cautions that the Manual says that we need to apply when we're going to use topographic calls.

So the Manual says "To avoid misapplication in the utilization of a topographic call to fix the position of a corner line." Number one, "The determination should result in a definite locus within a small area." Sometimes topographic calls don't put you in a real defined area. It's kind of like testimony where it says "Yeah the corner is up there on the top of the hill."

The topography may not be definitive enough to put you at exact point; it may help to substantiate the point once you've determined it. Also topographic calls may be in conflict. You may get your corner point to agree one topographic call and then in a different direction it doesn't agree with that one. Well that is a bad situation and you can't just summarily throw out one topographic call because you think it fits and then throw out the other because you think it doesn't fit.



**HANDOUT** A copy of Stan's presentation that he uses during topics 1-5 can be found in the Handout section at the end of the Evaluating Corner Evidence – Part 1 study guide.

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Rule two “the topographic call must not be contradicted by evidence of higher order or other topographic calls.” And three, “it should have only one reasonable interpretation.” If two reasonable surveyors, two reasonable individuals can look at the topographic calls and say “Well, that tells me it’s over here.” The other surveyor looks at that that says “Well, based on that call I think it’s over here.” We have a problem; maybe the topography isn’t going to work to serve as proof of the corner point.

There are some other cautions to apply with topographic calls. Topographic calls may have been made on the random line rather than the true line between corners. I’m going to show you an example of what this is but before we go on let me explain a little about this random and true line business in the Public Land Survey System. Here we have a township a typical nominal township and the range line and township lines were originally surveyed first. And then we come in to do the subdivisional lines of the township.

The original surveyor would start on the township line at the section corner and measure forty chains and eighty chains north and establish this section corner. Then to get the north section line at section thirty-six he would measure east on a random line, measure east on a random line, to the objective corner on the range line. And because of rough terrain and measurement uncertainties or measurement uncertainties on the range line he may have missed this section corner. It may have been down here some distance.

So the random line was measured east and then there is a falling, he hit range line and then there is a falling and he would correct down to the section line and then measure on true line back to this corner point. So random, correct down to the corner back on true line. Now what has happened in some cases is the items of topography may be a river here were called for on this line and when the measurements were reversed they may have been just been subtracted from this overall link and this quarter corner just corrected down to here.

This line, true line, may not have actually been measured on the ground completely which make the elements of the topo calls not accurate relative to the true line. In other words, the measurements on the topo calls were made on the random. So that’s random and true and that’s a problem that we have with topo calls on the east west line or any random and true

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measured section line. I'll have an example of that coming up here.

But let's go down some other cautions that we have with topography. Get lined up here, alright. Generally if the restoration of corner is dependent upon items of topography alone and appears questionable don't use it and I have already mentioned that. A check should be made to determine whether the results of restoring a corner from topographic calls are harmoniously related to the original and concurrent survey.

In other words make the measurements to adjacent corner points and see how they fit with these topo calls or see how the topo calls fit with the found corner points. Note the precision with which the calls were originally recorded. For example are they to the nearest chain? Or they to the nearest half chain? Or are they to the nearest ten links? And again I am going to show you an example of how this will be different with different lines in each township.

Distinct versus indistinct features for example entering a swamp or a marsh. You tell me, as I'm measuring down the line when do I enter this marsh? It is when the soles of my feet get wet? Or do I keep walking when my ankles get wet? And what if this is the wet time of the year and the original surveyor was there during the dry time of the year? Or in the case of the lake states, what if the beavers damned up the creek and its all backed up and you really don't know where you entered the swamp or marsh? So, in other words that's an indistinct feature.

However a rock ledge or a rock pinnacle something like that is very indistinct, a large boulder that could be distinct. So they would be more reliable information upon which to base your corner location from topography than an indistinct feature. And also then finally the topographic feature must be in the same location as the time of the original survey.

For example, rivers move, they are ambulatory and as I learned in Alaska, talking about this topic, earthquakes change the shoreline locations. Cause I had an individual say "Stan, what about earthquakes?"

And I go "What about them? Yeah you know we have a fault line." Well they told me a story about going to the field to look for a corner point that was on the shoreline of a lake. They looked and looked and finally they reasoned that "Boy, there's indication of some kind of shoreline evidence two hundred feet away up here away from the lake." And what had



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happened the 1966 earthquake I guess, if that's not right I'm sure someone will correct me, but that Alaskan earthquake moved the shoreline of this lake over two hundred feet. So beware of circumstance like that when you're using topography.

Stream beds and corner location. Here we have a fundamental diagram, a simple diagram; where is the location stream bed in 1845. And in 1845 when the original surveyor did his survey the section corner was 1.90 chains south. Don't go out there today and go to the current stream bed and measure on 1.90 chains south down to here that is wrong. Rivers move, banks erode and accrete so be very careful in using rivers to confine you corner point location for that kind of reason right there.

Another similar type circumstance, natural feature calls. Here we have a lot of feature calls, topographic calls around this section corner. At 5.50 chains, we enter a swamp and this same swamp is over here east of the section corner. I'm sorry that would be west wouldn't it?

Save your cards and letters I caught my mistake. But east of the section corner we have a creek that was four chains east and then also four chains east we leave the swamp. Also, to the North we have the same creek and the same swamp. So at first glance these features would tend to confine the location of that section corner right? Well that's not so, when you have these kind of feature that are at a diagonal say to the section line.

Let's look at this again. Look at this corner point we could of move it this way and this way and still kind of agree with these diagonal feature calls. So using the topographic calls to confine them might be kind of tough in this situation.

### The Casebook as a Reference

Remember when I told you, we were talking about existent, obliterated and lost and that going from existent to obliterated is basically kind of a grey area. Then, I mentioned that I use to think going from obliterated to lost that's going from black to white, you know, its cut and dry. But then I learned no it isn't, that there is some grey area between obliterated and lost and I'm going to give you an example now of why that might be so.

Again we have a simple diagram and this from the BLM case book called *Public Land Surveying: A Case Book*. And let me see if can get the pertinent information on here. Our objective is to restore a section corner

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where we can find no physical evidence of the monument or the accessories, there is none. And in addition, we don't find any fences, we don't have testimony or records that lead us into the locus of the corner point. We really don't have anything except topography. But if we don't have anything what do we do, it's a lost corner, what do we do with a lost section corner?

We double proportion. However Houston we have a problem in this case. Lets look at this again. This is the general area of our section corner, we don't find anything. So when we go to do a double proportion and the quarter corners in each direction to the North, to the East, to the South, and to the West those are all found.

Those are original quarter corners, so we would use these to proportion this lost section corner. However, when we do that, when we go to do that, the proportion position puts us right here, and that's a problem because the original notes state that the creek is east of the original section corner and the creek is also north of the original section corner. When we go to proportion it places us over here and creek is now west and we don't even have a creek to the north. So, what do we do here? Well, let's look at refining our proportionate methods to accommodate the elements of the GLO record that define where the original survey was. So, the solution in this case that was worked out was to proportion the position of this section corner in a north south position between this quarter corner and this quarter corner.

We would proportion to get the latitudinal position there after to get the longitudinal position they used the creek and measured west and placed that section corner. Thus, we have a corner point that is proportioned north, south and a physical feature is used to position it in the longitudinal axis. How bout that? What do you call that corner in this case? Is it obliterated, or is it lost? Does it matter? We used the elements of the evidence that we could to position the corner point on the correct side of the creek. And there after we used proportionment and lets zoom here again and look at why that might be the case. I should've established right up front that Crane Creek here is a narrow well defined creek.

It's very embedded within its banks and it hasn't moved, it is not ambulatory it's well defined and it's narrow so it has been there, it's always been there. So notice here on the example how the creek runs parallel to the longitudinal axis so we can get a definitive distance to the west to place our position. The question might be asked "Well likewise

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why don't you use the creek call from the North and come down South and place this position?" That's because the creek here, see how it kind of runs diagonal, and that lends a lot of north south uncertainty depending on exactly where you go from on the creek.

So the decision there the folks thought it would be better, the surveyors thought it would be better to proportion north/south. Then they checked the position with the creek to the North and it fit fairly well. So there's our solution on using some topography that was good definitive topography to control in one direction only, longitude.

This is the text book solution to the problem that we just discussed and I think I covered it pretty good for you and lets just go down to the root of it. Only those calls which are nearby and definite may be used and the reliability of the topo calls should be proven. Let me back up to the first paragraph cause they talk about a little bit about the uncertainties in the measurements of the original survey. There were four chains of excess on average in most of the section lines. So we had some measurement uncertainty there and that's why the proportionment in this case did not yield a very good result relative to the topography.

The combination of the nearby call to Crane Creek for longitudinal position and a proportionment between the nearest found corners to the north and south for latitudinal position was used. Double proportionment would've placed the corner on the wrong side of the creek. And then further down here the record distance, 1.5 chains, from Crane Creek was actually used for the longitudinal position. Section corner location solved.

There is a fundamental legal principle quoting right from court cases that say "Adapt your method of restoration to accommodate the record evidences that are not impeached." So if you have some topo calls confining the location of a corner point, you kind of need to use them and if you don't you, better be able to cast doubt upon them, you better be able to impeach those calls.

Next, I'm going to go into an example of survey taken from a BLM survey in Arkansas. Arkansas, I've lived a long time in Missouri and I've lived in Arkansas, in Missouri we call Arkansas the baja of the Missouri. And I just say that to tweak some of my friends in Arkansas it's a great a beautiful state but I like to tease them in that manner they had a few come backs regarding Missouri but we won't get into those. This is a resurvey down in Arkansas of township sixteen North, twenty-one West. This is

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very rugged terrain, very beautiful but very rugged terrain and we're going to look at some BLM field notes where they documented their resurvey in the BLM form of line notes.

So their resurvey is written in a manner where they are going, their notes are written as if they are measuring down the line, and they call for elements of topography as they are encountered and in this manner you can compare your resurvey location of the topography relative to the GLO distances.

I want to point out a couple of things here first, I want to know that for this portion, this line we're going to examine first, is the standard parallel north. So in other words this is the north boundary of the township it happens to be a standard parallel. Standard parallels were supposed to be and typically known to be measured with good precision using some the best deputy surveyors to establish that along with principle meridians. So this is a standard parallel, it is the north boundary of the township also the Deputy Surveyor is Deputy Surveyor Rider and he did the standard parallel in 1831.

Deputy Surveyor Rider, 1831, standard parallel. Let's look at some topography on the line that was measured. We are measuring westwardly from the quarter corner of section thirty-five and we're measuring down the line and let's look at some things here. And I know this hard for you to read but this distance is fifty-six chains and forty-five links, encounter a dry creek it's ten links wide it drains south fifty-six west. The GLO record distance for encountering this creek is fifty-six chains, seventy links.

The resurvey distance again was fifty-six chains forty five links, alright. So twenty-five links different, I've got to tell you in this country that is really good correlation. Twenty-five links is all. Let's go and look at the next call.

We have another dry creek. Ten links wide drains south six West at sixty-two chains and eighty links that is the GLO measurement. The resurvey distance is sixty-two chains, eighty-five links that's only a difference of five links. I know some surveyors today that can't measure that line that accurate for some reason. Then there is a third one that I want to compare. Again the resurvey distance sixty-eight chains seventy links, a dry creek four links wide drains south four west. The GLO record is sixty-eight chains, seventy-three links. The resurvey is sixty-eight chains seventy links that is amazing that the GLO could measure that well in this country.

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Another thing I want to bring your attention to on this standard parallel is the evident precision with which the deputy surveyor recorded his topographic calls. Let's look at this. Fifty-six chains, seventy links, ten links. Sixty-two chains, eighty links, ten links. Sixty-eight chains, seventy-three links nearest link -- note that precision. And then we've already seen how well that those topographic calls fit with our resurvey and that was on the standard parallel.

Now we're going to, let me get my township diagram, here's our nominal township and we just talked about the standard parallel which was this line up here measured by Deputy Surveyor Rider. Now we're going to jump down into the subdivisional lines and we're going to look at topographic calls along this section line right there. The differences are phenomenal. Again the same township, sixteen North, twenty-one West.

Now we're looking at the East/West subdivisional line between section one and twelve and we're going to measure down the line. We have a different Deputy Surveyor, Laferty, at a later date. The previous surveyor was Rider in 1831. Now Mr. Laferty, remember when I talked to you about the random and true situation? We have that situation here with the line between one and twelve that is a random and true line. I'm going to go ahead and show you, this is a diagram we'll see if we can accomplish anything with this, but this kind of what happened between section one and twelve with the topography. The section corner here is measured from random in an East direction and the deputy surveyor calls for a bluff, top of a bluff. Then he has several topographic calls on the random line here, here and here and here.

There is a river, the Buffalo River, makes a bend apparently makes a bend right there and then we come on over. And he misses his objective corner by a significant distance here so his random line hits here he corrects down to here. Probably what happens in what typically happens on these random and true at least in this area is the deputy surveyor went back to his random line and he sent a temporary quarter section post and corrected it down to the true line without actually chaining back on the true line.

So what happens is you can see right away on this kind of scenario that on the true line the distances of these river calls on this line versus this line are going to be drastically different. Again encountering the river here, here, here and here on random is going to be drastically different than coming back on true and encountering here, here, here and here. But something

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else even went on here because on true line when you look at the distances their saying encountered the river here and here and here and here. So he made some kind of calculation error in reversing these distance to correspond with coming back in the opposite direction. The result of all of this is a big disparity in the topographic calls.

On our resurvey we encounter the left bank of the Buffalo River bears South ten East North ten West flowing South ten east. We encounter it at forty-six chains. The GLO says it was located at fifty-seven chains as you are measuring westwardly on the true line. Holy Cow, there's an eleven chain disparity you know and I've seen surveyors throw up their arms and go "God, we have a fraudulent survey, we have a fraudulent GLO survey!" No we don't, no we don't.

There's plenty of original corners found in there we just have a problem with recording the topo calls and this random true business. Ok, the next topographic call was at forty-six chains, ninety links that was the right bank of the Buffalo River. The GLO record was fifty-eight chains fifty links, we're still a long ways apart on these topographic calls. Going further down the line the resurvey distance sixty-four chains ten links, the record is sixty chains fifty links.

Now we're starting to come back in a little bit and then finally we have sixty-five chains fifteen links on the resurvey the record is sixty-one chains so we still have about a four chain difference. But on the last one we have a distance of sixty-eight chains, sixty five links this is the top of a bluff. This bluff hasn't moved or anything, it's pretty permanent, pretty stable a definitive feature and it was encountered at sixty-eight chains, sixty-five links the record is sixty-seven chains so we're down only a chain sixty-five link difference on that call.

But you can see the gross disparity between the standard parallel surveyed by Deputy Surveyor Rider and the section line of section one and twelve surveyed by Deputy Surveyor Lafterty. And again that is because of this random and true business and the process of when you encounter these terrain features and I also having to do the mathematics of reversing your measurements to come back in the opposite direction on true. But the most definitive feature really wasn't too bad comparatively. So that's the random and true problem with topographic features.

Before we leave this township lets jump back up to the standard parallel and where you saw the topographic features having an excellent

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correlation with the resurvey location. On that same standard parallel there is another feature that was encountered and this kind of a fun one. At fifty-six chains, seventy-one links measuring from the quarter corner we have a cave entrance. Thirty inches diameter, thirty foot deep and the GLO record says it's at fifty-seven chains and is forty foot deep.

The resurvey encountered it at fifty-six chains seventy-one links. The Deputy Surveyor said it was at fifty-seven chains. BLM says this point now becomes an angle point. Well, I'll tell you about this cave, in going down into this part of the country to begin the resurvey we talked with local landowners and got some old survey records and its very remote, very rugged country.

We drove down to the nearest landowner and talked to him and he was outside there with his coon dogs and we told him about what we were doing, the resurvey and what lines we were wanting to measure and he said "um, yeah yeah I know." And I said "I've had surveyors in here and we noted that in the GLO notes there was a cave" and I asked him about his cave and he goes "oh, yeah" he said "I lost a coon dog in that cave, coon dog fell in and disappeared, couldn't get him out." I said "Really? Ok ok." Well I thought this should be easy to find.

So we went up hiked in there in the locus of this line looking for the cave but right away I saw that this terrain I don't see any rock bluff, that's usually where caves were and ledges and rock bluffs and stuff and this was one area of the country that was sort of on a rounded kind of hill side. We got to looking and got to looking and one of my crew members called me over "Stan get over here." I walked over there and here was this big, about twenty foot diameter, funnel going into the ground down to a hole about thirty inches diameter. This cave went straight down and I thought that's pretty cool and I started going down towards the hole and that funnel with loose rock and everything started, threw me on my butt and I'm sinking down to that cave and the only thing in my mind was "I'm going to be buried here like that coon dog." But thankfully one of my crew members grabbed me and pulled me out of there.

But we found that cave and so that cave entrance, it hasn't moved, that is where the GLO says the line is. So thusly BLM said in their resurvey this point now becomes an angle point. Remember what the courts told us about a positively verified line tree becomes an angle point to the survey well that's how this cave entrance was treated. It was treated as an angle point to the standard parallel and it didn't create much of an angle that

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was a well measured line by Deputy Surveyor Rider.

### Documentation

Alright I told you that I was going to give an example of documentation of a corner point whose position was mostly relied upon by topographic calls.

This is bit of an extreme example and sometimes I question why I ought to be sharing this but it's a good example on how you might want to carefully use topography to restore your corner point when there is no better evidence.

Let me see if I can set the general scene here. We're dealing with a section corner, the section corner of sections four, five, eight and nine alright? In the locus of the corner point there are some topographic features to the North he says he left the bottom and to the East the GLO surveyor says he left the bottom and also to the West he left the bottom so these features aren't real distinct.

You're kind of going from level ground then you're going up inclining the hill. Also, on this section corner as the Deputy Surveyor measured this North/South section line coming up from the section corner to the quarter corner, he established the quarter corner, and we found this quarter corner, we found original evidence of the quarter corner. Then we measure North and the GLO surveyor says he encountered a perpendicular rock bluff about forty feet perpendicular so a bluff about forty feet perpendicular.

And this was an interesting topographic feature cause this is kind of a razor back ridge it slopes off steeply and this ridge and the rock bluff almost became an arrow pointing to the section corner. The rock bluff itself was very narrow; when you're standing on the top of it, its straight down but it's not real wide it just tapers off into a steep hillside. And then we measured twenty-four chains, eighty-five links, according to GLO and he has the section corner.

We had no physical evidence of the monument or the accessories there was an unsubstantiated iron pin that was kind of over; let me look here, kind of up in this area. And so lets face it "Iron pin, good technicians tie it in, we got it, call her good." We'll have on our plat I dot P dot Iron Pin. We've seen example of that kind of plat, well that wasn't good enough. We had these terrain features. The iron pin did not match well all of the terrain features and also a problem was a double proportionment did not



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fit very well.

A double proportionment kind of put us up in this area and you know I went at length to talk about the random and true anomalies of section lines and that's what came into play with the double proportionment. This East/West line and this East/West line weren't measured as precise. Also section four and five is a closing line and often times well I'm going to say in this township we noticed that when they got to the quarter corner this distance to the closing there was always tended to be uncertainty.

Never say always, there tended to be uncertainty in the closing lines here so the proportionment there was a lot of uncertainty. And so I chose to work the definitive topography being the forty foot perpendicular rock bluff and I noticed that when I went from the found quarter corner on the line up to the closing corner that took me right across the rock bluff.

So I said I'm going to use that as alignment and I'm going to come from the rock bluff the GLO distance and put my corner point in and that agreed very favorably with these calls here. Alignment put me over this narrow rock bluff record distance to the section corner that agreed with the nearby topo calls. Now, how did I write all of that business up? Let's talk about that.

The corner of sections four, five, eight and nine is determined longitudinally on line between the one quarter section corner of sections eight and nine and the original closing corner of sections four and five on that line that I told you. Latitudinally at record distance of twenty-four chains eighty-five links northerly from a perpendicular rock bluff and the GLO record called it a bluff about forty feet perpendicular.

This position is further substantiated by other topographic calls of record and I'm calling for these topo calls going down the resurveyed lines. So north forty and a half minutes east, 5.56 chains I left the bottom. The GLO said they left the bottom at five chains, fifty links. Similarly going eastwardly north eighty-five forty-five minutes east at eight chains forty-five links I leave the bottom and GLO said they left it at 8.50, not bad. Going westwardly, five chains seven, five chains ten was the GLO.

All of that fit pretty well and so this an example of using the topography but now not topography alone can you see how I use measurements to put me on the line and show the relationships. So, topography and measurements as evidence.

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Now I told you about an iron pin, I'm not going to dodge that, I'm not going to hide the fact that there is one there so down here after my corner point description I tell future surveyors about this iron pin. A three quarter inch iron pipe projecting one inch from a collar of stone bears north twenty-four degrees 46.1 feet from my corner point.

It even falls in the remains of an old fence extending East and West and I must say that the fence meandered extensively. I throw in the fact that a St. Joe Minerals Incorporation records dated 1966 reflect existence of the fence but no reference is made to the iron pipe and probably somebody thought the iron pipe was the way to go or the surveyor that placed it there actually referenced it with some bearing trees and I found those and called for those.

So, I'm putting the conflicting evidence right up there with my survey to put everyone on notice, yes this is how I did it but I did find that iron pin, I considered it and I rejected it.

### Shorelines as evidence

I'm going to make a brief point about shorelines as evidence but this opens the door to riparian boundaries which is a whole new wide world of sports and a whole area of expertise, riparian boundaries. And I'm just going to mention the possibility of using a shoreline as evidence and this is largely from the BLM case book; let's go to the second paragraph.

When the evidence is sparse or non existent, say in the case of the meander corner which is a corner point in the Public Land Survey System that is placed when a body of water is encountered a meander corner is placed. So when the evidence is sparse or non existent the actual shoreline that approximately conforms to the original meanders may be the best available evidence or collateral evidence necessary to reestablish an obliterated meander corner. Using the actual shoreline when proven to be located approximately where the original surveyor described it coincides with principles of following the footsteps of the original surveyor.

The shoreline as direct evidence is more conclusive where it follows a well defined bank or the distance from the surveyed line crossing or meandered corner to a definite bend is relatively short. Conclusive evidence may also be provided where the line crosses a well defined short leg or point of water or land. Let me just give you a quick example what

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they mean by **meander corners**.

Lets just say this is a quarter corner and the GLO measured eastwardly and it encountered the lake and placed a meandered corner right here on this lake and then when they meandered the lake which means they measured along the shoreline and placed angle points and came back to the meander corner here. The meander corner position is substantiated by this point of land which creates a point in the meanders of the lake. Similarly if we were going from the section corner westwardly and they placed the meander corner and encountered it on the point of this shoreline sometimes that may be better evidence.

If your survey for some reason, you were down here and you encountered the lake here, you would have a big disparity in distance between here is the lake and here is the distance to the meander corner. You might want to look at procedures that get you up here on the point of this water body. There are situations where you can use shorelines as evidence to get you into the footsteps of the original surveyor.

I'm going to make one more brief point to caution you about topography, yes I showed you an example where I largely used topography but it is rare it's an example that is not common. This is a reminiscent, this is a memory from a William Bandee who was with the General Land Office and he says "As a transient man in 1906 and 1907 where I should as a US Deputy Surveyor I made notations in my field book as I walked the section lines, made notation of streams, ridges, fences or other items of topography and filled in the distances when the chain men found time to report them to me.

If they had missed something we filled it in the best we could while fresh in our memory and on the ground." Fresh in our memory they noted the location of topography. "If a creek crossing appeared to be missing the chain men would be called upon to try to supply the missing data from memory. I would not recommend restoring missing corners from items mentioned in the chain men's notes except in special instances." There's a direct quote from the Deputy Surveyor of the General Land Office cautioning us about the use of topography.

I'll conclude topography with that note and next we're going to talk about the collateral evidence of occupation. We've going been going down our list of collateral evidence. We talked about testimony, records, common usage, topography and now we're going to jump into occupation.

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Occupation evidence and when I talk about a line of occupation I'm talking about the perceptible demarcation on the ground caused by differing land uses.

And these differing land uses may indicate a demarcation of a boundary and may point towards a quarter corner point. And if you'll note occupation here I have some words highlighted in red and you know this form of evidence we're starting to get a little bit more wishy washy. May, presumption, possible evidence. Alright, occupation especially when long continued may afford satisfactory evidence of the original boundary when there is no other evidence attainable. The presumption could be that the occupation evidence was constructed upon some information or assumed knowledge of the actual line. The surveyor should inquire when the evidence of the occupation, the fence tree line, the hedge row etc. originated.

Unless it can be proven otherwise and lacking evidence of a higher order, here we go with these qualifications, occupation which could've originated when the original corners still existed should be considered as possible evidence.

Here's a cautionary note, it is often the case that occupation evidence as placed for convenience and it does not conform to original survey lines such as fences that have only be approximated, they are only there as a matter of convenience to keep cattle separated or to cultivate a field of soy beans different from a corn field or something like that. There is a challenge to the surveyor, that is to distinguish when occupation is merely evidence of a potential unwritten right such as adverse possession versus evidence of the original survey or title line.

Now let me go to a diagram right here to just make sure we're on the same page with a couple of things. Let's say that we have a section line here, here, this is a found section corner, its existent and we have a section corner here it's found and existent. But this landowner here, landowner A, he plants an orchard and constructs a fence and the fence comes on over here and encroaches on the land of B. And he builds the fence come on up and some kind of fence corner or something here. Over the years the fence is maintained, the time goes by and in some states the time for adverse possession is seven years some states it's ten, it varies from state to state but its state law.

So over the year's landowner A basically establishes adverse possession

## EVALUATING CORNER EVIDENCE – PART 4

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and gains title to this ground right here. So does landowner A, gaining title to this portion of land, does this now become the section corner right here? And this no longer the section corner? Absolutely not.

This is still the section corner. It still controls the survey lines of the Public Land Survey System the mere fact that title based from B to A for this parcel of land does not change the section corner. I wanted to make sure we cleared that up.

### Occupation Lines

So back to occupation. Alright we talked about the challenge to the surveyor. Now again Curtis Brown says “Land lawfully gained by unwritten means extinguishes the old written title but does not alter the position of the original survey lines.” Just like in my example. Therefore title lines and survey lines are not necessarily coincident and this is what makes it very tough, very tough for the surveyor to determine if that fence line is merely evidence of encroachment or is it evidence leading to a corner point? This is a tough thing.

Let me give an example of original evidence or linking evidence to the original survey versus occupation a little bit later we’re going to go into some Power Point slides to better demonstrate occupation evidence. But for now I just want to go into a sample documentation of a corner point that is in conflict with occupation. The weight of evidence, we have the corner of sections twenty, twenty-one, twenty-eight and twenty-nine it is monumented during the resurvey we found a charred pine nut in the center of an embedded mound of stone.

Now in this area of the state of Missouri evidence of the original wood post is best demonstrated usually by an embedded mound of stone and there was an era when the early county surveyors, lacking durable metal material for monuments and such would simply char a pine nut and place it in the mound of stone so that’s local knowledge.

From this charred pine nut in the mound of stone there was a stump hole that bared South sixty-seven West, ninety-seven links distant and this is at the record bearing and distance of the GLO accessory bearing tree just a stump hole but that sort of links me to the original record. In addition to the charred pine nut, the mound of stone and the stump whole on the record bearing distance of an original bearing tree we have some unrecorded bearing trees that we note.

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There is white oak **snag**, twenty-five inches diameter it bears north twelve west, fifteen feet with an open window scar three and half feet up from the base. A **window scar** is generally where somebody, maybe the original surveyor, blazed the tree and scribed it as in the examples we saw earlier in the slides or maybe a subsequent surveyor was checking this white oak and chopped into to see if there were scribe marks in there. But the tree is now hollow and it's just a snag but we tied it in as unrecorded bearing tree.

So this is what I called the corner point and in further describing this corner point there is some other things going on. The charred pine nut in the mound of stone was located at the corner of old fences extending North, East and West, old fences. However from the corner point we selected an iron pipe in a collar of stone in the corner of new fences extending North, East and West bears north twenty-five east, twenty-five feet. So we have a old mound of stone with a stump hole at GLO record bearing distance in a corner of old fences versus an iron pipe.

Now you surveyors, how many of your technicians would be out in the field looking at this stuff? They see the iron pin and they hone right in on that, that's what they tie in and that's what they bring back to you to analyze back in your office, just the iron pin. So they're only twenty-five feet apart so the measured relationship situation to other corners of section corners or quarter corners it'd be similar cause it's only twenty-five feet difference. We went, some would say the lesson here is you go with corner point that's in the old fences and reject the new fences.

No that's not the point here, the point is on the corner that we selected we can relate it the original record by the existence of the stump hole and we're saying that is an original tree that was an accessory to the actual monument. Just a little thing like that is what swayed us in evaluating the evidence right there, so conflicting evidence.

This is simply another similar corner point where at a quarter corner again there was a pine nut in the center of an embedded mound of stone and again a stump hole and there were only two original accessories so we have a stump hole located at each one. Now bear in mind the GLO survey in this location dated back to 1821, 1821 very old GLO surveys. So we went with this remains of a mound of stone and the stump holes while again twenty-five feet away there was another mound of stone at the corner of fences extending South and West again only twenty-five feet

## EVALUATING CORNER EVIDENCE – PART 4

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away.

Well we felt the relation of the stump holes with this mound of stone above versus a mound of stone in the fences we took the evidence that related to the original survey. Again a subtle difference here there are only twenty-five feet apart the one actually has fences the other didn't but it had the stump holes and went with the ones that linked to the original survey.

A little bit later we're going to look at some slides that help demonstrate the concept of occupation and the danger of fences that are a pertinent to occupation and the dangers of using occupation evidence to point to corner point.

### Measurements as Evidence

Alright, finally I want to jump into measurements as evidence and I just wonder how many of you consider measurements to be evidence? Just realize that you can not prove good or relationships to adjoining corners or to other evidence without measurements.

So therefore I think measurements are an important piece of evidence that you use collaterally. Measurements are a specialty of the surveyor and knowledge of their use as evidence is an important as making and analyzing them. In ranking conflicting evidence for boundary determinations, the courts of generally relegated measurements below more tangible elements such as monuments. Now we're all familiar with concept that monuments generally control over measurements, yes because monuments are more tangible you can feel them, you can touch them, they're more definite. Measurements may contain uncertainty.

Yet that means we just don't throw them out as a form of evidence. Surveyors commonly use measurements to assist in proving the validity of collateral evidence at a corner point by its relationship to other original corners. Measurements are evidence that can be used to determine a corner is obliterated rather than lost. Measurements yield relationships, they demonstrate good versus poor relationships, they show characteristics and trends of the original survey, they facilitate the development and the development of patterns and indexes. Let me mention something about indexes.

I have a lot of experience in doing retracements and resurveys in the state

## EVALUATING CORNER EVIDENCE – PART 4

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of Missouri and in doing so one thing that we have found that there is what we call “one degree windage to the right” when you’re retracing directions. By that I mean that if I’m retracing a North South section line or a North South range line that typically those lines are going to average North one degree East versus North.

Typically there are always exceptions so that’s a bit of an index that can be applied when you’re looking for corner points. Similarly if you recall back to that cryptic highway map where we had the highway tie, they had may be a different basis of bearing than what I had for my project. So to get on their coordinate system I had to apply an index correction to their bearing or adopt their bearing system to get to my corner point, so indexing is a way of adjusting your measurement instruments to theirs.

And also measurements enable the development of trial proportionments such as one, two, three or four point control. So when we’re in an area looking for collateral evidence of a corner point it’s certainly helpful to tie in adjacent controlling corners or corners that relate to your survey project and do some trial proportions do some trial mathematics to see where that takes you and hopefully that will lead you into the evidence. Because in that manner you’re taking the measurements and all the directions to other corners and bringing them into where you’re searching for the corner.

Let’s look at this caution down here. Again this is going to be an area where I sort of get up on the soap box a little bit but here’s a caution. Although technology makes it simpler to create a mathematical position for a corner point then to search and evaluate physical evidence, evidence of measurement is incompetent to prove an original monument in error. Evidence of measurement is incompetent to prove an original monument in error.

When called for in a deed evidence must prove for where the monument was as of the date of the deed not where measurements say it outta to have been set. So along with that let’s look at this bottom statement. GPS is merely a measurement tool and coordinates are measurement derivatives. GPS does not find monuments; it does not evaluate evidence it doesn’t make any surveying decision and as far as I know GPS does change or enlarge any legal boundary principle. Let’s not let technology take us away from the evidence lets the technology measure into the evidence.

So while I’m on this soap box a little bit I wanna quote something from Joseph Piava. He wrote something for *Professional Surveyor* in 1989



## EVALUATING CORNER EVIDENCE – PART 4

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talking about GPS, and technology and surveying and here's what he had to say about GPS in the wrong hands. "The greatest impact of the 1980's, GPS, will be to force surveyors to develop their knowledge of geodesy, electro magnetic physics and rigorous error analysis.

Like the proverbial computer this much touted tool if misused will be capable of producing in few days a much bigger mess than a surveyor with transit and tape could do in a lifetime." Holy cow! And you know what? I have seen that. I have seen large projects with GPS that disregarded the evidence and they produced a bigger mess in one day than in the lifetime of an old surveyor. That's GPS in the wrong hands because GPS makes it easier to create a corner point position than to search for it.

### An Assignment

I'm going to give you an assignment. Here are some coordinates. What I want you to do with these coordinates is go out and search for evidenced of the corner point at the location of these coordinates. Go do it.

We have the coordinates 400516.86952238.42 go do it. So many of you are probably saying "Alright is Stan on drugs now. Uh what is he trying to do here?" You don't know what to do with these coordinates and why is that? I haven't given you enough information about these coordinates so how about I just do this and I tell you what coordinate system we're on. Degrees, minutes, seconds. Degrees, minutes, seconds. Alright, does that help you?

That should tell you we're on a latitude and longitude coordinate system. Is there anything else? Well you might want to know the datum, is it nad twenty-seven or is it nad eighty-three, there are some other things like that. So actually you know we could probably make a whole list of things that we would want to know about these coordinates and I've listed a few of them right here.

The unit's coordinate basis, the datum, the format, the decimal point, the HP format all these of kinds of things and we could have a long list these are called attributes or Meta data. What they are is, they are information about the numbers in the coordinates and I would submit to you that the Meta data or the attributes are more important than the numbers themselves because just given the numbers you couldn't go out and look for the corner or you couldn't go out and find that corner. So it's the information about the numbers that's important.

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This is where GIS is dangerous, GIS is a number gobbling, number coordinate hungry monster and it just loves to take measurement and survey data and gobble them out and spit them out on nice fancy maps. But we don't really know anything about the data about the boundaries that the GIS spit out unless they're saved in a database and unless we defined it. So it is the attributes that are the important thing.

I'm going to give you what I think is a somewhat unique example of determining a corner point. It occurred in one of my resurveys but a private surveyor had already been in the location and determined the quarter corner of section eight and seventeen in a peculiar manner and we discussed his method of determining it and I thought it was very good. But I want to warn some surveyors that this is not a necessarily an accepted method and it caused some heated debate. In one session I had a front row of surveyors and in the front row and after talking about this particular corner description their supervisor leaned over and said "None of you will ever do it that way."

So here we go. Well let me show you first a simple diagram that I added to it. In 1867 the county surveyor found this original corner on the township line and measured easterly and found this original section corner. And he left a record of it; it is documented and recorded in the courthouse. He kept on measuring easterly and he found this quarter corner. This location of the quarter corner is now in a large clear cut, it is actually obliterated in Webster's Dictionary sense of the word. It's been logged and chained really hardly any stumps remaining so it's a goner.

Alright going back to the diagram from the quarter corner the old county surveyor in 1867 then he dove down and established his version of the center north sixteenth. Then he measured back westwardly and established the northeast sixteenth of section eighteen alright? And then he did some other stuff and ended up down here at the southeast sixteenth. So started here original corner measured to here original corner, measured here to the original corner and then did his subdivision business.

Alright then, in 1984 a private surveyor working with the county surveyors record and seeing that quarter corner is lost and not finding any evidence of that clear cut that surveyor didn't just throw up his hands and proportion like crazy and you know give up.

To proportion that corner point the section corner to the east was lost and

## EVALUATING CORNER EVIDENCE – PART 4

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if I recall you had to go at least a mile, mile and a half East, a couple miles North and a couple of miles South to double proportion in the section corner then to single proportion the quarter corner. But this private surveyor I thought, had a good solution let's look at what he did. The quarter corner of sections eight and seventeen it was perpetuated and recorded in 1867 by the county surveyor George Breckinridge.

It falls in a clear cut there's no remaining evidence of the original corner nor the bearing trees that were recorded by Breckinridge. The surveyor, Rick Stewart, he reestablished this corner by a distance intersection using Breckinridge's distances from the found corners of sections seven, eight, seventeen and eighteen and Breckinridge's corner for the center north sixteenth section corner of section seventeen. So let's drop down here and look at that diagram again.

What this surveyor did he said "I have Breckinridge's recorded distance for this segment and his recorded distance for this segment so I'm going to do a distance intersection and I have my quarter corner." What do you think of that? Well let's go in here and look at some of the explanation.

An index correction factor found by measuring between Breckinridge's corners at the Northeast sixteenth of section eighteen and the center North sixteenth corner at the section of seventeen was applied to the recorded distances.

He did this before doing a distance intersection to here the surveyor also measured this line and calibrated the resurvey measurements to Breckinridge's measurements which were indexing and then applied those indexed distances here and here to come up with corner point.

Quite frankly I have to praise that surveyor for coming up with this method because he used the best available evidence which wasn't much but he used the county surveyor's measurements to get back into the quarter corner. Now those measurements by themselves wouldn't have been any good in fact we wouldn't even have those measurements had the county surveyor not recorded his survey thankfully he recorded his survey.

So in this case we have what kind of a quarter corner? Is it existent, obliterated or lost? Well it's not existent because we didn't find the original monument or accessory so is it obliterated or lost? Many would jump to that conclusion that it's lost, but I would say that it's obliterated

## EVALUATING CORNER EVIDENCE – PART 4

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because we used the measurements and the recorded survey, the record of county surveyor Breckinridge.

Next we're going to look at another little scenario regarding measurements and other collateral evidence and how we documented that.



**PROBLEM** Before moving on to the next topic, complete the “Interpreting Original Field Notes” problem which you can access from the course description page.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 5 (89 minutes)

**ICON LEGEND**

 <b>WEB COURSE</b>	 <b>EXERCISE</b>	 <b>DIAGRAM</b>	 <b>READING ASSIGNMENT</b>	 <b>PROBLEM</b>	 <b>HANDOUT</b>	 <b>2009 BLM MANUAL</b>	 <b>QUIZ</b>
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## EVALUATING CORNER EVIDENCE – PART 5

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### Introduction

We're going to look at another corner point site where **collateral evidence** is used. And also measurements from a previous county surveyor's survey also came in to play to put the corner point on the ground and keep the corner point from being lost and it's now obliterated.

I'm going to give you an overview of the site conditions right here. This is a section corner of 14, 15, 22, and 23 and in my rough sketch here, this is a reservoir and here is a dam. Now the spillway of the dam went right over the area of a section corner. So at first glance, you might think that that section corner is going to be lost. But we used a lot of forms of evidence to put that section corner back in and I'm going to show you the documentation in a little bit of how we did that.

Now ultimately we're going to use **county surveyor records**, we're going to use the principle of common usage, a little bit of testimony and parole evidence, and then finally measurements. Let's look at a little bit of the history of the corner point.

We had a couple of county surveyors that had been in here in 1872, county surveyor Breckenridge. Then in 1892, Holman. And in 1900, Hawkins who also called for an existing north/south road at the 16<sup>th</sup> point north of this corner. And then in 1913, county surveyor Hutchins was in here. The problem here is stated in the actual corner description.

The corner point and vicinity have recently been obliterated by the construction of the Council Bluffs Reservoir. Aerial photos dated 1939 and 1967 show the existence of a north/south gravel road and east/west fence lines and occupation lines emanating from the locust of the section corner.

Local residents and forest service employees state that there is a corner tag facing east attached to a large white oak located on the west shoulder of the road at the fence line extending west. The important point here is Thomas Holman in 1892 resurveyed the south boundary of section 14, he re-established the quarter corner on that section line at midpoint between the found original section corners. My resurvey recovered Holman's one-quarter section corner and the original corner of sections of 13, 14, and 23. So let's go back to the diagram.

This represents the gravel road that exists right now. The gravel road that



**HANDOUT** A copy of Stan's presentation that he uses during topics 1-5 can be found in the Handout section at the end of the Evaluating Corner Evidence – Part 1 study guide.

## EVALUATING CORNER EVIDENCE – PART 5

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used to exist and go on South along the section line. Here's the fence lines emanating from the area of the spillway. And, as I mentioned, Thomas Holman in 1892 had the original section corner and over here had the original section corner and replaced the quarter corner and proportionate position.

Today, we have the road, the fences, the aerial photos, and the measurements of Holman's south boundary of section 14. We have the original section corner and the quarter corner and we took that line and, at Holman's distance, extended it on here at the corner point. That is basically the procedure that was used to restore this corner point and that is described also in the notes as thus. The corner of sections 14, 15, 22, and 23 determined from Holman's measurement of the south boundary of section 14 as supported by the projection of the center line, the road, and the old downed fence line from the east and west.

This corner point falls in the spillway of the dam where it's impracticable to put a permanent monument. So, again, how would you classify this corner point? When the county surveyor Holman discovered it, it was certainly existent. He made some measurements and recovered the south line of section 14 and recorded that survey. And now we can use that recorded survey and his measurements coupled with the fence lines, the road, and other indication to put that corner exactly back in to place. So it's really not lost. Again, we have an example of using collateral evidence to make the corner point obliterated and we could recover it.

You should have read the **IBLA** case called Nolan, **Gilbert and Logie Nolan**. This case demonstrates measured relationships and how they may be used to distinguish the proper corner point between two monuments and the locus of a section corner. The area looks a little bit like this: this is section 26 and the hachured area are the lands that the Nolan's have Indian trust patents on.

And then the MODOC Corporation has this interest in the rest of the section. The MODOC Corporation caused a survey to be made at section 26. And that surveyor used a monument for the southeast corner of section 26 that was south 81 degrees, 34 minutes west, nearly 194 feet from the corner point that the Nolan's felt should be the section corner. Now you can see that if this section corner is moved westwardly, that diminishes the boundary lines of the Nolan's.

So they contested the survey, and since it was Indian trust interest, the BLM was requested to come in here and do a resurvey. And their



**HANDOUT** A copy of the  
IBLA case can be found in the Handouts  
section at the end of this study guide.

## EVALUATING CORNER EVIDENCE – PART 5

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resurvey basically confirmed the survey that was caused to be made by the MODOC. And thus we have the conflict of the section corner.

Now I'm going to go through and just discuss this section corner position and cover how the judge panel of the IBLA looked at this. The case basically demonstrates an important principle: evaluate evidence for its relation to the original survey record. The issue was disagreement regarding the location of the southeast corner of section 26. There were two mounds of stone located about 194 feet apart. The Nolan's continued the easterly mound of stone was the proper corner and the MODOC surveyor and the BLM contended that the westerly mound of stone is the proper section corner. The history of the surveys in the area.

In 1872 was the original plat of the survey conducted by the General Land Office. This is the only official survey of record. Then about 1908, approximately, there is an unrecorded survey that establishes the southeast section corner and four 16<sup>th</sup> corners in the southeast corner, in the southeast quarter of section 26. In 1964, MODOC Recreational Estates acquired the remaining land inclusive of Nolan's in section 26. They hired a surveyor to survey it. That surveyor's survey disagreed with the 1907 unofficial and unrecorded survey.

In 1966, the BLM resurveyed the area and their resurvey supported the MODOC survey on all counts. Then, in 1967, the Nolan's hired a surveyor who disagreed with BLM and now we get in to the litigation. And it goes before the Interior Board of Land Appeals. And as they do, the decision goes in to some basic legal principles that they use to decide the case. And one of those is that the purpose of a dependent resurvey is retrace and re-establish the lines of the original survey in their true original position according to the best available evidence of the positions of the original corners.

Let's take a review of the evidence that basically was submitted by BLM. They said the 1871 survey is the only official survey performed in the township. They say that the adopted section corner is well correlated with other original corners found in the resurvey. So the westerly mound of stone they say is better correlated with other found original monuments. They say that the easterly mound of stone that the Nolan's contend is the proper corner introduces distortion in the lines emanating from it.

This distortion is not noted elsewhere in the township. They rejected the fence lines as substantiating the location of the original corners. And they rejected the 16<sup>th</sup> corners as they were unofficial, unrecorded, and were



## EVALUATING CORNER EVIDENCE – PART 5

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determined from the incorrect section corner. Well the Nolan's had a lot of contentions and we're going to go through those and then we're going to see how IBLA responded to those contentions. So the Nolan's contended the corner rejected by BLM is similar in appearance to their accepted northeast section corner.

The court said that the Nolan's surveyor stated the juniper post in their rejected corner was also similar in appearance and age as the post of the other 16<sup>th</sup>. However, the original GLO notes mention only the setting of a stone for the southeast section corner, whereas the GLO notes state that a post was set for the northeast corner. So the two section corner monuments were dissimilar. One was a post, one was a stone.

The Nolan's contended that old fence lines are consistent with their corner. These fences have been accepted for generations by adjacent property owners but there are no fences built to the BLM accepted corner. Well the court finding in that contention is that this contention only indicates the fences were laid out according to the unofficial Indian allotment surveys from 1908. It does not establish that the section corner used was the original one. If there were no other monuments, such as the one used by BLM, such evidence would be more convincing. That's what IBLA said.

A third Nolan contention is that the corner they favor is reconciled with the location of several 16<sup>th</sup> corners in the southeast quarter of section 26, which are scribed with Indian allotment numbers. Well the court said the same thing applies regarding the fences. They were simply laid off from the wrong original corner point. Let's not say wrong original corner point. They were laid off from the wrong point because it was not the original corner point. And here's one that I've encountered quite a bit in my surveys.

The Nolan's contended that the USGS map of the area shows bearings of many of the original lines off by as much as 2 degrees. Well IBLA said this: the lines on the USGS map are dashed, they're not solid, and that indicates they are only approximate. Moreover, USGS does not contend that its maps depict the land lines in their exact location. That's exactly right. It's simply a map, it's not a survey plat. A fifth contention by the Nolan's is that the bearing from the original west quarter corner to the original northwest section corner is north 1 degree, 8 minutes west.

They say this is the same general bearing as other north/south fences and the east section line emanating from their corner. IBLA said this is an

## EVALUATING CORNER EVIDENCE – PART 5

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isolated example. There is no definite pattern of excessive northwest bearings along the longitudinal lines of the township looking at the whole survey project. Number six the Nolan's contended that the BLM corner violates the rule that points long accepted are not to be disturbed and would vastly disturb improvements. And the court noted something that's kind of important. They said there was no unanimous agreement among all landowners interested in the location of the southeast corner.

And there are two possible locations for that corner. The field surveyor must choose the corner he or she believes to be more conclusive as to the location of the original corner. So going to the diagram, the court noted that this being a section corner, the location of this section corner affects land titles in at least four sections, not just section 26.

So they noted the relationship and the affected section corner on sections to the east, southeast, and to the south. Those sections would be affected also by the location of this section corner.

Finally, the Nolan's contended that the BLM survey challenges boundaries of other private owners whose lands are not covered by the dependent resurvey. And, again, the court cited some other cases. Some court cases and some IBLA cases. But the principle was, the only function of the BLM here was to determine the boundary of public lands in accordance with the original survey.

Reliance by private parties on a given corner location cannot overcome other evidence which demonstrates that another corner location is the correct location of the original corner. And here they're sort of sympathetic with the predicament that the Nolan's have in reliance on an incorrect corner point. But they point out that courts are proper forums for resolving boundary disputes among private parties stemming from reliance on different corner locations.

So, in conclusion, the IBLA said the Nolan corner would significantly distort the shapes of sections 25, 26, 35, and 36. Whereas, the dependent survey would make only minor changes. They concluded that the fences and other 16<sup>th</sup> monuments only prove that they were laid out in accordance with the surveys made around 1908, which emanated from the wrong position for the section corner. And so they dismissed the Nolan's protest.

I have a few questions and comments for you to consider answering. If the mound of stone used by the government the BLM did not exist and

## EVALUATING CORNER EVIDENCE – PART 5

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BLM proportioned the section corner, do you think the BLM would have won? In other words, going back to the diagram, the mound of stone to the westerly, if this was never found or did not exist and you just had this mound of stone and the decision was made to proportion (and by the way the proportion position was going to be even further west of the westerly mound of stone by about another 50 feet or so, so the proportion point would even have been over here), what do you think would have been the outcome of the case if BLM would have proportioned that section corner?

In this case, what element of evidence carried the most weight? In this case, to distinguish between the two mounds of stone, IBLA said the best relationship shown by the measurements to other original corners tilted the scale in favor of the westerly mound of stone. The best relationship.

Why didn't all the collateral evidence pertaining to the other corner cause a decision in its favor? There was fences built to it, there were 16<sup>th</sup> corner points measured from it. Why didn't that weigh in? That was simply because that was the wrong point for the section corner. It did not relate to the original survey.

We discussed a court case, **United States v. Citko**, and we saw how heavy testimony weighed in that case. The testimony helped to determine the corner point. But remember that the testimony related to the original survey and that the people testified to seeing scribe marks in the bearing tree, accessories, and also the wood post monument. Well we have testimony here for the Nolan's corner, but that testimony didn't link to the GLO corner, as did the Citko testimony.

What if the Nolan's corner would have had, say, stump holes agreeing with the GLO record for this corner point? Well then I think you have evidence that relates their easterly mound of stone to the GLO and that might have been enough to tilt in their favor that the easterly mound of stone is actually the corner point. Where I've surveyed, I'm willing to bet a large percentage of the surveyors would have simply tied the easterly mound of stone that the Nolan's contended was a section corner, just tied it and gone on and done their survey.

How about each of you, if you were the surveyor in this case, what would you have done? And then the question arose in the court that also addressed this in the case, what about the bona fide right of the Nolan's? Well succinctly stated, the court said those rights derive from the original plat and the resurvey by BLM is the best evidence of the original plat. So that is IBLA case Nolan.

## EVALUATING CORNER EVIDENCE – PART 5

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It's an interesting one in that it discusses, again, collateral evidence, you have conflicting evidence (two mounds of stone), and measured relationship played a big part in determining which mound of stone was the best evidence of the section corner.

I'm going to put up here another example of conflicting monuments and sometimes how just a little bit of evidence that helps you link it to the original survey will be enough to tilt the scales to help weigh your decision as to which monument, if they are conflicting monuments, will you choose. In this example that I'm going to put up here, kind of like in the Nolan case, there are two mounds of stone. And they're 143 feet apart. And coincidentally one mound of stone has two stump holes that agree with the record bearing and distance of original bearing trees.

The second mound of stone also has a stump hole that agrees with the record bearing and distance of one of the bearing trees. So what did we do in this case? Measured relationship certainly came in to factor here because they were 143 feet apart. And I knew that there was going to be some dissention in this decision because there was a faction that liked the one mound of stone, I thought that the other mound of stone fit better. So I selected it and here's how I wrote up the corner point description.

The two mounds of stone are 143 feet apart. The mound of stone that I selected, I describe this way. The quarter corner monumented with an embedded mound of stone, 24" base, 6" high, from which the remains of the original bearing trees, a dim stump hole bears south 4 degrees east, 5 links. This was the GLO bearing and distance for an oak tree. A stump hole containing wood fragments determined by the US Forest Products Laboratory to be pine, and pine was the correct species for this bearing tree accessory, bears north 12 west, 46 links.

Now, with my experience, I know what pine wood looks like as distinguished, say, from oak wood. Pine is pitchy and you can see the differences in the grain. And also pine lasts much, much longer after the tree is, say, destroyed, is logged off, or the tree is dead, pine lasts much, much longer than most other species and it has a very deep tap root that goes way down deep into the ground as opposed to most species of oak trees.

Oak decays, it's not as pitchy as pine and it decays quicker and most species of oak don't leave a deep tap root. However, in describing this I just wanted my peers to see that I'm analyzing the contents of the wood

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fragments in this stump hole – it's pine and it is correct – versus the stump hole at the other mound of stone. So right in my corner description, I'm tying in the other mound of stone. So from my mound of stone, another mound of stone bears south 64 east, 143 feet.

Wood samples taken from deep within a stump hole located at record bearing distance from this mound were determined by the Forest Products Laboratory to be oak. The correct species was pine. Also from this second mound of stone, a metal location tag marked "probable one quarter". Somebody thought it might be the quarter corner, maybe it is, we'll just say it's a probable one-quarter corner. And they put that tag on a tree referencing that second mound of stone. But my point here is that you're going to have conflicting evidence, use all means and use all elements of collateral evidence.

Measured relationships are going to help you. In this case, the physical evidence of pine remains versus oak remains, coupled with measured relationship tilted the scale to one of the mounds which I used. We've seen several examples of conflicting monuments, conflicting evidence.

Don't be afraid to put these things right into your corner descriptions. It tells the story of why you evaluated the evidence at that corner point the way you did and actually leaves footsteps for the next surveyor, the next generation to follow and to see how thoroughly you've analyzed that corner point and they won't have to question the work that you did.

Even where maybe the location of an original tree accessory doesn't agree with the record, go ahead and state that. And this is just an example in a corner description write up where a state licensed surveyor found the original stone monument of the General Land Office survey at a quarter corner. And he also had the original bearing trees that referenced that corner but note here that one of the original bearing trees, which is now a white oak snag, bears south 58 east, 35 links distance and there's an old scar. And note here that the actual record distance was 25 links and the corner point is actually 35. This can happen.

This is just an error in the GLO notes where either the deputy surveyor and the note keeper should have recorded 25 or the chainman measured 25 and said 35. Something happened there. But that doesn't mean that you reject that corner point. There are situations like this that will happen. Note that the other original bearing tree (a white oak 22" diameter, north 63 west, 22 links, with an old scar) it is at the record GLO bearing and distance. So that helps to confirm the found original

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monument and you have your corner point.

That surveyor documented the evidence that was inconsistent with the record. We're going to change gears a little bit and we're going to take a look at some slides that demonstrate evidence, that demonstrate the elements of collateral evidence in a different manner than I've done here.

### Best Available Evidence

Before we get into the PowerPoint slides here, I want to review a couple of the objectives that we started with at the beginning of this course.

I wanted to reinforce some principles that will assist you in evaluating evidence for its ability to serve as proof of a corner point and help you determine what is the **best evidence** of a corner point. I hope you're starting to get a feel for that. I'll give you an answer for this, it may not be the answer, at the end of this course.

And second, how much evidence is enough? And I'll maybe answer that later. Existent, obliterated, or lost? After evaluating the available evidence at a corner point, according to principles of evidence for your geographic area, you will state whether the corner point should be classified as existent, obliterated, or lost and understand why these terms are used.

Well I certainly hope that you know what these terms mean now and how they are applied. When the original monument and its accessories are gone, you will consider all means for ascertaining the location of the corner point by listing six general elements of collateral evidence that should be evaluated for their ability to serve as proof of the corner point before you determine the corner to be lost. And you've seen examples of the six categories of collateral evidence. We've just covered those. And now we're going to cover some visual examples on the slides.

You will author corner descriptions and field notes that more thoroughly describe and document all the elements of evidence you found and utilized to determine the corner point and which demonstrate your reasons for rejecting conflicting evidence. And you've seen some documentation of corner descriptions that I've used and have seen that do exactly that. Let's go to the PowerPoint.

We left last when the direct evidence of the corner is missing or destroyed. Other forms of evidence listed collaterally may be the best

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indication of the original corner position. So that takes us into collateral evidence: testimony, records, common usage, topography, occupation, and measurements. So let's look at these again from a more visual standpoint.

**Testimony** – we discussed this that testimony can be powerful evidence when it's very specific, when it's very convincing. It may be good enough to determine that the corner point is existent or obliterated. However, as the scales diagram, that witness testimony cannot overcome the actual original monument or the original accessories. Those carry the day.

**Records** – records are anywhere you can find them. For your geographic area, you need to become familiar where the records are and you need to go find them. Your search needs to be thorough and it needs to be exhausted. I've found records in all kinds of weird locations and the search for records just really never ends.

If you recall that cryptic road map that had the tie to a section corner, the highway plans that had the tie to the section corner, it was rolled up in the vaults of a rural county's recorder office and we only found that by simply by going through all of those records in there that weren't indexed. That's a good rainy day activity for the crew. Maps – maps can be a form of record and here you see a tick mark or an X or a cross.

These are found on USGS topographic maps. And that cross indicates that the geographer, cartographer thought that there was something that constituted the section corner at that point. How did they come about this determination? Well, back in the day when they were field checking and actually constructing these topographic maps, they had a stack of aerial photos for the areas that they would be doing the field examinations in.

And as they came in to the area of, say, this section corner, they would look on the aerial photography and correlate it with what was on the ground. And perhaps there was something there that they determined must be the section corner. And so they took their aerial photograph and made a pin prick on it and turned it over and on the back, they wrote what they thought that was. Say it's a fence corner. Maybe it's a marked mound of stone, something like that.

That kind of stuff now today is generally not available to us surveyors but what we know is that someone thought that this was a section corner. So the cross denotes a found section corner. Now if these lines were dashed,

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then that would indicate that USGS didn't find anything in there and quite frankly they're not sure where this section corner is and that there's a lot of uncertainty in where their section lines are shown on the topo map. So that's just something to realize about topo maps because sometimes they're given too much deference in where property boundaries and where corner points are located.

**Aerial photos** – you've heard me taut **aerial photos** as a form of records. I think they're an excellent form of records and I think they're typically underutilized. They can give us a history of land use patterns going all the way back to the late 1930s. And here you see land use patterns that reflect the rectangular pattern of the public lands survey system. And here's an interesting location up there, in this area right here. We may have some kind of trespass or encroachment, who knows what's going on in there. But aerial photos are very valuable for these kinds of purposes and they should be part of your records research before you go out to do a survey project.

**Perpetuations** – perpetuations is where some survey or someone has perpetuated the location of an original corner point by putting a more durable monument to substitute for the decayed wood post or the mound of stone or the marked stone. Here we have a car axle that a county surveyor used to perpetuate his found original section corner and he perpetuated that with a car axle.

And now my survey crew is going to further perpetuate his corner point by putting a durable, metal monument in the ground and take new bearing tree accessories. So we have a chain of perpetuation for this section corner. Perpetuations as we just discussed, they create new monuments and accessories that preserve the location of the monument. And if the monument is disturbed or destroyed when recorded. When recorded (and this is a very important point), they create a chain of evidence that link to the original corner location.

Perpetuations may not do us a whole lot of good if they're not recorded. In other words, if we can't find the records that the corner was actually perpetuated, how's that going to help us? Look at this white oak tree. It's a new accessory that was marked with hack marks by a county surveyor and it takes a discerning eye and experience to be able to see these healed hack marks. You have one here, here, and there's one up here. Three hack marks.

And local knowledge tells us that this old county surveyor used three hack



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marks on his accessories when it was a section corner, two hack marks on his bearing tree accessories for a quarter corner, and one hack mark for 16<sup>th</sup> corners. That was his method of marking his accessories and it was his method of perpetuating original corner points.

**Common usage** – here we have another aerial photograph that shows that roads and fences, looks like they're adhering to the rectangular pattern of the public land survey system. And in this case, it looks like we have a road here on the section line. Looks like we have another road here on this section line. This looks like, I don't know if it's a road or just a fence line, but a differing land use pattern on the east side here. On the north side, it's partially a road and then a fence line coming on through here.

So say we do not have the original monument or its accessories, would it be a prudent thing to say proportion a corner point a section corner that falls out here and a quarter corner that falls out here? Is that a prudent thing to do? Well I'm not sure in every case, but we need to make sure that we fully analyzed and considered common usage and occupation in these kinds of situations. In fact, we had one corner example that I used where the north/south road was used and where the fence intersected, that became my corner point right in there. This may be the situation in this photograph.

So here we have the surveyor that is conducting a survey and he's determining if he's going to use the center line of the road as the best evidence of his quarter corner on a north/south section line. This is another example of what you might have to do if you have to look for a monument that is buried underneath the road fill.

We have surveyor Doug Welman. I threw this in actually because at the time of this taping, the previous week was Groundhog Day and the office staff had some fun in comparing Mr. Welman to a groundhog popping up out of the hole to see if he saw his shadow.

**Topography** – we discussed topography at length and we're going to look at some visual slides of topography and some of the cautions you have to use in applying topography to determine your corner point.

The section line coming from the south came down here and then at the stream bank there was a topographic call. Now you could say that this stream bank right here is a distinct bank and it hasn't moved. In other words, the stream bed hasn't changed its location to any great length and the topo call here proved to be pretty valuable and it helped to confine the

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search area of a quarter corner that was up here on top of this hill back here.

Now, conversely, talking about rivers. Here you have what we would call a braided stream. This stream bank it moves depending on the water flow and if it floods and gets out of its banks the stream bed might be here right now, next year it might be over here or it might be up in there. It would be tough to distinctly say where the actual bank of this stream was at the time of the original survey. So we would have to use caution in using this stream as definite evidence. Discussing occupation – here we have two different forms of land use. We have, it looks like, a yard right over here and over here it's timber and it's overgrown.

So where is the boundary line in this case? Well this is where we have to be careful. There is the occupation line, but guess where the actual title line is. It's over here. In this case, how do I know that? This is because this used to be my front yard and the actual boundary line is there in the blue and apparently I sort of cleared and mowed over it a little too far. I'm sorry. This is pretty typical though of fences and occupation lines. You have to be careful that they're just there for convenience and do not actually indicate the boundary line.

Here again we have a 1939 aerial photo. I can tell you that the conditions have really changed between 1939 and today and we need to determine if we can find this area of the section corner. Now back in 1939 we that there's a road south, road west and there's indication of maybe some kind of road going off like this which today there really isn't much evidence of that. And then also up here evidence of occupation or differing land use right there and today there's no longer a fence line.

But having this aerial photo and seeing the differing occupation and uses of the land helps us to determine that the road intersection and perhaps the fence and the old road, this is the best location for the section corner, using all that evidence collaterally. This is a what used to be road, it's now long abandoned. It used to be shown on old 15 minutes USGS topographic maps as the township road and it was named that because it is actually on the north boundary of a township. It is a township line. And we are about to walk down this road to look for evidence of a section corner right in here.

So in using the map, aerial photography and to get us in to the on-the-ground location using measurements to adjacent nearest found corners, it brought us further down that township road to where a fence intersected

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from the south. And in looking in the area, we actually found the decayed remains of an original bearing tree right here. This is an original walnut bearing tree and when we pull off the record bearing distance from it, it put us in the abandoned road and we measured off for the other original bearing tree accessory and we found the decayed stump, decayed all the way down to ground level. And we felt all that information indicated that is the corner point.

**Fences as evidence of occupation.** You got to be careful about fences, as I've said many times. Here in the prairie states, I believe this is Wyoming, fences were often times known to be placed on the section line and after all you can stand on a section corner and see all the way to a quarter corner and maybe to the next section corner. And fences were actually placed on the line. Versus fences placed for convenience.

This is an old split rail fence and it was placed for convenience and basically between adjoining neighbors. Oh boy, what do we have here? We have a marked stone hanging from a fence post. What are we going to do in this kind of situation? Because we don't know if that mound of stone was moved over to the fence corner or was the fence post placed at the location of the mound of stone. What do we do? What are some things we can do to help us figure out what happened here? We can make measurements to adjacent corners, talk to the adjoining landowners, and check for the corner accessories.

Like in the previous slide there, measure out and maybe there's a stump hole, maybe there's an X on a boulder that will help you verify and confirm that this fence corner is the actual corner point. Here's an actual situation with the fence corner in an area where I've surveyed extensively. The fences and fence corners often times are not at the section corner. And actually the stone you see there is a marked stone. It's located out there in the pasture. We looked around for stones that fit the dimensions of the stone described by the original surveyor.

Found that one and got out the wire brush and rubbed the dirt off and found the grooves that proved that this is the original stone monument. But we have a dilemma here, don't we? Because, you have to wonder was this stone monument moved from where it is here, maybe from where the fence corner is, was it moved? And what can we do to figure that out?

Well as it turned out, we measured out for the accessories that referenced the original monument and so we measured off this way and in here we found the pine stump that was at the exact record bearing distance of the

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original pine bearing tree. And remember I told you that pines are very durable. And then off in this direction, we found a large stump hole, a distinct impression in the ground, with soft punky fragments of wood in there that was in the location of an original white oak corner point accessory.

So between the stump and the stump hole over there, it confirmed that the stone was occupying the correct position of the section corner. So then, of course, we have somebody on one side of the fence or other that's not going to be real happy.

Early on in this presentation when we last looked at slides of original evidence, I don't know if you recall, but I said I wanted you to remember this stump because it factors in to recovering a section corner. So here is that stump right here. And when opposite from our view of this stump, at the base of the stump, are some scribe marks and you can see the bottom of the scribes, the BT that was scribed in that stump by the original surveyor.

So using that stump as the accessory, we pull off of it and the red diamond is the position of the corner point. Well, guess what that does? See here we have a line of occupation right here. We have a clear cut here and some nice big timber over here. This is a line of occupation, that's true, but, in this case, the line of occupation was not the correct line and so now we have a lot of fun here that we have a clear cut that went over on to the adjoiner.

Let the evidence tell you where the line is and be careful of putting too much reliance on maps or calculated coordinates to lay out your timber sales or your property boundaries because of the problem in this case. This is a slide I've gotten a lot of mileage out of this slide.

We're on a hilltop getting ready to descend down into this old abandoned field to look for a section corner and closing corner on a range line. We're looking northeast and I can see right away where I'm going to go look. And, as it turns out, there is the range line as evidenced by that tree row, those are eastern red cedars, there's the range line going north and south, and here is the section line going west and there is the closing section line coming in from the east and closing on the range line.

So these lines of occupation prove to be evidence of the range line and the section lines. And also of note is the fact that the closing distance between the closing corner over to the section corner agreed with the

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dimensions on the original plat and is noted in the General Land Office surveyor's notes. Using that evidence, we determined that this is the section corner and this is the location of the closing corner.

So, you're going Stan, you just used a simple line of trees in this case? Well, we did. Local knowledge tells me that the tree lines got there. How did they get there? The tree lines are actually evidence of now downed fence lines. The tree lines are evidence of fence lines. So did the adjoining landowner plant trees there? No, they did not. What happens in this area is that when the fence line existed, the birds in the area would eat the blueberries on the eastern red cedar trees, and these are all eastern red cedars.

Then they would come over to the fence line and perch on the fence post and digest those seeds and then deposit the remaining seed on the ground. So, thanks to bird shit, we have evidence of the public lands survey system. I was talking about this slide in Casper, Wyoming and an old fellow in the audience raised his hand and said, "Well, maybe that works in some states, but here in Wyoming, by the time that seed left the bird's butt, the wind would have blown it all the way into Nebraska before it hits ground." So if you're in Wyoming, be careful of applying this kind of evidence. There were the corner points.

**Measurements** – we've been talking measurements as evidence and I even got on the soapbox and cautioned about letting measurements and coordinates and GIS dictate where corner points are versus letting evidence tell us where the corner points are. But measurement technology is all the rage, it's always evolving. But remember they're just tools of our trade. They're just tools of our trade. And the evidence dictates where the line is.

I've had a lot of good instrument men on my crews, instrument women on my crews, and you can train a lot of different people and beings to be an instrument person and this one was a really good one and I didn't get too much problem from adjoining land owners who didn't like where I was surveying a line. Keeping up with measurement technology is always a challenge and here we have Mr. Bill Degroot. He's still thinking he's on a transit and he's supposed to be leveling the GPS antenna.

But, just to make a point, like I was saying – don't let measurement technology take you away from the evidence. Evidence proves where a corner point is not where measurements say it ought to be. GPS is a measurement tool. It is not capable of evaluating evidence to determine a

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corner location. We're going to have a little fun here. The amazing surveyor stories.

The real surveyor versus the GIS monster. Just to read you some of the verbiage that's going on it's that the surveyor is saying, "Holy declination, it's trying to digitize me. Gasp. Wheeze. Got to keep my instrument level. If I can just reach my plum bob without straddling the tripod legs." The caption is chilled to accurate measurements, chilled to spine crunching fear of an object-oriented terror. It came from outer space. The real surveyor versus GIS monster. Like I said in the earlier example, be careful with abusing and not correctly using coordinate information.

In this photo, you now have a pop quiz. Down here in the corner this says that we have an iron pipe and a collar of stone right here. Tell me three forms of collateral evidence that we have right here in this photograph. We have a monument which is the iron pipe and the collar of stone, we have the testimony.

This gentleman, he was a very colorful individual. He had lived on this land all of his life, he had stories from his father and stories from his grandfather. One thing he did know is that this fence corner position and the iron pin – they were the section corner. And we have a fence, so we have occupation evidence. Three elements of evidence here. So another example is the weight of evidence.

All inscribed bearing tree outweighs an isolated mound of stone. We could have all kinds of these kind of scales and diagrams. We could attempt to have a flowchart. If we have this evidence, will it outweigh this evidence? But we really don't have a flowchart that could accommodate all the elements of collateral evidence and the various combinations. So you cannot survey and judge evidence based simply from the textbook or flowchart.

We've been talking about basically **conflicting evidence** the whole time. I've showed you corner descriptions that contained the tie in the conflicting monument. We've talked about some case studies and even showed you the example where the original bearing tree accessory was 10 degrees different, it did not agree with where the original monument was found. There are all kinds of things to check and one of the things, if you're in rugged country, you might check to see if the corner accessory is measured from the monument where it was set, to the accessory.

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Maybe it wasn't level changing; it might have been sloped taping to that tree. So you should try that. Maybe that's what happened. And I wanted to just maybe throw this in. I've been working with the course coordinators Dennis Mouland and Ron Scherler. They're trying to line up a tough putt here and I'm just trying to give you an example of what they do in their leisure time.

Now we're going to jump into our last case study. This is another **Interior Board of Land Appeals** decision. It specifically involved several corners of the public lands survey system. This is IBLA case **Yeargan**. I'm going to show you the general area on a township diagram that's covered in this case. The actual case involved seven corner points, actually there were ten, but they addressed seven of them specifically. There was one existent corner that BLM said was existent.

There were three obliterated corner points shown by the squares here, there, and there. And there were three lost corners reflected by the circles in this resurvey area and all of these corners, Yeargan's were contending that the surveyor erred in analyzing the evidence here. So let's get into the discussion.

The general issue was that the Yeargan's contended that the dependent resurvey was void because it was not a retracement of the original survey. And they presented specific arguments and information relating to seven of those corners that we just examined on the index. They asserted that the resurvey and pairs, the bona fide right, these are the rights acquired in good faith under law.

In pairs, the bona fide rights established under the original survey. In this case, the appellants, who are the Yeargan's, they have the burden of establishing by a preponderance of evidence that the resurvey is not an accurate retracement and re-establishment of the lines of the original survey. And the Yeargan's alleged error in the government's determination of those seven corners. Let's discuss the first one and the first one is the quarter section corner of sections 1 and 12.

And, if you recall, the BLM asserted that this is an existent corner point. The Yeargan's pointed out the reason for not accepting BLM's decision, they said that there is an inconsistency in the measurement from the one quarter section corner of 1 and 12 to the southeast section corner of section 1, which was an obliterated corner. Just so you know, the GLO distance was 2610 feet.



**HANDOUT** A copy of the IBLA case can be found in the Handouts section at the end of this study guide.

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The resurvey distance was 2598 feet. So between the resurvey and the General Land Office survey, there was only a discrepancy of 12 feet in that ½ mile. The BLM stated that they had evidence of the original bearing trees as noted by records and physical evidence of perpetuations by state license surveyors dating back to 1958. And they also pointed out that the original bearing trees are still there at the corner point today.

The IBLA in looking at these facts and at this evidence said that the evidence relating to the original position of the corner is given greater weight than the record distances related to the bearings and links of the line. So they said the evidence relating to the original position is given greater weight than the record relating to bearings and links.

They went on to say that measurement discrepancies are not uncommon between the original surveys and resurveys. And this alone does not disprove the corner. So fundamental principle here that we can learn from is that physical evidence relating to the original survey controls over measurements. Let's go to the one-quarter section corner of sections 11 and 12.

This was a lost corner that BLM declared to be lost and so they restored it by single proportionate measurement. The appellant alleges that the proportion point does not match physical evidence on the ground or information included in deeds. And it is south of the original corner position.

Well, BLM's statement of reasons included the fact that the corner could not be established beyond reasonable doubt on the basis of deed descriptions. They also said there was no other conclusive corroborating evidence. They said the measurements called for in the various deeds did not result in a common locus. They showed that there were discrepancies in using the various deeds in coming up with the same point.

The register of deeds for that county stated that in his experience only a rudimentary survey, if any at all, would likely have been conducted in constructing those deed descriptions. The register of deeds further stated that the maps which accompany the deeds were generally constructed by superimposing the deed descriptions over the original plat and not by actual field measurements.

In reviewing all of this, the IBLA said that the Yeargan's only offer a contradictory opinion and they have provided no conclusive corroborating evidence that could be utilized to determine the location of the original



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corner. So there were just general allegations and offered some deeds but they did not offer up that this is the corner point right here.

The next corner point was the corner of sections 3, 4, 9, and 10. And BLM classified that corner point as obliterated. The appellants really offered up nothing real contradictory but they just said that the creek seems to be in differing places in the 1847 original survey and the 1989 resurvey.

For this section corner point, the BLM surveyor accepted an iron pipe of unknown origin, but the iron pipe was reasonable well correlated to identify corners of the original survey. There was no other conflicting evidence, there was no other monument, no other bearing tree accessories. They showed that the branch, and again in Midwestern terms and branch is a creek, they showed that the branch in the original survey was called for at 35 chains, 50 links. The dry creek bed in the resurvey was at 35 chains, 39 links. So they said the call to the creek agrees reasonably well with the iron pipe and I have to say being familiar with this part of the country and the GLO surveys, that a very good correlation. Just 11 links difference. The IBLA concluded on this corner point that the appellant, the Yeargan's, failed to establish any error.

IBLA cited Manual Chapter 5 Section 16. While an incidental item of topography such as this is often useful in corroborating other evidence of the position of an original corner, it rarely can be used solely to re-establish an original corner. Particularly in view of the somewhat ambulatory nature of water. I don't know, I'm beginning to think that the IBLA panel must have watched this seminar because that's exactly the things we were saying about topography. So topography is best used in a cooperative manner instead of alone.

Let's go to the fourth corner position. This is the corner sections 2, 3, 10, and 11. BLM classified this section corner as obliterated. The Yeargan's alleged that the corner was wrong and that Ovada Yeargan had seen a rock pile that was about waist high with a pine knot in it. The BLM stated that the corner that they accepted is well correlated with the original corners. They said that this corner has been recognized over 77 years. They said that this corner position is perpetuated and properly recorded. And that their corner point is not in conflict with any of the found monuments.

So BLM accepted a monument that had been perpetuated and actually recorded by other surveyors for over 77 years. For this corner point,

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IBLA concluded that the evidence produced by the government was substantial and such position established by collateral evidence is acceptable where it is duly supported through proper relation to known corners. And in this case, the testimony that was given by the Yeargan's, that they had seen a rock pile about waist high, their testimony was not supported by other evidence and it wasn't substantial enough to overcome the other collateral evidence.

The fifth corner point is the corner of sections 1 and 12 only. And BLM classified this corner point as obliterated. It's located in a disturbed area. The BLM relied on perpetuations of the original corner and records of those perpetuations and re-established the corner point from the accessories that were documented in those perpetuations. IBLA concluded that while the area of the corner monument may have been disturbed, the calls to the found bearing trees from previous surveys perpetuating the corner demonstrate that the assigned position is correct.

The Yeargan's really didn't offer up anything substantial in here other than that they didn't really like the corner position. And the records of perpetuation that BLM used proved substantial in the eyes of IBLA. The corner of sections 1, 2, 11, and 12. The BLM said that this section corner is lost and used double proportionment. This double proportionment applied to this section corner right here. The Yeargan's merely stated that section 1 is not retraced as to the original survey.

Well, BLM stated that since the previous two surveys recovered no original evidence and the retracement data indicates they used record measurements only in only one and two directions only, the corner was determined to be lost. In this situation, there were two previous surveys conducted. In 1958, there was a survey and the measurements indicated that it was established by one point control.

The position of the 1958 survey was 69 links southwest. There was a second survey and it consisted of an angle iron and it was nearly 50 links northwest of the proportion point, but the record of that survey indicated that that lost section corner was determined using only two points of control instead of a double proportionment.

Basically, meaning that a lost section corner is determined by a double proportionment using the distance to the nearest found corner in all four directions. That would have been down this way to the south. So you would have used all four directions to double proportion the corner point. The 1983 recorded survey indicated that there were just two directions

## EVALUATING CORNER EVIDENCE – PART 5

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used in the record distance and that survey disregarded the distances in the other two directions down those sections lines.

For this corner point, the IBLA also upheld BLM and stated that the failure of the surveyors to define a known water course on the survey and resurvey does not impeach the integrity of the survey. And the records do not show that there was a faithful re-establishment of the corner point. So apparently in the case the Yeargan's also alleged that there was a water course north of the section corner that wasn't even called out for by the GLO. And they're saying well the fact that the GLO did not call for a water course does not impeach the survey. This demonstrates the danger of using improperly established corners from previous incorrect surveys. And this is really tough.

But BLM made the decision since one survey was one point control, the later one was two point control, the proper method to reestablish a lost corner point is by double proportionment and therefore that's what they did. I have seen and this is an instance where the courts tend not to be sympathetic to the reason of not doing a proper survey that the clients wouldn't pay for me to do that extra measurement over to that other corner. They're just not sympathetic to that. They want to apply the law.

The last one is the quarter corner of sections 2 and 3. And BLM classified that corner point as lost. And basically the only thing the Yeargan's had to say about it was that he corner position is in error based on statements of local residents. And the BLM said the testimony itself did not provide position knowledge of the precise location of the original monument. It was not backed up by any other evidence. So based on this, IBLA upheld BLM on that one also.

Just a couple of quotes that IBLA remarked about this case. They say in there opening statements that an allegation that a dependent resurvey is void because it impairs bona fide rights because it is without merit where the record shows that the dependent resurvey is actually an accurate retracement and re-establishment of the lines of the original survey.

Where rights to lands are based on patents grounded on the original survey, the dependent resurvey will not affect the location of any boundary lines as it is, by definition, a restoration of the original conditions of the original survey. There's an interesting statement in here that I like. IBLA said that the cadastral surveyor's primary responsibility when conducting a dependent resurvey is to act as a detective. Find all of the evidence. Find all of the direct evidence. Analyze all the collateral

## EVALUATING CORNER EVIDENCE – PART 5

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evidence.

Act as a detective who gathers all the available information and use his or hers best effort to determine the location of the original corners. That concludes IBLA Yeargan. And again that's an interesting one because it addresses specific corner points and the challenges to the evidence thereof. I just want to say something about the cases that we've discussed here and as you read other common law cases, that just remember as you're reading that case, the courts and IBLA applied the evidence and facts to the conditions in that specific case. You can't carte blanche just say well this applies everywhere under all similar conditions.

What we learn from these are general principles and we also learn what constitutes as evidence and what constitutes as better evidence in these cases. So they just provide us general guidelines and principles. Somewhat of a road map, if you will. So earlier I told you that as we concluded that one of our objectives I was going to answer some questions. What is the best evidence of a corner point? Well, the answer is, it depends on what evidence is available. I'm sorry, that's the best I can tell you.

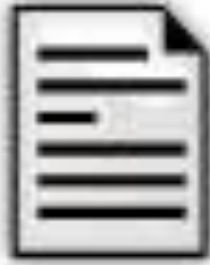
You're going to have to find the evidence, you're going to have to analyze it, and you're going to have to determine what is the best evidence. How much evidence is enough? Simply, you have to have enough to convince your peers and a court of law. Searching and evaluating evidence to me is a fascinating aspect of boundary surveying.

It's a facet of land surveying that is essential to the **United States Land Tenure System**. Society and the courts depend on surveyors to apply the proper legal principles in evaluating evidence. Let's not shirk our duty and responsibility here. Let's not let the coordinates, let's not let the measurements alone govern the corner position. And as you are out there gathering evidence and evaluating it and I hope the professional surveyor is the that's who is doing that and is not just leaving it up to the technicians and crew to go out and tie in iron pins.

I hope that you have the courage and the conviction of your analysis to fully document, fully document and record the evidence at each corner point. And hopefully in this manner, we can leave some footsteps for the next generation to follow in protecting the Land Tenure System. And with that, I wish you good hunting. Thank you.



**PROBLEM** Before moving on to the next topic, complete the “Determine Proper Location of Township Corner” problem which you can access from the course description page.



**HANDOUT**

665-D

GILBERT AND LOGIE NOLAN

A-30905

Decided AUG 8 1968

Surveys of Public Lands: Generally -- Surveys of Public Lands:  
Dependent Resurveys,

Where in the course of a dependent resurvey a mound of stone is found in a position consistent with that of the original corner which is reasonably well correlated with other original corners found in the township, it will be accepted as the original corner in preference to a more remote corner despite the fact that the latter appears to have been used as a corner in the positioning of fences built many years ago and accepted as the boundary by some landowners in the area.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

A-30905

Gilbert and  
Logie Nolan

: Survey Group 533-California

: Protest against dependent  
: resurvey dismissed

: Affirmed

APPEAL FROM THE BUREAU OF LAND MANAGEMENT

Gilbert and Logie Nolan have appealed to the Secretary of the Interior from a letter-decision dated September 27, 1967, by the Chief, Division of Engineering, Bureau of Land Management, which dismissed their protest against a dependent resurvey and subdivision of sections 23 and 26, T. 43 N., R. 12 E., M.D.M., California.

The Nolans have partial interests in several tracts of land covered by Indian trust patents issued in 1907 for aliquot parts of sections 26 and 35, same township and range. The land description in these trust patents is based on the plat of survey approved on February 14, 1872. The plat represents the original survey of T. 43 N., R. 12 E., executed by W. F. Ingalls in 1871 and is the only record of an official Government survey performed in the township. In 1964, Modoc Recreational Estates, a private developer which had acquired all the land in sec. 26 in which the Nolans had no interest,<sup>1/</sup> as well as other land in the area, had a survey made of its land. The survey performed by Joseph S. Westvold, a licensed surveyor, established the boundaries of the Modoc lands so that they impinged on lands claimed by the Nolans and others. Following complaints by the Nolans to the Bureau of Indian Affairs, the Bureau of Land Management through its Division of Engineering carried out a dependent resurvey and subdivision of secs. 23 and 26 in November 1966. The Bureau survey supported the Modoc survey on all points in contention.

The Nolans then protested the acceptance of the resurvey. They contended that the true boundaries of their land coincide with

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<sup>1/</sup> The NE $\frac{1}{4}$ NW $\frac{1}{4}$  and the E $\frac{1}{2}$  less the SW $\frac{1}{4}$ SE $\frac{1}{4}$ .

old fence lines which "for generations" have been accepted by the adjacent property owners.

The crucial issue in the dispute is the location of the SE corner of section 26, the corner common to sections 25, 26, 35 and 36. There are two possible points. One is a mound of stones containing a weathered, scribed juniper post at the intersection of an east-west fence line with the remains of an old fence to the north. The other is a mound of stones lying approximately 194 feet west and slightly to south of the first 2/. The dependent resurvey accepted the latter mound as the true original corner.

The Nolans insisted in their protest that the former is the correct one. They stated that they had consulted Philip D. Windrem, a licensed surveyor, who concluded that the Bureau of Land Management dependent resurvey had shown improper judgment in the selection of section and  $\frac{1}{4}$  corners in section 26. They then concluded that the rejected corner is identical in appearance to the accepted NE corner of section 26 and denied that a mound of stones ever existed at the accepted SE corner. They pointed out that old fence lines in the area are consistent with the location of the corner they favor. They also say that the position of the rejected corner is more consistent with an undisputed portion of the original exterior boundary of the section. They also urge that a "stone mound" along the north boundary should have been accepted as the  $N\frac{1}{4}$  corner and that if it were it would demonstrate that another ancient north-south fence which passes by this point is a true boundary consistent with the Nolans' view of the correct boundaries and corners. They also contended that the accepted corner cannot be reconciled with the location of several  $1/16$  corners in the  $SE\frac{1}{4}$  sec. 26 consisting of juniper stakes in mounds of stones scribed with the numbers of Indian allotments. They said that the Indian allotments must have been surveyed and that, whether the survey was formal or informal, it should be accepted now as it has been by those interested in the boundaries for many years.

In its letter-decision dismissing the protest and accepting the plat, the Bureau of Land Management pointed out that the 1871 survey was the only official survey performed in the township. It rejected the  $1/16$  corners scribed with numbers of Indian allotments because they were unofficial and unrecorded. It upheld the corner adopted by the resurvey on the ground that its location is well correlated with other original corners found in this township. It stressed that the Nolan corner would result in

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2/ The tie from the second mound to the first is stated as " $N81^{\circ}34'E$  2.932 chains."



a variation of some 2 degrees in the bearing of the east boundary of the section from the original bearing, while the bearing from the accepted corner varies only 2 minutes from the original. It noted that if neither corner were accepted and the corner was established by double proportionate measurement, the corner would fall about 40 feet farther west to the further disadvantage of the Nolans. Finally it rejected all evidence of fence lines in the area as representing true property lines and as substantiating the location of the original corners.

In their appeal to the Secretary the Nolans assert that the dependent resurvey rejected substantial evidence of the 1871 boundaries, thus altering lines long accepted by local residents, and, more particularly, erred in its choice of the two possible corners common to sections 25, 26, 35, 36. They say the resurvey also rejected an old monument at the  $N\frac{1}{4}$  corner of section 26, four  $1/16$  corner monuments in the  $SE\frac{1}{4}$  dating from a survey made about 1908, and numerous fences and fence lines placed on these corners and long accepted as the correct boundaries by local residents.

The purpose of a dependent resurvey is to retrace and reestablish the lines of the original survey in their true and original position according to the best available evidence of the positions of the original corners. United States v. Sidney M. and Esther M. Heyser, 75 I.D. 14, 18 (1968).

The Bureau of Land Management accepted the more westerly corner as the more probable location of the original corner primarily because its location is well correlated with other original corners found in the township. In fuller explanation of its reasoning the Chief, Division of Engineering, has commented:

"If the Nolan corner were used, considerable distortion of the section lines would result in the area around the SE cor. of sec. 26 which is not in notable evidence anywhere else in the area of these resurveys. The distance along the south boundary of sec. 25, between two found original corners, would be 76.33 chs. as compared with an original distance of 80.29 chs., a difference of 3.93 chs. or 259 feet. The bearing between the two found original corners, from the SE cor. of sec. 26 to the NE cor. of the same section, would be N.  $2^{\circ}02'$  W as compared with a North original bearing."<sup>3/</sup>

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<sup>3/</sup> Memorandum to Assistant Solicitor, Branch of Land Appeals, from Chief, Division of Engineering, June 4, 1968.

He also notes that a large percentage of the corners in the area were recovered from evidence of the original corners,<sup>4/</sup> a circumstance which indicates that the 1871 survey was executed with a fair amount of reliability.

While these comments are very persuasive, their weight would not overcome credible evidence that the Nolan corner was actually the original one and the Nolans assert that on the evidence the wrong section corner was chosen. They point out that the field notes of the 1871 survey state that the surveyor set a stone of certain size for the corner in a mound of stone and that the Nolan corner has an unmarked rock of approximately record size, while the accepted corner has not. While the presence of an unmarked stone of approximately record size in a mound of stones may be of some significance, the absence of any markings on it to identify it as the stone placed by the surveyor lessens its significance.

Next the appellants stress the fact that several ancient fences in the area are laid out along lines consistent with the Nolan corner while there is no indication that any fences were ever built to the accepted corner. This situation only indicates that the fences were laid out in accordance with the surveys made of the Indian allotments around 1908, but does not establish that the corner used in these surveys was the original one. If there were no other corners which could be the original corner, such evidence would be much more convincing. The discovery of another mound of stones in a position which could also establish it as the original corner forces the surveyor to decide which is the true corner. Here, as we have seen, the accepted corner is well correlated with the other original corners in the areas.

The statements of the Nolans that they accepted the fences as proper boundaries and of Mr. Frances Ballard, another long time resident, that he accepted a fence along the west side of his tract as the west boundary of his land (the NE $\frac{1}{4}$  of sec. 26) are at best only further indications that another survey had been made, but does not establish that this survey was based on the recovery of the original SE corner. For the same reason, the 1/16 corners in the SE $\frac{1}{4}$  which were apparently set by the one who surveyed the Indian allotments and which were rejected by the Bureau of Land Management are only other indications that a survey was made after the 1871 one but do not irrefutably establish the Nolan corner as the original SE corner where another possibly correct corner exists.

The Nolans also charge that the Bureau cavilled that acceptance of their corner would lead to a bearing from it to the

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<sup>4/</sup> The area comprises sections 13, 14, 24, 25, 35, and 36, T. 43 N., R. 12 E., and sections 18, 19, 30, and 31, T. 43 N., R. 13 E. Evidence of 25 original corners, excluding the one in controversy, was found in this area.

field notes, while the accepted corner yields a bearing only 2 minutes from true north, and yet accepted a deviation of  $1^{\circ}48'E.$  on the line from the SW corner to the  $W\frac{1}{4}$  corner. The SW corner, the one common to secs. 26, 27, 34 and 35, was established by proportionate measurement when no evidence of the original corner could be found. The bearing the Nolans refer to is on the line running from the corner as thus set to the found  $W\frac{1}{4}$  corner. Since proportionate measurement is the standard method of establishing a lost or obliterated corner and a found corner must be accepted, the fact that a bearing deviation somewhat greater than others results from the determination of the two corners does not justify accepting an even greater deviation in different circumstances.<sup>5/</sup>

The Nolans also point to the Geological Survey topographic map, Big Sage Reservoir, California (1962 Series), of the area as showing that many of the original bearings were off at least as much as  $2^{\circ}$ . Many of the lines on the map are dashed, not solid, showing that the section lines are only approximate. Moreover the Geological Survey does not contend that its maps depict the land lines in their exact locations.

The Nolans correctly note that the bearing from the original  $W\frac{1}{4}$  corner to the original NW section corner is  $1^{\circ}08'W.$ , which is in the same general direction as the other north-south fence lines and the east section line rejected by the Bureau of Land Management. Since there is no definite pattern of excessive NW bearings along the longitudinal lines of the township, this is an isolated example.

The Nolans next state that the dependent resurvey established the  $N\frac{1}{4}$  corner by proportionate measurement after rejecting a nearby mound of stones similar to the one it accepted as the SE corner. While it is not clear what lesson is to be drawn from that allegation, the Chief, Division of Engineering, has stated that the field surveyor says that the "mounds of stones" are not similar. The mound at the SE corner appears to have been constructed whereas the one near the  $N\frac{1}{4}$  corner appears to be a natural rock outcrop with one loose unmarked stone on its top. About two feet east of the loose stone there is an old fence corner. The field surveyor did not deem the loose unmarked stone worthy of consideration as evidence of the original  $\frac{1}{4}$  corner.

The Nolans allege that the dependent resurvey violates the rule that points long accepted are not to be disturbed, particularly where their rejection would adversely affect improvements

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<sup>5/</sup> The SW corner of section 26, as established by the Bureau, is 40.48 chains east of the  $S\frac{1}{4}$  corner for section 27. The field notes of the 1871 survey gives the distance as 40.18 chains. The Nolans' position for the SW corner of section 26 would place it 41.44 chains east of the  $S\frac{1}{4}$  corner of section 27.

or introduce new complications. The general rule is sound, but here there was no unanimous agreement among all landowners interested in the location of the SE corner and there are two possible locations. In such a situation the field surveyor must choose the corner he believes to be more conclusive.

The Nolans also say that they as Indians should be given the same protection as non-Indians as to land boundaries and that under the law of California the long accepted fences would fix the correct boundaries of their land. The Nolans as citizens of California and the United States can enforce whatever rights they have to their trust lands despite the acceptance of the dependent resurvey. Poafpybitty v. Skelly Oil Co., 390 U.S. 365 (1968).

Finally the Nolans say the Modoc survey challenges boundaries of other private land owners whose lands are not covered by the dependent resurvey. It is not clear how the Department's interpretation of its own survey would be binding in a dispute between other landowners in an area outside the scope of the dependent resurvey. As the Department stated in recent case involving a protest against the acceptance of a dependent resurvey:

"Reliance by private parties on a given corner location may be considered together with other evidence in considering where the proper location of an original corner is; however, such reliance cannot overcome other evidence which demonstrates that another corner location is the correct location of the original corner. The only function of the Department here is to determine the boundary of public lands in accordance with the original surveys. Courts are proper forums for resolving boundary disputes among private parties stemming from reliance on different corner locations."

Rubicon Properties, Inc., A-30748 (May 6, 1968), p. 13.

Neither party is bound by the Department's concept of the correct location of the original monument. Each may pursue whatever remedies are available to him to establish his claim to the land in dispute upon the basis of his own interpretation of the location of the disputed corner or upon any other pertinent legal theory.

Summarizing the physical evidence that has been developed, it appears that the Nolans base their claimed location of the SE corner of section 26 on the fact that it is marked by a mound of stone which contains an unmarked stone of the dimensions described in the 1871 survey field notes for the stone that was set as the

section corner; that the mound of stone also includes a scribed juniper post like the one in the accepted NE corner of section 26 and like the posts in the 1/16 corners in the SE $\frac{1}{4}$  of the section which were established in a survey of the Indian allotments around 1908; that the claimed SE corner is marked by the intersection of an east-west and a north-south fence line; that the latter line and other north-south fence lines in section 26 run in a direction consistent with the accepted line between the established W $\frac{1}{4}$  corner and NW corner of section 26.

The weakness, as we see it, of this evidence is that it is predicated upon the assumption that a formal survey was made of the allotments around 1908 and that this survey accurately followed the 1871 survey. But there is no record of the survey or as to who made it. Thus there is no credible evidence as to its accuracy. The scribed juniper post that appears in the Nolans' claimed corner position may have been placed there by the 1871 surveyor who set a post for the NE corner of section 26; but it is equally, if not more, possible that it was set by the person who set the four 1/16 corner posts in the allotment surveys in 1908.<sup>6/</sup> In the sketch made by surveyor Windrem submitted in support of the Nolans' protest, it is stated that all scribed posts are juniper and appear to be of similar age.


The fact that after the purported allotment survey in 1908 fences were built in accordance with the survey does not, of course, substantiate the accuracy of the survey. The fact that the north-south fence lines comport with the direction of the line between the W $\frac{1}{4}$  corner and the NW corner is of some significance but a limited one. This is so because, first, the Nolan corner would require a deviation in the bearing of the east line of section 26 of 2°02'W. from the true north bearing given in the 1871 survey instead of the 0°04'E. deviation made by the dependent resurvey. Secondly, the Nolan corner would give the south boundary of section 26 a length of 82.63 chains as contrasted with the 80.21 chains shown on the 1872 plat (an excess of 160 feet) and the 80.68 chains shown on the dependent resurvey plat. Correspondingly, as pointed out earlier, the Nolan corner would shorten the south boundary of section 25 from the 80.29 chains shown on the 1872 plat to 76.33 chains, a difference of 259 feet. Thirdly, the Nolan corner would require a change in bearing of the east line of section 35 of 2°47'E. from the true north bearing shown by the 1871 survey. In short, the Nolan corner would significantly distort the shapes of sections 25, 26, 35, and 36 whereas the dependent survey would make only minor changes.

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<sup>6/</sup> The 1871 field notes mention only the setting of a stone for the SE corner of section 26 whereas they state that a post was set for the NE corner of the section.

In conclusion then our review of the record leads us to the conclusion that the Nolans' protest was properly dismissed. Accordingly when this case is returned to the land office, the approved plat of the resurvey will be officially filed in the land office.

Therefore, pursuant to the authority delegated to the Solicitor by the Secretary of the Interior (210 DM 2.2A(4)(a); 24 F.R. 1348), the decision appealed from is affirmed.



Ernest F. Horn  
Assistant Solicitor  
Land Appeals

JOHN W. AND OVADA YEARGAN

IBLA 91-116

Decided June 29, 1993

Appeal from a decision by the Acting State Director, Eastern States Office, Bureau of Land Management, dismissing a protest of dependent resurvey ES-041965 (Group No. 83, Arkansas).

Affirmed.

1. Surveys of Public Lands: Dependent Resurveys

The purpose of a dependent resurvey is to retrace and reestablish the lines of the original survey in their true and original positions according to the best available evidence of the positions of the original corners. Where a party challenging the filing of a plat for a dependent resurvey fails to meet his burden of establishing by a preponderance of the evidence that the resurvey is not an accurate retracement and reestablishment of the lines of the original survey, the decision dismissing a protest of the dependent resurvey will be affirmed.

2. Surveys of Public Lands: Generally--Surveys of Public Lands: Dependent Resurveys

An allegation that a dependent resurvey is void because it impairs bona fide rights is without merit where the record shows that the dependent resurvey is an accurate retracement and reestablishment of the lines of the original survey. Where rights to land are based on patents grounded on the original survey, the dependent resurvey will not affect the location of any boundary lines as it is, by definition, a restoration of the original conditions of the official survey.

APPEARANCES: John W. and Ovada Yeargan, Norman, Arkansas, pro sese; Mark D. Etchart, Esq., U.S. Department of the Interior, Office of the Solicitor, Washington, D.C., for the Bureau of Land Management.

OPINION BY DEPUTY CHIEF ADMINISTRATIVE JUDGE HARRIS

John W. and Ovada Yeargan have appealed from a November 28, 1990, decision of the Acting State Director, Eastern States Office, Bureau of Land

126 IBLA 361

Management (BLM), dismissing their protest of the dependent resurvey of the exterior boundaries and subdivisional lines of T. 3 S., R. 26 W., fifth principal meridian, situated in Montgomery County, Arkansas.

The exterior boundaries of the township in question were officially surveyed in 1837 and the subdivisional lines were surveyed in 1846. The south and west boundaries and a portion of the east boundary of the township were dependently resurveyed in 1937. Pursuant to a request by the United States Forest Service (USFS) for a dependent resurvey of this township, Special Instructions for Group No. 83, Arkansas, were approved on November 2, 1987. A BLM Cadastral Survey crew, headed by Michael W. Young, performed the field work for the dependent resurvey between December 7, 1987, and July 10, 1989. The Field Notes were approved, and an official plat of survey accepted for the Director, BLM, on January 22, 1990. BLM published notice of the official filing of the plat in the Federal Register, 55 FR 3776, on February 5, 1990, stating that anyone desiring to protest the filing of the plat should do so prior to March 12, 1990. Following receipt of numerous protests, BLM stayed the filing of the plat by notice dated March 7, 1990, pending consideration of all the protests. 55 FR 9779 (Mar. 15, 1990). Thereafter, at the invitation of BLM, the Yeargans filed supplementary information in support of their earlier protest.

In his decision dated November 28, 1990, the Acting State Director, dismissed the Yeargans' protest after considering the information submitted by them as it related to 10 protested corner positions. The Yeargans filed a timely appeal. <sup>1/</sup>

In their statement of reasons (SOR), the Yeargans generally contend that the dependent resurvey is void because it is not a retracement of the original survey, and they present specific arguments and information relating to 7 of the 10 protested corners. They conclude their arguments with an assertion that the resurvey is void because it impairs bona fide rights established under the original survey.

[1] The Secretary of the Interior is authorized to consider what lands are public lands, what public lands have been or should be surveyed, and has the authority to extend or correct the surveys of public lands and make resurveys to reestablish corners and lines of earlier official surveys. Elmer A. Swan, 77 IBLA 99 (1983); see 43 U.S.C. §§ 2, 52, 751-53 (1988).

A dependent resurvey is a retracement and reestablishment of the lines of the original survey in their true original positions according to the best available evidence of the positions of the original corners. The section lines and lines of legal subdivision of the dependent resurvey in themselves represent the best possible identification of the true legal boundaries of lands patented on the basis of the plat of the original survey. In legal contemplation and in fact, the lands contained in a certain

<sup>1/</sup> The BLM decisions dismissing the other protests challenging the dependent resurvey were not appealed.



section of the original survey and the lands contained in the corresponding section of the dependent resurvey are identical. Manual of Instructions for the Survey of the Public Lands of the United States (1973) (Manual), 6-4 at 145; Crow Indian Agency, 78 IBLA 7, 10 (1983); Mr. and Mrs. John Koopmans, 70 IBLA 75, 76-77 (1983).

In a resurvey, a corner is categorized in one of three ways. An existent corner is one whose position can be identified by verifying the evidence of the monument or its accessories, by reference to the description in the field notes, or located by an acceptable supplementary survey record, some physical evidence, or testimony. Manual, 5-5 at 130. An obliterated corner is one at whose point there are no remaining traces of the monument or its accessories, but whose location has been perpetuated or may be recovered beyond reasonable doubt based on the acts or testimony of the interested landowners, competent surveyors, or other qualified local authorities, or witnesses, or by some acceptable record evidence. Manual, 5-9 at 130.

A lost corner is a point of a survey whose position cannot be determined, beyond reasonable doubt, either from traces of the original marks or from acceptable evidence or testimony which bears upon the original position, and whose location can be restored only by reference to one or more interdependent corners. Manual, 5-20 at 133.

A dependent resurvey seeks to restore what purports to be the original conditions of the official survey according to the record, based, first, upon identified existing corners of the original survey and other recognized acceptable points of control, and second, upon the restoration of missing corners by proportionate measurement in harmony with the record of the original survey. Titles, areas, and descriptions should remain unchanged in a typical dependent resurvey. Jean Eli, 78 IBLA 374, 376 (1984). Therefore, the cadastral surveyor's primary responsibility when conducting a dependent resurvey is to act as a "detective" who gathers all available information and uses his best effort to determine the location of all the original corners.

In an appeal from a protest against acceptance of the filing of a plat of a dependent resurvey, the appellant has the burden of establishing by a preponderance of the evidence that the resurvey is not an accurate retracement and reestablishment of the lines of the original survey. Peter Paul Groth, 99 IBLA 104, 111 (1987); Stoddard Jacobsen, 85 IBLA 335, 342 (1985).

In this case, appellants allege error in BLM's determinations regarding seven corners of the resurvey. Of those seven, one was determined to be existent, three obliterated, and three lost. Appellants, in their protest, presented arguments regarding these corners which were thoroughly reviewed by BLM in its decision. On appeal, they elaborated somewhat on those arguments. BLM has responded in detail. Accordingly, we will proceed to address individually each corner in question in the order raised by appellants. As a detailed history of each corner may be found in the BLM decision, we will not set forth all of those particulars here.

1/4 Section Corner of Sections 1 and 12

BLM determined this corner to be existent. The 1989 resurvey recovered the aluminum monument and bearing trees set in 1979 by John M. Thorton, a State of Arkansas registered land surveyor, to perpetuate the corner, evidence of both of the original bearing trees, and bearing trees marked in 1958 by Doyce Ward, a surveyor for Dierk's Lumber Company, to perpetuate the corner. BLM concluded that, under the rules of the Manual, this evidence was conclusive of the corner position and that appellants did not submit any evidence or information which would challenge the validity of the corner (Decision at 6).

On appeal, appellants merely point out an inconsistency in the measurement from the 1/4 section corner of sections 1 and 12 to the southeast corner of section 1. They state that the original survey showed this distance as 2609.64 feet, the resurvey as 2598.42 feet, and Thorton as 2600.44 feet.

Such an inconsistency does not establish that this corner was located in error in the resurvey. As discrepancies between measurements in old and more recent surveys are not uncommon, the fact that the measured distances differ is insufficient standing alone to disprove the reestablishment of the corner. Frank Lujan, 40 IBLA 184, 186-187 (1979). Thus, appellants have failed to establish that BLM's determination regarding this corner is in error.

1/4 Section Corner of Sections 11 and 12

BLM determined this corner to be lost and reestablished it by proportionate measurement. Appellants allege that BLM's resurvey of this point is incorrect because it does not match physical evidence on the ground or information included in deeds. They assert that the proportionate position as established by the resurvey is south of the original corner position.

In their protest, they relied upon various deed descriptions which make calls to a road, a railroad dump, and an iron stake. They also relied on an affidavit of W. R. and M. C. Warren, which they asserted "places the 1/4 Section without question."

In its decision, BLM concluded that this corner "cannot be reestablished beyond reasonable doubt on the basis of these deed descriptions and, without conclusive evidence of the monument or accessories, must therefore be considered lost" (Decision at 18). BLM also considered the Warren affidavit and held that it was a "recitation of the 1959 deed description" and did not attest to direct knowledge of the original survey monuments or accessories (Decision at 16).

Appellants contend on appeal that the deeds and affidavit "show the survey being moved south." However, BLM in its decision carefully reviewed appellants' documents and demonstrated the proportioned corner is in harmony with that evidence. BLM made measurements from the proportioned position of this corner point to the road and railroad dump referenced by appellants and favorably compared them with the distances cited in the deeds.

IBLA 91-116

126 IBLA 364

Where location of a corner cannot be determined from evidence of original accessories, proportionate measurement is a suitable means to determine the corner. James O. Steambarge, 116 IBLA 185, 193 (1990).

BLM held that "[w]hile these deed descriptions were fully employed in searching for evidence of the original corner, no additional physical evidence, or conclusive corroborative evidence, of the original survey monument or accessories was recovered as a result of these measurements" (Decision at 18). Appellants only offer a contradictory opinion and have provided no evidence that could be utilized to determine the location of the original corner.

Corner of Sections 3, 4, 9, and 10

In its resurvey BLM considered this corner to be obliterated. As explained in the decision:

The 1989 dependent resurvey recovered an iron pipe of unknown origin in a collar of stone, and a local bearing tree. A diligent search failed to recover any evidence of the original monument or accessories, or any evidence of conflicting local monuments.

\* \* \* \* \*

The iron pipe monument was reasonably well correlated to other identified corners of the original survey, and was determined to be the best available evidence of the original corner position.

(Decision at 11).

Appellants provide nothing on appeal to dispute BLM's conclusion other than the single sentence that "[t]he branch (creek) seems to be in different places on the 1847 and 1989 surveys."

In its decision, BLM stated: "The original survey made a topographic call to a branch (creek) 35.50 chains south of this corner. The dependent resurvey calls a dry creek bed on the line between sections 9 and 10, at a distance of 35.39 chains from the section corner of sections 3, 4, 9, and 10" (Decision at 11).

In its answer, BLM explained, citing Manual, 5-16 at 131: "While an incidental item of topography such as this is often useful in corroborating other evidence of the position of an original corner, it rarely can be used solely to reestablish an original corner, particularly in view of the somewhat ambulatory nature of water courses" (Answer at 8). Moreover, the call to the creek in the original survey reasonably agrees with the call to the dry creek bed in the dependent resurvey.

Appellants have failed to establish any error in BLM's determination regarding this corner.

Corner of Sections 2, 3, 10, and 11

BLM treated this corner as obliterated since the original monument or accessories were not recovered but other evidence was available to ascertain the corner position. BLM explained that in 1963, J. D. Robbins, Montgomery County Surveyor, perpetuated the position of a corner "which he reported as having been in existence for approximately 50 years at the time of his recovery" by placing a galvanized iron pipe at the corner and marking four new bearing trees (Decision at 8). BLM stated that he recounted that the adjacent landowners at that time accepted the position. In 1982, John R. Archer, a State of Arkansas registered surveyor, recovered the perpetuated corner and replaced the monument with an aluminum post and marked three new bearing trees. The resurvey recovered Archer's monument, two of his bearing trees, and the bearing trees marked by Robbins.

Although in their protest, appellants alleged that the corner was wrong and that Ovada Yeargan had seen a rock pile waist high with a pine knot in it, appellants were unable to locate that monument, stating further on appeal that "[t]he land has been cleared and the mound of stone was destroyed and, of course, I can't say exactly where it was" (SOR at 3). They further questioned Robbins' objectivity and reliability in the matter.

BLM determined the perpetuation to be proper:

Mr. Robbins properly recorded his perpetuation of the position of the local corner 27 years ago, and at that time he approximated the age of the local corner to be 50 years. Mr. Robbins recordation certificate indicates that he confirmed the correlation of the local monument with locally accepted monuments to the north, south, and west, and that it was acknowledged as the proper corner position by the "Blacks, Warrens, Dierks Lbr. Co. and the U.S. Forest Service - all adjacent landowners."

Due to the fact that this monumented position has been recognized as the corner of sections 2, 3, 10, and 11, for approximately 77 years, is reasonably well correlated with other identified corners in the township, had been properly recorded by both Mr. Robbins and Mr. Archer, and was not in conflict with any other monument representing this corner, it was determined to be the best available evidence of the original corner position in the 1989 dependent resurvey.

(Decision at 9).

Although no evidence of the original monument or accessories was recovered, acceptable available evidence was relied upon to establish the corner in question. The Manual, 5-9 at 130, provides that a position is acceptable where the location has been perpetuated or the point is recovered beyond reasonable doubt by the acts and testimony of the interested landowners, competent surveyors, witnesses, or by some acceptable record evidence. Further, such position established by collateral evidence is

IBLA 91-116

126 IBLA 366

acceptable where it is duly supported through proper relation to known corners. We find the treatment of the subject corner as an obliterated corner to be proper as the resurvey successfully conformed with the survey requirements and the evidence produced was substantial. While appellants disagree with the determined location of the corner position and contend that other evidence is available, none has been produced.

Corner of Sections 1 and 12, Only

BLM considered this corner to be obliterated. Although neither the original monumentation nor bearing trees were located, BLM relied on evidence perpetuating the original corner. In its dependent resurvey, BLM

recovered the remains of the concrete post [set by W. J. Bates, USFS Project Surveyor, in 1934], the aluminum post set by Mr. [Ed] Lazar [State of Arkansas Registered Surveyor] in 1984, the remains of one of Mr. [Theo] Rosenaur's [Polk County Surveyor] bearing trees [marked in 1961], and the 1984 Lazar bearing trees.

(Decision at 7).

Appellants challenge the accuracy of the resurvey by asserting that during his survey in 1961 Rosenaur failed to report recovering the concrete post set by Bates in 1934. They also allege that after Rosenaur marked the corner with an iron pipe the corner position was destroyed when it was bulldozed for a log-loading site. They state that after they complained to USFS about destruction of the site, Lazar found part of the concrete post and reset the monument. They question whether the concrete post "was in the right place, as a bulldozer could have moved the monument" (SOR at 4).

In its decision, BLM acknowledged that Rosenaur did not report recovery of the concrete monument set by Bates in 1934. However, it stated that both perpetuations of the corner were based on the recovery of the remains of the original bearing trees. Further, BLM noted that the whereabouts of the iron pipe set by Rosenaur was unknown, but it observed that "Rosenaur's bearing tree was recovered in the proper relative position to the remains of the concrete monument, and this position was determined to be a careful and faithful perpetuation of the original corner" (Decision at 8).

All available evidence firmly supports the resurvey's decision to locate the corner in question at the assigned position. While the area of the corner monument may have been disturbed, the calls to the found bearing trees from previous surveys perpetuating the corner demonstrate that the assigned position is correct. Appellants have failed to show any error in BLM determination regarding this corner.

Corner of Sections 1, 2, 11, and 12

IBLA 91-116

BLM reestablished the position of this corner by means of proportionate measurement after failing to recover any evidence of the original monument or accessories. Appellants allege that "Section 1 is not retraced as to the

126 IBLA 367



original survey" (SOR at 4). Citing the seventh rule of survey, 43 U.S.C. § 751 (1988), that every surveyor must note the true situation of "all watercourses over which the line he runs may pass," appellants explain that north of the subject corner is "a spring that forms a branch 4-5 feet wide and 2-3 feet deep" and that this spring branch "was not a topographic call on the 1847 survey nor is it on the 1989 survey" (SOR at 4). Appellants further contend that an "angle iron" was placed at the corner in 1958 by Doyce Ward, a surveyor for Dierk's Lumber Company, and replaced in 1983.

The origin of the "angle iron" monument cited by appellants has not been documented. BLM reported that Roy Black, a State of Arkansas registered land surveyor, set his corner position in 1983 at an "angle iron and rock pile" and perpetuated it with an aluminum post (Decision at 12). However, BLM explained that Black's monument bore no relation, by record or physical ties, to the corner established by Ward in 1958. The 1958 corner, positioned 69 links southwest of the resurvey corner, was not utilized "due to its poor relationship with other identified corners, and the fact that the 1989 retracement data indicates it was established at record measurement from one direction only" (Decision at 12). The 1983 corner, positioned 49 links northwest of the proportioned corner, was not utilized because "the 1989 retracement data indicates it was established at record measurement from two directions only" (Decision at 13).

The proportionate measurement was not employed until all collateral evidence had been reviewed. See Manual, 5-20, 5-21 at 133. A lost corner is a point of a survey whose position cannot be determined, beyond reasonable doubt, from available evidence or testimony. The 1958 and 1983 corners did not afford such reliability. Appellants have provided no evidence that BLM's conclusions in this regard are in error.

The other matter, which was not raised in their protest, the failure of the surveyors to define a known watercourse on the survey and resurvey, does not impeach the integrity of the resurvey. The rule of survey noted by appellants obligates a surveyor of public land to record certain topographic features on his survey. Even assuming that a spring-fed creek does exist, as alleged by appellants, the failure to note it on the field notes of the dependent resurvey is not the type of error which would, in the absence of other evidence of error, call into question BLM's location of the corner. We find no error in BLM's establishment of this corner by proportionate measurement.

#### 1/4 Section Corner of Sections 2 and 3

BLM also established this corner by proportionate measurement. Appellants allege the corner position established by the resurvey is in error based on the statements of Marvin Black and M. L. Black, descendants of the original owner of adjacent private property. They argue that the original position is about 70 feet north of the resurvey corner.

BLM considered the statements of both M. L. and Marvin Black and determined that "based on the physical evidence or lack thereof" it was impossible to discern the location of the original monument or accessories

IBLA 91-116

126 IBLA 368

(Decision at 14). Noting that a corner "is not considered as lost if its position can be recovered satisfactorily by means of the testimony and acts of witnesses having positive knowledge of the precise location of the original monument" (Decision at 14, citing with added emphasis Manual, 5-10 at 130), BLM held that "[n]one of the testimony or supporting documentation offered by protestants gives any indication of knowledge as to the precise location of the original corner" (Decision at 15).

Appellants have presented nothing that persuades us that BLM erred in establishing this 1/4 section corner.

Appellants have generally argued in this case discrepancies in the measurements of lines and certain topographic calls among the various surveys, conditions not uncommon between old and more recent surveys. See State of Oregon, 78 IBLA 13, 20 (1983), citing Alfred Steinhauer, 1 IBLA 167, 172-73 (1970). However, appellants have failed to produce any conclusive evidence that the challenged corners perpetuated or reestablished in the dependent resurvey are in positions other than those of the original survey. Further, they have failed to show error in the methodology used in the resurvey to locate the corner positions. They merely disagree with what has been done. However, a differing opinion is not substantial, conclusive evidence, and it is the appellants' obligation to identify specifically reversible error in a dependent survey. Frank Lujan, 40 IBLA at 187. As appellants have failed to establish by a preponderance of the evidence that the dependent resurvey in question is not an accurate retracement of the lines of the original survey, BLM's decision dismissing the protest against the survey must be affirmed.

[2] Appellants, relying on 43 U.S.C. § 772 (1988), contend that the subject dependent resurvey is void because it impairs their bona fide rights. <sup>2/</sup> The cited statute, 43 U.S.C. § 772 (1988), provides in pertinent part: "That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of land affected by such resurvey or retracement."

In the case before us the boundaries of the land owned by appellants are adjoined by both private and public lands. Disputes concerning boundaries between private owners are matters for the jurisdiction of the state court where the lands are located. James S. Mitchell, 104 IBLA 377, 380 (1988). Therefore, the results of a dependent resurvey will not alter or affect any boundaries between private tracts of land and an appeal will be

<sup>2/</sup> Appellants also cite the cases Keller v. United States, 6 Cl. Ct. 724 (1984), and Missouri Pac. R. Co. v. Sale, 127 S.W.2d 133 (1939), to support their contention that the dependent resurvey in question is void because it impairs bona fide rights. Apart from the general pronouncement that a resurvey may not be executed to impair the bona fide rights of private landowners as established under the original survey, these cases have no bearing on the merits of this case.

dismissed with respect to such boundaries for failure to demonstrate how the appellant has been adversely affected. Alice L. Alleson, 77 IBLA 106, 108 (1983).

With respect to appellants' lands which adjoin public lands, the issue is whether their rights have been impaired by the resurvey. The Secretary of the Interior is under a duty to consider and determine what lands are public lands and has the authority to correct the surveys of public lands as may be necessary. See 43 U.S.C. § 2 (1988); Kirwan v. Murphy, 189 U.S. 35 (1903); Mr. and Mrs. John Koopmans, 70 IBLA at 76. A resurvey, however, can affect bona fide rights only in the matter of position or location on the earth's surface. See Manual, 6-13 at 147. Bona fide rights are protected in a resurvey by showing "the original position of entered or patented lands included in the original description." Manual, 6-14 at 147. "The position of a tract of land, described by legal subdivisions, is absolutely fixed by the original corners and other evidences of the original survey and not by occupation or improvements, or by the lines of a resurvey which do not follow the original." Manual 6-15 at 147. If appellants' rights in the lands at issue are based on patents grounded on the original survey, then the dependent resurvey will not affect the location of any boundary lines as it is, by definition, a restoration of the original conditions of the official survey. Manual, 6-25 at 149.

The proper execution of the dependent resurvey serves to protect the bona fide rights of appellants in this case because a dependent resurvey traces the lines of the original survey. In the absence of evidence from appellants to the contrary, it must be concluded that the dependent resurvey is an accurate retracement and reestablishment of the lines of the original survey.

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed is affirmed.

Bruce R. Harris  
Deputy Chief Administrative Judge

I concur:

Will A. Irwin  
Administrative Judge

126 IBLA 370

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 6 (61 minutes)

**ICON LEGEND**

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 6

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### How we approached Evidence for CFEDS

Hello everyone. Dennis Mouland here once again. This time with one of my favorite topics corner evidence analysis.

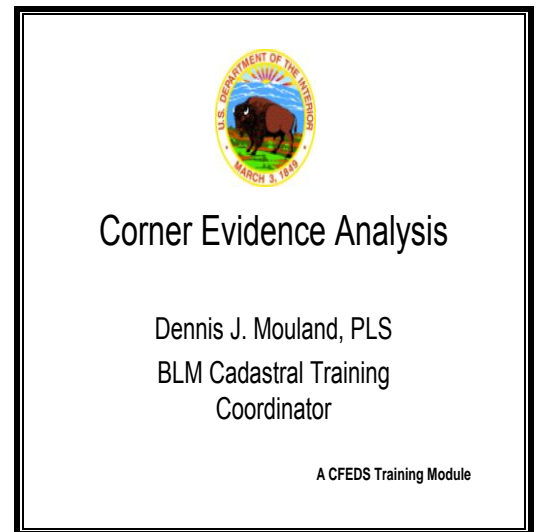
Actually in this corner evidence evaluation course that we have – let’s face it, we could talk about this for 120 hours just on this subject. It’s always a fascinating subject. I find that there’s almost always something to learn from someone and their corner search experience, that sort of thing.

And rather than try to totally formalize this not-so-formalized subject, the way we chose to do it in the CFedS training was to simply expose you to three different persons from different parts of the country and their experiences. And so you are hearing from me on this and I’m primarily a Southwestern person.

We have Stan French also doing a session and he’s got a lot of experience, although some in the West, a lot of his stories and experiences he gives you are from the Midwest, especially Missouri.

And then we have Bob Dahl who will speak more esoterically about corner search and some of the legal ramifications here and there and what kind of things we ought to think about. And although Bob is currently in the Washington office, his experience is mostly in the Northwest so we tried to provide a little bit of geographic variety but more important three different personalities and approaches to the same subject and you’ll see that there’s very little overlap.

While there might be some, you might even hear some disagreement, don’t let that bother you. Evidence analysis is not a black and white thing. If it was, if it was that simple and easy, I don’t suppose we’d license land surveyors, would we? So it certainly is something that we have to pay attention to. It’s the heart and core of what we do.



## EVALUATING CORNER EVIDENCE – PART 6

### Objectives

So, given a survey request, CFedS can better analyze survey evidence and conformance with the 2009 Manual of Surveying Instructions and general boundary law principles. And, of course, any subsequent manual that comes out that would certainly apply as well but that's our objective.

### Course Objective

- Given a survey request, students can better analyze survey evidence in conformance with the 1973 Manual of surveying Instructions, and general boundary law principles.



### Course Pathway

Now, let's take a quick look at the pathway we're going to take then to get there. First, we will review the need for evidence search. That might seem obvious but that's a good thing to talk about.

We will review tools for records research. We'll discuss uses of field evidence in the process of corner point identification. And we will explore some keys to resolving some conflicting evidence. So that's kind of the path we will take on this course. And perhaps we should talk about this.

The first thing on the list there was the need for evidence search. We need to understand how fundamental that is. I think you've heard plenty of that already up until this point in CFedS and you probably already knew about it anyway as a land surveyor.

But again, we're in a day and age where evidence search seems to have fallen off and we're more interested in mathematical solutions which is not where the law goes and we need to realize that in spite of all the fancy gadgets we have and I'm all for it.

I'm all for the technology and the software and the processes that

### Course Pathway

1. Review the need for evidence search
2. Review tools for records research
3. Discuss uses of field evidence in corner point identification
4. Explore some keys to resolving conflicting evidence

## EVALUATING CORNER EVIDENCE – PART 6

we've developed. It's great, but we still have to dig holes, we still have to get the metal detector out, we still have to analyze scratches on rocks, we still need to look at things.

Now, we need to understand that much of that is a **common law** principle. And the common law, at least the definition of it, is the system of jurisprudence based on custom traditional usage and precedent from previously heard cases rather than a codified system of law.

So it's not statutory law, it's this common law. And on this planet, we have 5000 years of pretty consistent basic principles of boundary law and I've got some of them listed there. That the original point holds forever, that natural monuments will generally hold over others, and that we are always interested in the intent of the parties as you can see on the picture there on the right.

That's the famous rope stretchers drawing found in the pyramids showing the ancient Egyptian surveyors using a rope to measure distances and really the Egyptians were some of the first ones to give this, if you want to call it, common law.


The principle especially that corner points aren't supposed to move, that they have to be returned to their original position even if the monument is destroyed. The Egyptians did that with a system of witness corners or reference monuments up on the banks of the Nile up away from where the Nile would flood.

And that's really where that concept came from and we find it throughout history, we find it in the Bible, we find it in Europe and Africa and as those countries migrated and moved to other places, why they just took those principles with them.

Now we need to realize that, as I hinted here a minute ago, we need to remember who we are and what we are as professional surveyors and as a CFedS, what we're really doing. And I'm going to encourage you to not sell your professional soul.

### Common Law

- A system of jurisprudence based on custom, traditional usage, and precedent from previously heard cases, rather than a codified system of laws
- 5000 years of very consistent basics:
  - Original point holds forever
  - Natural monuments generally hold over others
  - Intent of the parties





## EVALUATING CORNER EVIDENCE – PART 6

### Two Basic Sides to Surveying

Let's not forget that we have two sides to surveying really. We have the art side, which a bunch of things listed here: legal research, records research – that's kind of an art – corner research, evidence analysis, unwritten rights, boundary law, title issues.

You notice, quite a few of those are what we're talking about today. And then we have the science side, which is just really the math: the measurements, the calculations, adjustments, how we use GPS or AutoCAD or other data collector software, that sort of thing.

So, those are two sides to our surveying profession. But we need to realize that much of our profession in the last 20-30 years has been selling and sold to the science side and ignoring the art side. And that is something that each of you as an individual needs to think about yourself and examine your own situation and circumstance, your background, your training, even your attitude.

I'll talk about that later in this course too. So, be aware of your professional soul because we are supposed to be experts of both those lists. We're supposed to be experts of the measurements, the calculations and the adjustments, the gadgets and the software and all that, but we're also supposed to be experts at the art side of things and those are the things that most of us were never formally trained in.

It's pretty tough to find a course. I mean we're trying to do it here, but you don't find a lot of classes that are on that. You can read some text books but some of that's not very practical or it's limited to certain parts of the country, that sort of thing.

### Don't sell your "professional soul"

#### • ART

- Legal Research
- Records research
- Corner Search
- Evidence Analysis
- Unwritten rights
- Boundary law
- Title Issues

#### • SCIENCE

- Measurements
- Calculations
- Adjustments
- GPS-Geodesy
- AutoCAD, etc.

## EVALUATING CORNER EVIDENCE – PART 6

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Now, sometimes, depending on what lawyer you're talking to, the common law includes the case law or vice versa. But, I want to talk about **case law** for a moment.

First of all, I'm talking about the need for evidence search, corner search, that sort of thing. Let's define case law. It is that body of law based on judicial decisions as distinguished from laws created by legislators or congress, the latter being known as statutory law.

### Case Law

- The body of law based on judicial decisions, as distinguished from laws created by legislatures or Congress, the latter begin known as statutory law.
- Case law is often considered part of the common law
- Survey-related case law very consistent

Case law is often considered part of the common law and you will find that survey related case law is incredibly consistent in this country.

Now I'm going to just read you a sentence or two from several court cases that none of them involved federal land. They're just private court cases that went on appeal or higher and I just find a few sentences here quite interesting. I'll just tell you the name of the case – **Beltz v. Mathiowitz**.

The court said, listen to this carefully, *“The true corner of a government subdivision is where the United States surveyor established it, whether this location is right or wrong.”*

We understand this principle comes all the way from the Egyptians and now we see here is a court case. This is actually an 1898 case somewhere up in the Midwest, Upper Midwest, that heard this case and somebody was saying yes that is the original evidence over there but it didn't measure right.

The government didn't put it in the right place and the courts are saying it doesn't matter. Wherever the government put it is it. That's why it is so important that you and I are out there searching for that evidence because that is it and nowhere else is it, whatever that corner is you're looking for.

## EVALUATING CORNER EVIDENCE – PART 6

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Another case, a 1911 case, it's called **State vs. Ball**. *“Monuments erected by the government surveyor to mark section corners of a survey will control even if they are in conflict with the field notes.”* That's interesting.

Of course, we use the field notes to help evaluate the evidence but what they're saying, what the case was about, was the measurements and the bearings, the distances weren't the same and yet we found the original monument in its original position.

Another case, I'll give you **Puget Mill vs. North Seattle** that I quoted in another part of the CFedS training and I actually go into it in a little more detail, but it's got a very similar line here and I'm just showing you this consistency. *“True corner of a government survey is where the government survey located it and one that is known that controls over bearings, distances, blazes and even the calls in the field notes.”*

Then they added this, *“Error in the location of the corner (where the government didn't put it where the measurement said, but that's where the government put it) however plainly shown is not subject to correction in the courts.”* See, that was an appellate court telling the lower court, this is actually on the 9<sup>th</sup> circuit, you can't move survey corners, you can't move the GLO's corners.

And then another one, **Vaught v. McClymond**, is a 1945 case if I remember right, was an Oregon case. *“Errors of location of original corners as established by the federal government (so we're still talking errors where they didn't measure right is what we're talking about, so those measurements and those corners, the section isn't square, it's not the way the plat shows but yet we found the original evidence) that cannot be corrected by the courts nor can it be corrected by a surveyor called on to locate government corners and lines.”*

So there again is another appellate level case that is chastising the lower court for trying to move section lines or whatever or corners (therefore, the lines). And also pointing out – surveyor, you can't do that either.

Now, I won't quote it now because we've used it previously and perhaps another time, but I'm going to recommend that in the

## EVALUATING CORNER EVIDENCE – PART 6

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Manual, and I just need to grab it and remind you what you need to look at 5-15, which is where the Manual basically defines what a resurvey is and what damage also a poorly done retracement causes to an area.

And they actually quote from the Supreme Court case **Cragin v. Powell**. So, I'm trying to show you that there is this incredible amount of consistency in the law and so we have common law that backs it up that we need to be out there doing corner search and evidence analysis and we also have case law, which tells us very specifically that's what we're supposed to do.

At the risk of repeating myself from another module, I'll just simply say all of us studied some case law. You may not have realized it, but that is the foundation of most of the books that have been written by Walt Robillard, Curt Brown, Don Wilson, Gurdon Wattles.

In fact, there's all sorts of footnotes in those textbooks that give us case after case after case. So, they didn't make that up, or that it isn't just unique to some area of the country. Those are our basic fundamental rules.

There are changes or differences from one state to another but you're supposed to know that already. You're a licensed land surveyor in those states. That is basically my discussion on the need, you see it's not just that it's fun to do; it's not just that we have this tradition to go out there – no, it is absolutely required.

It is, if you will, the most fundamental task that a land surveyor must perform. And to fail to find evidence is a failure to your client and to your profession and to the society as a whole. You've caused chaos and confusion. It may not be discovered for a few years, but certainly in most situations, it can create liability.

I'm one of those that I don't want to do a good survey just because I don't want to get sued, I want to do a good survey because that's the right thing to do.

## EVALUATING CORNER EVIDENCE – PART 6

### Research the Record

The fundamental of doing the right thing is to do the evidence analysis. But prior to evidence analysis, or actually I suppose you could say it's part of the evidence analysis, before you go to the field, we want to **research the record**.

You hear that over and over again and just about every speaker we have in the CFedS program is talking about researching the record because that's the foundation of what we do.

Now, there are really some primary sources of researching the record that I think are pretty necessary. Of course, on any project, you want to look at what's going on in there, who's been in there, what kind of activities or what kind of structures or improvements or what kind of things have happened there.

Because a lot of times that will define who you might want to talk to for survey records, but some of the primary sources we have, obviously if you're in the public lands is the General Land Office and the BLM's notes.

You'll also have your county records. And let's realize that your county records are really in maybe two different types or two different sources.

You have county records, you have what the county has done as an entity, like the county surveyor or the county road department or whatever as an entity that they've done, but in most jurisdictions the county is where private survey plats are recorded, subdivision plats, records of survey, or various other forms of things. I realize that's different in a few states, some that's done at the state level.

But the county records realize that you really have two sources that are officially done by the county, but then things that private surveyors have officially recorded or filed or deposited, depending on which state calls that.

### Researching the Record

<ul style="list-style-type: none"><li>• PRIMARY SOURCES</li><li>- GLO/BLM Notes</li><li>- County Records</li><li>- City</li><li>- State</li><li>- Special Districts</li><li>- NOAA</li><li>- Railroads</li><li>- Utilities</li><li>- Highway Departments</li><li>- Resource Mgt companies</li></ul>	<ul style="list-style-type: none"><li>• SECONDARY</li><li>- Title Companies</li><li>- Assessor's Offices</li><li>- GIS data</li><li>- Court Cases in area</li></ul>
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## EVALUATING CORNER EVIDENCE – PART 6

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And then you look at where else you are – the city that you're in, did they have a survey department or did they in the past – the state, what kind of records do they have. What kind of special districts might there be? If you're in an area and there's a bunch of irrigation ditches, there's probably an irrigation district. Or flood control, there's probably surveyors there or at least they've paid for surveys. And some of that may not be in the county records so you want to look for that.

And even NOAA, the old Coast and Geodetic Survey, not always, but once in a while, they set a tri station really close to a section corner or quarter corner and it's very possible that they tied, sometimes even first order tie from the triangulation station over to this corner that was a couple hundred feet away and used it as an RM perhaps or at least tied it in.

My point being that if corner is lost or you're not quite sure about it, but you've got a tri station within a few hundred feet. That doesn't hurt to contact NOAA, most of that stuff is online now. Look at that and see if they made a tie to your corner because I'd rather use that tie to set the corner than proportion it.

And as you hear over and over, proportioning is the last resort – it really is the last resort. Some other ideas here – if you've got a railroad in the area, contact the railroad.

Sometimes that's difficult to figure out where their records are, but keep calling and find out. And then keep track of where that was. Each company has their records in different places. Utilities – you got a big power line crossing the area or a sewer line the city has that may have had a survey done for the right of ways.

There may be records that they have that would be of great use to you. Another one – the highway department that could be a state or county highway department, or even a city street department for that matter.

Every highway department I've ever dealt with, especially with the state, there's some big old room full of all the old maps, all the old plans for the right of ways and for the highways that they built. There's always somebody in that office that knows where

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everything is. You know what I'm talking about. I go there and I say I need Highway 4, but not where it is now, I need it where it was back in the '50's. And they say, "Oh yea, come on over here and go through these (usually hanging) files and pull out here this is it."

You look on it and low and behold, there's a tie from one of their PC's that they monumented over to a section corner that you're having trouble finding or that you're about to go out and look for. Great information. I'll tell you what, you don't want to miss that because if that sort of information is available, and you have to assess it's reliability, but if it's available and reliable, you need to use that before you do any proportioning - that is part of evidence analysis. And obviously any resource management agency or company that's in the area.

A big timber company that's in the area, I know that Weyerhaeuser and Boise Cascade have had their own survey departments. They have huge land record systems. Some of them have their own GIS's. All kinds of stuff.

In some areas where you're at, where you work, there may be other entities or things I've never even thought of. But, you just kind of look at the area to see who's been in here, who would have had a need for a survey in the last 100 years. Did they survey? Do they have records? That's what you're looking for.

Now, there's a secondary source of records and they're not all that good and so I just list them here because they're not surveying records, they're other information records. Some examples – title companies, you might be able to get a title policy or commitment and it might have information, but usually nothing you can really use. Your Assessor's Office, GIS data. You can pick a book and page and there may be other information there but you're not going to get what you really need.

I even mention court cases in the area because it's extremely difficult to research court cases in any area unless you or your client happen to know about the court case or there is some evidence of it.

Because normally court cases, the results of those, are not

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recorded in the grantor/grantee record system, they are not recorded in the record of surveys or subdivision files and so, unfortunately, there's a lot of things that happen in court, be it law suit, divorce, probate, that just never ends up in the true public record in the sense of where you and I and the title insurance companies normally go.

### The "Other Record"

So, we need to realize those are secondary and normally they are not going to provide you with much information, but they might.

Now, there's one other source I want to generally make reference to and it's what I call the "other" record or maybe we ought to say it in some kind of a dark tone like "the other record" because it's all that data that's unrecorded by local private surveyors. Unrecorded plats, notes or other documents that a private surveyor has.

We need to ask – can you use them?

Yes, you can. In fact, I think it pays off to talk to surveyors that have worked in an area, even if they're out of business. Talk to them to see what's going on. You do need to look at it, as with anything you need to analyze whether it's reliable. But I will just mention that sometimes you have to deal with uncooperative persons.

I know many of private surveyors, who's retired, or maybe they're not even retired but they don't want to share that information. And they think they're protecting their client or they're protecting their own liability.

A lot of times that's what's going on in their minds. I try to encourage them to share it with me because I want to protect their client too. I want to see what the survey was. If they really don't want to let you have it, you need to make a note in your file, very simple note that says I contacted Joe Blow land surveyor and he told me to drop dead. At least it's in the record that you did make

### Don't forget the "other" record

- Unrecorded plats, notes, and other documents of private surveyors
- Can you use them?
- Dealing with un-cooperative persons





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an attempt to contact that person just in case something were to come out later. But, really, these uncooperative people, a lot of times you can talk to them.

In fact, I've found a really good trick I just might mention is I'll say, "Can I just see it? I won't make a copy or anything. Can I just see it?" Well, ok. And they let me see it and when you look at it you see all these things on it that tell you that their survey is probably worthless. I'm not saying that's always the case, I'm just saying a couple of minutes at glancing at it and a lot of times you can figure out.

I've got a slide on that here in a minute about that, part of your analysis of that record. So, these unrecorded things, people say, "Well, it's unrecorded, it's in that private surveyors office so I can't use it." No, you can use anything that will help identify a corner point.

You sure don't want to miss something whether it was the survey the guy did and he found the stone you can't find because it's been destroyed since then, but he took ties to the fence corners and other things out there.

You want to know that if at all possible. Because any other solution you come up with will probably be in a different position and that will eventually come out, will eventually be found.

Now, when we get the private record, we do need to analyze it. Now, obviously, the ideal goal that we have is boy it'd be nice if I could just assemble the entire history of every corner I'm working on this project and it's evidence through time.

### Analyzing the private records

- Ideal Goal: Assemble the entire history of each corner and it's evidence thru time
- Watch for signs of poor surveys/dumb assumptions:
  1. 330, 660, 1320
  2. Aliquot acreages
  3. Bad proportions
  4. Lack of evidence calls
  5. Conversions to metes and bounds from PLSS

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Let's think about that for a moment. It'd be nice if, let me make one up here, I found the GLO or even if it isn't on public lands, I understand, whoever did the original survey, here's the record, let's just say the GLO's set a stone and two bearing trees and that was 1850 let's say.

In 1901 the county surveyor found the stone and it was crumbling and he found one of the bearing trees and he set a new monument there and took some new bearing trees, but then 1952 a developer hired a land surveyor who came in there and he found that and they were going to build a big brick fence in there where the corner is so he took some different references to it, and then in 1979, the highway department came through and tied one of those references was still there and they remonumented it. I'm just making this up but that's the sort of history that you'd like to have or maybe we could call it a pedigree of the corners on a project. That's the ideal goal. I realize that you don't get that.

In fact, one of the last things I'll discuss with you in this module is that **uncalled for monument**. You go out there and it's supposed to be the GLO stone or some original monument or something and you go out there and there's some rebar, no number on it, you don't know where it came from, where they set it, how they set it.

So, we'll discuss that a little bit as do our other speakers also. But that's our goal. Now, when I am analyzing the private record, those plats and even deeds often, I'm looking for signs of a really poor survey or maybe what we'll just call dumb assumptions that they made.

If it's public lands and you see a bunch of numbers like 330, 660, 1320, 2640 all that, then you know that they didn't subdivide that section. That this is one of those what we call "1320 specials". I look for acreages in deeds or on surveys where everything happens to turn out to be the aliquot acreages and the public lands. 5 acres, 10, 20, 40s, 80s, 120, 160, those kind of acreages because you know that it's very rare that that would ever happen.

I'm also looking for bad proportions, I've seen quite a few places where a surveyor claims he did a double proportion and in reality all he did was a bearing bearing intersection which is quite

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different and can drastically move a corner position. So I look for that and you know what else?

You can have a survey where they actually did a good job but if there's a lack of evidence calls, it doesn't help you all that much. See I'd like to find these old plats or even field notes perhaps, mostly plats, where they actually say I found the stone here or I set a rebar here so that I know what their footprint is so I can go out and look for it. And, as always, when you chain a title, be careful about conversions to metes and bounds from a public lands description.

If it was the Northwest to the Northwest of section 10, but now it's been rewritten as East 1320 then South 1320 and now West 1320, you have a problem and there's even greater problems that can be done by that same kind of a practice. So, let's just be aware of those issues.

### Use of Quad Sheets

Now I want to mention for a moment one of the surveyors favorite tools and it is a fabulous tool. I don't know who dreamed of doing topographic maps in this country. I think they were done far before John Wesley Powell.

I know he was very involved in mapping of the West and worked with the USGS, but one of our basic tools in surveying is the USGS quadrangle map, right? And they are fabulous tools for figuring out access for laying out plans of how you're going to doing this, that and the other. But, what I want to remind you of is that they are not necessarily a great corner search tool.

They're great to help you get into a general area, especially in the West. I've seen quite a few places over the years where the quads were anywhere from 300 to 1000 feet off. And we need to understand how that's done.

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On the slide here I've got a portion of a quad sheet from the Ft. Apache Indian Reservation, which is out in eastern Arizona here. Beautiful country out there in the higher elevations and this is about 5000 or 6000 feet here where this is.

So, we're all used to looking at quad sheets and all that stuff. But you notice this red circle here. We have, and if you look really close, you can get a quad sheet of your own and take a look at it, but when there's a little tick mark there, a little red tick mark, that means that at some point in the past, somebody with USGS or another federal agency usually or perhaps a state agency found something there that they think might could kind of be the corner.

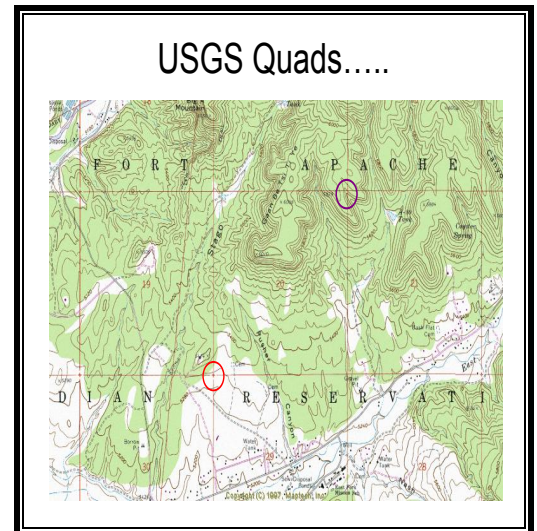
I say that because you need to realize that most of the folks with the USGS and with other agencies that might have identified a corner or even photo identified it are not experts in cadastral survey evidence analysis so I've seen quite a few of those where I get there, the tick mark is just a doggone fence corner. I find the evidence a couple hundred feet away. So, understand that even that is not a guarantee of anything.

Now, on the other hand, where the purple circle is up here, you see that there is no tick mark there. The red lines that are the section lines just cross and let's understand how was that point determined. The USGS in cooperation more recently with whatever federal agency has jurisdiction in the area.

For instance, if it was on a National Forest, the Forest Service assists them in figuring out what's going on out there. But, what essentially is done is it was proportioned. So, at the purple circle here, they never found anything there. No one even looked there probably. They might have looked and not found anything, whereas at the red circle they looked and they found something.

And if you're following me here, we just need to realize that neither of those are as reliable a source as we want. I still think that they are pretty good search area tools.

For instance, if I want to search for this corner here, well I can look on the quad sheet and see I need to come up the highway, up this dirt road here approximately so much it's over here near kind of where the tree line is and all those things that we surveyors



**DIAGRAM** A full size version can be found in the Diagrams section at the end of this study guide.

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would look at on a quad to get us to the right area. To at least drive to the right area. But even then, be careful that there are situations where that doesn't work very well and, in fact, I believe the quad sheet is simply a fabulous way to get in to the right neighborhood, but it is not a corner search tool of and by itself.

I mention that because one of the jobs I ever had in surveying – that company never did their research, they never got the field notes, they never got even go the plats. They had the quads for the whole area – they worked in the whole county. So they pulled out the quad and we'd just go out there. We'd walk to that place or drive to it and we'd look and we don't even know what we're looking for. Is it a stone? Is it a brass cap? Are there bearing trees? Was it a big X on a rock? What is it? We had no idea. The party chief would say just look around and see if you see anything.

So we'd look around and don't see anything and don't know what we're looking for and I was just brand new to it. I saw some numbers scraped on a tree; I didn't mention that because I didn't know that was it.

But here was the scary part, this guy (the surveyor in charge at this company), his policy was if you looked around for a couple of minutes and you didn't see it, you get yourself right to where those red lines crossed and drive something in and say that's it. Well, folks, that is not only bogus, it's illegal, it's unethical, it's unprofessional. You ought to have your license revoked for that. I saw that done a lot. Just imagine the chaos that's created when other surveyors come in – they don't do their records research, they just find that rebar that we just slammed in, just pulled it out of thin air basically.

Wow and yet here's the stone some 100 feet away or bearing trees or whatever. So we got to be careful with that.

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So understand the proper use of the USGS quads. Now, I want to speak specifically to public lands and the GLO and BLM record.

And while you may have many sources to get the record of the old original public land surveys, and it depends on what state you're in, but you need to realize that the only reliable, totally reliable, source is the public room, which is a function of every BLM state office. And in the first course, you heard Dominica talk about where those state offices were. And there's one for eastern states in Springfield, VA that covers quite a few, 25 states or so.

### Getting the GLO/BLM Record

- Your **only** reliable source is the "Public Room", a function of each BLM State Office
- Micro-filmed (through 1998) and/or scanned records are available of plats, notes, patents, and other records
- Contact your BILS if you need any help or direction!

### The GLO Records and County Records

But you see here's the point, in many locations your county surveyor might have the record and yet I don't know that they have the complete record. Especially newer things that have been done.

I know of quite a few counties I've worked in over the years where they have all the old stuff, but when BLM sends them a dependent resurvey, they don't know what to do with it. They throw it out or they stick it in some corner in the vault. They don't realize that they need something complete.

Now the BLM went in and microfilmed everything through 1998. Since that time, they've scanned the records of the plats and the notes and even the patents and some other records. So a lot of that stuff is available through 1998 in a microfilm format and then scanned in others. Some of them are on the Internet. Not all of them and we have a lot of issues with that.

But here's my bottom line if you're working as a CFed or just working in something that you need public lands information, I would talk to your BILS first. I think that's your best contact. That person would be able to tell you I'll help you order that stuff from the state office or they may know the county surveyors office here has a fabulous record and it is complete.

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You want to check that out before you get started. There are many other sources, in areas that I've worked I know of places, I know which counties I can trust. I know some other BLM offices that have the complete record in scanned format. Locally, you get to know those things. But for some of you if it's your first time doing that, I'd talk to your BILS especially if it's Indian related stuff. And any kind of survey room related stuff, if you're needing the record you should contact the BLM.

Now, sometimes those records aren't free, sometimes you may have to go a ways to get those, you may have to even go do your own research. I've found personally that that's best because a lot of times when you call the public room, in most cases cadastral survey is not involved with them. And so as time goes on here we seem to be having less and less expertise in the public room that really knows how to research your needs.

I have found that in the past when I was in the private sector, it was best that either I or I trained somebody to be able to go do that kind of research for us and just go down there do it. Then you know for sure you got everything rather than relying on a secretary or a technician there that doesn't really know cadastral at all or know what to look for. So that's just some thoughts about that.

Now when you do get the GLO notes or newer surveys BLM from 1946 on, there's a lot of things we want to understand.

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The first of them is that we want to understand how running notes work. Now let's talk about how running notes work. We need to digress on that for a minute.

First of all, whenever you do get a set of notes, and again I've seen some great sources for some of the states we call closed states where the BLM doesn't have an active program operating. In fact, I was recently on the state of Florida's web site. They've got a great web site with all the field notes and all the plats.

### About the notes....

- Understand how "running notes" work
- Evidence calls (corners and accessories)
- Controlling Intermediate Monuments
- Topo calls and passing calls
- Other info in introductions, closing comments/certifications
- Transcribe older notes carefully!!
- Lots of info not on the plat

### Order of Field Notes

Find out what your state has and, I'll tell you what, if your one of those states that has not done this with the GLO record, then you ought to be pushing for that to be funded by a grant from your state association of surveyors or some volunteer effort. It's just so fundamental to doing a survey.

Well, when you look in a set of field notes, I'm going to go over to the yellow model here, usually you're going to start with a first page that looks like this. A front cover and it's just going to say field notes, blah, blah, blah, zoom in a little bit on it and it's going to give the surveyor's name and maybe the contract number he's working on and what township it is and the dates that he did the survey, that sort of thing. That's going to be on the front cover of any set of notes.

And then there will be an index of some kind (and I'm using a very generic one here) that in the older surveys is handwritten or hand drawn but it tells you what page number in that set of notes each line is. You can go very quickly.

To find some, just for instance, assuming these are like page numbers, these are actually showing you the order in which they are in, but if I was after this section here, whatever it is, I would need page 14 right there and 15, 26, 16, 17, 18, 28, 29, 39, 27. Can you see what I'm doing?



#### HANDOUT

A copy of the Order of Writing Field Notes can be found in the Handouts section at the end of this study guide.



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I'm getting all four sides of it, plus the lines that come into it. That's one of the tricks if you were just working in one section. Get a mile out each way from your section. That way, if you've got a lost corner, you've got that information. Plus, you pick up topo calls, that sort of thing, which on these lines that are outside your section but might help you find your corner that you're going to use.

Once you get inside a set of notes, let's understand how running notes work. They're called running notes because they run.

### Reading Field Notes

They run along the line that the surveyor is describing. Let's take a look at this one here.

This is on page 3 of his running notes, notice that there's a column over here on the left and it says chains and links, a lot of times it just says chains, that's where the chainage is from the last corner that he started from.

If you're not familiar with this, you really need to pay attention. Of course, we have a web-based exercise you'll be working on to test how well you read the note so be sure you pay attention. Now he's going to talk about the subdivision of this township, whatever it is. And you commence November 3, 1851. This is up in Oregon actually, north.

So now we know his bearing, between sections 35 and 36, so now we know which line it is. He gives us the variation, now what is that? 20 degrees, 10 minutes East. That is the magnetic declination. He's running true north. We know that, we've been studying that, right? He's running true north but the variation here is what he's giving us.

There are some historical reasons why they did that. I won't go into those now. Let's just read as he runs, the running notes. At 9.50, so that's 9 ½ chains, to a footpath from Portland to Vancouver, course North 45 East so this must be right in our Portland area. From this section corner, up the section line at 9 ½ chains across a footpath that goes from Portland to Vancouver. I

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imagine that topo call is gone now.

At 15 chains, a ravine, and he tells us that it runs or flows South 80 degrees West. At 37.80 to the Southeast corner of a log cabin but partly finished so it wasn't a finished log cabin, that's 37.80. So, you see, all of this coming from 0 is where we begin at a section corner in this case and ran North. At 39.30 to a road from the lower ferry at Portland to Sandy, isn't this realistic, right? And it's course is North 45 East. And then after we've run what we call all these topographic calls running along, then we actually get the footprint of the quarter corner that he set.

Let's take a look at that. At 40 chains, and that's what you'd expect on an original survey, 40 chains. Set the quarter section post, so we know that it's a wood post, from which, so now we know what the monument is, and now a fir 20" diameter bears North 46 degrees East 153 links there is an accessory, a bearing tree. We'll be discussing how to use those here in a bit.

And then a do (**ditto**), a fir 16" diameter is South 34 West 142 links. So we now know exactly what it is that he set, exactly what the footprint is at that quarter corner. That's the evidence we're going to look for and if we're having trouble finding it we might use his topographic calls.

You've got there 70 links away, that's not very far, is this road or ravine that's 2 links or 2 chains away. That's not too bad. You could use that to look for things. Now continuing then, because this is an original survey so he's going 40.80, random and true, this stuff that we showed you in an earlier course.

Let's go back to it and finish out this mile. At 53.36 a fir 12" diameter. Notice this is not a bearing tree. These were bearing trees. This is actually online at 53.36. That means that this is a line tree. And you heard Ron Scherler already talk to you about controlling intermediate monuments.

There's an example, a 12" fir at that specific distance – that is a controlling intermediate monument – a true line tree. At 60 chains, enter thick timber, 64 foot of a ravine. And then I'm going to change pages on you here. Notice we're still running along that line. At 72.67 we have another line tree, a fir 16" diameter. And

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then at 80 chains, we get to the mile and now he's going to give us the footprint for the corner he's going to set here. Set post corner sections 25, 26, 35, 36 from which.

Now he's going to have to take 4 bearing trees or **accessories** here because the rule was you took 1 per section. A quarter corner would get 2. Section corner or township corner would get 4. So we have a cedar at this bearing distance, a fir, another cedar, another fir, so we've got 4 bearing trees here. See the odds of finding one of those even to this day, although this might be in downtown Portland, but once you get out of a downtown area, the odds of finding at least one of those are pretty good. There's also in a set of running notes some other requirements that they had to address.

Let's just read those there for a moment just so you understand. Land gently rolling, soil good, second rate clay loam. They had to report on this for homesteaders to kind of get an idea before they went out. The South 60 chains are open. Then there's scattered timber and firs, blah, blah, blah. So he gives some other information in there. And then as we discussed in a previous class, notice then the next thing he's going to do is across the North line at section 36.

So what is the very next thing we get here? Then he's going to run East on a random between sections 25 and 36, 40 chains set a temporary corner, finds a section corner and then (switching pages for you again) now he's going to come back on the true line. And this is where he gives us his topo calls, which is what you hope for. We'll discuss that later. At 12.80, a road from Portland to Sandy River.

He set the actual quarter corner, it takes two bearing trees. At 40.15, he's also at the southeast corner of Thomas Kelly's Claim so there might be some other records available about that. And then continuing, we got 43.80, a footpath, well that's the same one that was on the North South line. Enter timber.

Here's another line tree, 61.47, a fir 12" diameter and then back to the corner that he began at. So you know the running notes are tremendously important information for us because they are literally the footprints of that surveyor and you hear it all the time

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– well our job is to walk on the footsteps of the surveyor before us, yes it is. And I don't know how you can do that without looking at the footprints.

Now I have some other notes that I want to run by you because when you do the research, you come across all sorts of other record information or other surveys. It's not just the original survey. And I want to show you a couple of other interesting things just so you recognize the kind of data you can find out from a set of notes. Here's an interesting one that I believe it's in Wyoming, I don't remember, but I'm going to zoom in on that a bit and it's real hard to read and that makes it very realistic. Let's just take a look at this; I want you to notice the little thing I noticed about this.

He's just run North to a corner so now he's going to go East on a random line. Fine, we would expect that but notice he picks up his topo calls on the random line. This is a wagon road, this is a telegraph line, this is a draw or a ravine. He picks up his topo calls on the random line which he wasn't supposed to do. But you know what, here's this piece of information in here that tells me he was pretty open about the fact that he didn't do it right and you will find out later in this module why that's important to us to be aware of something like that. Now, after a while, the General Land Office started using typewriters and so some of the older notes, not oldest, but newer notes of original surveys.

Here's just an example, this is from township 30 North range 14 West, up here in northwestern Arizona. But that's South 89.59 West on a random line in a temporary point for this and as he comes back, see in this case he's going to do it right, he's going to do topo calls on the true line. So he intersects that other line as he comes back on 89.57 East on the true line, he ascending so he's going up a hill.

Here's the edge of the hill at 30 chains, here at 40.15 here's the footprint set a sand stone 18x8x5 10" in the ground for the one quarter marked 1 / 4 on the North face so we're getting all kinds of information here.

And he raises a mound of stones two foot at the base a foot high and it's North of the corner so it tells us the pits are impracticable

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because they were required to take accessories but he didn't have any bearing trees here and when they say pits impracticable it means either they couldn't dig the holes or, what I found most often, they weren't going to bother to dig the pits.

And we'll talk about the pits here in a little bit. Topo calls 51 chains at the bottom of a canyon, 55 highest point. Sixty-five in canyon that runs Southwest and then back to the corner.

### Dependent Resurvey Notes

Once again, we've got running notes. The typed ones are still in the exact same format with the chains running in the direction that he's going and him giving us data as he crosses it, once again fulfilling our definition of running notes and how they work. Now if you are working in an area where the GLO or BLM did dependent resurveys, you are going to find information about those as well in those notes.

Let's take a look at this page. This is in Arkansas. Notice we have topo calls here to sand and a river bottom. Here's the left bank of the Wachtaw River, right bank of that river. Of course, that's not very reliable topo calls, we'll talk about that later, but at 40.325 chains.

Now notice here they couldn't find this quarter corner so in this resurvey they're going to proportion it so they say point it for the quarter corner of section 36 only (so we're on a tension line) at proportionate distance, there is no remaining evidence of original corner. So he's telling us exactly what he did and what he found, what he didn't find and he's telling us what he left.

So here's what this surveyor said. At our post 28" long, 2½" diameter, 24" in the ground, has a brass cap on it marked just like that and then he took 2 new bearing trees, a post oak, gave us the bearing distance. Notice in later surveys they tell us exactly how they scribed the tree, the exact numbers.

There's a pine, how it's done, and then he continues on. Seventy-three chains into the end of a lane, a driveway, 74.55 a creek, 79.60 the lane turns South so he has to run along the lane is what it looks like. And then here, take a look at this set of information.

## EVALUATING CORNER EVIDENCE – PART 6

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At 80.65 point for the corner of sections 35, 36 determined longitudinally by proportionate measurement and latitudinally by an old fence.

There's a interesting combination of information. All evidence that are remaining are original monument. He set a monument; he took new bearing trees, etc.

### Remonumentation Notes

So you see even on dependent resurvey, frankly you actually get a whole lot more information on dependent resurveying because they kind of standardized the process that they would use and that works pretty good.

Now in an earlier module of another course when we're talking about the public land system and how it basically works, I mention to you that there are things that are called remonumentation projects. And if you recall, those are situations where the BLM did not actually run lines.

We just went out and looked for evidence and if we found that we perpetuated it somehow and remonumented it, took new accessories, whatever. And I wanted to just show you a sample of the set of notes from a remonument project because there's no bearings and distances and that sort of thing. Now interestingly, they still use the same form for the notes.

Notice that it has the word chains up here. It's a form that the government uses now. This is from Colorado. But that's blank. That whole column is blank. But here's just an example that I want to give you. Let's zoom in there a bit – I know it's out of focus.

The standard corner sections 33, 34 on the South boundary of the township. Now this is what they found monumented by the original sand stone 18x10x6 and it was marked 3 notches on the East, 3 notches on the West. It had the letters SC on the North face. It's firmly set in the ground and had a mound of stones north of it and from which he's telling you when I got there that this time I even found an original bearing tree or two. Really, he found the stump hole of one of them and he found one that was

## EVALUATING CORNER EVIDENCE – PART 6

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still alive apparently.

Then he tells us now here's what I did at the corner point I set an iron post so he removed that stone and in that exact same position set an iron post 30", 2 1/2" diameter, 10" long in the ground to underlying rocks in a supporting mound of stones so he couldn't get it in very deep because bedrock was real close. It's a big mound of stones, 4 foot base, comes up to the top and it has a brass cap marked – there's how it's marked. And then notice that he went ahead while he was there and took a new bearing tree. Then he tells us, "I buried the marked stone alongside." So he didn't take the stone home.

Keep this in mind CFedS, this is very important. He didn't take the stone home as a souvenir, put it in his personal museum, used it as a door stop, or anything else. This is what you're supposed to do – leave that evidence there. So he buries the marked stone. Why would he bury it? Because we don't want two monuments out there for the same corner. This is a remonument so we're not running any section lines. But notice that they did still give us, if you want to call it, a topo call.

The corner is situated on near level terrain and scattered aspen and pine timber and it's 152 links East of Divide Road, which bears Southeast and Northwest. At least we even get a little bit more information in there as to what he found, what he left, what you and I should be looking for.

Now if you want to see some additional examples of field notes, the back of your 2009 BLM Manual has just an incredible array of corners and that's in the appendix. Appendix 2, Sample Field Notes. They've got almost every possibility, almost every combination in there. And it's good practice to take a look at that if you're not familiar with these and get used to that.

So that was, if you will, a little bit of a tour of how running notes work and how to read those. And again you're going to have opportunity to practice that a little bit after this lecture.

Let's continue our discussion about the running notes for a few minutes. What you're really interested in as we just saw is the evidence calls. You want to see the corners and the accessories.

## EVALUATING CORNER EVIDENCE – PART 6

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You want to see that stuff. You're going to see his calls for corner controlling and intermediate monuments. We saw 2 or 3 examples of line trees in there and I don't think we had any meander corners.

That whole list that you've been given of things that would qualify for that. We saw topo calls and, by the way, we even saw a passing call. I should have pointed it out, but a passing call... let's digress for a minute here.

A **topo call** is where we're running the section line and you cross something. A **passing call** is you're running the section line and you pass by something and so they give you a station, if you will, they tell you how many chains up and how far over.

So let's say that there's a cabin over here at (I'll just make this up) 30.50 chains on this line from the section corner, 50 links East is the Southeast corner of Joe Blow's cabin. That's a passing call. And, at a minimum, that's good information. If you're not quite sure where the line ran through there but you'll find the rotting remains of that old cabin, pull 50 links over, you'll probably be really close to the line he ran and now you'll have a better idea of where to search for the evidence. That's what we do with this kind of stuff.

You want to realize you don't just go to the corner descriptions, you want all that information and it will help you immensely in your search or even in your resolution of confusing evidence situations. Also in the notes then, there's other information in the introductions. They might tell you why they're doing the survey. They will definitely tell you when they did it, what time of the year they did it.

I find that very interesting in really snowy, icy cold places like the Upper Midwest where they're out doing a survey in January then it helps you understand why his meander corners aren't good on the lake because everything was frozen.

Enough snow and you're not even quite sure where the lake, the pond, or the swamp was. It also tells you something about perhaps the monuments they were setting where they didn't last very well. If you're driving through snow, the ground is frozen and you can't



## EVALUATING CORNER EVIDENCE – PART 6

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get into the ground that well, that sort of thing.

You'll also find in the back of the notes closing comments and the certifications. And I've even occasionally found things of interest in there. When you have older notes like the first two sets that I showed you in the handwriting, you want to be very careful, transcribe them, get to know some of those. I showed the one to get to know the DO ditto. There's another one that I just learned here recently, the ampersand sign.

When you see that symbol and the letter c, that's an abbreviation for etcetera. And it was used extensively in some of the old GLO notes. I was wondering about it and a couple of us started researching it and finally found someone who knew about it showed it to us. But transcribe those notes carefully, realize you're trying to put it into something that the crew can read and not make mistakes.

You want to carefully look at those handwritten notes. I might mention for corner search it's really important that you know and/or your crew, whoever is doing the work, that you leave the data in chains and links, especially at the corners. If your crew is given transcribed and it's also been converted to feet or meters or anything else, then you lose the opportunity to find transposed numbers and other issues that inevitably occur with the notes.

It's very important that you learn to think in chains and links and especially when it comes to your evidence search because that's what the records in and if they made a mistake, if they switched some numbers around, if he did it in those units. If something was 76 links and he should have written 67 links, you're not going to catch that if you change that to feet. Because the feet you can switch those numbers around but it's irrelevant so keep that in mind.

And realize that in the notes, there's a tremendous amount of information that is not on the plat. I mention that folks because I have been amazed over the years how many times a surveyor says he's done his records research on the public lands and all he got was the plats. He's always trying to save a few bucks because he doesn't want to pay for the notes. I don't know how you can do the survey with just the plat. I mean the plat just gives you some

## EVALUATING CORNER EVIDENCE – PART 6

measurements and some areas and stuff.

All the data, all the information about the corner and its accessories and topo calls, other information at the beginning of the notes and the end of the notes. How do you do that? How do you do a survey without that? Don't be cheap because all you're going to do is put it to yourself and your client.

And future surveyors and the public in general are going to have a very difficult time of resolving what it is you actually did out there on the ground because you didn't know what to look for. Now, there are a few things we want to talk about, some techniques, for corner search.

The first question I'm going to ask you is what is your attitude?

Now that might seem like a strange question to ask but I find that your attitude about corner search in general and about (and this applies to public lands or any other kind of survey) your attitude really makes a big difference.

If you've got people working for you, coming to work "it's not worth going up there and digging that hole" or "climbing up that hill" and they got to whine about it – those are dangerous people. You need to fire them. You don't want those people making evidence searches for you on behalf of you and your license. And sometimes they reflect your attitude too. Here's a problem – I see this all the time. There's this "all those surveys were done at a bar". Get rid of that. That's so rare. That attitude is just part of this "we're not going to find it". You need to hate to proportion.

We train you here on how to do proportioning, but you need to hate it. And I mean just like it's like going to the dentist without novocain. You don't want to proportion. You need to develop then that positive attitude in your staff about finding evidence. We're going to find it. I'd make this your motto. There's no such thing as a point not found. I know that's not true, but that's a much better point of view to start the morning with than "we're not going to find it". So keep that in mind. You need to be persistent but not overly.

We're going to talk a little bit about some of those things when

### Corner Search Techniques

- What is your attitude?
- Avoid the "surveys done in a bar" theories
- Hate proportioning!
- Develop positive attitudes in your staff about finding evidence
- Be persistent
- Can you see the big picture?



## EVALUATING CORNER EVIDENCE – PART 6

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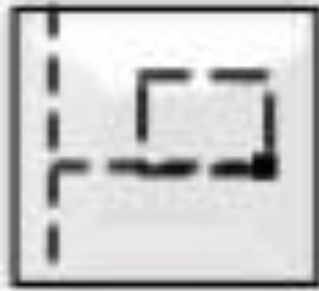
people say, “Well, we searched for that corner for 3 weeks and then finally gave up.” Who can afford to do that? That’s not realistic. Even the government can’t afford to do that. But persistence and then and even more important question, “Can you see the big picture?” And that’s where we’re going to go in our next video lecture because I’m going to start talking about actually now that we’ve gathered all this field notes for the record, we’re going to go to the field and start looking for corners and that sort of thing.

We’re going to talk about that process. Not the way I’ve done it – well, I’ve done some dumb things and I’ll share a couple of those with you too. Not that I’ve got the primo method and there’s different things for different parts of the country too – terrain and all that.

But your general attitude and your big picture approach to evidence search is the key to finding evidence that others have not. I’m going to end this here and I’ll see you on the next video lecture. We’ll pick it up with this actual process of searching for evidence in the field.

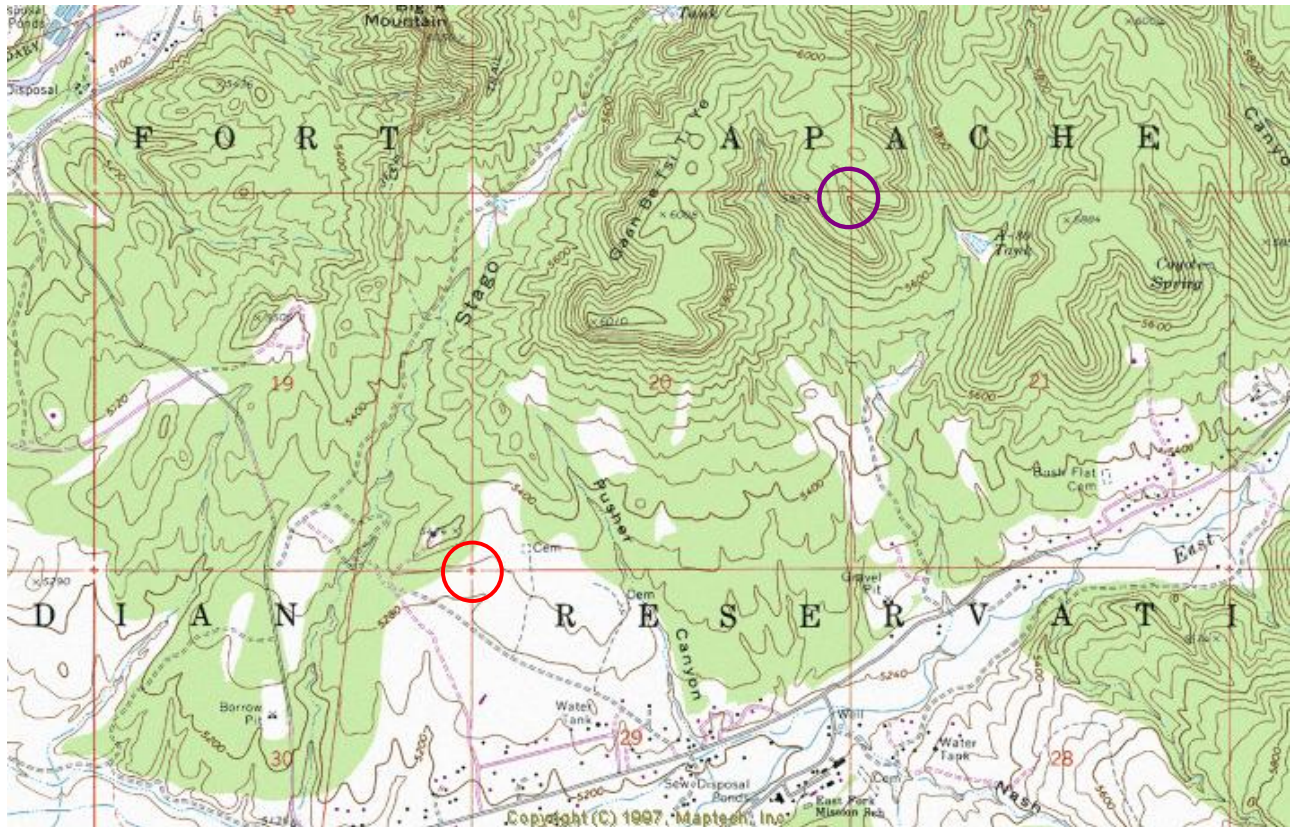


**PROBLEM** Before moving on to the next topic, complete the “Determine Proper Cap Marking for a Corner” problem which you can access from the course description page.



**DIAGRAM**

# USGS Quads.....



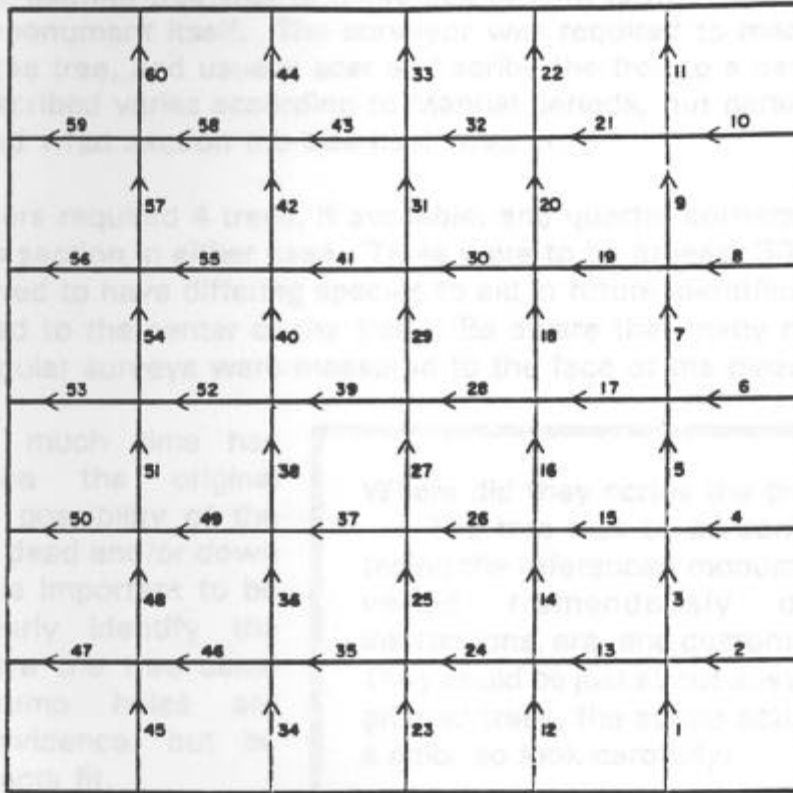


**HANDOUT**

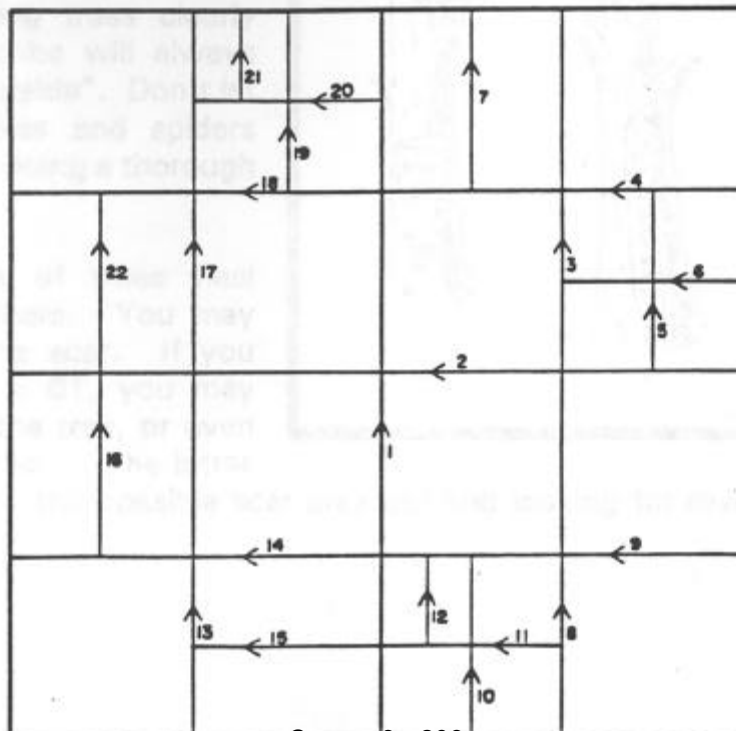
# Order of Writing Field Notes

## Bearing Trees

### Normal Township Subdivision



### Section Subdivision





## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 7 (59 minutes)

ICON LEGEND

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 7

### Introduction

Welcome back to the next lecture for this module of this course. And we are talking about corner evidence analysis. We talked about the records, we kind of ended it with a discussion about how we're going to see the big picture.

### “Getting There”

So let's start talking about the process that we're going to go through in corner search. Obviously, if you've never been to the area or anything, you need to get to the right area. The right place. Getting there is what I call it.

The old methods we used to use are compass and pace or use a string box or something from a known corner or hope that the USGS quad is accurate. Of course, we had a discussion last hour on that. You can traverse in from a known corner. We used to do a lot of that. You're obviously always watching for fences or other cultural things that would indicate where at least people think a line is. Not that it necessarily defines it.

We have other methods and I want to comment on them for a moment. GPS into a search area. That's a great way to do it. You don't have to traverse in. But that's going to require that you had a coordinate to traverse to, if you will, or to hone in on with your GPS.

And so I mention here the **GCDB** data. Now, the GCDB is the Geographic Coordinate Database. BLM has that in a good portion of the country. And it's kind of an underlying cadastral layer for GIS's. A lot of counties and states and other agencies have used the GCDB data to build their GIS's. And it doesn't guarantee that that's where the corner is.

Just as any GIS doesn't necessarily indicate that's where the corner is. But you need to talk to your **BILS** and learn how to access and use the GCDB data. We're going to have a continuing education course, but that's going to be a couple of years from when I'm speaking anyway now.

### Getting there.....

- Old methods:
  - Compass/pace or compass/string box
  - Hope USGS quad is accurate
  - Traverse in from known corners
  - Watch for fences, other culture
- Newer methods:
  - GPS in to search area
  - Use GCDB data



## EVALUATING CORNER EVIDENCE – PART 7

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Before that, GCDB stuff was really out there for everybody. But what I'm saying is especially if it's in one of the western states and some of the Midwestern states as well. We have estimated coordinates for almost every section and quarter corner. And when I say estimated, it's based on what we do know, what we found, some private records have been researched, a lot of information's been gone through to create that database.

But the point is this, it's there and it's available and it can certainly give you a coordinate to roam to, to hone in on with your GPS, or even if you're traversing in if you can't use GPS in the area.

### **Avoid “Hit and Miss” Corner Search**

One of the things I'll just mention is it's always a challenge doing corner search and that's half of the fun as a surveyor. It's a challenge. You and another person are out there and you're going to find it before the other one and that's good. I think that kind of stuff is healthy. Keep a little competition in it. And keep the challenge there.

But recognize that if you don't get to a really good place to begin with, using the topographic calls or whatever other information you have to get to the area. You can waste a lot of time and I personally have wasted a lot of time before I really even got to the right neighborhood.

It's the pits to maybe use a quad sheet, get to an area, and spend two hours looking for a corner, only then to look in the field notes and realize we're supposed to be on the other side of that creek. And you've spotted that the quad sheet isn't that good so you want to look at all the evidence. You want to see what's there and use that to help you get to the right search area.

## EVALUATING CORNER EVIDENCE – PART 7

Another real practical thing is just common sense, but it wasn't very common for me, was that you should establish a pattern for what you're going to do.

Make your search comprehensive and thorough. I say avoid hit and miss searches. Let me just explain to you what I've done in the past earlier in my career. I'd get to my search area, do my getting there part. And tie some flagging in a tree or down a lathe or something. This is where we paste to her; this is where the GPS says it should be. And I'd sit there and waste a half hour, "Is that a mark on the tree?" "I'll go over there and look at that." "I guess not." "Is that a mound of rocks?" And I walk over there.

Spend all this time going all over the place rather than just be very thorough and comprehensive with what you're doing. So what that means is you've got your search area center point, if you will, however you got there. You've got a place identified. Then set up a pattern for that.

If you're working by yourself, it's sometimes good to start at that point and actually work in circles where they just keep getting a greater and greater radius. So that you have looked at every rock, at every tree, at every whatever else there might be in that search area out to what you think is a reasonable maximum radius.

If you've got two people there and the section line is east and west, just an example, and one of you do a zigzag pattern north of the corner and other do a zigzag pattern south of the corner. Set up some kind of a grid or some kind of a circle somehow so that when you're done there, that's really the goal, you can say we searched that area. If there's more than one of you, trade areas. I find that to be very effective too.

And, once again, I warn you to look for all of the evidence. I found that when I'm working in a treed area, I will seem to look for the bearing trees more than anything else. I'll even walk by the scattered mound of stones and not recognize it because I'm walking to look at a scar on a tree. I'm just recommending that you try to see the big picture. Look for all the evidence, not just part of it.

### Establish a Pattern

- Make your search comprehensive and thorough (avoid hit and miss searches)
- Set a pattern for search from a key location (grids, circles)
- Trade areas if more than one person
- Look for **ALL** the evidence

## EVALUATING CORNER EVIDENCE – PART 7

### Look for ALL the Evidence

So let's explore that concept for a moment of looking for all the evidence. And remember, based on some of the things we discussed already, what is out there?

Here's a list of things and we're going to go through them individually here. You've got the monument itself, you've got **accessories**, you've got what we call **memorials** (which are kind of a special sort of accessory), we have **controlling intermediate monuments** (remember line trees, meander corners, witness points, all these other things), we have **topo calls** and **passing calls**, and we even have ties to **cultural features** (a fence corner of a cabin, a stock fence, whatever, even a well).

Those sort of things are included in the evidence and we find that kind of stuff and we want to look for all of that.

Now when it comes to monuments in the public lands system, and I'm focusing on the public lands system today, we have certain types of monuments. We're going to look at an example of most of these.

We have **wood posts**, we have read some notes about wood posts. We also have mounds and pits. Now understand actually the mound was the monument, the pits are accessories and I'll show you a picture of that. So the mound really is the monument. We have stones, much better idea.

If a corner actually fell on a tree, the tree would become the monument. There's instructions in Chapter 4 of the Manual on how they would do that and where they would scribe the tree.

Starting in 1910, 1915 era, we transferred over to iron posts and brass caps. They wanted something that was metallic and magnetic so that it could be found with metal detector.

And the brass cap was a much better way to stamp very precise information on it rather than just scars; not scars, well scars on the trees obviously, but etch marks in the stones or the wood posts. And of course later for economic and other reasons, we moved to

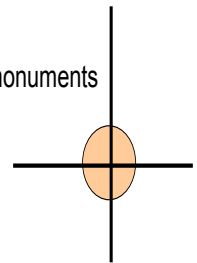
### Look for ALL the evidence

- Monument
- Accessories
- Memorials
- Controlling Intermediate Monuments
- Topo and passing calls
- Cultural feature ties



### Monuments

- Wood posts
- Mounds and pits
- Stones
- Tree monument
- Iron post with brass cap
- Aluminum posts/drive monuments



## EVALUATING CORNER EVIDENCE – PART 7

aluminum posts with aluminum caps on them. Or even drive monuments, aluminum monuments that we just drive in.

But those are some of those monuments that were used and that's our first area of looking for all the evidence we want to explore. Let's take a look at some pictures here.

I've got a couple things here for you to look at. Notice here's a wood post, it's a quarter corner. That's the original wood post. You can kind of see the scale, it's not sticking out the ground that far.

You've got a hard hat sitting there and what's that 8" or 10" there. So the wood post is only sticking up a couple feet. But you can very clearly in this picture see the scar, the 1/4 S and that looks like a 28, I guess. I'm not there on the ground, but that's a good example of a quarter corner wood post.

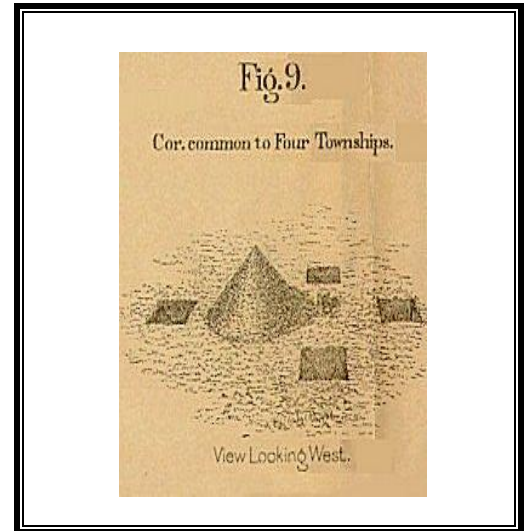
And I've got another one here that's showing you the post that he's scribed. And that's a real close up of it so I don't know exactly what kind of corner it is, but it's probably a quarter corner. Looks like it.



## EVALUATING CORNER EVIDENCE – PART 7

Now here's an example of **mounds and pits**. Now what I did is this is out of a manual. I forget which one, I think it might be like the 1881 Manual. But this is a diagram showing you how they were supposed to know.

In each Manual you'll find a different, well not always different but an exact way, this is for a corner that's common to four townships. And so here's this mound of earth right here. And then, in this case, they had four pits that they dug. Of course, that's where the dirt came from to build the mound. And they're in a certain pattern, they're a certain specific distance and direction from each other. That's part of that evidence thing. And I encourage you to have, you can still buy the Manuals back to 1933 (reprints), and then in Al White's book, which you have on your resource CD, he reprints most of the important stuff from all the earlier Manuals. And we've also got on your CD the original 1855 Manual.



So there's information where you can find out what were the rules at the time of the survey, the date of the survey I'm retracing, what were the rules he was to follow, how far and what direction were the pits to be from the mound. But, in this example, we're talking about monuments so it's the mound of earth that is the actual corner.

Now you might think well those are hard to find. Yes, they are. I have only found mounds and pits twice in my whole career, 34 years or whatever at this point. And I've seen a lot of places where they said they set them, but I couldn't find any evidence.

Now most of the time when you do find them, the soil will look different, there will be different kinds of grass growing (this is out in the boonies obviously where it's not been disturbed by man for development or whatever).

You find different kind of grass and soil color in the pits than you do where the mound was and that's kind of how you find those. And I've discovered personally that in order to find mounds and pits, or any evidence of a corner set with that, you usually have to have other evidence that gets you to a pretty small area. I would not want to be looking over a two or three acre area for mound and pits.

## EVALUATING CORNER EVIDENCE – PART 7

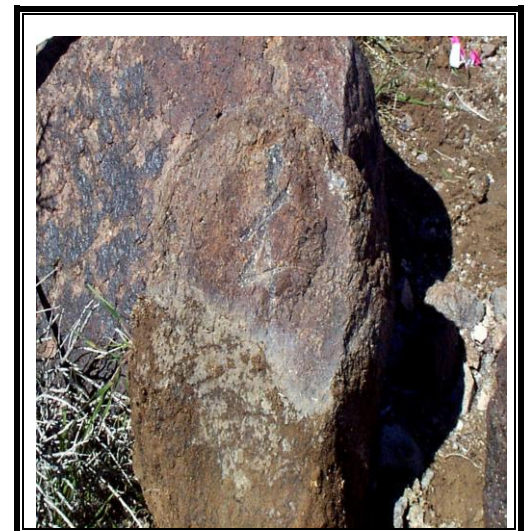
You'd like to have other topo calls or other information that would get you to a really small search area. Maybe 100 square feet, that'd be nice. And then you can kind of look for it or even probe in the dirt if you like.

But here's a picture of some actual mounds and pits. This is an interesting one I found. This is here in Arizona, out in the desert. But if you notice very carefully, it looks like almost somebody doing wheelies with the four-wheelers over here, but that's the BLM's four-wheelers for the survey crew. Fortunately, they didn't drive through it. But you can see even in raw dirt where there was no grass growing.

This looks like it was just in a gravelly area, but you can see the remains of that mound and you can see the remains of the pits. There's another one over there. You do find them. And I'm not saying that they're going to be easy and I'm not saying you want to waste a whole lot of time looking for something that maybe doesn't exist. But if you're in an area where there's potential that it exists, well then that's worth looking. We're going to switch to stones now.

Here you can see a close-up of a very large stone and if your eye is any good, you're noticing 1 / 4 scribed right there on that stone. That's our quarter corner that somebody found.

We have a tremendous archive of pictures here at the BLM of corners. Here's another one.

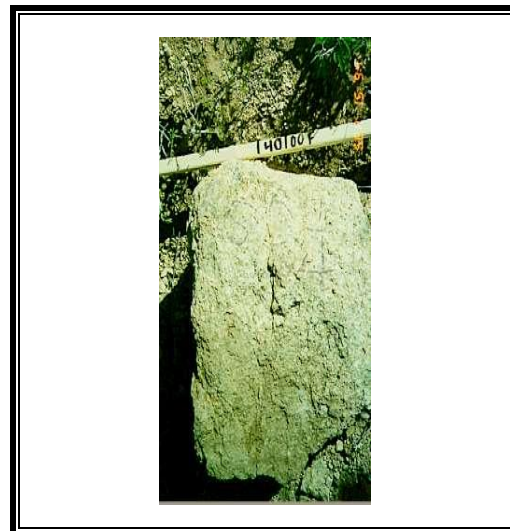




## EVALUATING CORNER EVIDENCE – PART 7

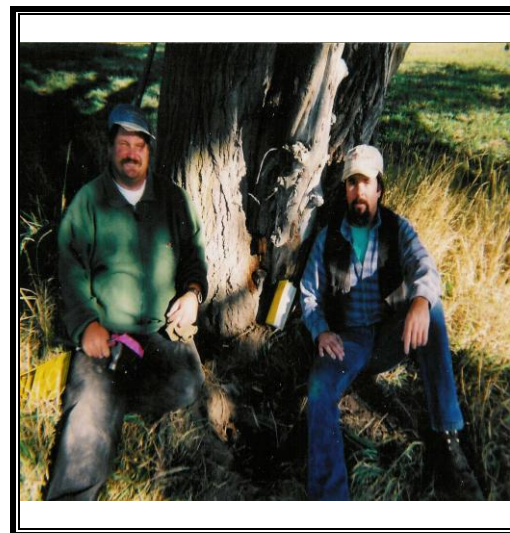
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And, again, you look closely and of course it's just as hard on the film to find it. Here's a 1 / 4, in this case he uses open fours. You learn that about different surveyors that you retrace. There's a quarter corner stone and here's a tree monument.



Now this is the only picture I could find of a tree monument and doggone if the guys didn't sit in front of the scars so it's not really that great.

But here's what you've got, there's a scar back there behind this gentleman and there's another one here which is where this tree was an actual monument. They call for it and they scribed it on four sides on this one. I think it was. So we do have tree monuments.





## EVALUATING CORNER EVIDENCE – PART 7

And then using the more recent monuments, just pictures of them in case you've never seen them, the old iron posts with the brass cap on it. They're generally 36" long.

Some of the really old ones were filled with concrete. Imagine carrying several dozen of those out into the field. And here's a much more modern monument. A drive monument with aluminum cap on it. And, as you can see, they even concreted this one in so apparently it wasn't all that stable. We don't always do that but that's just examples of these newer monuments that are set and just giving you an idea of what they were.

So we have these various monuments that... Now I want to go over here and use the elmo for a minute and show you a couple of things. I pulled some diagrams out of some of the old Manuals and you can see here some examples of some of these. There's a section corner stone with the scribes on it. I'm going to talk about that in a minute. There's a quarter corner. We just saw some of those wood posts I pulled out of a Manual.

What a quarter corner mound and pit should look like. And so I'm just showing you some other examples of this stuff.

### Historic Corner Markings

Now with the stones and the wood posts in particular, the GLO had a marking system for how those monuments were to be marked. And you do have this in your handouts and it's going to be very difficult to read here.

What you have in your **handout** will be better. But the system that was used for marking stones and wood posts for whatever the kind of corner it was. This was, of course, before brass caps. Now let's understand something. And if you've got this in front of you, it's a lot easier to read. But at a township corner, there are six notches on four sides. And so all the township corners are marked that same way if they're common to four townships.

Then as you move away from that township corner, like on this township line, this stone or wood post will have one mark on this side and five on this side, meaning I'm one mile from a township



**HANDOUT** A copy of the GLO Markings can be found in the Handout section at the end of this study guide.

## EVALUATING CORNER EVIDENCE – PART 7

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corner there and I'm five miles from that township corner. So obviously the next one is going to be two and four, three and three. And you've got the same thing going up the range line from section 36 there, we had all four and then up here one to the south, five to the north. So that's how you knew and why it's important that you be sure the stone is oriented in its original orientation because it's going to tell you which corner it is by that.

As you go inside the township, you get a similar pattern except everything's based on the southeast corner of the township. So notice that this section corner, the northwest corner of section 36, is going to have one notch south and one notch east. Now the reason for that is because, cardinally, it's one mile from the east township line and one mile from the south. So obviously we come over to this one. We've have two on the east, one on the south. And I'm going to slide this up to the northwest part of the township and just show you the same things going on up there.

Here we have the corner of sections 5, 6, 7, and 8. Well that's going to have five on the east and five on the south because that's how far you are from the southeast corner of the township, cardinally.

Then we see on these township lines and range lines, we have the same pattern. So you go out there, you find a stone and it's marked for (using this as an example) two to the east and three to the south. Well you can use this diagram, or any diagram really, to realize that that's the corner common of 14, 15, 22, and 23. That's how they mark them.

That's the kind of evidence we're looking for because a lot of times you go out there and you find a stone or a rock. Well is it marked? Now I'm not saying that it has to be marked to count. Because, as we'll discuss later, sometimes stones lose their marks. But let's recognize that there was the system to help us know which corner we're at and that's a big part of the evidence you are looking for to validate a stone that you found, or a wood post. They were done the same way.

At the bottom of that handout, that document that we were just looking at – it also tells you how the quarter corners were done. And that generally the quarter corners are marked on the east/west

## EVALUATING CORNER EVIDENCE – PART 7

lines, the 1 / 4 is on the north side and on the north/south lines, the 1 / 4 is on the west side. So that's a valuable piece of information. And that's what you're looking for and that's how to know where you are.

### Accessories

Now I want to switch gears then. We were still talking about looking for all the evidence and now we've broken it down. We've just looked at monuments and saw just a few examples of that and how they were marked.

Let's talk about accessories. Now what is an accessory? Now it depends what your context is. Women's purses and jewelry are accessories, right? You had drove the getaway car and you're an accessory to the crime. But in a similar way, this word means that or has that connotation.

An accessory in land surveying, of public lands in particular, is some physical object that's permanent, well not permanent but it's pretty well fixed, and it's been tied in the survey process by a bearing and a distance to a corner point.

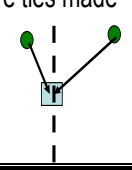
So you have a monument set and then they would use these as reference monuments. And their purpose was to preserve the corner location. We'll talk about **memorials** here in a minute. Or any cultural feature tie that was made. So you see in the little diagram there, this is our corner point and they took two **RM's**, using modern language. They could be bearing trees or bearing objects, they could be a lot of different things.

But the idea is that even if the monument itself becomes lost, we can still get to the corner position because we have these two accessories. And so it was all about evidence and preservation of position.

And if you are not familiar with these, in spite of their name **bearing tree or bearing object** especially, you actually use a distance-distance intersection to resolve these bearings to know which of the distances are center sections. With distance-distance intersections, you either have no solutions or two solutions. That's

### Accessories

- Fixed physical objects tied by bearing and distance to a corner point
- Used as a system of RM's for the preservation of the corner location
- Includes memorials under a monument
- Includes some cultural feature ties made by the original surveyor
- Use = D-D



The diagram shows a central corner point marked with a small square containing the letters 'NP'. Two dashed lines extend from this point, one to the left and one to the right. At the end of each dashed line is a green circle representing an accessory. A vertical dashed line also extends downwards from the corner point.

## EVALUATING CORNER EVIDENCE – PART 7

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basic geometry. So you use a distance-distance solution to resolve these in most cases.

Now we're going to look at a couple of accessories here but let's understand what a memorial is. I don't have any pictures of that. But a memorial is an accessory with a special condition. It is at the corner point. It's actually located at the corner point. And some examples of a memorial: broken glass or even a whole bottle.

Sometimes you read in the notes and he says at the corner point I deposit (he'll usually say words something like that) broken glass or broken pottery or charcoal (is another very, very common one). And then over that he sets his wood post or his stone.

And so again if you're questioning whether the stone's been moved or something, read and see if there's a memorial called for. If so, reference your stone out, pull it out, dig down. You should find it. I've found all kinds of that stuff. I had one where every corner the guy, "I deposit a small stone with a cross on it." And it was really just rocks about so big with a cross on it that he chiseled or marked on there. He threw it down in the hole that he set the wood post or whatever into and we've used that to validate corners or even find corners that way.

When we get to a small search area, start digging carefully, boom, you find stuff. So those are memorials. So if you follow what I'm saying here, accessories are generally at another location tied by bearing and distance to the corner point. Generally, a memorial in public lands. I realize in the east, that memorial has a different meaning.

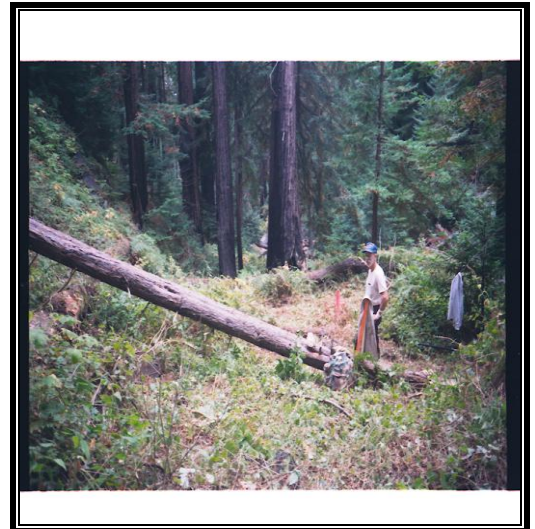
But in public lands, a memorial is generally something that is at the corner point, but it is under the monument, generally. Now let's just take a look at a few examples of accessories.

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Here's a bearing tree. This is actually a juniper tree up here in northern Arizona, near the Grand Canyon. And this is over 100 years since it had been scribed, but you can see here the scribe where he carved into the tree and, not that it's all that legible in the picture, but there are letters and numbers scribed inside there that helped us know that that was the bearing tree that he had taken in that location.



Here's a bearing tree that has fallen over, but this surveyor found it. You can't see it real well, but there's a scribe right there. And that's good enough evidence.



You find that and you can tell where the stump hole was or it's still connected to where it went in. That's better evidence than proportioning. And that's what's going on here. Now I want to comment for a couple minutes about bearing trees. And I hope you understand, and I mentioned it earlier in this module, that the general rule was to have an accessory in each section. And there were some other rules. You didn't want accessories right at 180 degrees apart because that's not a very good strength to figure from a trigonometric point of view. And if you could have them at 30 degrees or more, that was a real good strength to figure. But sometimes you didn't have that choice. But those accessories were taken.

Now I want to talk about how trees were scribed. Where was the bearing tree scribed? First let's ask that question.

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Where were bearing trees scribed? And I've discovered after working in several parts of the country, just about anywhere. There was no standardized thing to that. Your distance is supposed to be measured horizontally from the monument to the center of the tree at the top of the root crown. That's the rule.

But sometimes you'll find some variations on that. And I'm going to talk about this bark scribing and stuff here in a minute, but I want to show you something on the elmo here. Just a diagram out of a government document that just talks about how trees are scribed just to give you some ideas.

Notice that here's a tree where there's a BT down low and up here's the numbers written horizontally. This is what I find in most of my experience is like this. The scribe is up and down this way and done vertically. There's other places where all they did was an X up at breast tight and down here BT, this sideways, this horizontal. But the point is, they scribe the trees just about anywhere. I've seen places where they've scribed on a branch sticking out from the tree. They scribed the branch. I don't know why, but maybe it was just easier at the time so that's what they did.

Now the other thing on that previous slide was about bark scribing and wood scribing and I want to just show you and let me get that lined up on here. Here's an example.

### Bark Scribing

Just understand some trees... If it's a tree and I'm no forester, I'm not a phlebotomist or anything so forgive me, if it's a tree with thicker bark you actually cut into the tree.

This is what they did down to, what do they call it, the cambium layer I think it's called. And that's the smooth meat. You get the bark out of the way and you're down to the smooth surface usually of the tree. And that's where they scribe this.

Now, of course, as you scribe this and scar the tree, what's the tree going to do? It immediately considers this damage to it and it starts to sap over this and grow it back. And that's fine. By the time we come back and look at it, sometimes the scribe may just

### Where were BT's marked?

- Just about anywhere
- Measured horizontally to center of tree, top of the root crown
- Bark scribe v. wood scribe



## EVALUATING CORNER EVIDENCE – PART 7

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be a line like this. That's all that's left. Or sometimes you have some marks of how it grew into that but it may be all that's left and you have to open that up carefully to look in there.

But one of the really cool things about bearing trees and scribing them this way is that if this tree dies or falls over and begins to rot, the last piece of wood to rot, the last thing to go, will be this area because that sap protects that. And in many cases I found where the whole tree is where it was laying, it's just a pile of sawdust and larger, but just rotted away, and here's this one piece of wood that's still in tact, 12" long. You pick it up, turn it over, boom, there's the scribe. So it's a great way to force evidence of an accessory of a bearing tree to last forever, not forever but for a long time, even after the tree is gone.

Now on other types of trees, this is primarily aspens and birch, things that have that just paper thin bark. They did what they called bark scribing and that's where you just took the timber scribe, as you saw on the slide there, and just scribed it immediately right in the bark. You did not cut into the tree because the layer that you would cut into is just 1/16 of an inch below here so you just go ahead and scribe right in the tree. So here we have a one quarter S13. You can see here, this is a drawing, but you will find this in the real world out there.

These little dots which are the center point, the radius point of the scribe. And so that's called bark scribing. Now if we go back and look at the slide we were watching just a moment ago. That is a timber scribe. There's a picture of one down there at the bottom. You can see it has that point on it there which is a radius point. And we're able to use this very sharp little edge there.

That's how they scribed and turned it about that radius and this one is for straight lines. And this is just one model of a timber scribe but that's how that worked and you find that evidence. Now one of the things I want to warn you though about bark scribing. It's different than the regular scribing.

The regular scribing, as I mentioned, the tree heals over top of that and creates a scar there and sometimes it looks like a lot of other scars where rocks hit it and you'll waste some time looking at the wrong tree and all that. That's part of it. But when they bark



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scribe, you need to understand, let's say that aspen was a 10" aspen 100 years ago and they bark scribed it. Now it's grown, depending on where you're at, and now it's a 28" aspen.

Understand that the scribe mark grows with the tree on bark scribing. So now that one quarter S13 or whatever it said on there, now is big huge letters. It won't go up, it stays at the same elevation. I had a surveyor argue that in court one time. Well it went up with the tree. No it doesn't. It stays right there. But what I discovered personal experience is if you're up real close to a bark scribed tree you don't notice it because a lot of times aspen and birch have some natural black marks and they're kind of ugly trees in some ways on the bark. And of course that's why people scribe Joe loves Sarah or Kilroy was here because they're easily scribed with anything. But if you step back a little ways, you will see the big one quarter or the S13 or whatever a lot more obvious.

Because up close it may just look like part of the natural scribing of those trees. So that's a little bit about bearing trees.

### Bearing Objects

Now we also have bearing objects. I've got a good picture of one here for you that the X is where you actually measure to on a bearing object.

This obviously just a great big boulder and the BO, not talking about a personal hygiene issue, it is talking about it's for a bearing object. Sometimes you'll see them marked that way. I've seen more often in my experience, at least here in the southwest, the X is above the BO.

The BO is down below that. But the X is where you measure to on a bearing object. Of course, when we're talking about bearing trees, you measure, unless you can prove otherwise, you measure to the center of the tree at the top of the root crown. That's an example of an accessory.





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Here's an example too that I just wanted to show you of a cultural feature tie. As you can see, we've got some GPS equipment set up there on a point and the actual point seems to be right here, at least that's where the unit is sitting.

But this fence coming in here and going out that way, there could be an actual tie in the notes. When the government set that monument, they might have said the fence corner is over here three feet.



Well that's good because if this pipe got pulled, and you're going to have to look at it carefully to decide if this fence is the fence that was there at the time, or was rebuilt in that position, but if you feel comfortable with that, then you're probably going to be able to, even if the brass cap has been moved, come back the three feet and set the corner at it's original position.

And I've been in on these where they set the cap and they gave a tie to the fence, and maybe the fence was further away, and then when you come along, in fact this happened to me recently, the brass cap is sitting there hanging in the fence. Somebody pulled the brass cap out for whatever reason or it got damaged or a grater hit it, sometimes that happens too. Yet I've used the fence to put it back in.

Notice that the reason I'm using the fence so surely here is because the fence was called for in the notes. When you're using a fence as evidence that was not called for in the notes, that's very different. That's when you're saying the fence is the best available evidence. I don't have to worry about best available evidence if the fence or a cabin or some other feature was tied in the original survey. You can use it like an accessory as long as it hasn't moved. Now we're going to change gears here and talk about another type of evidence.

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See we're still under this umbrella discussion of look for all the evidence.

### Topographic Calls

I want to talk about the use of topographic calls. Now when it comes to topographic calls, you hear quite a bit of variety from people.

Some will say I always use them and some will say I never use them. The bottom line is that you don't want to be at either of those extremes.

Using topo calls – not a black and white answer. There's a lot of issues that we need to discuss and think about. Every survey is unique so you need to ask yourself these questions.

Were the topo calls that I'm going to use faithfully measured? And even if they measured them, did they faithfully record them or did they not write them down until the end of the mile or the end of the day, for that matter? And how closely are they measured? To the nearest chain or to the nearest 10 links? Are they well defined calls? Is it possible then that the call has been moved or been altered in such a way that you can't use it?

### Using Topo Calls

- Not a black and white answer.....
- Every survey is unique.....so ask these questions:
  - Were they faithfully measured?
  - Were they faithfully recorded?
  - Are they to the nearest chain or 10 links?
  - Are they well-defined calls?
  - Has the call moved or been altered?

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I just brought in an aerial photograph of an area and just drew a section line on it. There it is you can see. Just imagine all of the topographic features that could occur if you were running on this line.

Let's just say that that is north, up that way. So as they're coming along, maybe there's a quarter corner here and then the bank and the other bank and they might call for a road and here's the section corner and they call for this highway.

Looks like there's a creek coming through here and another one through here. There's just all sorts of things that would cross there that would be of use to us. And when we looked at those field notes earlier in this module, you saw that there were all sorts of variety of topographic calls that are potential or that are available to us.

Now let's take a look then at some well-defined topo calls and some poorly defined ones. This is going back to what we just spoke about. Sometimes topo calls, you just can't use them because they are too poorly defined. They are not in a definitive position where you could measure from.

For instance, if you have a water course that can't move, it's in a narrow little canyon or something and it can't move around, well then that's good. Roads of course can be moved but there's usually evidence of the old road. Same with trails, ridges, cliffs. Think about this picture you see here, just this sheer bluff.

That would be good if they called for the top of that or the toe of it, depending on which way you're going. That may be just a really clean position for you to measure from to look for a corner. And the same with structures, although you have to be careful with them sometimes. But those are some of the more well-defined topographic calls. Whereas, the ones that you really can't trust or rely on are where they tied a water course, but it's something that can move easily and probably has moved.

Generic things like "begin descent", did he measure at the very top or where he thought the steepest slope was or in-between? Those aren't very reliable. "Enter swamp" that describes some whole townships in some parts of this country. The edge of the swamp



### Types of topo calls

• Well-defined	• Poorly defined
• Water courses unable to move	• Water courses that can move easily
• Roads	• Begin Descent
• Trails	• Enter swamp
• Ridges	• Leave meadow
• Cliffs	• Enter wooded area
• Structures	

A photograph showing a steep, rocky cliff face under a clear blue sky. The cliff is dark and appears to be made of layered rock. A small red timestamp "MAY 13 2009" is visible in the bottom right corner of the photo.

## EVALUATING CORNER EVIDENCE – PART 7

could be quite different now. “Leave meadow”, “enter wooded area” – these are the kind of things that can change from 150 years ago to now. It’s not that definitive. So you want to be cautious about that.

Now, I brought up a couple things there about the topo calls. Let’s talk about those concerns. And the first one really is “was it accurately measured and/or reported?”

One of the things you want to do is see if the topo calls make sense amongst themselves. Maybe you have other topo calls on lines of the same survey and part of your project where the surveyor, he called for three or four topo calls – how do those measure between themselves? Is there anything major missing? See I’m always suspicious where they cross a major stream or ridge and they don’t even mention it in the topo. Then you kind of wonder if they were forgetting things or not being very faithful about it.

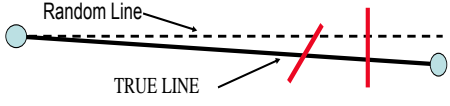
Now when we’re discussing this accurately measured... let’s understand, topo calls generally are not measured to the link. I don’t know that I’ve ever seen that. And you may recall in the sample field notes we looked at earlier, which were older 1850s vintage in Oregon, all the topo calls if I remember right were to the nearest chain. Now, let’s just understand from a rounding point of view, or maybe you can call significant figures, but if they’re just rounding this to the nearest chain then that means that at any one time you could have up to a half a chain either way of error.

So if they say they crossed a ridge, and maybe it’s a real definitive ridge, but they crossed this ridge at 33 chains. Well you’re plus or minus... well I shouldn’t have picked 33 chains, but you’re plus or minus half a chain either way, which happens to be 33 feet. And so that’s good information as far as a search area. It can get you into a corner search area. But you could fluctuate a chain total there, anywhere in there, and still be within what they would have rounded to that number. So you want to be cautious of that.

Now in the Manual and some of the later field notes that I showed you, you may have noticed that the topo calls were measured to

**Concerns with topo calls...**

1. Accurately measured/reported?
  - A. Make sense to themselves?
  - B. Nothing major missing?
2. Taken on the random line?
  - A. Not on the true line, not approved
  - B. Can make adjustments to help search areas



The diagram shows a solid black line labeled 'TRUE LINE' and a dashed black line labeled 'Random Line'. A red diagonal line and a red vertical line are drawn across the lines, representing potential errors or adjustments.

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the nearest 10 links. And that makes it a lot tighter because now you're plus or minus five links, which is just 3.3 feet. So you're a lot closer there.

So now if you've got that definitive ridge or a cliff or something that, a rock outcrop I've seen that, or a rock spire or things like that that are really definitive, haven't moved, haven't done anything, and it's to the nearest 10 links, now you've got a lot tighter control. In other words, you measure from it, assuming that they were faithfully done, and it should put you right in the middle of a great search area, a small search area.

### The Gunter's Chain

Now I'm going to show you a Gunter's chain, which you've probably seen and are familiar with. And we're going to examine this thing here in just a second.

Just to take a look at something to make a point here about the topo calls and the 10 link increments. This is a newer chain, it's about 1900 vintage chain and you'll see why it was a lot easier for them to measure topo calls to the nearest 10 links, as opposed to the nearest chain. So what am I saying here about those precisions? Am I saying that you can't use topo calls for anything when they're measured to the nearest chain? No, not at all. You can use them for good search areas. But if you're ever going to use really close topo calls, and I caution you about this, but sometimes it's the best thing to do.

If you're going to use really close, within a chain or two, topo calls to help set a corner, I'd be really reluctant on the ones that measured and reported to the nearest chain. Whereas, I'd lean more towards using them if they're using the nearest 10 links because that makes it a lot more plausible. Now, as you can see here, I've stretched out the first few links of a Gunter's chain.

And if you're not familiar with it, of course, a chain is 66 feet long and there are 100 links. You can see these individual links. They literally are the links like a chain. But what I wanted to show you is these little tabs that exist at every 10 link increment on the newer chains.

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And so you can see that when they were measuring something, whether it was a topo call or anything else, they didn't have to sit there and count each of the individual links to try to figure out how far they were, they could just quickly look at the chain and see these tabs and realize how far they were. And as you can see here, the first tab has one point that means you're 10 links from the end of the chain.

And the next one has two points, so that means you're 20 links from the chain and it just goes on up three and four and then the fifth one, which is in the middle of the chain, is round and then it counts back down four, three, two, one. So all you had to do is just look roughly at which end of the chain you were on, look at the tab, and you knew where you were.

So it was a method of allowing them to count where they were a little faster and the introduction of that made it a little more precise with the measuring of topo calls. So when you see topo calls to the nearest 10 links, realize you've just a little bit better, not necessarily that it was measured better, but it's reported to a greater accuracy and that's really what we're looking for.

### Random and True Issues with Topo Calls

Now then, continuing our discussion about topo calls, let's realize that we were just discussing accurately measuring and all that. Now we want to ask a very important question and that is, "Was it taken on the random line?"

You remember earlier in this module I showed you a set of handwritten, they were very difficult to read, but I showed you where he openly admitted he took his topo calls on the random line. Now that doesn't mean that they're totally useless, but you need to be aware of some things. First of all, the courts have said that if something isn't on the true line, in other words it's on the random line, then it's not approved. The way the courts look at it is if the surveyor general didn't approve something and all he did was approve the true lines, then you really can't use it because it was never approved by the surveyor general.

Now, down below here on the slide you can see a diagram I've made of the random line. If you remember that discussion from a

## EVALUATING CORNER EVIDENCE – PART 7

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couple courses ago, they measure out here and then they measured the falling. See how far they missed that corner, then computed what the bearing was of the true line and then went back on that direction. And I've thrown in these red lines here for a couple of topographic calls.

Let's understand, if the topo call that you're calling is crossing the line of relatively 90 degrees, then it really doesn't matter if he took it here at the random line or here at the true because your distance along the line is relatively the same. And that's even if this was a big falling, a 50 link falling or something. What's is going to change? Half a link or something? You can do the trig on it if you want to. Where you want to be cautious is when the topo call crosses at something other than 90 degrees. Especially at 45 or, even worse, it could be something real shallow like that.

But if it crosses at a 45 or something else other than 90, just realize that the distance that he measured to it on the random line is different than the distance he measured to it on the true line. And so you've really got to consider that if you're going to use some topo calls for search areas, that sort of thing. Obviously, your worse case scenario is that way down here on a big falling; you crossed a real shallow angle. That's where you really want to pay attention.

However, your best case scenario is that they crossed at 90 anywhere on the line or even a very shallow angle, but way back on the west side of the line because your random line and true line are so close to each other, it probably doesn't make any difference what that distance was. So it's just a common sense thing of taking a look at what they had done and what they reported and be sure that you're using it accordingly. That you're using it in a manner and a precision and an application that fits what was actually done. So remember that.

We have to be very cautious; really what was on that slide, about making sense of themselves, is there nothing major missing. I always look for that kind of stuff. And then look for obvious things where it was taken on the random line. That will help you with topographic calls. I want to ask another question.

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What about far away ties or calls? Something way off, way out there. Well, long ties usually were not measured. They're not reliable. My general rule, this is just me it's not something from the BLM, that if it's more than five chains I really don't trust it anyway. But be careful.

Hear in this example, I got a corner here and let's say this is 30 chains away and over here is this house. Even if the house hasn't moved and all that, you need to realize 30 chains away, that's a long way to go record, distance, and bearing to set a corner. The general rule, although it's changed over the years, but the general rule was that the GLO never took accessories or anything like that more than five chains away.

In fact, for a while, it was limited to three chains. When you get out to longer distances, you've just got to be very cautious.

Also, as you can see here, be cautious with what I would call an **evolving call**. This is even on something that's close, frankly. When I say an evolving call, I mean a call that might have been real in a particular place when they took it, but could change.

Mine shafts – it might have been a little 6 by 6 mine shaft when he took it and shot it and yet it has collapsed in and now it's 20' x 8'. Where did he measure to? Or the mining company has expanded it to a huge shaft and there's no guarantee that it's centered in the same place. Springs – they can wander around on the ground. And even structures – I've seen places where you tie to a cabin or something and it's real obvious with other information that this cabin had to have been moved.

So even smaller structures and things, you need to be cautious about even if they're close. So that's some other ideas there about this stuff. Now you know we're sitting here talking about evidence and talking about what we're doing out there on the ground.

### What about far-away ties or calls?

- Long ties usually not measured or reliable
- Be cautious with "evolving" calls
  - Mine shafts
  - Springs
  - Even structures!!





## EVALUATING CORNER EVIDENCE – PART 7

### Corner Classifications, Again

I want to, for a moment, review something that is actually provided elsewhere in the courses, but ties in really well here. That's from Chapter 5 of the 2009 Manual, the three corner conditions or what I'm going to call that. That's the existent corner, the obliterated corner, and the lost corner.

Let's look at those defined individually. An **existent corner** is one whose position can be identified by verifying the evidence of the monument or its accessories by reference to the description in the field notes or located by an acceptable supplemental survey record, some physical evidence, or testimony.

Let's understand here folks that if the stone, or whatever the actual monument was, is gone, that is not a lost corner. As long as there is one or more of the accessories there, or even testimony from an individual, or these other things I said, supplemental survey record, maybe it's been tied in by some other survey since the original survey, and you can put that position back. That's an existent corner.

The second paragraph here is quite surprising to people, but it says even though its physical evidence may have entirely disappeared, a corner will not be regarded as lost if its position can be recovered through the testimony of one or more witnesses who have a dependable knowledge of the original location.

Now let's understand existent corner, we're talking about original evidence. And so when we're talking about testimony under existent corners, we are talking about an eye witness who saw the original evidence.

### The Three Corner Conditions

- Existent Corners (BLM 5-5)
- Obliterated Corners (BLM 5-9)
- Lost Corners (BLM 5-20)



### Existent Corners

- 5-5. *An existent corner is one whose position can be identified by verifying the evidence of the monument or its accessories, by reference to the description in the field notes, or located by an acceptable supplemental survey record, some physical evidence, or testimony.*
- *Even though its physical evidence may have entirely disappeared, a corner will not be regarded as lost if its position can be recovered through the testimony of one or more witnesses who have a dependable knowledge of the original location.*

## EVALUATING CORNER EVIDENCE – PART 7

That doesn't mean they had to be there in 1840 when it was set, it means that it could have been there last week, a D-9 took it out yesterday and it was there last week. That's good. And a lot of times out in more remote rural areas, we come across people (landowners, Indians whose families have been there on that allotment for a long time) we find people who saw something.

You don't want to lead your witness when you're talking to them, but you just ask them, "Have you ever seen some kind of a marker out there?" "Well, yeah, there was a rock with numbers on it." Well, that sounds pretty good to me. So that's kind of a brief look at existent corners.

Now an obliterated corner is one at whose point there are no remaining traces of the monument or its accessories. So now you don't have any of the original evidence, none. But whose location has been perpetuated. Remember 6-8 of the Manual tells us that a corner is a location or a place, a monument is a physical object marking that place.

The monument is gone, but the location has been perpetuated or the point for which may be recovered beyond reasonable doubt. Now notice I've got that in different colors there because the **IBLA** case **Kendall Stewart** and even another one previous to that changed this standard where we don't use the "beyond reasonable doubt" words, we use "substantial evidence." So it's recovered with substantial evidence. That's the new one and we have other information for you on that, I just wanted to let you know that I'm reading from what the 2009 Manual said.

But the next edition of the Manual will change that based on this court decision. So what we're saying here, or the point for which

### Witness Information

(Don't lead your witness)

- How do they know this is the corner?
- Was there a marker of some kind?
- If so, what was it?
- Were there any markings on it, and what were they?
- When did they first see it?
- When did they last see it?
- What aids them in knowing where it was?
- Date of testimony
- Identity, address, etc

### Obliterated Corners

- 6-17. An obliterated corner is one at whose point there are no remaining traces of the monument or its accessories, but whose location has been perpetuated, or the point for which may be recovered *beyond reasonable doubt* by the acts and testimony of the interested landowners, competent surveyors, other qualified local authorities, or witnesses or by some acceptable record evidence.
- A position that depends upon the use of collateral evidence can be accepted only as duly supported, generally through proper relation to known corners, and agreement with the field notes regarding distances to natural objects, stream crossings, line trees, and off-line tree blazes, etc., or unquestionable testimony.

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may be recovered by or with substantial evidence. Now notice these interesting examples we've got: by the acts and **testimony** of the interested landowners. There's testimony again and their acts.

We had testimony before under existent, but that was somebody who saw the original evidence. How could you be testimony and now under an obliterated corner? Well that maybe that you happen to know, let's say you're a long term rancher or farmer and you remember when your dad pulled that stone out or told you that he pulled the stone out to put the fence corner there.

See it's going to take more substantial evidence for us before we're going to accept that testimony, but you see that's still acceptable testimony for us to at least take the testimony and analyze it in with everything else we're doing. So it said by the acts and testimony of the interested landowners. Well what acts might that be? Building fences, among other things.

Competent surveyors – is that an oxymoron? Let's just ask ourselves that for a minute. Competent surveyors.

Let's just realize that the BLM and the writing of this Manual probably put that adjective in front of that noun just so that we would make sure we realize there's some that aren't. And so just because a surveyor was there and said he did something, if it doesn't fit or make sense, maybe we need to be careful. So but that's the acts and testimony of a competent surveyor.

So some private surveyor may have remonumented it and we've got some record on that. Or other qualified local authorities. Who might that be? County surveyors or witnesses or by some acceptable record evidence.

Interestingly, this next paragraph says and it tells us now here you've got an **obliterated evidence**, you're not going to just jump right on it, you have to test it. And here's general guidance on it.

A position that depends upon the use of collateral evidence, and that's anything outside of the original evidence, can be accepted only as duly supported, generally through proper relation to known corners. That doesn't mean it has to measure perfect, it just needs

## EVALUATING CORNER EVIDENCE – PART 7

to make sense. And how it agrees with the field notes regarding distances to natural objects, stream crossing, there's topo calls.

We're going to use topo calls to decide or help us decide whether this obliterated corner is acceptable. Does it make sense with line trees or even the off line tree blazes, which are described in Chapter 4 of the Manual, or some kind of unquestionable testimony? So the obliterated corner is that in between situation, it's not existent, it's not lost. We've got other evidence there and I will end this module with a little bit of discussion on that.

But, once again for right now, we're just going through the three corner conditions seeing how they differ and perhaps all of them are broader than we might think. At least that's how it strikes me. Well, finally, our third corner condition, 7-2 in the Manual, is the lost corner.

And notice it says a **lost corner** is a point of a survey whose position cannot be determined beyond a reasonable doubt. And once again that's in color there to remind you that it needs to be replaced with substantial evidence. And so let's read it again.

A lost corner is a point of a survey whose position cannot be determined without substantial evidence or with, depending on how you're looking at it, either from traces of the original marks or from acceptable evidence or testimony that bears upon the original position and whose location can be restored only by a reference to one or more interdependent corners.

So there we see 7-2, we don't have any evidence or the evidence we have is not substantial, it doesn't make sense, something's all goofed up. This has happened to me hundreds and hundreds of times, you go and you find somebody's pipe or rebar and you want to accept it, you want to make it work, then you realize it's on the wrong side of the creek and it doesn't make any measurement differences or it doesn't make sense with the distances to any of the other corners.

It's way out of whack, whatever. So you have to decide. We have to realize that all three conditions require you to go to the field, research the record, go to the field and spend some time looking and digging and listening with a metal detector and thinking about

### Lost Corners

- 7-2 A lost corner is a point of a survey whose position cannot be determined, *beyond reasonable doubt*, either from traces of the original marks or from acceptable evidence or testimony that bears upon the original position, and whose location can be restored only by reference to one or more interdependent corners.



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it, and maybe running some numbers backwards or whatever we discussed earlier to try to figure out what did they do.

That's really those corner conditions and that was a good time for us to talk about it because it showed another way that topo calls can come in to play. And all the other evidence, including testimony and that sort of thing.

So now I want to finally talk about reality, **evidence reality**. It's not fair for you and I to demand perfection of those old surveyors or to demand perfection of their evidence or of their measurements or anything like that. It's not fair.

The law never implied or intended that things had to be perfect or even close to perfect. Let's realize, and in spite of all the data that we get in a set of notes, perhaps the deputy surveyor was not measuring the exact dimensions of his stone. I've had people want to reject a marked stone because it's an inch different from the record. You've got to be kidding me. Maybe that deputy surveyor wasn't aware of basic geology. He did know a granite stone from a lime stone. That's ok.

You've got a marked stone there, marked the way and oriented the way it's supposed to be, I'd weight that pretty heavily. Maybe he wasn't an expert on tree species. He took a bearing tree to a Douglas Fir and you look at it and no that's a white fir. Well, ok, if you've got a forestry degree, great. I worked for the forest service for 17 years and all I know about trees is some lose their leaves and some don't. Cut the guy some slack.

Just think about your own human nature, it's also possible that he was not consistent from start to finish. Everything's always great at the beginning of a nice big project. And then as you're losing money and you've run out of whiskey out there in the original survey, up there in section 6 as you're about to finish out the township, things might be going pretty quick and dirty.

They may not be bothering to scribe their trees very well, or they just blow off taking any accessories. Maybe that deputy surveyor was not careful in his note keeping. Maybe he was sloppy at times. I'm sure you've never had that problem, reading your own

### Evidence Reality

- Not fair to demand perfection of these surveyors or their evidence
- Perhaps the Deputy Surveyor was not:
  - Measuring exact stone dimensions
  - Aware of basic geology
  - An expert on tree species
  - Consistent from start to finish
  - Careful in his notes
  - Honest

## EVALUATING CORNER EVIDENCE – PART 7

information. And let's realize that, perhaps, and it's very possible, that deputy surveyor was not honest. Those things happen.

Let's realize that none of that that we just looked at will nullify or negate a survey, the data and evidence that you have to research and then go out and look for. That doesn't change the story. We've got to figure out where that surveyor was. That's what we mean by walking in their footsteps.

Since we've switched gears to reality, let's talk about time and the elements. In reality, time, the weather, earthquakes, whatever. All these things affect us. Here's just a few thoughts.

Soft stones lose their marks. I've seen beautiful stones I know was the GLO survey and I think he marked it, but it's a soft sandstone.

Wood rots. Wood posts, bearing trees, they die or they get cut. People don't recognize survey evidence a lot of times. Especially some of the old stuff. So they inadvertently destroy the evidence not even knowing that's what they did. Moss and lichen can hide the evidence.

You want to be very careful scraping that off of an old stone corner to see if you can read the numbers on it. Because if you use a big old wire brush, you're going to remove the numbers if it's a soft stone. And if only the accessories remain, we use them. The idea here was that we had a variety of types of material, if you will, that was marking the corner point.

A stone or a wood post, a tree, an X on a rock, all of this stuff is kind of different material so that even in varying elements or weather conditions and other issues with the elements, the idea was to maximize the length of time that that evidence was there so that you and I could find it. And I believe most of the time they did a darn good job of it and the evidence is there for us to find. What frustrates me is we're out there with a \$50,000 GPS unit and we don't take the time to dig the hole and look for it. We just go, "Well I don't see, do you see it?" "No I don't see it." Boom, we're done. That doesn't cut it and that reality is where an awful lot of us in our profession are right now.

### Time and the Elements....

- Soft stones lose marks
- Wood rots
- Trees die or get cut
- People inadvertently destroy evidence
- Moss and lichen hide evidence
- Only accessories remain? Use them!
- Be realistic



## **EVALUATING CORNER EVIDENCE – PART 7**

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So reality takes us to the time and the elements as well. But they have an affect on these things and we need to take that into consideration. Well, I'm going to break off this lecture here and pick up the subject of reality and of our conflicting evidence in particular because that's part of reality on the next video lecture. So I will see you over there.

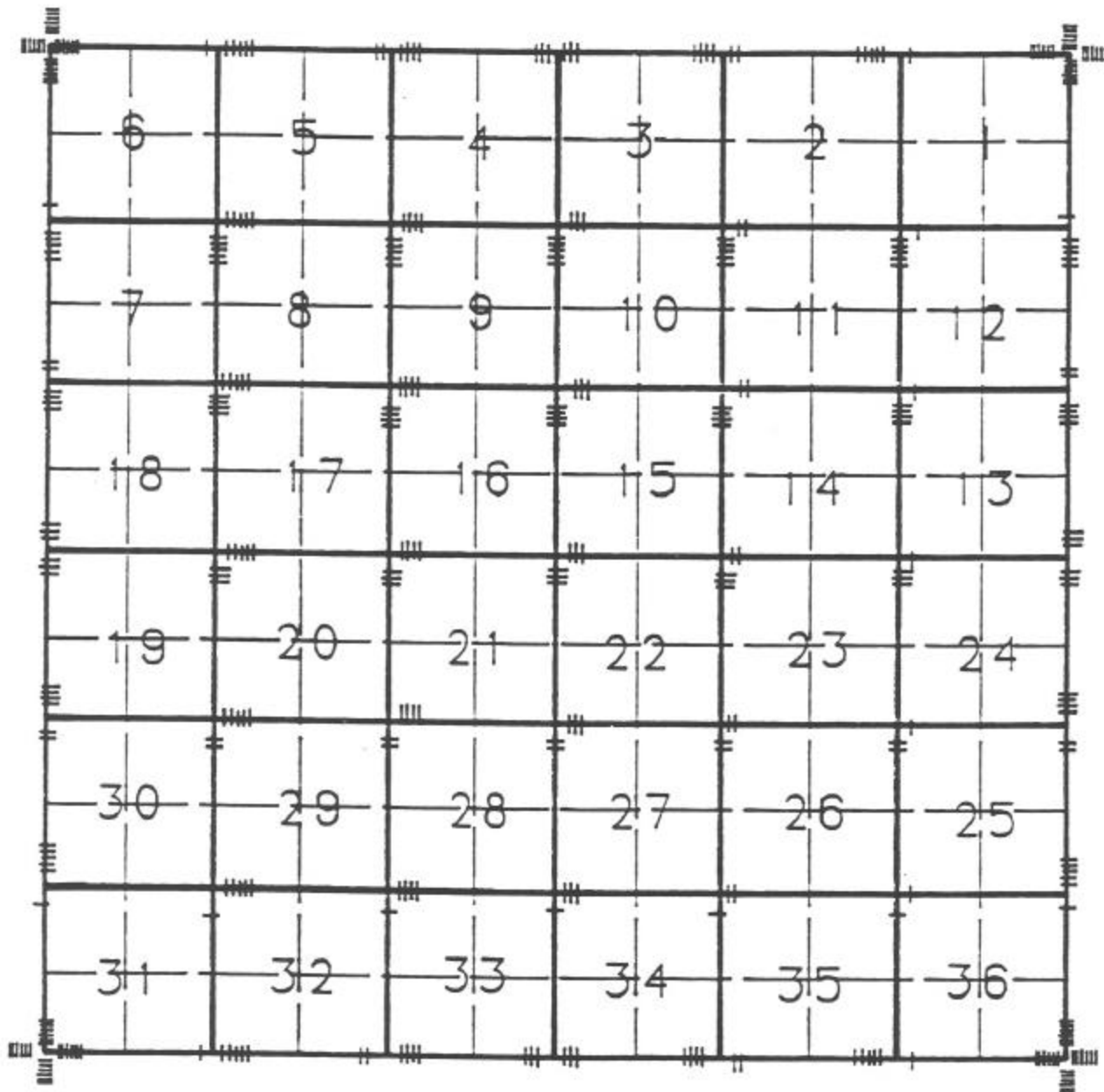


**HANDOUT**



SYSTEM OF MARKING CORNERS  
BY THE G.L.O.

TOWNSHIP 5N RANGE 3W MDM



ON NORTH/SOUTH LINES 1/4S IS ON THE WEST FACE.

ON EAST/WEST LINES 1/4S IS ON THE NORTH FACE.

Range and Township line corners bear grooves on the faces of the stone. Section corners are marked with notches on the edges of the stone.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:









- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments

**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 8 (28 minutes)

ICON LEGEND							
 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ

## EVALUATING CORNER EVIDENCE – PART 8

### Introduction

Welcome back to the final video lecture for this module that I'm doing on corner evidence analysis. And what we did was talk about, you know, the use of some of the evidence in corner search techniques in the previous one and kind of ended it talking about, hey, reality of time and the elements and that maybe things weren't just exactly how they said they would be. That's life. That's the way it is. We have to be realistic about it.

### Confusing Evidence

Now what I want to do is talk about conflicting evidence. And that is you find evidence out on the ground, but it doesn't make sense. What do we do with that? So, let's think about this for a moment. Bottom line, you will not be able to totally resolve everything. Sometimes you're going to have to just make a call of what you're going to do with it. But, I believe we can resolve most evidence confusion.

Usually it lies in the notes, and you can see some examples here of transcribed notes. Let's understand that the original surveyor kept his information in what you and I would call field books. They called it a **field tablet**. And when they were done, that was transcribed out of the field tablet into the handwritten or typed notes that you and I actually have. And those official handwritten or typed notes are the ones that are officially approved and the field tablets almost always were destroyed. So, recognize that no matter what, you are dealing with transcribed notes.

Now, if they were real careful things are ok, but you know you can't read your own handwriting sometimes. I can't. And here the guy is doing this maybe he is in a rush to get it done. It's, you know, it's beer-thirty at the GLO and he's trying to get it done. Well, just recognize that things can happen. And because those transcribed notes, then we end up with possibly reversed numbers. 76 links was 67 links. That's transpositions as well. All right. That's what that is. Reverse numbers I'm thinking more of the bearing, you know, he went North 76 degrees East and he gave us the wrong quadrant really. Or sometimes maybe they measured

#### Keys to conflicting evidence

- We cannot totally resolve all, but we can resolve MOST evidence confusion
- Usually lies in the notes:
  - Transcribed notes
  - Reversed numbers
  - Transpositions
  - Horiz v. Slope
  - Wrong quadrants
- Or it lies in a field discrepancy.....

## EVALUATING CORNER EVIDENCE – PART 8

slope instead of horizontal and, hey, those things happen and we need to track those out, trace that out if things don't make sense. All right.

However, it could also be a field discrepancy something in the field isn't right, you know, or a combination of the field and the notes. That's really what we're talking about here. You know, you don't know right off the bat. Things just don't make sense and I can't answer all those, but what I do want to give you is some of the more common questions that I've been asked over the years or maybe I think a couple of them I've asked myself.

So, let's take a look at the five common questions that I want to address.

### Common Questions about Confusing Evidence

**Question One.** Where is the actual corner point when the stone does not have a cross on it?

Well, understand and this is just a picture out of one of our older training things. It's a standard corner. SC stands for standard corner not section corner. This could be, see, this is a standard corner quarter corner. It's on a standard parallel is what that means. But, generally there is no cross up here on this, ok. The GLO wasn't setting crosses.

The center of the stone is considered your actual point, so that's what you want to use. The GLO didn't set a mark, so what does that mean when you find a mark? That tells me that somebody, since the GLO, put a cross on it so they had a definitive point that they could measure to and from, and you know I don't have a problem with that but just recognize that that's not a big deal when you don't have a cross on it. Hey, it wasn't supposed to have one anyway.

#### Let's look at 5 common questions

**Question 1:** Where is the actual corner point when the stone does not have a "+" on it?

**ANSWER:** The center of the stone is considered the actual point. Most of the time, GLO did not set a mark; thus indicating a previous retracer placed it on the stone



## EVALUATING CORNER EVIDENCE – PART 8

**Question Two.** What if two or more accessories indicate a different position than the monument?

All right, let's say you've got two bearing trees you measure in, and neither one of them comes to the monument. Well, here's probably what that is.

The validity of the monument needs to be established. See if somebody moved, people do this people move survey monuments. But they don't understand about accessories, and of course that's one of the beauties of having accessories, so it's possible, you know, that someone has moved it.

It's also possible the accessories are written wrong in the notes. I've seen places where he wrote the accessories for a quarter corner that was actually for a mile north of there at another quarter corner. They did that sometimes.

But you need to you know you actually you want to figure out is the corner monument has it been disturbed? Has it been moved? Has someone reset it that maybe wasn't authorized to do that? That's what you're looking for. And so you want to consider the other evidence that you have.

Maybe you've got some topal calls coming into that corner which would make it really clear whether the monument is in the correct position or not. I have experienced that where people have moved corners, moved monuments from the corner point, and the accessories didn't come there.

And of course you don't want to jump to the conclusion, that well the monument's right or the trees are right, because there's possibilities here either way. But you want to gather what other evidence you have. Topal calls, fences, take a look at what's going on out there.

Here's one that I did on an old homestead survey up near the Grand Canyon many years ago. They called for memorials underneath the stone; and I was pretty sure these stones had been moved, and I couldn't find the memorials under the stone. I found them where the bearing trees put the corner, which the stone

### Question 2

Question: What if two or more accessories indicate a different position than the monument?

ANSWER: The validity of the monument needs to be established. It is possible the accessories are written wrong in the notes, but this usually indicates your corner mon has been disturbed, moved, or re-set by someone unauthorized to do so.

## EVALUATING CORNER EVIDENCE – PART 8

wasn't there anymore, so I proved that someone had moved those monuments, and I don't know what their purpose was in that.

All I know is that, I figured out what the confusion was by looking at all the evidence that I had. And I've seen other times where you couldn't figure something out; but there were some line trees or a blazed line coming in to it and where the monument is is way the heck out of position from that. And yet, where the bearing trees bring you or whatever accessories they are bring you was right in the line with the blazed lines.

So, you know, you start looking at those kinds of things, and it helps tip the scales which way you're going to go with that.

**Question Three.** What if the monument is gone, but the accessories do not come to the same place?

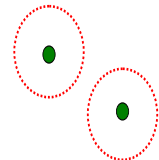
All right. Well, obviously you want to look at your record very closely. You're going to try every combination transpositions, maybe horizontal versus slope on the distance, or wrong quadrants. Let's realize that, you know, the solution to a bearing tree is a distance-distance intersection even though its name is bearing, ok?

So, let's say that these two green dots are the trees that we have, all right, or whatever they are accessories. And the red dots that I have, or red lines the circles around them, are where their distances would be. Now, you notice if the distances never meet, by you know a significant amount, I mean if it's just an inch or two or three, well, I wouldn't worry about it. But, if they never meet then obviously one or more of the distances are wrong. Right? One of those distances is probably bad.

If the bearings, let's say the bearings for this tree goes out this way and the one for this tree goes out that way so they never intersect either well then obviously one if not both of those bearings are bad. Now, again the way to use trees technically is to go distance-distance intersection, and you use the bearings that are given to tell you which intersection, right? Because we discussed this earlier, you have two solutions for a distance-distance intersection, but this tells you which one by using those bearings.

### Question 3

- Question: What if the monument is gone, but the accessories do not come to the same place?
- ANSWER: Examine the record closely, try every combo of transpositions, H v.S, wrong quadrants. If no D-D intersect, then one distance is bad. If no B-B intersect, then a bearing is bad.
- Closest is best?



## EVALUATING CORNER EVIDENCE – PART 8

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But if they never meet either distance or bearing, then its obvious which one it is so you need to play with those numbers. Try to figure out what's going on. I've been in situations where played and transposed the numbers and all that; and still couldn't figure it out. And yet once again I have found other evidence out there including blaze line and topal calls and fences and things that made it very clear, you know, this fence corner is exactly at the bearing and distance you know I'm exactly but at the bearing and distance from that one tree but not the other one. That, you know, if you're in a 6 or one half dozen another that may just tip the scale.

There is a general rule and it actually came out of one of the old versions of Clark on Boundaries and that is the **closest is best**. That's simply saying, well look ok, if you've tried every possibility you don't have any other evidence to help figure it out you've tried all the transpositions all that stuff. You can't figure it out. Then it's kind of a, you know, punt, you know, fourth down and 90 yards to go to first down, you know. It's kind of a bad situation.

That rule, and this isn't something from the Bureau, but that rule was closest is best. Meaning, that well if you've got one bearing tree or accessory of any kind that's, you know, 50 links away, and the other one's 3 chains away; we'll use the one that is 50 links away, because the odds are if there was a mistake as he was writing it down the deputy surveyor would have noticed it on a shorter distance where as a longer distance you wouldn't as likely to catch it.

That's a real loose rule and policy and I'm not saying that's an absolute, but closest is best is one possible solution if you have tried all the other possibilities. Understand, you need to look at all the evidence first. Be surprised. Usually the answer will pop out for you, it may take a little time, but usually the answer will pop out.

## EVALUATING CORNER EVIDENCE – PART 8

**Question Four.** Is it safe to set a corner from a single remaining accessory?

Well, yes it is. The Manual 6-11 said if we found the monument or it's accessories even just one accessory that's an existing corner, but we need to be concerned about a couple of things. First of all, the reason you cannot find the monument or the other accessory could be due to this accessory having an error in a dimension. I'm going to show you an example of that here in a minute.

Recognize that if all you do have is one remaining accessory then you really need to think about your basis of bearings. And if we haven't made it clear in this program yet, your basis of bearings needs to be true meridian. And also some possible indexing which we will discuss in the restoration of lost corners course which is yet to come.

We'll give you a few ideas about indexing. But so you need to think about your basis of bearings and indexing for distance or bearing for that matter in the setting of one of these.

But what happens you know this is a true story I want to show you over here on the elmo of what happened. I went out on the ground; and I'm looking for a quarter corner stone, and I found this bearing tree. Now in the record, it said South 88 degrees, 10 links which is just a little distance here. And I came over here, this has never been disturbed, it's out in sagebrush country up here in northern Arizona never been disturbed. So I'm wondering, well why isn't that stone here? By the way, that's a good question to ask sometimes, you know? Why isn't that stone here? I mean, who would have taken it? There's never been even a fence built out there.

So, you know I was kind of suspicious, and there's another tree, so you know I came out my 10 links then went up to the bearing and distance to the other bearing tree. Well, I couldn't find, in fact I fell on exposed bedrock where there hasn't been a tree since Adam you know, so I get a little nervous here and so I wandered back up into the woods here to the North of this a little bit. And I found two or three blaze trees. And this is a North-South section line, so I knew there isn't even a chance of that being on the random line

### Question 4

Question: Is it safe to set a corner from a single remaining accessory?

ANSWER: Yes, but we should note a couple of concerns:

1. The reason you cannot find the mon or the other acc. could be due to this acc. having an error in a dimension
2. Use of one really requires some thought on Basis of Bearings and possible indexing



## EVALUATING CORNER EVIDENCE – PART 8

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it's going to be on the true line.

So, I found those and I kind of compassed back and it brought me down through here, and I found the stone. And I was just shocked. I found the stone, marked one quarter, so I measured from the stone out to the tree. And guess what? The notes say 10 links. It was 110 links. He just wrote it down wrong. And once I found the stone, then I measured up here and sure enough I did find that tree, it had fallen over, but it was, you know, it was 66 feet from where I had been looking for the other one.

So, now you might say this is Murphy's Law, you know. If you only find one accessory, it's the one with a mistake in it. I don't know if that's totally true I mean Murphy I believe Murphy used to be a surveyor until he got a good job. But just think about this, I almost set a cap here with 1-slash-4 on it. That would be pretty embarrassing to have set it exactly one chain away from a stone that's been sitting there waiting to be found for over a hundred years.

So, that's a true life story of setting a corner from one remaining accessory. It turned out there were two accessories it was just that one was the one that had a mistake. So, what's the bottom line answer there? Wander around out in the woods there for a few minutes.

Take a look, kind of think it through. Ask yourself, when a stone isn't there or whatever the monument is you know, wonder why that's not there? That's a good question to always ask yourself and try to answer it. If it's a busy place a lot of activity's gone on, well you understand why your evidence may have been disturbed or destroyed. But you know there is a lot of situations' where just asking yourself that common sense question helps you realize, that you know something? Something just is a little fishy here. Let's check it out.

## EVALUATING CORNER EVIDENCE – PART 8

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### Stone and Brass Cap

**Question Five.** You've found the original stone and it's in place and you found a General Land Office brass cap, because that was done back when the GLO was first starting to do dependent resurveys, and it's sitting right along side of it. It may just be, you know, a couple feet or, you know, even less than that in some cases. I've seen them 3 or 4 feet away because of the size of the stone. But you know the real question here is which is the corner, the stone or the brass cap? Now you need to, as always, read the record very closely.

Generally here's the rule. If the cap setter, ok in other words the GLO doing the dependent resurvey, if they said, "At the corner point I set this cap." Well, then the general rule is we're going to use the brass cap instead of the stone. Now, sometimes not often, sometimes you can prove that that's not what they did, but what that requires is that the stone and the brass cap are, you know, more than a couple feet apart, generally I'm saying, and you've got an accessory there.

Let's say that you had a bearing object 20 feet away; and so you measure the 20 feet, and it hits on the stone. It doesn't hit on that brass cap. You know there is 2 or 3 feet there. Well that might be an exception to that. But, the general rule that the bureau has used is if they use the term at the corner point then they really clearly they're telling you the intent of that resurvey was that the brass cap at the corner point I set this brass cap stamped this way. They are saying that our intent is that's the corner point. And so, what we're saying is you may be able to occasionally disprove that, but most often not. That's just one of those reality things about confusing evidence.

### Question 5

Question: You have found the original stone in place, and the GLO BC from a dependent resurvey is right alongside it. Which is the corner?

ANSWER: Read the record closely. If the cap setter said it was set "at the corner point", we generally use the cap. Sometimes this can be disproved with the use of close and accurate accessories, but otherwise the cap is the policy in these cases

## EVALUATING CORNER EVIDENCE – PART 8

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### Un-called for Evidence

Now, when we go out on the ground it happens a lot, more and more as time goes by, we don't find the original evidence.

We find something we don't even expect. There's no record of it and this is what the textbooks on surveying call the uncalled for monument. We find a monument that is not in any record. What do we have to do? We have to determine these things. Was it a faithful re-monumentation of the original? How are you going to figure that out? Was it a properly performed proportion to set a lost corner?

You know somebody was there and couldn't find the section corner, quarter corner so they reset it. See we don't have a record. We don't know. Or is this some bogus position set by someone as a best guess? And so now are we going to treat it as a lost corner now? Or what are we going to do?

The uncalled for monument; it really is a complex thing. I mean we could spend 8 hours. I've done seminars for 8 hours on that one subject. But, let me give you a clue of something we already read and looked at and it kind of helps us put two and two together here just a little bit.

When you think about the issues here, and especially how you are going to analyze this evidence that you've found, is it not true that the uncalled for monument could very likely be the same as an obliterated corner 6-17 in the Manual?

I think that's true because see the obliterated corner the original evidence is there, but you found something else and now you have to weigh it based on the general, but I think important terms or tests, that we're given to us in 6-17, especially in that second paragraph.

### The Uncalled-for Monument

- We often find a monument not in any record. We must determine if it was:
  - a faithful re-monumentation of the original
  - a properly performed proportion to set a lost corner
  - A bogus position set by someone as a best guess
  - A lost corner now?

## EVALUATING CORNER EVIDENCE – PART 8

The uncalled for monument truly is the obliterated corner, so in my mind from an analysis point of view those are one and the same. And we should treat it that way. So, read 7-2 again. We read it a little while ago. Read it again as for clues on how to assess it.

The courts will ask all the time, even out in metes and bounds world when you find an uncalled for monument, you don't automatically accept it and you don't automatically reject it.

The courts ask this. Does it meet the **intent of the parties**? And you and I need to think about what the intent was of the public land system, something we covered in the first course that you took here in CFedS. And, does the parties at the time that that was set or they hired a surveyor, say 1950 they hired a surveyor, and he stuck this pipe in. We don't know who he is. We don't know how he did it, but what was the intent of the parties at that time? Was it for an absolute perfect survey?

Well, you couldn't get a perfect survey in 1950. I mean I suppose you could pay enough money and get a first order geodetically produced product out there, you know what I mean?

But, you know what was the standard of care back and what was the standard method and **misclosure** allowance? I mean even today surveys aren't required to be perfect, because believe it or not, they're not. You can't measure perfectly even with our GPS and all of our adjustments.

So, you know we need to be somewhat broad-minded and look back in time and see, well what was the intent of the parties then? I mean here's the public land system we've been talking about where you know everything's measured to the nearest link.

Well I'll tell you what, that means the distances are all to the nearest half link rounded, so I'm not going to argue about an inch. I'm not going to argue about it. It's irrelevant. So, you know somebody says, "Well, I measured out. I'm saying I'm metes and bounds, you know, I measured out here and it's measured to the nearest foot and I missed it three-tenths so I can't accept it." You've got to be kidding me. You miss it by three-tenths and the distances are to the nearest foot. It's right on the money. So, think

### Uncalled-for vs. Obliterated

- Really one in the same in analysis
- Read 7-2 for clues as to how to assess it.
- Courts ask "does it meet the intent of the parties?" What would you say is the intent?
- Beware of doing a pass/fail on it solely by proportioning or math analysis
- More in other sessions on this!!

## EVALUATING CORNER EVIDENCE – PART 8

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about this intent of the parties because I believe that is a really broad question. It's not a well there intent was to have it right there right down to, you know, an ant's eyebrow. No, that was not their intent because that was not the norm and that was not the standard of care at the time. So, don't hold them to that. So, in other words, you need to be careful. And here's my warning. Beware of doing a pass/fail on whatever evidence you found solely by proportioning or by a math analysis.

Let me put it this way. This might surprise you. But you know, if you find a pipe, let's say it's a section corner, you find a pipe and it's supposed to be a wood post or a stone or something, so you haven't found any of the original evidence but you find a pipe.

What a lot of people do is they'll go out and they'll go to the other quarter corners each way and they'll do a double proportion, which you're going to learn later in these courses exactly how to do that by the book. So, they do a double proportion and see how close it comes to that pipe, and then they decide whether they are going to use that pipe.

Now, there's nothing wrong with using it as part of your analysis; but what I'm concerned about, and this is what's happening a lot in our profession today, that is the sole test. It's the litmus test that here's this pipe.

Well, let's do a proportion. If we hit on it, or you know within whatever you want to say a few tenths, then that's it. Well, I've got a real problem with that. First of all, in spite of what the law says, in reality when you proportion in a corner because it's lost that becomes its legal position.

But if you think that's the original position, you don't understand proportioning or the reality of the measurements and the assumptions in proportioning.

So, I'm really careful about that, because frankly, if you find the pipe. You don't know where it came from. You do a proportion on it and you hit on the pipe. All you've proven is that you have the same measurements that guy did, and you proportioned it the same as he did. In other words, the original evidence may still be there.

## EVALUATING CORNER EVIDENCE – PART 8

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This is just somebody's proportion, because they didn't bother to look for it. So, you want to be very cautious about that. So, let's flip that coin over. So, you proportion it and you miss it by 12 feet. Is that a reason to reject it? I don't think so.

Let me give you a test you can do. You find some place where you have found, you know, quite a few section quarter corners in an area, and I'm talking original evidence or what you consider to be original evidence.

And you've got say a section corner that you've found and all four quarter corners out from it. Just use your quarter corners and do a double proportion and see if you hit that section corner. You won't hit it. I mean the odds are, you know, a million to one that you're going to hit it. What does that prove? See, well it proves that the assumptions that proportioning is based on are not realistic. We have to do them. It's part of the equity of how we resolve lost corners. I'm not talking about that.

What I'm talking about is you testing an obliterated corner. Don't let did I hit on it or hit within a few tenths of it be your pass/fail, because in reality I believe doing that actually proves the exact opposite of what most of us think we're proving. So, be aware of that. And you will hear some more in other sessions about that on the uncalled for monument, the obliterated corner situation, and using that as evidence.

## EVALUATING CORNER EVIDENCE – PART 8

Now, I've got the ultimate question here that needs to be asked. How long should you search? And I'm not going to tell you the answer to that. I don't know the answer. But consider these points.

First of all, I think it's just dumb to have set time frames. I've worked for private organizations that had a policy you look for every corner for an hour. Well, you know what? Sometimes you're wasting your time out there, and other times if you had stayed another half hour and really thought about things and put it together, you would have found the evidence. You know those set time frames, you know company policy or whatever, that's foolish.

You are required as the Manual talks about in 7-1 to exhaust the reasonable possibilities. And where do we come up with the reasonable possibilities? Well folks, I think you come up with it by researching the record, and having a realistic approach to this. Also, you need to identify who does the best corner search in your organization, and I'm going to tell you something. It may not be you, registrant.

You may have a technician working for you, who is better at it and more persistent and more common sense and hey, use that person and give them a raise too. Identify who does the best corner search, and it may not be you, registrant, and let's just face it. That's the way it is. Now, I'm ok at corner search but I've had people working for me that are far better than me, and man just turn them loose. That's what they're good at. Let them sniff out that evidence.

### The Keys to Finding Evidence

But frankly folks, the real key to finding evidence; evidence that other surveyors do not find, and I'm not saying we're doing that to you know conquer them and be smarter than them.

I'm saying because you want to do the survey right. The real key to finding evidence that others do not find is simply this.

### How long should you search?

- Age old question, but consider these points:
- Set time frames are foolish
- Exhaust the reasonable possibilities
- Identify who does the best corner search in your organization
- But the real key to finding evidence others do not find is.....

## EVALUATING CORNER EVIDENCE – PART 8

If you have properly researched the record, and if you have a positive attitude about corner search, and if you use your common sense, you will find evidence the average surveyor never will.

And yeah, like this gentleman here smiling, it's always a good feeling, isn't it? It's always a good feeling when you come up with that evidence, and when you discover something. Not just because someone else didn't find it, but because it's your job. It's your job to find that evidence and to put it to use.

The government, the taxpayers of America, you know, whether it was last week or 150 or 200 years ago, invested this incredible amount of money into the infrastructure of a land net from the public land system. And why? And you know they didn't just kick a mark in the dirt. They set a monument. They took bearing trees. They gave us topal calls. They gave us all this other evidence. Why?

So we can find it. It's our job to find it. It's not our job to measure and be the greatest measurers on earth. We should be good measurers, but that's not our job. The reason you and I are licensed in the states we're licensed in is not so that we, you know, draw nice looking plats or anything. It's so that we protect the private property rights of the citizens in boundary survey. And the only way you really protect those rights, whether it's federal or Indian trust land or just private land, wherever you're surveying.

The only way you and I protect those rights, which is why we're licensed, is by researching the record and going out there and finding the evidence. And that's what this corner search course and this module in particular are about.

### How long should you search?

- If you have properly researched the record, and if you have a positive attitude about corner search, and if you use your common sense, you will find evidence the average surveyor never will!!!





## EVALUATING CORNER EVIDENCE – PART 8

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Well, we're at the end of this discussion and I want to make sure that we have met our objectives, and here were the at least the plan that we laid out for us was this.

We wanted to review the need for evidence search. We talked about the common law and case law. Read a couple things. Wanted to review some tools for records research. Little bit about analyzing those records. We discussed uses of field evidence in corner point identification. Talked about some of the ways that it's supposed to work. And then we ended it by talking a little bit about conflicting evidence and different things that, you know, just don't seem to work out, and that seems to happen quite often. Not that the surveys are bad, I'm just saying that's just human nature.

So, I wish you luck on all your corner search. This is the heart and core of what boundary surveying is about, and frankly folks, it's one of the key things, you know, when we sat down and designed the CFedS training, you know, although we have 7 courses you're taking here there's more to come in the Continuing Ed. But you know there were 2 or 3 basic things that we sat down and says you know we've got to address this.

This is where all of us as surveyors fall down, and where we need to help build the CFedS up and help them do better and better at this. And one of those key ones was the records research, and then another one was the corner search. And so we're hitting it pretty hard in these courses and I hope you've been enjoying it.

So, that concludes my discussion on this. There's some more other things you'll be doing here about evidence evaluation, but once again I just wish you luck on all that you do with corner search. It's the best part of surveying. It's what makes it fun, and makes it challenging. So, don't turn your back on it.

Don't say that we can't afford it or can't do it; don't have the time. It's why we exist. Good luck.

### Conclusion...met objectives?

1. Review the need for evidence search
2. Review tools for records research
3. Discuss uses of field evidence in corner point identification
4. Explore keys to resolving conflicting evidence

**Good luck on all your corner search!!!!!!**

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**









- Upon completion of this course, students will be able to:
- Provide legal and historical backgrounds for evidence analysis procedures
  - Discuss proper use of evidence, including confusing evidence situations
  - Practice reading of and interpretation of field notes and plats
  - Present proper markings on monuments

**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 9 (59 minutes)

ICON LEGEND							
 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ

## EVALUATING CORNER EVIDENCE – PART 9

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### Introduction

Hello, my name is Bob Dahl. And I'm here to talk today about local surveys as they relate to the certified federal surveyor program. The certified federal surveyor program, or CFedS, is part of the Secretary of the Interior's fiduciary trust model.

Before I get started in the content of the course, I'd just like to share with you a little bit about my background and who I am and my experience. I learned what a plum bob was in 1969 for the forest service doing p-line surveys, timber access, and the Oregon coast. I surveyed for private surveyors in the forest service for 3 or 4 years as a technician. Then I went to Oregon Institute of Technology. I have a Bachelor's Degree in Surveying. I'm licensed lands surveyors in Oregon, Washington, and California. I'm a certified water rights examiner in Oregon.

My first job with the Bureau of Land Management was in 1977. Until 1997, I did dependent resurveys in Oregon, Washington and California. That was my goal to be as good as dependent resurveyor as I could be. Then I had an opportunity, I applied and was selected to be on the staff of the Chief Cadastral Surveyor, Don Buhler in Washington, DC. And that's where I'm currently am assigned to the BLM's headquarters in Washington, DC.

Among my other duties, one of my duties is I'm currently working on the development of the next edition of the Manual. So, that's a little bit about who I am and where I'll be coming from when we talk about this today.

### Course Objectives

Let's get into the objectives of what we're going to try to accomplish today and we'll see how it goes. All right, local surveys, the objectives, upon completion of this lesson the student should be able to:

1. Describe what a local survey is and know the importance of obtaining records of local surveys.
2. Describe how the status of the lands may influence the evaluation of local surveys.
3. Compare and contrast the authority of the local surveyor with the authority of an official Federal Authority Survey.
4. Recognize the proper jurisdiction and apply the controlling law



**HANDOUT** A copy of Bob Dahl's presentation that he uses during topics 9-12 can be found in the Handout section at the end of this study guide.

## EVALUATING CORNER EVIDENCE – PART 9

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regulation policy when evaluating local surveys.

5. Describe the significance of **United States Code Title 43, Section 772** with relationship to evaluation of local surveys, and
6. Recognize situations when nothing can be done by any BLM surveying procedure to correct a conflict caused by a local survey.

That will be our objectives today. There was lots of terms in there and we will spend time defining what those terms mean because we have to make sure we have an understanding of how we're using the terms and that way we can communicate better.

### “Local Surveys” vs. Federal Authority Surveys

I'm going to talk about an introduction here and then a little bit about definitions of local surveys. The purpose of this presentation is to discuss the role that local surveys play in the establishment and reestablishment of monuments that define the boundaries of areas in which there is a federal interest.

You will hear me today use the term federal interest quite often and I will define it more clearly as this course goes along. General terms, federal interest, any land with a federal interest including Indian land with a trust status, or a restricted fee status, or a tribal fee, or individual Indian fee status. But again, we'll get into that in more detail as we go.

Let's get into the definitions of a **local corner**. Some of these terms I'm going to be talking about is a glossary of BLM surveying and mapping terms. It's a publication that the cadastral survey puts out. It's on the BLM national website, cadastral website, and many of the terms that I'll be using will come out of this and this is a good handy definition book. Let's talk a little bit about local surveys and what I mean by using the term.

In general terms, there's three types of surveys. There's a Federal Authority Survey. There's a State Authority Survey. And there's a No Authority Survey. These are my working definitions, these are not a legal definitions by any means, but in my years of surveying on the public lands, the federal lands, Indian lands, private lands, this is a rule of thumb that has helped me in classifying the type of survey I'm looking at because I need to know what type of survey I'm looking at before I can evaluate it such as a local monument. How much weight should I put on it?

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So, three types of survey, **Federal Authority Survey**, and I'm going to be very specific when I use the term Federal Authority Survey. A Federal Authority Survey must have every one of these ingredients. It must have a request for survey. There must be a special instructions approved by the appropriate official. There must be assignment instructions to a surveyor. There must be field work including monumentation. There must be preparation of field notes and/or plats as appropriate. There will be a review of those field notes and plats. There'll be approval of the final field notes and plats by the appropriate official, and there'll be the official filing in the federal official records. To have a Federal Authority Survey, often times called a cadastral survey or an official survey; you have to have every one of those ingredients. If you're missing any one of those ingredients, you do not have a Federal Authority Survey. I'll put the importance of the significance of a Federal Authority Survey into the discussion as we go on today.

Second type of survey, because I'm looking at a survey on the ground and I'm going to evaluate it, I'm trying to figure out how much weight to put on it. **State Authority Survey**, any survey that meets every state rule, law, regulation at the time it was done. When a survey has all those ingredients, then it rises to the level of a State Authority Survey.

Third type, **No Authority Survey**, that's easy. The type of survey that if it's not a Federal Authority Survey, it's not a State Authority Survey; it's No Authority Survey. So, one of the processes you're going to do when you evaluate local surveys is you're going to want to be able to classify what type of survey you're looking at. Now, just because you know what type of survey you're looking at doesn't mean you know the answer yet. But it's one of the questions in most of the cases you want to find the answer to.

Now I'd like to talk a little bit about perspective and overview as we go along here. Here we go. The function of the local surveyor begins when employed as an expert, to identify lands which have passed into private ownership. Now, I'm starting to build a background for you of how I begin to think about and process local surveys or the evaluation of local surveys. And this is some perspectives and overview that I have found to be helpful.

The function of the local surveyor begins when employed as an expert to identify lands which have passed into private ownership. This may be a

## EVALUATING CORNER EVIDENCE – PART 9

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simple or a most complex problem depending largely upon. One, the condition of the original monuments as affected principally by the lapse of time since the execution of the original survey.

What kind of conditions is the original monumentation? Two, the use and occupancy of the land, yes use and occupancy is relevant to the evaluation of whether to accept or reject a monument or a point that is purportedly representing a property corner. Three, the degree to which local surveys conform or do not conform with law and proper procedures. You want to underline degree. That's not an absolute. Degree, there will always be sliding scales. Four, the presence of any nonofficial survey administered by federal agencies or employees, what I'm getting there is circle nonofficial federal agency.

If it's not a Federal Authority Survey and it's not a State Authority Survey it's a No Authority Survey. If a federal agency did a survey and it did not have all the ingredients of a official survey it's not a Federal Authority Survey. If that same federal agency did not do all that was required for the date and time it was at of meeting the state requirements it's not a State Authority Survey. Then it falls into the category of No Authority Survey but that doesn't mean that it has no weight. Don't connect that dot. It may be very relevant and you may have to give it weight, but just because the surveyor was a federal employee doesn't make it a Federal Authority Survey. That may or may not be relevant to your evaluation.

Perspective and overview, I'm going to talk a little bit about the local surveyor in the federal context. The General Land Office and the BLM has been working behind local surveyors for many, many years. Most of this country was surveyed by local private surveyors often as contractors for the General Land Office. And most of the work today in America is done by private and local surveyors. The BLM itself has 260 cadastral surveyors. Not all of them are out running crews every day. What is there? 50,000 licensed land surveyors in the country today? Of course, not all of them are out there doing boundary surveys. Most of this country has been surveyed by local surveyors, and most surveys today are being done by local surveyors. It is very relevant to the federal authority surveyor and to the private surveyor to understand where in the context of the law, how our legal system has evolved with this set of facts.

Let's explore that a little bit. The work of the local surveyor usually includes the subdivision of the section, the official unit of subdivision into the part shown upon the approved plat. In this capacity, the local

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surveyors performing a function contemplated by law, he can not properly serve his client or the public unless he is familiar with the legal requirements concerning the subdivision of sections.

In the event that the original monuments have become lost or obliterated along the section exterior, because generally the federal government generally just surveyed the township exteriors and the section exteriors in general terms, there's always exceptions. And then they patented the legal subdivisions the subdivision parts of the interior of the subdivisions. The federal laws, Congress never intended for the federal government to actually survey and monument those legal subdivisions, those patent corners, inside the section.

The system always has contemplated that the county or other local surveyors would do that type of surveying. This system allows for that. Now we've got to decide how much weight, how much importance of value, is put upon that activity by our legal system, by the surveyors.

In the event that the original monuments around the section exteriors have become lost or obliterated, the surveyor cannot hope to effectively cover said corners without a full understanding of the record concerning their original establishment. Do you know how original surveys were conducted? If you don't know how they were conducted you're going to have a difficult time determining how to reestablish them, how to look and search for them, and evidence of location after their original establishment. Did somebody come along after the original survey and do some activity?

Nor can the surveyor hope to legally restore the same or legally weight evidence of subsequent location use or occupancy. Properly weight evidence of subsequent location use or occupancy until he or she has mastered not only the principles observed in the execution of the original survey and later local practices, but also the principles upon which the courts having jurisdiction over such matters have based theirs.

## EVALUATING CORNER EVIDENCE – PART 9

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### Following Footsteps

We often hear about what one of the things you want to read in there is they're telling you, you got to follow the footsteps of the original surveyor and I'm going to suggest that you have to follow the footsteps of any subsequent surveyor or person that is perpetuating or purported to perpetuate the original conditions, the original corners, the original lines, following in the footsteps. The other thing that I think there's two sets of footsteps that we as surveyors have to follow in.

One is of course the traditional one that we've been brought up on following the footsteps of the field surveyor. Learning about how he was supposed to do his work. How she did her chaining and got her meridian, that sort of thing.

The second set of footsteps that we have to follow is, who is going to evaluate your survey to determine if you did it right? What's the court of competent jurisdiction for the area where you're surveying? A federal court, a federal judge, a state court, state judge, for example. Where will a federal judge go to? What will they read? What will be their guidance when they determine and look over the shoulder of you and your survey plat in a local corner situation? Where will that judge go for guidance? That's the second set of footsteps that we have to get smart at. We have to understand those, where's the judge going to go so I can actually get out ahead of him so when he comes along to look over my shoulder to evaluate, he's actually walking in my footsteps because I have done the research of the law.

I have gathered the facts and I've brought them together and documented them in a manner that makes sense to an attorney, a landowner, and a surveyor, and ultimately the judge. Two sets of footsteps.

Along that same vein, we need to know what type of monument we're looking at, in general terms. In general terms, there's two types of monuments. And again, this is about evaluating a local monument. Let me just back up a little bit, evaluating a local monument.

For my purpose, when I use the term local monument I mean any monument that was not established during a Federal Authority Survey; three types of surveys, Federal Authority, State Authority, No Authority. So, for this discussion when I use the term local survey, I'm talking about any survey or any corner that was established as not being a part of a



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Federal Authority Survey. Two types, federal monument, original monument, federal monument, or local survey, local monument.

And of course I'm coming to you from the perspective of a federal authority surveyor. When I receive special instructions from my cadastral chief from the state office, and I'm to go out and conduct a survey along and identify the limits of the federal interest, I'm going to keep track of the evidence that I'm gathering. Is it part of the official federal record or not? And then that helps me put the evidence in certain categories and it helps me as we get into weighting that evidence.

What is an **original corner**? Original corner is a monumented position which when recovered contains zero error. Examples may be an original section, one quarter meander and witness corner, line tree and witness point established during an official Federal Authority Survey Monumented corners of a cadastral original survey in place prior to entry being made or patent being issued. A monument in place by the official and approved by the appropriate official prior to the issuance of a entry, paper, or patent is an original corner. It contains zero error and we'll get into why that is.

No matter how far out of its platted position, it is correct. The principle behind this are the stabilization of property corners and lines, and a simplified system intent upon minimize questions and title. I'm going to elaborate on those principles as they go through, but they will come out again, and again, and again. I'm going to get into and we're going to walk through where the concept of original corner, and zero error, and correct where it was established, came from and how that has impacted us today.

What is a **resurvey corner**? There's two types of corners, original corner and a resurvey corner. I want to give one more example of an original corner. Step back into just a private practice residential subdivision. An interior corner, an interior lot corner, a corner to a lot corner, interior of a residential subdivision has the characteristics of an original corner. It was set prior to the approval of the plat. It contains zero error.

The legal description is based on its location, not the plat. When you go out and find it, zero error. Original corner. What is a resurvey corner? A monumented position which can contain error. Examples would be a reestablished corner, center one quarter, and one-sixteenth section corners; a monumented corner of a local or cadastral survey not in place prior to entry being made or patent being issued. Be very clear. You can

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have an official survey that is a resurvey meaning it can contain error. What was the characteristic? It was put in place subsequent to an entry being made or the patent being issued.

A component of the evaluation process of acceptance or rejection of a resurvey corner is how far it is from its platted or theoretical position. It's error based on your, because you're resurveyor number 2 because the first resurveyor is resurveyor number 1, you're resurveyor number 2, is how far it is from its platted or theoretical position. It's error based on resurveyor number 2's numbers. So, when I'm looking and evaluating a corner position or a monument, am I looking at an original corner or a resurvey corner? I need to know that.

The definitions I gave you are not necessarily legal or official. They are working definitions that I have found. There are always exceptions to the rules. But I think if these definitions has helped me simplify this clutter that we have when we get into these complex situations where we have a hundred years of use and occupancies, and surveys, and resurveys. We have to begin to break it down into its component parts and then from that we can come back and hopefully come to a conclusion, often times called our opinion. Enough about original corner and a resurvey corner.

And we did talk about the perspective of given to the local surveyor because the system has always set up that the local surveyor will play a part. But, most of the local surveying that's done in the public land survey system, (PLSS); most of the local survey activity is done in the resurvey manner, isn't it? Because the local surveyors didn't do the original surveys. Local surveys almost exclusively are resurveys; they can contain error. What's the process to evaluate?

Another thing that we need to know when we talked about what kind of corner do we have, is we need to know about the land status. The land status will determine the court a competent jurisdiction, federal court, state court, or federal court applying state law. I need to know which set of rules I should be surveying by, or what is the court a competent jurisdiction? Is my survey going to be drug into a federal court or a state court? Which set of rules will be applied? State rules or federal rules?

And I'll make some distinctions in cases where federal rules are different than state rules that may impact and affect your conclusion in terms of is, that the corner?

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### Land Status

Three types of land statuses, I got to know the land status to know the jurisdiction, three types of land status. One, **public domain land**, two, **acquired lands**, three, **patented lands**. Now let's step back a little bit, again, working definitions for survey and surveyor purposes. These aren't legal definitions for title purposes, for management purposes, for which code of federal regulation is pertinent because it's a wilderness area. No. This is land status that affects the surveyor's corner evaluation.

Public domain land, federal land today and always has been federal land. Federal land today always has been federal land. Which set of rules will be applicable when you have the status of public domain land? Federal rules, federal rules will be applicable. There's always exceptions, but in general rules if you have public domain land, federal land today and always has been federal land, then federal rules will be your guidance.

Acquired lands, federal land today but at some period of time was not federal land. Example, General Land Office went out and did the original survey across the unsurveyed land, laid out the public land survey systems, the rectangular survey typically; followed by monumentation, field notes, plats, official filing, then once it was officially filed, then the federal government says, "Now we can do business on this plat."

Until it's officially filed, the federal government will not do business on the plat. The plat doesn't exist officially. Once it's officially filed then they'll issue patents. The original conveyance document of title from the government to somebody else, could be a state, could be a private individual, could be a tribe.

Acquired lands, it is gone to patent so now there was public domain before it was surveyed, it was federal land. It went to patent. It became not federal land but then some period of time later the federal government acquired a right back, maybe the fee simple right, maybe less than fee. But that whatever right or interest is acquired back is an acquired lands status.

Which set of rules will you use to survey when you have an acquired lands situation, federal or state? Well, this is an easy one. It depends and on a lot of different factual scenarios. It depends if whether federal rules will be applicable or state rules will be applicable. And I'm going to get into helping you sort out that depends.

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For example, unwritten rights, is there in the federal legal system, statute law, case law, is there federal adverse possession? The answer, in general terms, is no. Unwritten rights, adverse possession, acquiescence, practical location, etcetera is state law driven. There is no unwritten right statute in federal law, general terms. There are some exceptions there. So, if you have acquired lands and unwritten rights vested during that period of time that the land was in private hands, then that landowner can only convey what they own and if that title has vested to the person that holds the unwritten rights it wasn't conveyed to the federal government. If you have that factual situation you probably are going to apply state rules.

The third type, I call it patented lands or private lands or nonfederal lands. Pick however you want to describe it. Here's the definition, nonfederal land, today's nonfederal land. Doesn't matter if it was a Mexican rancho which never was federal land or the Southeast quarter of Section 32 that at one time was part of the public domain and was federal land, but the definition is today nonfederal land. There is no federal interest. Which set of rules will govern the survey when you're in a nonfederal land status? State rules, general terms. And you're also going to find that some state rules will lead you right back to the federal rules. That's where you need to know the state laws in your state where you're going to practice. Three types of land statuses, to know the land status tells me which set of rules to go to. Enough on land status.

Let's continue talking about a perspective and overview to sort of set the stage for when we are found in the situation of evaluating local corners, local evidence. The Bureau of Land Management assumes no control or direction over the acts of county and other local surveyors in the manners of subdivisions of sections, evaluation of evidence of corner locations, and reestablishment of lost corners of original survey where the lands have passed into private ownership. Nor will the bureau issue instructions in such cases. It follows the general rule that disputes arising from uncertain or erroneous location of monumented or protracted corners originally established by the United States are to be settled by the proper local authorities or by amicable adjustment.

The Bureau desires that the rules controlling the acts of its own cadastral surveying service and of surveyors under the latter's direction be considered by all other surveyors as merely advisory and explanatory of the principles which should prevail in performing such duties; neither does the Bureau assume control or direction over the acts of federal

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employees performing or administering surveys not authorized by the designated chief cadastral surveyor. That gives you a little context of the BLM's perspective and the courts perspective of local surveys and the relationship to the BLM. The BLM assumes no control or direction and at the same time they're not held by them.

### Proper Historical Perspective

Let's continue to look at perspectives and overview. "I believe it is only when we have ignored the objects of the past, and have disregarded the consequence of the future in our preoccupation with the present; that we have failed as a profession." That's by Ken Witt, former chief cadastral surveyor in Colorado. I think that sums it up. We need to know our past, we need to know the rules and regulations and the history that led up to the situation you're looking at, and we need to understand the consequence of our behavior for the future.

The future consequences and sometimes we get so involved with and preoccupied with the present, and if we fall into that trap we are going to fail as a profession. We will not have served the public. Society is changing, laws are changing, surveying is changing. The public land survey system is evolving and maturing. Here's another and those are that summary there.

Another perspective, what I label foundation principles of the public land survey system. When I use the term public land survey system that's the whole system all together, of which a part of the public land survey system is the rectangular surveys, the mineral surveys, the Indian allotment surveys, etcetera. But all of those are under the umbrella of the public land survey system and I'll talk a little bit more specific about the specific rules and regulations governing the development and administration of the public land survey system, and how they affect and impact private practicing land surveyors, and how they affect and impact land owners in Indian country.

One of the foundation principles of the public land survey system, stabilization of property corners and a simplified system intent upon minimize questions of title. Are the foundation principles of the law of boundaries on the public land survey system? Stabilization of property corners and a simplified system of minimize questions of title.

It is far better for the settler to know where his or her boundary is then

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exactly how much land they owned. For example, I'm going to skip ahead. **43 USC 751 and 752**, the Acts of 1796 and 1805 basically said the original monument will control. What's the principle behind the original monument will control statute? Stabilization, this didn't start with the United States this is 3 to 4 thousand years worth of history, evolution of ownership of land, the dividing and partializing of land.

Stabilization of property corners trumps adjustments and measuring over precision. That's what has been one of the foundation principles of the public land survey system, and that will influence the law that we read that will govern surveying practice when we get in an area that has complexity of multiple uses, multiple boundaries, multiple use and occupancy and improvements with seemingly with quote "sloppy surveys". What's going to control? How do you weight the evidence? That's what we're going to get into.

I found after many years of surveying this seems to me to be a statement of what I do, the job of the resurveyor and of resurveying. This is what I think I do, again this is my experience what I have found. One, to determine the true and correct location of the legal subdivision boundary then determine the property boundary. What I mean by that is true and correct location of the legal subdivision. Where is the statutory location of the Southeast quarter, the Southeast quarter by the technical and rigid application of the rules governing the location of legal subdivision of a section? I want to know where that falls. But that may not necessarily be where the property boundary is.

Two, the surveying profession is not a static profession. It changes over time as laws, standards of practice, and technology change. What was applicable in the 1930's in the timberland country of Western Oregon and the type of due care that was acceptable in 1930 in that type of country, probably is not acceptable today. What has changed? The value of the land has changed. The use and occupancy probably has changed. The technology has changed. Surveying is not static even boundary surveying.

Boundary surveying is one of the slowest evolving parts of the legal profession, but it is evolving and we need to keep track of what has been historically accepted, what changes has begun that society has expect and accepted a different expectations, and to think a little bit about what the future's going to hold. That is what you're going to pull together when you're evaluating acceptance and rejection of local evidence. That's what I think the job of the resurveyor is.

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The role of the resurveyor, when you find yourself in these positions these are the kinds of things that I begin to think about. You know, you got to ask the right questions if you don't ask the right questions you're probably not going to get the right answer. The big part of dependent resurveying is have I considered everything? Have I asked all the right questions? This is just an attempt I use to stimulate me to make sure I thought about all the possibilities, and then weed them out to come back to my opinion.

I call it the most reliable method of predicting. We talked about two sets of footsteps. Who am I trying to predict here? Not the past, not the surveyor that came before me but that judge is going to come ahead of me, or is out ahead of me and he's going to tell me if I did it right or wrong. So, I need to get into his footsteps ahead of time and I'm going to predict what laws, what rules, how he's going to weight the evidence. Evaluate your Supreme Court's and/or Interior Board of Land Appeals' and Interior Board of Indian Appeals' decisions.

Under similar circumstances in the past, gauge the strength of current legal policy trends in your own and other jurisdictions, and then predict a result from that information. I find after many years of surveying this seems to me to be a statement of what I do. To be able to recognize the potential of the situation, point out the possibilities, and render an opinion.

I mention evaluate your Supreme Court's decisions. If it's a federal court, what are the federal courts doing? If it's state jurisdiction, state jurisdiction, they are the court of last resort for the land status that you're dealing in. **Interior Board of Land Appeals**, are a board that sit in Washington, DC, they are made up of federal employees most of them attorneys. They are administrative law judges, administrative judges.

Whenever a citizen disagrees with a decision by a, and let's just stay inside the BLM; let's just stay inside of cadastral surveys, Federal Authority Survey. Whenever a citizen disagrees with the opinion, my opinion as a Federal Authority Surveyor of where the federal interest is, they can protest that and they can appeal the decision. The appeal process will take that jurisdiction out of the chief cadastral surveyor's hands because the chief cadastral surveyor has rendered his or her opinion based on the approved plat and field notes. He'll remove the jurisdiction from the chief cadastral surveyor, and put it in the hands of these administrative law judges. These administrative law judges speak for the Secretary of the Interior.

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### Resurveyor Guides

I'm jumping ahead a little bit. I'm going to get back to the role of the Secretary of the Interior, and his or her position in this scheme of who is the Secretary of the Interior and why should I care when I'm evaluating this local corner out here in who knows where.

The Interior Board of Land Appeals speak for the Secretary of the Interior and, in fact, when their decision is rendered it sets BLM policy. So, I need to know how the IBLA evaluates local evidence, because that gives me a method to predict the future.

On that last bottom line on that overhead, to be able to recognize the potential of the situation, point out the possibilities, and render an opinion. I got to ask the right questions. I got to know what questions to ask.

The resurveyor's guides to begin to get there here's what I've developed with resurveyor's guide, and when I say I, I don't mean just me. I've stood on the shoulders of many, many fine surveyors and I always have this saying, I steal from the best. So, a lot of this isn't original. I've culminated it from different sources and resources, and this seems to help me when I'm evaluating evidence in local conditions, the resurveyor's guides.

I need to know what the original surveyor was supposed to do. How can I evaluate and search for corners, reestablish corners unless I know what the original surveyor was supposed to do? Where do I find out what the original surveyor was supposed to do? Special instructions, or survey orders, contract or group file, federal statute laws, federal regulations, survey manuals, information from subject matter books, classroom education, self-study, on the ground training, what Manual was he surveying under? What Manual was the original surveyor surveying under? That's the book I want to study and read so I can understand what the original surveyor was supposed to do. What restoration pamphlet was in effect? What federal laws were in effect?

The second resurveyor's rules, what the original surveyor said he did. It may be, believe it or not, different than what he was supposed to do. How do I find out what the original surveyor said he or she did? I get that information in plats, field notes, contract or group file, correspondence associated with the survey job. Clearly in the federal system, the original surveyor tells us what he or she did in the field notes, the plats, but there's



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three parts of an official survey. Field notes, plats, and sometimes those can be combined onto a plat only but they'll be a plat with field notes, and the third part of an official survey is the contract or group file.

The contract or group file. For every contract let by the General Land Office and every survey group let by the General Land Office and the BLM, there is a file. They're numbered sequentially by state. For example, Contract 37 Colorado, Group Number 987 California. On the face of that field notes and the plats, they will tell you what contract and/or group is involved. So, if you just read the field notes and plats you're getting a part of what the original surveyor said he did, but until you get the contract and group file you don't have the whole story.

Now, you don't need the contract and group file for every resurvey job, but if you start to get into areas where it's dicey and it doesn't make sense. Why did the original surveyor do it this way when the Manual says do it this way? Then the group file may be an explanation. The group file will contain correspondence from the field surveyor to the office. Sometimes there will be an explanation. Oh, that's why they did it that way.

Second thing, what the original surveyor said he did. And third, and probably most important, what the original surveyor actually did. And believe it or not, believe it or not, it may not be what they are supposed to do and it may not be what they said they did. In fact, we have rich evidence that occasionally some of the original surveyors didn't do what they were supposed to. Believe it or not, I know it's hard to believe.

Where do we find out information about what the original surveyor actually did? I don't know, it seems to me you got to go on the ground. The conditions on the ground, you got to walk the ground, you got to feel it, touch it, smell it before you can begin to get a sense of what the original surveyor actually did. Why is it significant about what the original surveyor actually did? Back to the principle of the original monument will control. If you don't get in the footsteps of the original surveyor, you're going to be embarrassed.

The other places you can find out information about what the original surveyor actually did is occasionally there'll be **field tablets**. Don't confuse field tablets with field notes. Field notes are the official record, a narrative, a descriptive narrative, a textual of what the surveying process was. Those are typically prepared by the contract surveyor or the cadastral

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surveyor, reviewed and approved by the chief cadastral surveyor or the surveyor general, depending on what era you're in. That's field notes.

Field tablets, general terms, are what the surveyor had in his hand when she was in the field and was making notations on them. And from the field tablets when they got back to the office, either that winter or that night, then they would transcribe the abbreviations and the shorthand into field note format.

Field tablets, occasionally original surveyors field tablets are still around, because under the contract system the field tablets were under the ownership of the contract surveyor. So, you can still find those in some places. A lot of county surveyors got contracts with the surveyor general, with the General Land Office, and you go into the county surveyor's office or a county that has done a good job of keeping old county surveyor's records often times there'll be a field tablet of when the county surveyor had the original contract. And you'll get a little more insight into what the original surveyor actually did. Is that part of the official record? No, it's not. But that's a whole different issue about knowing what is a part of the official record and what is not a part of the official record and then that gets into admissibility of evidence. We won't go there just yet, but ok.

Another place you can find out about what the original surveyor actually did is an examination of surveys. In general terms, in general terms an examination of surveys mean under the contract system, which basically went from 1796 to 1910, the federal government hired private surveyors and paid them by the mile to do the original surveys of the public land survey system, contract system.

Subsequent to 1910, they went to the direct system where they did it with federal employees that were hired and paid by salary to conduct the surveys. There's overlap, there's never clean but that from 1910 to present is called the direct system. That's all it is. It just helps us gives us handles on how to call the different eras. And there's always overlap.

Under the **contract era**, believe it or not, even the commissioner of the General Land Office back in Washington, DC was getting the word that some of the contractors weren't doing what they're supposed to, and believe it or not some of the surveyor generals were in cahoots with them. So, one of the remedies, administrative remedies, to stop that is to send out another surveyor, pay them by per diem so they weren't under the

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pressure of by mile, to examine or audit a portion of the field work.

This was done after the contract surveyor was done and had turned in his draft field notes and sketch plat to the surveyor general, and after the surveyor general had prepared the plat and prepared the field notes and sent it back to the commissioner of the General Land Office in Washington. Then the commissioner General Land Office would send another surveyor out to examine it. That's one of the reasons why they went from the contract system to the direct system.

Can you see the bureaucracy they built up? There were complaints about timeliness. So, the examiner of surveys went out and examined and audit and then his or her, I don't know of any woman examiner of surveys, his return was sent back to Washington, DC and based on that examination the contract surveyor either got paid or was told to go back in the field and correct something. Those examinations of surveys are a set of field notes detailed. He ran, he might have went out in the middle of the section, found a corner and he retraced a mile East. And he describes each section corner and quarter corner as he goes. He gives you some more topography.

Do you suppose evidence of a second surveyor out there within a year of the original survey might be useful data to find the original evidence? I think so in some cases. So, that's another way of finding what the original surveyor actually did.

Conditions on the ground, field tablets, examinations of survey, read the ground, the condition, the integrity, and the history of the original survey is how you tell that.

I'm going to do a few more of these and then this we'll be the end of this segment of this lecture. This is a good one. You all know what that means, right? Stare at a decision till you're not quite know what to do and don't move at all. And you know what that one means. Do little or nothing at all. Relax. That's probably not a direct interpretation. But these are principles at law that are pertinent to a resurveyor because a resurveyor is dealing with property law is dealing with title boundaries. We're going to get back to these two principles here in a little bit.

We talked about the resurveyor guides. How about the resurveyor-resurveyor guide? The resurveyor guide is based on the premise that there was an original survey then there was a resurveyor, resurveyor number 1.

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Well how often are you in the situation where you're resurveyor number 1? You're the first surveyor after the original survey. It's almost a luxury to be that resurveyor number 1. How often are you resurveyor number 2 or 3 or 8? What I mean by that is there was an original survey then there was subsequent survey activity. I call them "resurveys" quotes. And there may be numerous one of these, so you're just get in the line, pull a number, you're resurveying of a resurvey.

Let's look at some guides. What resurveyor number 1 was supposed to do. Where do you find out what resurveyor number 1 was supposed to do? Special instructions, or survey order, contract or group file, federal statute law, federal regulations, survey manual, information for subject matter books, classroom education, self-study, on the ground training, what Manual was he surveying under? What restoration pamphlet was relevant? What resurveyor number 1 said he did. You can find that information in plats, field notes, contract or group file, correspondence associated with a survey job. What resurveyor number 1 actually did. This sounds familiar doesn't it? Conditions on the ground, field tablets, examination of survey, read the ground, the condition, integrity, and history of the original survey and of the resurvey.

The resurveyor guides and the resurveyor of the resurveyor guides are very similar. Very many of the same principles are involved and you have to understand both of them. You have to understand what rules the person ahead of you was supposed to do, what he said he did, and what he actually did. Here's that stare at the decision. This is a resurveyor-resurveyor guide. This is a common-law principle. That's Latin for, to adhere to precedence and not to unsettle things which are established, to adhere to precedence and not to unsettle things which are established.

The law does not care for or take notice of very small or trifling matters. It's been my experience that these two principles, common-law principles, are applicable and relevant to the public land survey system as it has been developed. And I hope in these lectures that I can bring that home in a way that proves it to you as best as I am capable of doing it. I believe these general principles are the presumption behind and are the principles behind the letter of the law.

And then just, finally, final thing for this lecture portion, real property boundary location. It's cool. It is a strange and satisfying fact that having none of the privileges of a lawyer, judge, or court, the property boundary can and does exert the influence of all. A common-law principle, you all

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can read that, you all know what that means, right? No one is bound to do what is impossible, and I know it seems like sometimes when you're out there on the ground you have been dealt an impossible situation. There is so much confusion and bad information, bad surveys, bad locations, people not acting in good faith, and sometimes you feel like you are bound to do what is impossible. And I think sometimes I feel that way, too.

And I hope the next lecture part will help you to begin to pick apart and undo the knot so we can begin to see what pieces are relevant to where we're going. So, thank you.



**HANDOUT**

02/06/06

***LOCAL SURVEYS***  
***Applying the BLM***  
***Manual of Surveying Instructions***

*Presented by*  
*Bob Dahl*  
*Cadastral Surveyor*  
*Washington Office*  
*Bureau of Land Management*

*Presented for:*  
*Certified Federal Surveyors Training Program*

*Bureau of Land Management*  
*National Training Center*  
*Phoenix, AZ*  
*February 27 & 28, 2006*

## LESSON PLAN OUTLINE

**INSTRUCTOR:** Bob Dahl, RLS, CWRE

**COURSE:** BLM National Training Center

**UNIT:** Certified Federal Surveyors Training Program

**LESSON:** Local Surveys – Applying the BLM Manual of Surveying Instructions

**SUGGESTED TIME:** 4 hours

**TRAINING AIDS NEEDED:** 2009 BLM Survey Manual, 1974 Restoration Supplement, BLM Glossary of Surveying Terms, U.S. Code Title 43.

**ADVANCED READING:** 2009 Manual, Chapter 1: Sections 1, 3, 7, 20 & Chapter 3: Section 131 thru 136, 94 & Chapter 6: Section 18, 20 thru 26, 35, 36, 37, 39, 40 thru 43, 45, 46, 48, 49 & Chapter 5: Section 10, 18, 19, 21, 23, 24, 25, 28, 29, 36, 56 Chapter 7: Section 50.

**OBJECTIVES:** Upon completion of this lesson the student should be able to:

1. Describe what a local survey is and know the importance of obtaining records of local surveys.
2. Describe how the "status of lands" may influence the evaluation of local surveys.
3. Compare and contrast the authority of the local surveyor with the authority of an official (federal authority) survey.
4. Recognize the proper jurisdiction and apply the controlling law/regulation/policy when evaluating local surveys.
5. Describe the significance of United States Code Title 43 Section 772 with relationship to evaluation of local surveys.
6. Recognize situations when nothing can be done by any BLM surveying procedure to correct a conflict caused by a local survey.



## I. Introduction

The purpose of this presentation is to discuss the role that local surveys play in the establishment and reestablishment of monuments that define the boundaries of areas in which there is a federal interest.

## II. Local Survey

BLM Glossary  
Page 30

### A. Definition of a local corner

### B. Our working definition of a local survey will be: Any survey NOT containing ALL of the following;

43 USC 2 & 1201  
BLM Glossary  
(Cadastral Survey  
approval/authority)  
Page 9

1. Conducted under authority granted by Congress to the Secretary of the Interior, delegated to the Director, Bureau of Land Management, and further delegated to the Chief Cadastral Surveyor.

(Official Cadastral  
Survey)  
Page 38

2. Initiating documents:

a. Written request with proper justification,

b. Special Instructions,

c. Assignment Instructions.

2009 Manual  
Sec. 5-15

3. Actual survey in the field and the preparation of the official record of the field work, field notes, and plat.

4. Official approval of the field notes and acceptance of plat of survey by the Cadastral Chief of Cadastral Survey, public notification, and plat filing.

## III. Criteria to be considered when evaluating a local monument.

Key Points  
& Aid Cues

Outline

- A. Original monument - Any monument which contains zero error - when found in its original position.
- B. Resurvey monument - Any monument which can contain error.
- C. What legal authority was the "local surveyor" surveying under? The land status will determine the court of competent jurisdiction; federal court, state court or a federal court applying state law.

BLM Glossary  
Page 43

1. Public Domain Land.

Page 2

2. Acquired Land.

Page 40

3. Patented Land.

43 USC 766  
2009 Manual  
Sec. 5-15

- D. Authority of local surveyor in the establishment and reestablishment of monuments that define the boundaries of areas in which there is a federal interest.

2009 Manual  
Secs.3-131 thru 3-136

- E. The weight given the expert testimony of local surveyors. The weight given testimony of individuals. What local records may affect the position of a corner of public lands.

2009 Manual  
Sec. 6-41 thru 6-43  
and 7-50

- F. Was the local corner placed with due regard to the location of the original survey, or agreement is so close as to constitute the best available evidence?

43 USC '772

- G. Would acceptance of the local survey impair the bona fide rights of the entered or patented land?

Key Points  
& Aid Cues

Outline

2009 Manual  
Sec. 6-45, 6-46,  
6-48, and 6-49

- H. Was the local reestablishment of a lost corner, done by proper methods, without gross error and officially recorded? If a monument of unknown origin, what is its age and degree to which it has been relied upon by all affected landowners?

2009 Manual  
Secs. 6-12  
to 6-18

- I. Was the local survey executed with such care as might be expected by the exercise of ordinary intelligence under existing conditions?

IV. After acceptance or rejection of local survey.

2009 Manual  
Sec. 5-12

- A. Obligation to affected landowners and local surveyors.  
B. Procedure to follow within the field notes and on the plat.

LOCAL SURVEYS – OFFICIAL SURVEYS  
AND  
BONA FIDE RIGHTS - AS TO LOCATION

V. Perspective when conducting a resurvey on the Public Land Survey System (PLSS).

A. Federal Survey and Federal Resurvey Authority.

1. Federal Statute Law - United States Code, Title 43 Public Lands, Chapter 18 Survey of Public Lands, Section 2 (43 U.S.C. § 2). The Secretary of the Interior (SOI) or such officer as he may designate shall perform all executive duties appertaining to the surveying and sale of the public lands.
2. 43 USC § 1201. The Secretary of the Interior is authorized to enforce and carry into execution, by appropriate regulations, every part of the Public Lands statutes.
3. 43 USC ' 772. The Secretary of the Interior may in his discretion cause to be made such resurveys or retracements of the surveys of public lands as he may deem to be essential to properly mark the boundaries of the public lands remaining undisposed of.
4. 43 USC § 773. The Secretary of the Interior, upon application of the owners of three-fourths of the privately owned lands or by any court of competent jurisdiction, accompanied by a deposit, may make a resurvey or retracement of any or all of the lines of said township and to set permanent corners and monuments, of private or federal lands, in accordance with the laws and regulations governing surveys and resurveys of public lands.
5. 25 USC § 176. Whenever it becomes necessary to survey any Indian or other reservations, or any lands, the same shall be surveyed under the direction and control of the Bureau of Land Management (BLM), and as nearly as may be in conformity to the rules and regulations under which other public lands are surveyed.

B. Manual of Surveying Instructions.

1. *Manual of Instructions for the Survey of the Public Lands of the United States* 2009 edition, Chapter 1, Section 3 and 7 (Manual 1-3 and 1-7). The Manual of Surveying Instructions describes how official (aka federal authority and aka cadastral) surveys identifying the boundaries of the federal interest lands are made in conformance to statutory law and its judicial interpretations.
  2. Manual 1-15 It is within the province of the Director of the BLM to determine what lands have a federal interest, what lands have been surveyed, what are to be surveyed, what have been disposed of, what remains to be disposed of, and what are reserved.
  3. Manual 6-3, 6-4. Where federal lands, including Indian lands, are involved, the final authority to approve or disapprove the official resurvey procedures rests with the SOI, acting through the Director, BLM.
  4. The failure to conform the resurvey to the requirements of the Manual of Surveying Instructions constitutes gross error. *Peter Paul Groth*, 99 IBLA 104, 119 (1987).
  5. BLM Administrative Manual 1203 – Delegation of Authority: The Washington Office Chief Cadastral Surveyor will provide the final interpretation of the Manual of Surveying Instructions.
- C. Limit of Jurisdiction of the Federal Authority Surveyor.
1. Manual 5-19. Limit of Authority of Surveyor and the Quiet Title Act.
    - a) In the resurvey process, the surveyor will determine whether or not lands embraced within a claim as occupied have been correctly related in *position* to the original survey.
    - b) The surveyor will interpret the evidence with respect to its effect upon the manner in which the resurvey shall be executed to protect valid rights acquired under the original survey.
    - c) It comes within the realm of the surveying process to identify and mark out on the ground the various legal subdivisions of the federal interest, including Indian, lands.

- d) In the resurvey process the surveyor will determine whether or not lands embraced within a claim as occupied have been correctly related in position to the original survey.
- e) Where the demonstration of this question may be one involving more or less uncertainty, as is often the case, the surveyor will examine and weight the evidence relating strictly to the surveying problem involved.
- f) The surveyor has no authority to enter into an agreement concerning the exchange of one subdivision for another or to bind the Bureau of Land Management in this particular.
- g) It is a judicial question beyond the function of the surveyor to determine whether or not specified lands have been duly earned under a certain entry.
- h) The Quiet Title Act is the basis to adjudicate a disputed title to real property in which the United States claims an interest. Challenges to the United States' title to real property, of which location maybe one consideration, are authorized by the Quiet Title Act; 86 Stat. 1176; 100 Stat. 3351; 28 U.S.C. 2409a, as amended.
- i) It is within the realm of the survey approval and filing process, to provide a record upon which the court of competent jurisdiction in a Quiet Title suit may clearly and accurately determine the boundaries of the United States claim of interest and may, with security, accept the boundaries thus determined insofar as they represent the true location of the federal interest.

2. Manual 5-21. Authority to Decide Boundary Disputes.

- a) The surveyor employed by the BLM, or surveying by BLM assigned special instructions, is to bear in mind that his work is professional, legal and equity in character.
- b) The surveyor is not a referee as to the justice or injustice of a situation.

- c) The surveyor can only act upon the equities or inequities that may appear to be involved if they fall within the SOI's duties to do justice appertaining to the survey and location of federal interest, including Indian, lands under the law.
- d) The surveyor is not clothed with authority to decide boundary disputes, but may be regarded as one qualified by training and experience to testify in such cases.
- e) The statutory authority to decide boundary disputes is vested in the court, by virtue of its legal capacity to weight the evidence, the facts being shown by the testimony of the witnesses, including the surveyors, and by exhibit of the official records.
- f) The court is qualified to weight the evidence, to exercise discretion as to the preponderance of the evidence, its acceptability, and by court decree to enforce its opinion.
- g) The court will determine the facts as to the sufficiency of the control, or extent of the monuments and other marks of the official survey that can be relied upon, and how that control is to be applied.
- h) The court's opinion will be binding in fixing the boundaries of privately-owned property, and would seldom be contested as to acceptability in fixing the boundaries between the federal lands and the alienated lands excepting as a preponderance of the evidence showing may be made that the monuments of the official survey had been disregarded, overlooked, or otherwise ignored in the testimony in the case, the court itself possessing no authority to set aside the official survey.

D. BLM Relation to Local Surveys.

1. Manual 3-76. Subdivision of Section by Local Survey.

- a) The work of the local surveyor usually includes the subdivision of the section into the parts shown upon the approved plat.

- b) In this capacity the local surveyor is performing a function contemplated by law.
- c) He cannot properly serve his client or the public unless he is familiar with the legal requirements concerning the subdivision of sections.
- d) In the event that the original monuments have become lost or obliterated, the surveyor cannot hope to effectively recover said corners without a full understanding of the record concerning their original establishment, and evidence of location after their original establishment.
- e) Nor can the surveyor hope to legally restore the same or legally weigh evidence of subsequent location, use or occupancy, until he has mastered not only the principles observed in the execution of the original survey, and subsequent local practices, but also the principles upon which the courts and administrative boards having jurisdiction over such matters have based their rulings.
- f) BLM assumes no control or direction over the acts of:
  - i. Local and county surveyors in the matter of subdivision of sections, evaluation of evidence of corner locations and reestablishment of lost corners of original surveys where the lands have passed into private ownership.
  - ii. Neither does the Bureau assume control or direction over the acts of Federal employees performing or administering surveys not authorized by the designated Chief Cadastral Surveyor.
  - iii. These are all local surveys.

2. Manual 6-3 & 6-4. Authority of the Secretary of the Interior.

- a) The SOI and the BLM cannot assume jurisdiction over or responsibility for the acts or results of surveys made by:
  - i. County, local, or private surveyors, or
  - ii. By surveyors or engineers who may be employed by other branches of the Federal Government and not conducted under the direction and control of the chief cadastral surveyor.



- b) On the other hand in the subdivision of sections and in the location of private property lines generally, it falls to the county or other local surveyor to mark the official corners, and where a required corner is missing the local surveyor will be called upon to recover the point.
- c) Thus it will be seen that county and other local surveyors as well as cadastral surveyors of the BLM are constantly called upon to search for existing evidence of original monuments, and in this work the surveyors will be guided by the same general methods.
- d) Should the search for a monument or corner location result in failure, the appropriate restorative surveying process to be observed by either surveyor will be based upon the same rules as hereinafter outlined.
- e) This presentation draws little distinction between the duties of the two classes of surveyors.

3. Manual 6-7. Private Disputes.

- a) Where a corner marks the boundary between, or in any manner controls the location of the lines that form the boundary of privately-owned property, dissatisfaction on the part of or dispute between private landowners may be brought before the local court of competent jurisdiction.
- b) The SOI will not be bound by a court decision if the United States is not a party to a suit affecting federal lands when evidence of the official survey was disregarded or there was some other departure from good surveying practice

4. State Statutes, Administrative Regulations and Case Law.

- a) Most states within the PLSS have incorporated the rules set forth in the Manual of Surveying Instructions, the manual supplements and the circulars governing the weight given original evidence of corner locations, procedures to reestablish lost General Land Office (GLO) or BLM corners, and procedures for subdivision of sections.
- b) Many states have explicitly incorporated the Manual.

- c) One example of incorporation by state statute: Oregon Revised Statutes, ORS § 209.200. In the resurvey of lands surveyed under the authority of the United States, the county surveyor or a registered professional land surveyor shall observe the following rules: (1) Section and quarter-section corners, and all other corners established and approved by the GLO or its successors, must stand as the legal and permanent corners. (2) They must be reestablished at the identical spot where the original corner was located by the government survey, when this can be determined. (3) When this cannot be done, then such corners must be reestablished with reference to the current United States Manual of Surveying Instructions.
- d) One example of incorporation by state regulation: Washington Administrative Code, WAC § 332-130-030. The following requirements apply when a land boundary survey is performed. The reestablishment of lost GLO or BLM corners and the subdividing of sections shall be done according to applicable GLO or BLM plats and field notes and in compliance with the rules as set forth in the appropriate GLO or BLM Manual of Surveying Instructions, manual supplements and circulars. Methods used for such corner reestablishment or section subdivision shall be described on the survey map produced. Monuments placed shall be magnetically locatable and include a cap stamped with the appropriate corner designation as defined in the current BLM Manual of Surveying Instructions.
- e) One example of incorporation by state common law: “The parties are in agreement that this publication [BLM Survey Manual] together with a BLM circular entitled “Restoration of Lost or Obliterated Corners and Subdivisions of Sections, A Guide for Surveyors” (1974), are the applicable guides for a legally valid survey in Idaho. In order to be admissible in court, a survey must conform to the BLM manual.” *State of Idaho v. Barnett*, 776 P.2d 438 (Idaho 1989).

E. Role of Local Surveyor when Conducting a Resurvey on the PLSS.

1. Manual 3-76. The function of the local surveyor.

- a) Begins when employed as an expert to identify lands which have passed into private ownership.
  - b) The expert testimony by local surveyors who may have identified the original monument prior to its destruction, who protected bona fide rights as to location by a reasonable application of the good faith rule, or have marked the corners of legal subdivisions by law using the accuracy standards for the time and local followed by use and occupancy is by far the most reliable.
2. Manual 6-18. Acts and Testimony of Original Corner Recovery.
    - a) A corner is not considered as lost if its position can be recovered satisfactorily by means of the reliable testimony and acts of witnesses having knowledge of the precise location of the original monument.
    - b) The expert testimony of surveyors who may have identified the original monument prior to its destruction and recorded new accessories or connections is by far the most reliable, though landowners are often able to furnish valuable testimony.
  3. 43 USC § 766. All subdividing of surveyed lands into lots less than one hundred and sixty acres may be done by county and local surveyors at the expense of claimants. This law was a section of the 1870 Mining Act. It was directed towards placer mining claim patent applications described by legal subdivisions.

## VI. Inviolate Rules – Resurveys.

### A. Constitution of the United States.

1. Congress shall have the power to regulate commerce with the Indian tribes. Article I, sec. 8, clause 3; Commerce Clause.
2. Congress shall have the power to dispose of and make all needful rules and regulations respecting the territory belonging to the United States. Article IV, sec. 3, clause 3.

3. The Constitution and the laws of the United States shall be the supreme law of the land. Article VI, clause 2; Supremacy Clause.
4. No person shall be deprived of property without due process of law; nor shall private property be taken for public use without just compensation. 5<sup>th</sup> Amendment.

B. Federal Statute Law.

1. 43 USC § 752.
    - a) The position of existent and obliterated corners returned by the SOI are unchangeable and are the corner locations of the described entered or patented lands.
    - b) The boundary lines, actually run and marked in the surveys returned by the SOI, are the proper boundary lines of the sections, or subdivisions, for which they were intended, and the length of such lines as returned, are the true length thereof.
    - c) Each section or subdivision of section, returned by the SOI, is considered as containing the exact quantity expressed; and the half sections and quarter sections, the contents whereof shall not have been thus returned, shall be held and considered as containing the one-half or the one-fourth part, respectively, of the returned contents of the section of which they may make part.
  2. 43 USC §§ 752 and 753.
    - a) The corners of half and quarter sections, not marked by the SOI, shall be placed as nearly as possible equidistant from those two corners which stand on the same line.
    - b) The boundary lines which have not been actually run and marked shall be ascertained, by running straight lines from the established corners to the opposite corresponding corners.
- D. 43 USC § 772. "Provided, that no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant,

entryman, or owner of lands affected by such resurvey or retracement.”

1. Basic Principles – Resurveys.
  1. Manual 5-10. Dependent Resurvey Defined.
    - a) A dependent resurvey is a retracement and reestablishment of the lines of the original survey in their true original positions according to the best available evidence of the positions of the original corners.
    - b) In legal contemplation and in fact, the lands contained in a certain section of the original survey and the lands contained in the corresponding section of the dependent resurvey are identical.
  2. Manual 5-28. Bona Fide Rights and Dependent and Independent Resurveys.
    - a) The basic principles of protecting bona fide rights in the resurvey is to show the original position of alienated lands included in the original description.
    - b) The resurvey is an official demonstration by the BLM according to the best available evidence of the former survey.
  3. Manual 5-29. Corner of Original Survey Unchangeable.
    - a) The position of a tract of land, described by legal subdivisions, is absolutely fixed by the original corners and other evidences of the original survey and not by occupation or improvements unrelated to the original survey, or by the lines of a resurvey which do not follow the original.
    - b) Under fundamental law the corners of the original survey are unchangeable.
    - c) Even if the original survey was poorly executed, it still controls the boundaries of land alienated under it.
  4. Manual 5-36. Resurvey Restores Original Conditions.

- a) A resurvey is an official re-marking of the original lines upon a plan whereby existing evidence of the original survey is given primary control over the position of the lines to be reestablished.
- b) The resurvey is designed to restore the original conditions of the official survey according to the record.
- c) A resurvey is based:
  - i. Upon identified original corners and other acceptable points of control;
  - ii. Upon the restoration of lost corners by proportionate measurement in harmony with the record of the original survey, and
  - iii. Upon some flexibility allowable in applying the rules of proportionate measurement in order to protect the bona fide rights of claimants, particularly in those cases where no objection is found to adopting a point acceptably located under the rule of good faith, and only slightly at variance with the theoretical position.

5. Manual 6-3 & 6-4. Authority of the SOI.

1. The principles of a resurvey of an original survey, apply to the resurvey of an official resurvey, and generally to the resurvey of a local survey.
2. Prior official resurveys, and local surveys subsequent to the original survey, must be considered in context of the objects of each government resurvey. The objects of a government resurvey are:
  - a) The adequate protection of the existing rights acquired under an original survey and faithfully located by subsequent survey in the matter of location on the earth's surface; and
  - b) The proper marking of the boundaries of the remaining federal interest lands.

VII. The General Rules – Resurveys. These General Rules are accepted as a means of protecting bona fide rights in the execution of resurveys.

- A. The General Rules are applicable in cases:
1. Showing fairly concordant relation between conditions on the ground and the record of the original survey.
  2. The original survey was made faithfully, and is supported by a reasonably good field-note record.
- B. Existent, Obliterated and Lost Corners. The Manual provides guidance on acceptability of physical evidence and testimony.
1. Manual 6-11. *An existent corner is one whose original location can be identified by substantial evidence of the monument or its accessories, by reference to the description in the field notes, or located by an acceptable supplemental survey record, some physical evidence, or reliable testimony.*

{Comments for existent corner definition: The term “original” is inserted in response to Stoddard Jacobsen and Robert C. Downer v. Bureau of Land Management (On Reconsideration), 103 IBLA 83, 89 Dissent (1988) keying on the location of the corner versus the position of the monument.

Corner location – space marked by a feature. Corner position – space occupied by an object; a subset of corner location; more specific than corner location

The term “substantial evidence” is inserted in response to Stoddard Jacobsen and Robert C. Downer v. Bureau of Land Management (On Reconsideration), 103 IBLA 83, 85 (1988) citing the proper standard to consider a corner existent.

See *Howard Vagneur*, 159 IBLA 272, 282 (June 27, 2003); *Robert W. Delzell, Betty Simpson*, 158 IBLA 238, 245 (January 29, 2003); *Mark Einsele et al.*, 147 IBLA 1, 11 (December 10, 1998); *Stoddard Jacobsen and Robert C. Downer v. Bureau of Land Management (On Reconsideration)*, 103 IBLA 83, 86 (July 8, 1988).}

- a) A corner is existent (or found) if such conclusion is supported by substantial evidence.
  - i. The substantial evidence standard of proof is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.
  - ii. Substantial evidence is defined by the courts as more than a scintilla of evidence but less than a preponderance of the evidence.
- b) Even though its physical evidence may have entirely disappeared, a

corner will not be regarded as lost if its location can be recovered through the reliable testimony of one or more witnesses who have dependable knowledge of the original location.

- c) Manual 6-12. The need for corroborative evidence is in direct proportion to the uncertainty of any original feature in doubt or dispute.
  - d) Manual 6-13. Discrepancies in the Record.
    - 1) Allowance for ordinary discrepancies should be made in considering the evidence of a monument and its accessories.
    - 2) No set rules can be laid down as to what is sufficient evidence.
    - 3) Much must be left to the skill, fidelity, and good judgment of the surveyor, bearing in mind the relation of one monument to another and the relation of all to the recorded natural objects and items of topography.
    - 4) The records of official surveys fall under the doctrine of **presumption** of regularity; that is the official record is correct unless it is established by a preponderance of the evidence otherwise.
  - e) Manual 6-16. The retracements will indicate the probable position and will show what discrepancies are to be expected. Any supplemental survey record or testimony should then be considered in the light of the facts thus developed.
2. Manual 6-17. *An obliterated corner is one at whose original position there are no remaining traces of the monument or its accessories, but whose location has been perpetuated or the point for which may be recovered by substantial evidence by the acts or reliable testimony of the interested landowners, competent surveyors, other qualified local authorities or witnesses, or, by some acceptable record evidence.*

{ Comments for obliterated corner definition - In *Kendal Stewart*, 132 IBLA 190, 195 (1995) the Board found: “[2] In



[Jacobsen & Downer v. BLM \(On Reconsideration\), 103 IBLA 83, 86 \(1988\)](#), aff'd, Downer v. Hodel, No. 88-513-HDM (D. Nev. Oct. 12, 1989), we found that "the proper standard for BLM to apply in the course of a resurvey is to consider a corner existent (or found) if such a conclusion is supported by substantial evidence." Where physical evidence has entirely disappeared, a corner will not be regarded as lost if its position can be recovered through the testimony of one or more witnesses who have a dependable knowledge of the original location (Manual, 6-11 at 130). However, there must be substantial evidence of a perpetuated corner location in order to consider the corner obliterated, rather than lost. [James O. Steambarge, 116 IBLA 185, 191 \(1990\)](#)."

In *James O. Steambarge*, 116 IBLA 185, 191 (1990) the Board found: "For either an existent corner or an obliterated corner there must be some evidence of the original corner location. Consistent with our decision in [Stoddard Jacobsen, supra](#), are no remaining traces of the monument or its accessories we hold that a corner is shown to be obliterated if there is substantial evidence of a perpetuated corner location. Accord [Boise Cascade Corp., 115 IBLA 327 \(1990\)](#)."

In Robert W. Delzell, Betty Simpson, 158 IBLA 238 (2003) the Board found: HN3. "Surveys of Public Lands: Dependent Resurveys. An obliterated corner is one at which there, but whose location has been perpetuated or may be recovered beyond reasonable doubt based on the acts or testimony of the interested landowners, competent surveyors, or other qualified local authorities, or witnesses, or by some acceptable record evidence. Where evidence does not support that a particular location is an obliterated corner, the Board will not reverse BLM's determination that the corner is lost." }

- a) A position or location that depends upon the use of collateral evidence can be accepted only as duly supported, generally through proper relation to known corners, and agreement with the field notes regarding distances to natural objects, stream crossings, line trees, and off-line tree blazes, etc., or reliable testimony.
  - b) Manual 6-18. The greatest care is necessary in order to establish the bona fide character of the record intervening after the destruction of an original monument.
  - c) Full inquiry may bring to light various records relating to the original corners and memoranda of private markings, and the surveyor should make use of all such sources of information.
  - f) The matter of boundary disputes should be carefully looked into insofar as adverse claimants may base their contentions upon evidence of the original survey. If such disputes have resulted in a boundary suit, the record testimony and the court's decision should be carefully examined for information which may shed light upon the position of an original monument.
3. Manual 7-2. *A lost corner is one whose original location cannot be determined, by substantial evidence, either from traces of the original marks*

*or from acceptable evidence, or reliable testimony that bears upon the original position, and whose location can be restored only by reference to one or more interdependent corners.*

{Comments for lost corner definition: See *Howard Vagneur*, 159 IBLA 272, 278 (June 27, 2003); see section 360, 1947 Manual.

Implicit with this paragraph is the test – If the corner is lost does the restorative method and the position of the restored corner protect bona fide rights as to location. }

- a) Thus, if substantial evidence of the location of the original corner exists that position will be employed in preference to the rule that would be applied to a lost corner.
  - b) In addition once a corner is considered lost, it is the surveyor's responsibility to assure that the restoration method and the restored position comply with the statutory protection of bona fide rights requirements delineated in 43 USC 772.
  - c) Manual 7-1 thru 7-7. Rules for lost corners. Proportionate measurement harmonizes surveying practice with legal and equitable considerations.
  - d) Manual 7-8, 7-16, 7-53, 7-54, 7-56. Proportionate measurement methods.
  - g) Manual 7-5 The manifest errors in measurement are removed from the general average difference and placed where the blunder was made prior to proportionate measurement.
  - h) Manual 7-57 Index correction.
- C. Manual 5-46. Identification of Exceptions to The General Rules.
- 1. It is an axiom among experienced 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 reasonably good field-note record.
  - 2. That is the condition for which the basic principles have been outlined, and for which The General Rules have been laid down.

3. The General Rules cannot be elaborated to reconstruct a grossly erroneous survey or a survey having fictitious field notes.

VIII. Exceptions to The General Rules. The Manual provides Exceptions to The General Rules where rigid application of them (The General Rules) would be contrary to the legal requirement to protect bona fide rights.

A. Good Faith Location Rule Exception:

1. Manual 6-35. The Good Faith Location Rule.

- a) It may be held generally that the entryman has located his lands by The Good Faith Location Rule if; such care was used in determining his boundaries as might be expected by the exercise of ordinary intelligence under existing conditions.
- b) Good faith location (referred to herein as a satisfactory location of a claim or of a local point), is when it is evident that the interpretation of the record of the original survey as related to the nearest corners existing at the time the lands were located is indicative of - such a degree of care and diligence upon the part of the entryman, or that of his surveyor, in the ascertainment of his boundaries as might be expected for the time and place.
- c) The relationship of the lands to the nearest corners existing at the time the lands were located is often defined by his fencing, culture, or other improvements.
- d) Lack of good faith is not necessarily chargeable if the entryman has not located himself according to a rigid application of the rules laid down for the restoration of lost corners where:
  - i. Complicated conditions involve a double set of corners, both of which may be regarded as authentic;
  - ii. There are no existing corners in one or more directions for an excessive distance;
  - iii. Existing marks are improperly related to an extraordinary degree; or
  - iv. All evidences of the original survey which have been adopted by the entryman as a basis for his location have been lost

before the resurvey is undertaken.

2. Manual 6-35. Good Faith Location and Subdivision of Section.
  - a) Lack of good faith is not necessarily chargeable if the entryman has not located himself according to a rigid application of the rules laid down for the subdivision of sections.
  - b) The law presupposes the fact taught by experience that measurements of lands can not be repeated with absolute precision, and that the work of no two surveyors will exactly agree.
  - c) A decision to set aside previously located legal subdivisions must be supported by evidence that go beyond mere demonstration of technical error, such as in measurement, or nonconformity to strict adherence to reestablishment of corners or subdivision of section rules.
  - d) Were the Federal government obliged to open to readjudication the question as to the location of a particular tract or tracts over technical differences, controversies would be constantly arising and resurveys and readjudication would be interminable.
  - e) It is unlawful for the Federal authority surveyor to impair bona fide rights as to location.
  - f) For proof of impairment of bona fide rights as to location when marking legal subdivisions, as defined by 43 USC 772, there must be positive evidence of an intentional departure from the legal principles governing:
    - i. Recovery of original corner location;
    - ii. Reestablishment and establishment of corner location, or
    - iii. Subdivision of a section.
  - g) The legal intent of stability of boundaries and title to lands will have been met when the evidences of an extant subdivision of section survey indicates:
    - i. The use of correct exterior controlling monuments;
    - ii. Conformance to legal subdivision principles;

- iii. Reasonable accuracy standards for the time and place;
- iv. Sufficiency for identification of the legal subdivisions, and
- v. Without fraud or gross error.

{Comments on above: When discussing the Act of February 11, 1805; RS 2396, now codified as 43 USC 752, the Department said; "These provisions recognize the fact taught by experience that measurements of lands can not be performed with precise accuracy, and that the work of no two surveyors would exactly agree. While the alleged shortage in the instant case presents a discrepancy of unusual proportion, yet the very purpose of the declarations of law above mentioned, was to obviate inquiry and contention in respect to survey inaccuracies.

The evidences of the Government survey in this case appear to be sufficient for identification of the boundaries, and therefore, no proper case for resurvey is presented. In denying the former application for resurvey the Department stated in part as follows:

It is to be presumed that Congress, in enacting the law above quoted, and this Department in its interpretation, had in mind that the stability of surveys and the title to lands described by reference thereto should be unassailable by parties finding differences in measurements and areas from those returned. In the present case, the evidences of survey are now found with sufficient certainty, to permit the grantees of these lands to determine the boundaries thereof and to deduce therefrom the deficiency in area. It must therefore be held that these evidences were at least as good when entries were made as they are now and there can be no proper complaint that the grantees were not chargeable with the knowledge that the deficiencies then existed.

Recognition of right to resurvey and repayment in this case would establish a most far-reaching precedent because it would afford a basis for a similar claim by anyone who had purchased Government land and found the area short of that indicated by the plat of survey. And yet the Government would have no sort of basis for claim to further payment in those cases of patented lands where there was an excess of acreage over that paid for in harmony with the survey returns at the time of disposal. Doubtless the wise purpose of the law was to forstall and preclude vexatious disputes as to the actual area of lands disposed of according to the survey returns. If such transactions were not made final, controversies would be constantly arising concerning patented lands and resurveys and readjudications would be interminable." *Scott K. Snively (on Petition)*, 49 LD 583 (May 5, 1923).

When discussing the Act of February 11, 1805; RS 2396, now codified as 43 USC 752, the Department said; "In denying the State's claim for credit on account of the alleged deficiency, the Commissioner held that Section 2396, Revised Statutes, contemplated that in the disposal of public lands the official surveys are to govern, and that each section or sectional subdivision, the contents whereof have been returned by the surveyor general shall be held as containing the exact quantity expressed in the return that the design and purpose of this statute was to establish beyond dispute all lines and monuments of accepted official surveys; to obviate inquiry and contention with respect to survey inaccuracies and place a statutory bar against attempts to alter the same or to set up complaints of deficiency of areas as a basis for resurvey. The Commissioner observed that aside from this statutory limitation, administrative reasons precluded the granting of the State's claim; that the stability of surveys and the title to lands described by reference thereto should be unassailable by parties finding differences in measurements and areas from those returned, and if transactions involving the disposition of public lands were not made final, and the Government was obliged to open up for readjudication the question as to the area of a particular tract or tracts granted and patented, controversies would be constantly arising and resurveys and readjudications would be interminable. The appeal presented by the State, while in effect admitting the correctness of the Commissioner's conclusion as a matter of law, insists that this statutory rule can not be universally applied; that the circumstances and conditions here are exceptional; that the surveys are grossly inaccurate; that the State is equitably entitled to an adjustment and should be allowed to take the full quantity of land granted by Congress.

The Department has carefully considered the matter and finds no reason to differ with the conclusion reached by the Commissioner. The provisions of section 2396, Revised Statutes, recognize the fact taught by experience that measurements of lands can not be performed with precise accuracy and that the work of no two surveyors would exactly agree. True, the alleged shortage in this case looms to a figure of impressive proportions, but the very purpose of the declaration of law above referred to was to obviate inquiry and contention in regard to survey inaccuracies. Moreover, the recognition of right to an adjustment in this instance would establish a far-reaching precedent and afford a basis for similar claims by other States, and a multitude of claims by individuals who had purchased Government lands and found the area short of that expressed on the plat of survey. Also, the rule works both ways, in favor of and against the United States. Manifestly the Government has no basis for claim to readjustment of boundaries or for further payment, or for restitution in those cases of certified or patented lands where there was an excess of acreage over that paid for or taken in harmony with the survey returns at the time of disposal. And if the returns are conclusive against the Government they must also be conclusive in its favor. Take the present case; the Government can not inquire into the contents of the school sections and subdivisions assigned by the State as basis for its indemnity selections, but accepts them as containing the exact quantity expressed in the return. Examination might disclose a deficiency in the area of these sections; frequently, no doubt, exchanges have been made of unequal areas, the discrepancy being in favor of the State, but the law gives these transactions repose and they can not be disturbed. Otherwise endless confusion would ensue." *State of New Mexico*, 51 LD 409 (March 18, 1926). Repose – cessation of activity.

"In some instances, bona fide rights are protected only where BLM departs from a rigid application of resurveying principles to ensure that long-accepted survey lines are not disturbed, so that property boundaries are stabilized and title is secured." "After a long period of time, when acquired rights and boundary recognition have become established, boundaries should become fixed." "Lines long accepted should not be lightly cast aside for greater conformity to recent surveys." *Longview Fibre Co.*, 135 IBLA 170, 183 (April 10, 1996). }

- h. The law gives these activities repose.
- 3. Manual 6-36. The extent of recognition given by neighboring claimants to a local point used for the control of the location of claims very often carries with it the necessity for a consideration of its influence in the matter of the acceptability of such locations under the good faith location rule.
  - 4. Manual 6-37. The surveyor should neither rigidly apply the rules for restoration of lost corners nor the rules for the subdivision of sections (the preface to 43 USC 752 states the principles upon which the boundaries are to be ascertained pertains to section exterior lines and section interior lines) without regard to effect on location of improvements nor accept the position of improvements without question regardless of their relation or irrelation to existing evidence of the original survey and the description contained in the entry.
    - a) Between these extremes will be found the basis for the determination of whether improved lands have been located in good faith or not.

- b) No definite specific set of rules can be laid down in advance.
  - c) The solution to the problem must be found on the ground by the surveyor.
  - d) It is upon his judgment primarily that the responsibility to resolve the question of good faith as to location.
5. 1919, 1930 & 1947 Manuals, section 414: The question to be determined is whether the position of the lands claimed, occupied or improved is to be adopted under the good faith location rule, and whether, if so adopted, the claims thus acceptably located can all be properly protected by the dependent plan of resurvey.
- a) If the position of any claim fails to qualify under the good faith location rule it may be disregarded as to the effect produced thereon by the plan of dependent resurvey.
  - b) On the other hand, if these claims are held to be acceptably located under the same rule, they may be adopted as the determining factor in the position of the missing corner or corners, or establishment of new corners.
  - c) If the claims are in such concordant relation to each other and to the identified evidences of the original survey as to receive full protection by the dependent plan of resurvey, the surveyor may proceed with full assurance of the adequacy of the plan.
  - d) Otherwise, the question of other processes analogous to those of a special case claim, independent resurvey, correction of conveyance document (43 U.S.C. § 1746), or Quiet Title Act must be considered.
6. If two or more claims are acceptably located, but are discordantly related to each other to a considerable degree (by virtue of irregularities in the original survey), it will be clear that the general plan of dependent resurvey may not afford protection to such claims. In this case, as before stated, some other process must be adopted to protect the acceptably located claims.

7. Manual 6-39. In cases involving extensive obliteration at the date of entry or selection, the entryman or his successors in interest should understand that the boundaries of the claim will probably be subject to adjustment in the event of a resurvey.
  - a) A general control applied to the boundaries of groups of claims must be favored as far as possible in the interest of justice, equal fairness to all and of simplicity of resurvey.
  - b) A claim cannot generally be regarded as having been located in good faith if no attempts have been made to relate it in some manner to the original survey.
  
8. Manual 6-40. Cases will arise where lands have been occupied in good faith, but whose boundaries as occupied disagree with the position of the legal subdivision called for in the description.
  - a) The good faith location rule cannot apply.
  - b) These are not a survey issue but a title issue and relief must be sought through the process of amended entry, correction of conveyance document, quiet title action, tentative approval relinquishment, or interim conveyance reconveyance or relinquishment. to cover the legal subdivisions actually earned, rather than through an alteration of the position of established lines.
  - c) This is a process of adjudication rather than one of resurvey.
  - d) A case of this character should be regarded as erroneous location in precisely the same manner as if the question of resurvey were not involved.
  - e) These are matters for adjudication by the BLM after the resurvey has been accepted and the plats filed in the land office.
  
- B. *Satisfactory Local Conditions Exception:* Manual 6-41. It is not intended to disturb satisfactory local conditions with respect to roads, fences and other evidence of use or occupancy.



1. The surveyor has no authority to change a property right that has been acquired legally, nor can he accept the location of roads, fences and other locations of use or occupancy as evidence prima facie of the original survey.
  - a) Something is needed in support of these locations.
  - b) This will come from whatever intervening record there may be, the testimony of individuals who may be acquainted with the facts, and the coupling of these things to the original survey.
2. In many cases due care has been exercised to place the property fences and other evidence of use or occupancy on the lines of legal subdivision, and locate the public roads on the section or their subdivision lines.
  - a) These are matters of particular interest to the adjoining owners, and it is a **reasonable presumption** that care and good faith would be exercised with regard to the evidence of the original survey in existence at the time.
  - b) The **burden of proof** to the contrary must be borne by the party claiming differently.
  - c) Knowledge regarding the construction of a purported property line fence, or other use or occupancy line can be obtained from long time landowners and community members and could provide positive evidence whether they were located in conformity with the good faith location rule.
3. A property corner or a use or occupancy position should exercise a regular control upon the retracement only when it:
  - a) Was placed with due regard to the location of the original survey; or
  - b) Agreement is so close as to constitute the best available evidence.
4. Other factors to be considered are the rules of the State law and the State court decisions, as distinguished from the rules laid down by the BLM (the latter applicable to the public land surveys in all cases). Under State law in matters of agreement between owners, acquiescence, or adverse possession,

property boundaries may be defined by roads, fences, use or occupancy lines, or survey marks, disregarding exact conformation with the original legal subdivision lines. These may limit the rights as between adjoining owners.

5. In cases where the federal government has an acquired interest, and rights have vested to a location by state law prior to the acquired interest disregarding exact conformation with the title lines or original legal subdivisions, the surveyor must not impair the location of such rights.
  - a) The conflicting title lines and ownership lines are surveyed and monumented and the conflict area is returned upon the plat.
  - b) Each intersection of conflicting boundaries is determined upon the ground and recorded in the field notes.
  - c) The returns will describe and show the limits of the federal ownership and the limits of the federal title.
  - d) The survey field notes will document the findings of fact duly supporting the conclusion arrived at.

C. *Local Points of Control Exception.* When the retracements show that the principal resurvey problem is one of obliteration, with comparative absence of large discrepancies, i.e. – that is:

1. The official survey had been made faithfully.
2. The official survey was followed by local use and perpetuation.
3. Then the official survey can be reconstructed or restored, as it was in the beginning, based upon identified existing corners of the original survey and other recognized and acceptable local points of control.
4. Manual 6-45. Local Point of Control. The acceptance of duly qualified and locally recognized points of control should:
  - a) Aid materially in obtaining stability of the public land surveys,
  - b) Obtain simplicity of resurvey, and

- c) Avoid the conflicts which would differ only slightly in position.
5. In this manner a flexibility will be introduced in the plan of the resurvey, at least to the point of protecting satisfactory local adjustments.
6. The surveyor cannot abandon the record of the original survey in favor of an indiscriminate adoption of points not reconcilable with it.
7. Chief among this class of evidence forming the basis of the recognized position of land boundaries are:
  - a) Recorded monuments established by local surveyors,
  - b) Duly agreed upon by the interested property owners;
  - c) The position of boundary fences determined in the same manner; and
  - d) The lines of public roads, drainage or irrigation ditches, and timber cutting lines when intended to be located on the subdivisional lines.
8. The local record in these cases, when available, may furnish evidence of the original survey. If a point qualifies as above, the **presumption** is strong that its position bears satisfactory relation to the original survey and that its correctness can not be successfully disputed.
9. Points which actually qualify may be accepted as the best available evidence of the true position of the original survey.
10. Once it is accepted in the course of an official survey, a local point of control has all the authority and significance of the identified original corner.
11. Many situations will arise where it will be manifest that it is better to accept a position based upon local interpretation rather than to disturb satisfactory existing conditions.
12. The surveyor will endeavor to avoid disturbing the position of locally recognized lines when such action may adversely affect improvements.

13. At the same time the surveyor must use extreme caution in adopting local points of control. These may range from authentic perpetuations of original corners down to marks which were never intended to be more than approximations.
14. The age, position and the degree to which a local corner has been relied on by affected landowners may lead to its adoption as the best remaining evidence of the position of the original corner.
15. When a local reestablishment of a lost corner or a local establishment of a minor subdivisional corner has been made:
  - a) By proper methods;
  - b) Without gross error;
  - c) It will ordinarily be acceptable.
16. Monuments of unknown origin must be judged on their own merits, but they should never be rejected out of hand without careful study.
17. The recognition of the principle that the restoration of a corner may be influenced by the position of one or more existing claims warrants, within suitable limits, the acceptance of an unofficial determination which would not necessarily agree with that resulting from a rigid application of the General Rules laid down for the restoration of lost corners or subdivision of section.
18. Thus where the bona fide rights are found to have been definitely established with reference to the location of lands by existing evidence of the original survey, the theoretical point determined by the General Rules will be set aside in favor of a near-by duly qualified corresponding point, the position of which has been agreed upon by the adjoining property owners. Such a point may then be recognized as the best available evidence of the true position for the corner. The **burden of proof** to the contrary must be borne by the party claiming differently.
19. All such Exceptions to the General Rules adopted during the course of the resurvey or subdivision of section must be fully documented on the plat or in the field notes.

- IX. Corner Positions Based on the Protection of Bona Fide Rights as to Location; 43 U.S.C. § 772. The administration, settlement and usage of the public domain was and still is heavily influenced by the Bona Fide doctrine. Bona Fide is Latin for Good Faith. What is or is not Bona Fide rights as to location is usually stated in the form of a question: Did the claimant or entryman act in good faith when locating or marking the claim, entry or improvement? Did he or she make a good faith effort to follow the public land laws and policies? Were the actions made in good faith without gross error, fraud or deceit?
- A. The application of bona fide rights as to location (The Where of bona fide rights – is within the realm of the surveyor, in contradistinction from The What or The Who of bona fide rights – which is within the realm of realty specialist and attorney) establishes that bona fide rights as to location does not exist in lieu of acceptable evidence of the original corner in a different position.
- B. In addition the following conditions warrants the protection of bona fide rights as to location with the possibility of departure from the General Rules:
1. When there exists gross errors or inadequate original evidence to the extent that the application of the normal methods for restoration of lost corners or subdivision of section will impair bona fide rights as to location as evidenced by usage or improvements, or
  2. There are complicated conditions involving a double set of corners, both of which may be regarded as authentic which results in irreconcilable conflicting evidence of the original corner positions or in conflicting positions when these positions are used for restoration of lost corners or subdivision of sections.
- C. Additional Methods for the Protection of Bona Fide Rights as to Location.
1. Section 426; 1947, 1930 & 1919 Manuals: Erroneous local resurvey followed by improvements located onto federal lands. In the execution of a resurvey there may possibly arise rare cases where locally established or recognized corners controlling valuable improvements are so discordantly related to the existing authentic evidences of the original survey that such local corners can not qualify for adoption as acceptable collateral evidence, either by the good faith location rule, satisfactory location, or as a local point of control.

- a) There is no legal authority for a disregard of the identified evidence of the original survey or acceptance of a fraudulent or grossly erroneous corner position.
- b) These cases are decidedly exceptional in any township where regular control has been developed by careful retracement and thorough search.
- c) No general survey remedy has been devised.
- d) A title remedy may be the only solution. Title remedies include amendment of entry or correction of conveyance document to the occupied legal subdivisions.
- e) Whether such method appears to be impracticable or not, the surveyor will submit a detailed report of the conditions found, with recommendation for procedure suited to the particular situation to be dealt with and designed for protection to the claimant's improvements, but on a plan that will not disturb those who have acquired legal rights in the matter of consistent location.
- f) A metes-and-bounds survey of an erroneous location cannot have the legal effect of a title remedy such as an amendment of the entry or correction of conveyance document.
- g) No legal title can be established by the occupancy of lands outside of the subdivisions named in the entry or selection, except where the adjoining lands is or has been alienated lands.
- h) By law adverse possession does not run against lands under title to the United States.
- i) Sooner or later the claimant would find himself without a complete legal title to the lands upon which he had spent his labors.
- j) A title remedy such as an amendment of entry or correction of conveyance document, when the occupancy and improvement do not conform to the lines and subdivisions of the original survey, is the

only safe course.

- k) The surveyor should work closely with the realty and legal professionals to assure compatibility between the conditions on the ground, the official survey and the title documents.
2. Erroneous location of an official resurvey and improvements located onto federal lands. A different situation may arise in the execution of a resurvey where fraudulent or grossly erroneous located monuments from a prior official resurvey have been used to control placement of valuable improvements onto lands under title to the United States.
- a) In these rare cases the official resurvey monuments are so discordantly related to the existing authentic evidences of the original survey that such resurvey monuments can not qualify for adoption.
  - b) There is no legal authority for the SOI to disregard the identified evidence of the original survey nor to accept a fraudulent or grossly erroneous corner position. To do so is an impairment of the bona fide rights or claims as to location of the claimant, entryman or owner of the lands affected by a resurvey.
  - b) An appropriate treatment of this situation, where possible of application, consists in a title remedy. This would consist of an adjustment to the title so as to include the occupied legal subdivisions in terms of the original survey, or to a metes-and-bounds tract.
  - c) These cases are decidedly exceptional in any township where regular control has been developed by careful retracement and thorough search.
  - d) No general survey remedy has been devised.
  - e) Title remedies include that of recordable disclaimer of interest in land, 43 USC 1745.
  - f) Whether such title remedy method appears to be impracticable or not, the surveyor will submit a detailed report of the conditions found, with recommendation for procedure suited to the particular situation

- to be dealt with and designed for protection to the claimant's improvements, but on a plan that will not disturb those who have acquired legal rights in the matter of consistent location.
- g) A metes-and-bounds survey of an erroneous location cannot have the legal effect of a title remedy such as a recordable disclaimer of interest in land.
  - h) Equitable legal title may be established by the occupancy of lands outside of the subdivisions named in the entry or selection, and sooner or later the claimant would find himself without a complete legal title to the lands upon which he had spent his labors.
  - i) A recordable disclaimer of interest in land, when the occupancy and improvement do not conform to the lines and subdivisions of the original survey, is a possible title conflict remedy.
  - j) The surveyor should work closely with the realty and legal professionals to assure compatibility between the conditions on the ground, the official survey and the title documents.
3. Erroneous location of a local or official resurvey and federal improvements located onto alienated lands. In these cases the resurvey can be either a local resurvey where the locally established or recognized corners, or an official resurvey, where the fraudulent or grossly erroneous located monuments, have been used to control placement of valuable federal interest improvements beyond the boundaries of lands under title to the United States.
- a) Issues arise when the monumentation is so discordantly related to the existing authentic evidences of the original survey that such local monuments, or fraudulent or grossly erroneous located official monuments can not qualify for adoption as acceptable collateral evidence, either by the rule of good faith or as an local point of control for the local monuments; or in the case of an official resurvey they can not qualify for adoption as to do so would impair bona fide rights or claims of a claimant, entryman, or owner of land.
  - b) The usual appropriate treatment of this situation, where possible of application, consists in the removal of the federal improvements from



the occupied alienated legal subdivisions.

- c) However, when it is determined to assert an interest to the occupied legal subdivisions in terms of the original survey, or by a metes-and-bounds tract, the usual appropriate treatment of this situation, where possible of application, consists in a conveyance document or quiet title action.
- d) These cases are decidedly exceptional in any township where regular control has been developed by careful retracement and thorough search.
- e) No general survey remedy has been devised
- f) There are title remedies including the federal government can acquire ownership by written and unwritten title.
- g) Whether such method appears to be impracticable or not the surveyor will submit a detailed report of the conditions found, with recommendation for procedure suited to the particular situation to be dealt with and designed for protection to the claimant's bona fide rights as to location and to the federal interest improvements, but on a plan that will not disturb those who have acquired legal rights in the matter of consistent location.
- h) A metes-and-bounds survey of an erroneous location cannot have the legal effect of a title conveyance document.
- i) The federal government can obtain legal title to lands established by the use or occupancy of lands inside of the subdivisions named in an entry or selection, by state law, as adverse possession does run for the United States.
- j) Sooner or later the federal government would find itself without a complete legal title to the lands upon which it had spent its labors.
- k) A written title transaction, when the occupancy and improvement do not conform to the lines and subdivisions of the original survey, is the only safe course.

- l) The surveyor should work closely with the realty and legal professionals to assure compatibility between the conditions on the ground, the official survey and the title documents.

X. Special Case Claims – Fictitious, Fraudulent or Grossly Erroneous Original Surveys

A. Section 401(1); 1947 Manual. Special case conditions exist when:

1. The record field notes and plat representing the original survey are fictitious, fraudulent, or grossly erroneous beyond any tolerable limit, and
2. In the township there is use or occupancy boundary lines or other improvements.

B. Special case resurveys provides methods adapted to areas of considerable alienated land or considerable federal lands. This exception to the General Rule resurvey is applicable when:

1. It has been determined not to identify the alienated lands by tract segregations;
2. There will be no projection of new subdivision lines, and
3. The original plat will not be cancelled.

C. Special Case Resurveys are applicable where:

1. The original survey cannot be identified with any degree of certainty in accordance with the representations of the approved plat and field notes, or
2. The prevailing conditions are such that strictly restorative processes, when applied as an inflexible rule between existing monuments or adopted local corner positions, are either inadequate or lead to unsatisfactory results.

D. Generally, special case resurveys can be avoided by restoring the section boundaries in which the claim is situated, using the same control that would have been employed to govern the resurvey, which in certain cases may be three-point, two-point, or even one-point control.

1. In effect this may employ the traces of the original survey, the good faith rule or a combination in the same township.
  2. This type of resurvey provides for the segregation of individual claims in conformation to the subdivisions of the resurvey.
- E. Special case claim segregations will be necessary only in those unusual cases where unrelated control prevents the reconstruction of sections and legal subdivisions by usage of existent corners and accepted local points of control that would adequately protect the alienated lands.
- F. Section 401(2); 1947 Manual. These processes are found to be more flexible in their application than those of the strictly dependent type, but at the same time they are intended duly to protect all private rights which have been acquired upon the basis of the original survey and plat. The special case resurvey also perpetuates the record of the original survey with respect to the identification and description of the remaining federal lands.
- G. Manual 6-60. Special Case Claim Resurveys.
1. The special instructions should designate the sections containing alienated lands which will be dependently resurveyed.
  2. Where there is acceptable evidence of the original survey, the identification of the areas that have been disposed of must be the same as would ordinarily be derived by the regular subdivision of the section.
  3. The special case claims which are to be segregated by resurvey are those areas that;
    - a) Cannot be so identified, nor conformed satisfactorily;
    - b) Where correction of conveyance document appears not to be an available remedy, and
    - c) The disposals are found to be in conflict by overlap.
  4. Every corner of these claims common with federal land within the survey

group is to be monumented.

H. Manual 6-61 and Section 446; 1947, 1930 & 1919 Manuals. Complete Land Status Necessary.

1. An abstract of pertinent records and a status diagram will be furnished to the surveyor showing lands whose boundaries cannot legally be disturbed. These include patented lands, valid entries or claims, school sections, land grants, tentative approvals, interim conveyances, disposals, reservations, or selections of lands whose position and description are based upon the original survey and plat subject to the resurvey plan.
2. The resurvey will not be complete until each claim described by the special instructions has received full protection in the matter of location.
3. Each must be protected by the assignment of subdivisions of the resurvey.
4. It is necessary to furnish to the surveyor the status of all claims in the adjacent sections or of adjoining townships ungrouped for resurvey which might affect the resurvey procedure. The abstract will be included with the other data to accompany the special instructions for the resurvey.

I. Section 436(2); 1947 Manual. Reconstructed Claims.

1. Before making an identification of alienated subdivisions it is necessary to make certain the discrepancies are such that no adequate or satisfactory basis can be shown for the restoration of the former section-line boundaries as a whole.
2. The plan of the special case resurvey must be such that all lines, monuments, and plat representation will duplicate the description of all previous sections where disposals have been made.
3. The alienated lands described by official field notes and plat now regarded as fictitious, fraudulent, or grossly erroneous beyond any tolerable limit must be reconstructed using the best available evidence of the original survey based upon good faith locations, rules for restoration of lost corners and principles of section subdivision.

- J. Manual 6-63. The jurisdiction of the Bureau of Land Management, the limit of the authority of the surveyor, and the bona fide rights of claimants, where alienated lands are involved, remain absolutely the same whether the resurvey is to be made upon the traces of the original survey, the good faith rule or a combination.
1. Identified corners of the original survey in the immediate vicinity of alienated lands to be conformed or segregated are employed for the control of the location of such lands.
  2. The question of the good faith of the entryman is fully considered, as previously outlined.
  3. Where the evidence of the original survey is so obliterated that lack of good faith in location cannot be charged against the entryman, whose claim boundaries may differ from a theoretical location determined by more rigid surveying rules and principles, the available collateral evidence is to be regarded as the best indication of the original position of the claim included in the original description.
  4. This available collateral evidence is employed as far as consistent for the control of the section boundaries and subdivisions within which such claim is located.
- K. Manual 6-64. Consult with Claimant.
1. Where the surveyor cannot definitely locate a claim by identification of the original survey, he should ask the claimant to point out his boundaries.
  2. The boundaries of the alienated land, so determined, are fixed as between private and federal lands, subject to official acceptance and filing of the resurvey.
  3. The surveyor should explain that an acceptably located claim must:
    - a) Have a form agreeing with the original entry;
    - b) Approximately regular boundaries;
    - c) An area not widely inconsistent with that shown on the original plat,

and

- d) A location as nearly correct as may be expected from the existing evidence of the original survey.
- L. Manual 6-65. Dispute may arise over adjustment of the line between adjoining entered, selected, approval, conveyance or patented lands, each acceptably located. If it cannot be reconciled by the surveying process, the claims are surveyed in conflict and so shown on the resurvey plat.
- M. Manual 6-66. Conformance to Improvements.
- 1. The surveyor cannot change materially the configuration of a special case claim as shown by its original description in order to indemnify the owner against deficiencies in area, to eliminate conflicts between entries, or for any other purpose.
  - 2. If improvements have been located in good faith, the special case claim resurvey should be so executed, or the conformation to the lines of the resurvey as indicated, as to cover as nearly as possible these improvements and at the same time maintain substantially the form of the entry as originally described. No departure from this rule is allowed.
- N. Manual 6-67. Consult with Absentee Landowner.
- 1. An attempt should be made to consult an absentee owner so that he may point out the lands subject to a resurvey.
  - 2. If the owner cannot be found and there is no indication of the boundaries of a claim, the surveyor should locate it from the nearest original point of control or from a point of a neighboring claim, or assign to the alienated lands the appropriate subdivisions of the resurvey.
  - 3. The controlling factors are individual and neighborhood improvements (such as buildings, wells, springs of water, cultivated lands, public roads, fences, corners of recognized private surveys, etc.) which indicate the evident intention of the claimant, entryman or patentee as to the position of his land.
- O. Manual 6-68. The following rules will be observed in executing the resurvey of

designated special case claims:

1. Each acceptably located claim which is at variance with the lines of the resurvey is surveyed and monumented at each angle point.
2. Where the limiting boundary of the resurvey has been reestablished in its original position, the portion of a special case claim lying outside the limiting boundary is not surveyed. It is located in an area where the original conditions cannot be disturbed. The portion of the special case claim lying within the area of the resurvey has at least one identifiable original boundary. It should be defined by conformation to the lines of the resurvey in a position which is properly related to the identified or restored corners on the limiting boundary.
3. Where the boundaries of a special case claim are unacceptably located as pointed out by the claimant, the claim is surveyed and monumented in a suitable relation to the original survey. If the claimant protests the location, the surveyor should request that the protest be made in writing. The written protest will be submitted with the returns of the resurvey. Accurate ties should be made to the corners of the claim as unacceptably located. The surveyor should make a complete report of the facts with reference to the question of location. Further protection to the entryman may be sought by an amendment of entry or correction of conveyance document.
4. Where the boundaries of a claim conformation to the lines of the resurvey does not cover the lands occupied, improved, or claimed, the claimant may express a desire to amend his entry or seek a correction of the selection or conveyance document. The fact should be stated in the field notes. A separate full report is made by the surveyor describing the subdivisions actually occupied and those sought under the amended entry or correction of selection or conveyance document which are not within the special case claim as surveyed, all looking to the protection of the title to the lands actually earned. (See current regulations relating to the amendment of entries, correction of conveyance documents, tentative approval relinquishments, interim conveyance reconveyance or relinquishment, or quiet title action.)
5. Where the regular quarter-quarter sections within a special case claim fall in approximately the same position as the regular quarter-quarter sections of the resurvey, the claimant, entryman or patentee may desire to conform his claim

to the resurvey. If no apparent objection is found by the surveyor, the facts should be stated in the field notes and the claim so indicated upon the resurvey plat. The desire by the claimant, entryman or patentee to conform his claim to the resurvey should be documented as testimony and included in the field notes. However, where a claim includes a fractional lot as originally described or where any part of a claim falls upon a fractional lot of the resurvey, the claim must be resurveyed as a whole, even though some or all of the lines of the claim may coincide with certain subdivisional lines of the resurvey.

No special case claim should be conformed to the lines of a resurvey under an involved amended or correction of conveyance document description which includes numerous subdivisions smaller than the regular quarter-quarter section, excepting as completely surveyed and monumented.

6. Conflicting special case claims, each acceptably located, are surveyed and monumented and the conflict shown upon the resurvey plat. Each intersection of conflicting boundaries is determined upon the ground and recorded in the field notes. The number of acres in conflict with each other will be shown in the field notes or plat, or both.
7. The corners of a special case claim are designated by the appropriate aliquot part or lot number consistent with the controlling tentative approval, interim conveyance, claim, entry or patent.
8. Accessories are required with the monuments at the corners of the special claims.
9. Where special case claim lines intersect, a connection is made to the nearest claim corners on each side of the intersection and recorded in the field notes of the section line. This is considered a satisfactory connection to all adjoining claims located within the special instructions. Where an extensive system of special case claims has been resurveyed, the interior claims of the block do not require connections.
10. All recovered monuments of the original survey not otherwise reported upon are connected by course and distance with a corner of the resurvey. The connection and a description of the traces of the original corner as identified are recorded in the field notes of the resurvey. The old monument is



amended and buried if practical and the accessories are effaced unless the point may be needed to control the position of a claim.

What is an original corner? A monumented position which when recovered contains zero error. Examples would be an original section, 3, meander and witness corner, line tree and witness point. Monumented corner of a cadastral/original survey in place prior to entry being made or patent being issued. No matter how far out of its platted position, it is correct. The principles behind this are the *stabilization of property corners and lines*, and *a simplified system intent upon minimized questions of title*.

What is a resurvey corner? A monumented position which can contain error. Examples would be a reestablished corner, center 3 and 1/16 section corner. Monumented corner of a local or cadastral survey not in place prior to entry being made or patent being issued. A component of the evaluation process of acceptance or rejection of a resurvey corner is how far it is from its platted or theoretical position, its error, based on Resurveyor's No. 2 numbers.

There are many who seem to argue; if a resurvey monument contains error, seemly to the exclusion of all other considerations, it can not be the legal subdivisional corner for which it was set. From this line of reasoning, the inescapable conclusion seemly is that any attempt to monument a resurvey corner is a legal fiction. Because every measurement contains error, it is an impossibility to monument a position that is mid-point and on line between two monuments or, to monument a position at the intersection of two straight lines. Every new surveyor who attempts to monument the resurvey corner will find error in the previous Resurveyor's monument. Now, both surveys have

been executed "with due regard to the location of the original survey", both surveys "faithfully executed", both surveys "following proper procedures", both surveys "meeting a duty of care which a surveyor of ordinary skill and prudence would exercise under similar circumstances." Therefore under this logic; Resurveyor No. 2 rejects Resurveyor's No. 1 monument as marking the aliquot part corner and sets a new monument or worse yet does not set a monument but calls for a new "correct" or "theoretical" position, with reference to Resurveyor's No. 1 monument. This approach hardly *stabilizes property corners and lines*.

There are seemly just as many who seem to argue; accept Resurveyor's No. 1 monumented position, not as the aliquot part corner it was intended to mark, but as a "possible" property corner because, Resurveyor No. 2 is suggesting since the title owner is not in possession to his title line, a new title has been created in favor of the possessor and the previous owner's title is extinguished, by a legal doctrine, adverse or agreed, which of course can only be pursued and determined through a judicial proceeding. Or they advocate attempting to get and record boundary line agreements between adjoining landowners, in seemly ever resurvey situation. This hardly is *a simplified system intent upon minimized questions of title*.

On March 13, 1805, less than ten years after the birth of the Public Land Survey System, Albert Gallatin, Secretary of the Treasury, wrote to Isaac Briggs, Surveyor of the Lands South of Tennessee, referring to the just enacted Act of February 5, 1805 (43 USC '752), "the principal object which Congress has in view is that corners and boundaries of the sections and subdivision of sections

should be definitively fixed; and that ascertainment of the precise contents of each is not considered as equally important. Indeed it is not so material either for the United States or for the individuals, that purchasers should actually hold a few acres more or less than their surveys may call for, as it is that they should know with precision, and so as to avoid any litigation, what are the certain boundaries of their tract." These fundamental principles, while addressed to yesterdays original surveyor, also pertain to today's Resurveyor No. 2.

These provisions recognize the fact taught by experience that measurements of lands can not be performed with precise accuracy, and that the work of no two surveyors would exactly agree. Gallatin points out the very purpose of the declarations of the law, was to obviate inquiry and contention in respect to survey inaccuracies. In *Scott K. Snively (On Petition) 49 LD 583 (1923)*, speaking to the same law, declared; "Doubtless the wise purpose of the law was to forestall and preclude vexatious disputes as to the actual area of land...If such transactions were not made final, controversies would be constantly arising concerning patented lands and resurveys and readjudications would be interminable."

The original surveys and monuments of the Public Land Survey System form an enduring basis upon which depends the security of the title to all lands acquired there under. Resurveyor No. 2 must exercise the greatest care so that the resurvey will relieve existing difficulties as far as possible without introducing new complications. Moving corners relatively short distances is less important than maintaining the stability of boundaries.

43 U.S.C. ' 772      **Resurveys or retracements to mark boundaries of  
undisposed lands.**

The Secretary of the Interior may, . . . , in his discretion cause to be made, . . . , such resurveys or retracements of the surveys of public lands . . . to properly mark the boundaries of the public lands . . . : **Provided**, That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey or retracement: . . .

Black's Law Dictionary:

**Bona fide:** In or with good faith; honestly, openly, and sincerely; without deceit or fraud. Truly, actually; without simulation or pretense. Innocently; in the attitude of trust and confidence; without notice of fraud, etc. Real, actual, genuine, and not feigned.

**Bona fide error:** Mistake made unintentionally; inadvertently; in good faith.

**Bona fide possessor:** One who not only supposes himself to be the true proprietor of the land, but who is ignorant that his title is contested by some other person claiming a better right to it.

**Bona fide purchaser:** One who has purchased property for value without any notice of any defects in the title of the seller. One who pays valuable consideration, has no notice of outstanding rights of others, and acts in good faith.

**Good faith:** Good faith is an intangible and abstract quality with no technical meaning or statutory definition, and it encompasses, among other things, an honest belief, the absence of malice and the absence of design to defraud or to seek an unconscionable advantage, and an individual's personal good faith is concept of his own mind and inner spirit and, therefore, may not conclusively be determined by his protestations alone. Honesty of intention, and freedom from knowledge of circumstances which ought to put the holder upon inquiry. An honest intention to abstain from taking any unconscientious advantage of another, even through technicalities of law, together with absence of all information, notice, or benefit or belief of facts which render transaction unconscientious. In common usage this term is ordinarily used to describe that state of mind denoting honesty of purpose, freedom from intention to defraud, and, generally speaking, means being faithful to one's duty or obligation. Webster's New Collegiate:

**Bona fide:** Made in good faith without fraud or deceit. Made with earnest intent, neither specious nor counterfeit.

Good faith: Honesty or lawfulness of purpose.

*Manual*, ' 5-25: Bona fide rights are those acquired in good faith under the law. A resurvey can affect bona fide rights only in the matter of *position or location* on the earth's surface. The surveyor will be concerned only with the question of whether the lands covered by such rights have been actually *located* in good faith.

*Manual*, ' 5-28: Bona fide rights are protected in a resurvey by showing "the original position of entered or patented lands included in the original description."

*Manual*, ' 6-37: The surveyor should neither rigidly apply the rules for restoration of lost corners without regard to effect on location of improvements nor accept the position of improvements without question regardless of their relation or irrelation to existing evidence of the original survey. Between these extremes will be found the basis for determining whether improved lands have been located in good faith or not. No definite set of rules can be laid down in advance. The solution to the problem must be found on the ground by the surveyor. It is his responsibility to resolve the question of good faith as to location.

Dan Ogle, 131 IBLA 129, 130-31 (1994): "This case is one where improvements were apparently placed in reliance on an unapproved survey that did not follow the original official survey. Bona fide rights are protected only where they were established in accordance with an official survey. Therefore, the suggestion that the dependent resurvey is void because it impairs bona fide rights is without merit because appellants have failed to show that the dependent resurvey is not an accurate retracement and reestablishment of the original survey."

John W. & Ovada Yeargan, 126 IBLA, 370 (1993): " The proper execution of the dependent resurvey serves to protect the bona fide rights of appellants in this case because a dependent resurvey traces the lines of the original survey. In the absence of evidence from appellants to the contrary, it must be concluded that the dependent resurvey is an accurate retracement and reestablishment of the lines of the original survey."

UNITED STATES CODE  
 TITLE 43. PUBLIC LANDS  
 CHAPTER 1. BUREAU OF LAND MANAGEMENT  
 43 USC § 2 (2005)

§ 2. Duties concerning public lands.

The Secretary of the Interior or such officer as he may designate shall perform all executive duties appertaining to the surveying and sale of the public lands of the United States, or in anywise respecting such public lands, and, also, such as relate to private claims of land, and the issuing of patents for all grants of land under the authority of the Government.

**History:**

(R. S. § 453.)

2 Stat. 716; Act of April 25, 1812.

**STATUTE I.**

April 25, 1812. **CHAP. LXVIII.—An Act for the establishment of a General Land-Office in the Department of the Treasury.(a)**

Office estab- lished.	<i>Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established in the department of the treasury an office, to be denominated the General Land-Office; the chief officer of which shall be called the commissioner of the general land-office, whose duty it shall be, under the direction of the head of the department, to superintend, execute and perform, all such acts and things, touching or respecting the public lands of the United States, and other lands patented or granted by the United States, as have heretofore been directed by law to be done or performed in the office of the Secretary of State, of the Secretary and Register. of the Treasury, and of the Secretary of War, or which shall hereafter by law be assigned to the said office.</i>
Commissioner to be appointed.	
His duties.	
Chief clerk to	

5 Stat. 107; Act of July 4, 1836

**CHAP. CCCLII.—An Act to reorganize the General Land Office.(a)**

**STATUTE I.**  
**July 4, 1836.**

<i>Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the passage of this act, the executive duties now prescribed, or which may hereafter be prescribed by law, appertaining to the surveying and sale</i>	<i>Duties relating to public lands under supervision of the commissioner.</i>
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**of the public lands of the United States, or in anywise respecting such public lands, and, also, such as relate to private claims of land, and the issuing of patents for all grants of land under the authority of the Government of the United States, shall be subject to the supervision and control of the Commissioner of the General Land Office; under the direction of the President of the United States.**

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 28. MISCELLANEOUS PROVISIONS RELATING TO THE PUBLIC LAND  
SUBCHAPTER IX - ENFORCEMENT OF PROVISIONS  
43 USC § 1201 (2005)

§ 1201. Power of Secretary or designated officer

The Secretary of the Interior, or such officer as he may designate, is authorized to enforce and carry into execution, by appropriate regulations, every part of the provisions of title 32 of the Revised Statutes not otherwise specially provided for.

**History:**

(R. S. § 2478.)

Revised Statute § 2478.

The Commissioner of the General Land-Office, under the direction of the Secretary of the Interior, is authorized to enforce and carry into execution, by appropriate regulations, ever part of the provisions of this Title not otherwise specially provided for.

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 18. SURVEY OF PUBLIC LANDS  
43 USC § 772 (2005)

§ 772. Resurveys or retracements to mark boundaries of undisposed lands.

The Secretary of the Interior may, as of March 3, 1909, in his discretion, cause to be made, as he may deem wise under the rectangular system on that date provided by law, such resurveys or retracements of the surveys of public lands as, after full investigation, he may deem essential to properly mark the boundaries of the public lands remaining undisposed of: *Provided*, That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey or retracement.

**History:**

(Act of Mar. 3, 1909, Ch. 271, 35 Stat. 845, 36 Stat. 884, and Title VII, § 705(a), 90 Stat. 2792.)

35 Stat. 845

**CHAP. 271.**—An Act Authorizing the necessary resurvey of public lands.

March 3, 1909.  
[H. R. 24885.]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior may in his discretion cause to be made, as he may deem wise under the rectangular system now provided by law, such resurveys or retracements of the surveys of public lands as, after full investigation, he may deem essential to properly mark the boundaries of the public lands remaining undisposed of: Provided, That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey or retracement: Provided further, That*

[Public, No. 324.]  
Public lands.  
Necessary resurveys  
authorized.

*Provides.*  
Bona fide rights not  
impaired.

Amount for, limited

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 18. SURVEY OF PUBLIC LANDS  
43 USC § 773 (2005)

§ 773. Resurveys or retracements of township lines, etc.

Upon the application of the owners of three-fourths of the privately owned lands in any township covered by public-land surveys, more than 50 per centum of the area of which townships is privately owned, accompanied by a deposit with the Secretary of the Interior, or such officer as he may designate, of the proportionate estimated cost, inclusive of the necessary work, of the resurvey or retracement of all the privately owned lands in said township, the Secretary, or such officer as he may designate, shall be authorized in his discretion to cause to be made a resurvey or retracement of the lines of said township and to set permanent corners and monuments in accordance with the laws and regulations governing surveys and resurveys of public lands. The sum so deposited shall be held by the Secretary of the Interior or such officer as he may designate, and may be expended in payment of the cost of such survey, including field and office work, and any excess over the cost of such survey and the expenses incident thereto shall be repaid pro rata to the persons making said deposits or their legal representatives. The proportionate cost of the field and office work for the resurvey or retracement of any public lands in such township shall be paid from the current appropriation for the survey and resurvey of public lands, in addition to the portion of such appropriation otherwise allowed by law for resurveys and retracements. Similar resurveys and retracements may be made on the application, accompanied by the requisite deposit, of any court of competent jurisdiction, the returns of such resurvey or retracement to be submitted to the court. The Secretary of the Interior is authorized to make all necessary rules and regulations to carry this section] into full force and effect.

**History:**



40 Stat. 965; Act of Sept. 21, 1918

SIXTY-FIFTH CONGRESS. SESS. II. CHS. 175, 176. 1918.

965

**CHAP. 175.**—An Act Authorizing the resurvey or retracement of lands heretofore returned as surveyed public lands of the United States under certain conditions.

September 21, 1918.  
[H. R. 8004.]

[Public, No. 216.]

Public lands.  
Resurveys of privately owned lands at request of owners.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That upon the application of the owners of three-fourths of the privately owned lands in any township covered by public-land surveys, more than fifty per centum of the area of which townships is privately owned, accompanied by a deposit with the United States surveyor general for the proper State, or if there be no surveyor general of such State, then with the Commissioner of the General Land Office, of the proportionate estimated cost, inclusive of the necessary work, of the resurvey or retracement of all the privately owned lands in said township, the Commissioner of the General Land Office, subject to the supervisory authority of the Secretary of the Interior, shall be authorized in his discretion to cause to be made a resurvey or retracement of the lines of said township and to set permanent corners and monuments in accordance with the laws and regulations governing surveys and resurveys of public lands; that the sum so deposited shall be held by the surveyor general or commissioner when ex officio surveyor general and may be expended in payment of the cost of such survey, including field and office work, and any excess over the cost of such survey and the expenses incident thereto shall be repaid pro rata to the person making said deposits or their legal representatives; that the proportionate cost of the field and office work for the resurvey or retracement of any public lands in such township shall be paid from the current appropriation for the survey and resurvey of public lands, in addition to the portion of such appropriation otherwise allowed by law for resurveys and retracements; that similar resurveys and retracements may be made on the application, accompanied by the requisite deposit, of any court of competent jurisdiction, the returns of such resurvey or retracement to be submitted to the court; that the Secretary of the Interior is authorized to make all necessary rules and regulations to carry this Act into full force and effect.

Deposit for cost, etc.

Field and office work.

On application of court.

Approved, September 21, 1918.

UNITED STATES CODE  
TITLE 25. INDIANS  
CHAPTER 5. PROTECTION OF INDIANS  
25 USC § 176 (2005)

§ 176. Survey of reservations.

Whenever it becomes necessary to survey any Indian or other reservations, or 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 under which other public lands are surveyed.

**History:**

(R. S. § 2115.)

13 Stat. 41; Act of April 4, 1864.

**SEC. 6.** *And be it further enacted,* That hereafter, when it shall become necessary to survey any Indian or other reservations, or any lands, the same shall be surveyed under the direction and control of the general land-office, and as nearly as may be in conformity to the rules and regulations under which other public lands are surveyed. Reservations, how to be surveyed.

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 18. SURVEY OF PUBLIC LANDS  
43 USC § 766 (2005)

§ 766. Geological surveys, extension of public surveys, expenses of subdividing.

There shall be no further geological survey by the Government, unless hereafter authorized by law. The public surveys shall extend over all mineral lands; and all subdividing of surveyed lands into lots less than one hundred and sixty acres may be done by county and local surveyors at the expense of claimants; but nothing in this section contained shall require the survey of waste or useless lands.

**History:**

(R. S. § 2406.)

16 Stat. 217 and 281; Act of July 9, 1870

**CHAP. CXXXV.** — *An Act to amend "An Act granting the Right of Way to Ditch and Canal Owners over the public Lands, and for other Purposes."* July 9, 1870.  
1866, ch. 262.  
Vol. xiv. p. 251.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the act granting the right of way to ditch and canal owners over the public lands, and for other purposes, approved July twenty-six, eighteen hundred and sixty-six, be, and the same is hereby, amended by adding thereto the following additional sections, numbered twelve, thirteen, fourteen, fifteen, sixteen, and seventeen, respectively, which shall hereafter constitute and form a part of the aforesaid act. Sections to be added to former act.

lands. Surveyed lands how subdivided into lots, &c. lands: *Provided,* That all subdividing of surveyed lands into lots less than one hundred and sixty acres may be done by county and local surveyors at the expense of the claimants: *And provided further,* That nothing herein contained shall require the survey of waste or useless lands.

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 18. SURVEY OF PUBLIC LANDS  
43 USC § 752 (2005)

§ 752. Boundaries and contents of public lands; how ascertained.

The boundaries and contents of the several sections, half-sections, and quarter-sections of the public lands shall be ascertained in conformity with the following principles: First. All the corners marked in the surveys, returned by the Secretary of the Interior or such agency as he may designate, shall be established as the proper corners of sections, or subdivisions of sections, which they were intended to designate; and the corners of half and quarter sections, not marked on the surveys, shall be placed as nearly as possible equidistant from two corners which stand on the same line.

**History:**

(R. S. § 2396.)

2 Stat. 313; Act of February 11, 1805.

**Sec. 2. And be it further enacted,** That the boundaries and contents of the several sections, half sections, and quarter sections of the public lands of the United States, shall be ascertained in conformity with the following principles, any act or acts to the contrary notwithstanding :

1st. All the corners marked in the surveys, returned by the surveyor-general, or by the surveyor of the land south of the state of Tennessee, respectively, shall be established as the proper corners of sections, or subdivisions of sections, which they were intended to designate; and the corners of half and quarter sections, not marked on the said surveys, shall be placed as nearly as possible equidistant from those two corners which stand on the same line.

Principles upon which the boundaries and contents of the public lands are to be ascertained.

43 USC 752(2)

Second. The boundary lines, actually run and marked in the surveys returned by the Secretary of the Interior or such agency as he may designate, shall be established as the proper boundary lines of the sections, or subdivisions, for which they were intended, and the length of such lines as returned, shall be held and considered as the true length thereof. And the boundary lines which have not been actually run and marked shall be ascertained, by running straight lines from the established corners to the opposite corresponding corners; but in those portions of the fractional townships where no such opposite corresponding corners have been or can be fixed, the boundary lines shall be ascertained by running from the established corners due north and south or east and west lines, as the case may be, to the water-course, Indian boundary line, or other external boundary of such fractional township.

2d. The boundary lines, actually run and marked in the surveys returned by the surveyor-general, or by the surveyor of the land south of the state of Tennessee, respectively, shall be established as the proper boundary lines of the sections, or subdivisions, for which they were intended, and the length of such lines, as returned by either of the surveyors aforesaid, shall be held and considered as the true length thereof.

Boundary lines run and marked by the surveyor south of the Tennessee river to be the proper boundaries of sections.

Boundary lines not actually run to be ascertained.

And the boundary lines, which shall not have been actually run, and marked as aforesaid, shall be ascertained, by running straight lines from the established corners to the opposite corresponding corners; but in those portions of the fractional townships, where no such opposite corresponding corners have been or can be fixed, the said boundary lines shall be ascertained, by running from the established corners, due north and south, or east and west lines, as the case may be, to the water-course, Indian boundary line, or other external boundary of such fractional township.

43 USC 752(3)

Third. Each section or subdivision of section, the contents whereof have been returned by the Secretary of the Interior or such agency as he may designate, shall be held and considered as containing the exact quantity expressed in such return; and the half sections and quarter sections, the contents whereof shall not have been thus returned, shall be held and considered as containing the one-half or the one-fourth part, respectively, of the returned contents of the section of which they may make part.

Surveys to be returned.

3d. Each section, or subdivision of section, the contents whereof shall have been, or by virtue of the first section of this act, shall be returned by the surveyor-general, or by the surveyor of the public lands south of the state of Tennessee, respectively, shall be held and considered as containing the exact quantity, expressed in such return or returns: and the half sections and quarter sections, the contents whereof shall not have been thus returned, shall be held and considered as containing the one half, or the one fourth part respectively, of the returned contents of the section of which they make part.

UNITED STATES CODE  
TITLE 43. PUBLIC LANDS  
CHAPTER 18. SURVEY OF PUBLIC LANDS  
43 USC § 753 (2005)

§ 753. Lines of division of half quarter sections; how run.

In every case of the division of a quarter section the line for the division thereof shall run north and south, and the corners and contents of half quarter-sections which may thereafter be sold, shall be

ascertained in the manner and on the principles directed and prescribed by section 752 of this title, and fractional sections containing one hundred and sixty acres or upwards shall in like manner as nearly as practicable be subdivided into half quarter-sections, under such rules and regulations as may be prescribed by the Secretary of the Interior, and in every case of a division of a half quarter section, the line for the division thereof shall run east and west, and the corners and contents of quarter quarter sections, which may thereafter be sold, shall be ascertained as nearly as may be, in the manner, and on the principles, directed and prescribed by the section preceding; and fractional sections containing fewer or more than one hundred and sixty acres shall in like manner, as nearly as may be practicable, be subdivided into quarter quarter sections, under such rules and regulations as may be prescribed by the Secretary of the Interior.

**History:**

(R. S. § 2397.)

3 Stat. 566; Act of April 24, 1820.

566

SIXTEENTH CONGRESS. Sess. I. Ch. 51. 1820.

STATUTE I.

April 24, 1820.

CHAP. LL.— *An Act making further provision for the sale of the public lands.*

Act of March 3, 1819, ch. 92.  
Act of March 2, 1821, ch. 12.  
Act of March 3, 1823, ch. 57.  
Public sale of lands in half quarter sections, after 1st July, 1820.  
At private sale, in entire, half, quarter, or half quarter sections.  
Act of Feb. 11, 1805, ch. 14.  
Fractional sections, less than 160 acres, to be sold entire.

Proviso.

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That from and after the first day of July next, all the public lands of the United States, the sale of which is, or may be authorized by law, shall, when offered at public sale, to the highest bidder, be offered in half quarter sections; and when offered at private sale, may be purchased, at the option of the purchaser, either in entire sections, half sections, quarter sections, or half quarter sections; and in every case of the division of a quarter section, the line for the division thereof shall run north and south, and the corners and contents of half quarter sections which may thereafter be sold, shall be ascertained in the manner, and on the principles directed and prescribed by the second section of an act entitled, "An act concerning the mode of surveying the public lands of the United States," passed on the eleventh day of February, eighteen hundred and five; and fractional sections, containing one hundred and sixty acres, or upwards, shall, in like manner, as nearly as practicable, be subdivided into half quarter sections, under such rules and regulations as may be prescribed by the Secretary of the Treasury; but fractional sections, containing less than one hundred and sixty acres, shall not be divided, but shall be sold entire: *Provided*, That this section shall not be construed to alter any special provision made by law for the sale of land in town lots.*

4 Stat. 503; Act of April 5, 1832

**TWENTY-SECOND CONGRESS. SESS. I. CH. 65, 66. 1832.****503****STATUTE I.****April 5, 1832.****CHAP. LXV.—An Act supplementary to the several laws for the sale of public lands. (a)**

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That from and after the first day of May next, all the public lands of the United States, when offered at private sale, may be purchased at the option of the purchaser, either in entire sections, half sections, quarter sections, half-quarter sections, or quarter-quarter sections; and in every case of a division of a half-quarter section, the line for the division thereof shall run east and west, and the corners and contents of quarter-quarter sections, which may thereafter be sold, shall be ascertained as nearly as may be, in the manner, and on the principles, directed and prescribed by the second section of an act, entitled “An act concerning the mode of surveying the public lands of the United States,” passed on the eleventh day of February, eighteen hundred and five; and fractional sections, containing fewer or more than one hundred and sixty acres, shall in like manner, as nearly as may be practicable, be subdivided into quarter-quarter sections, under such rules and regulations as may be prescribed by the Secretary of the Treasury:

All public lands offered at private sale may be purchased in fractions of sections, &c.

Act of Feb. 11, 1805, ch. 14.

UNITED STATES CODE  
TITLE 28. JUDICIARY AND JUDICIAL PROCEDURE  
PART VI. PARTICULAR PROCEEDINGS  
CHAPTER 161. UNITED STATES AS PARTY GENERALLY  
28 USCS § 2409a (2005)

§ 2409a. Real property quiet title actions.

(a) The United States may be named as a party defendant in a civil action under this section to adjudicate a disputed title to real property in which the United States claims an interest, other than a security interest or water rights. This section does not apply to trust or restricted Indian lands, nor does it apply to or affect actions which may be or could have been brought under sections 1346, 1347, 1491, or 2410 of this [title \[28 USCS §§ 1346, 1347, 1491, or 2410\]](#), sections 7424, 7425, or 7426 of the Internal Revenue Code of 1954, as amended ([26 U.S.C. 7424, 7425, and 7426](#)), or section 208 of the Act of July 10, 1952 ([43 U.S.C. 666](#)).

(b) The United States shall not be disturbed in possession or control of any real property involved in any action under this section pending a final judgment or decree, the conclusion of any appeal therefrom, and sixty days; and if the final determination shall be adverse to the United States, the United

States nevertheless may retain such possession or control of the real property or of any part thereof as it may elect, upon payment to the person determined to be entitled thereto of an amount which upon such election the district court in the same action shall determine to be just compensation for such possession or control.

(c) No preliminary injunction shall issue in any action brought under this section.

(d) The complaint shall set forth with particularity the nature of the right, title, or interest which the plaintiff claims in the real property, the circumstances under which it was acquired, and the right, title, or interest claimed by the United States.

(e) If the United States disclaims all interest in the real property or interest therein adverse to the plaintiff at any time prior to the actual commencement of the trial, which disclaimer is confirmed by order of the court, the jurisdiction of the district court shall cease unless it has jurisdiction of the civil action or suit on ground other than and independent of the authority conferred by section 1346(f) of this [title \[28 USCS § 1346\(f\)\]](#).

(f) A civil action against the United States under this section shall be tried by the court without a jury.

(g) Any civil action under this section, except for an action brought by a State, shall be barred unless it is commenced within twelve years of the date upon which it accrued. Such action shall be deemed to have accrued on the date the plaintiff or his predecessor in interest knew or should have known of the claim of the United States.

(h) No civil action may be maintained under this section by a State with respect to defense facilities (including land) of the United States so long as the lands at issue are being used or required by the United States for national defense purposes as determined by the head of the Federal agency with jurisdiction over the lands involved, if it is determined that the State action was brought more than twelve years after the State knew or should have known of the claims of the United States. Upon cessation of such use or requirement, the State may dispute title to such lands pursuant to the provisions of this section. The decision of the head of the Federal agency is not subject to judicial review.

(i) Any civil action brought by a State under this section with respect to lands, other than tide or submerged lands, on which the United States or its lessee or right-of-way or easement grantee has made substantial improvements or substantial investments or on which the United States has conducted substantial activities pursuant to a management plan such as range improvement, timber harvest, tree planting, mineral activities, farming, wildlife habitat improvement, or other similar activities, shall be barred unless the action is commenced within twelve years after the date the State received notice of the Federal claims to the lands.

(j) If a final determination in an action brought by a State under this section involving submerged or tide lands on which the United States or its lessee or right-of-way or easement grantee has made substantial improvements or substantial investments is adverse to the United States and it is determined that the State's action was brought more than twelve years after the State received notice of the Federal claim to the lands, the State shall take title to the lands subject to any existing lease, easement, or right-of-way. Any compensation due with respect to such lease, easement, or right-of-

way shall be determined under existing law.

(k) Notice for the purposes of the accrual of an action brought by a State under this section shall be--

(1) by public communications with respect to the claimed lands which are sufficiently specific as to be reasonably calculated to put the claimant on notice of the Federal claim to the lands, or

(2) by the use, occupancy, or improvement of the claimed lands which, in the circumstances, is open and notorious.

(l) For purposes of this section, the term "tide or submerged lands" means "lands beneath navigable waters" as defined in section 2 of the Submerged Lands Act ([43 U.S.C. 1301](#)).

(m) Not less than one hundred and eighty days before bringing any action under this section, a State shall notify the head of the Federal agency with jurisdiction over the lands in question of the State's intention to file suit, the basis therefore, and a description of the lands included in the suit.

(n) Nothing in this section shall be construed to permit suits against the United States based upon adverse possession.

**History:**

(Added Oct. 25, 1972, ♦ [P.L. 92-562](#), § 3(a), 86 Stat. 1176; Nov. 4, 1986, ♦ [P.L. 99-598](#), 100 Stat. 3351.)



## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 10 (78 minutes)

ICON LEGEND

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 10

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### Introduction

Welcome back. Let's talk about local surveys, official surveys, and **bona fide rights** as to location. But before we start talking more specifics about the statutes and the laws, common and statutory laws, and the administrative rules governing those areas, let's speak to something more fundamental.

This is sort of a conclusion that I hope as we go through this process, I'll keep coming back to and you'll see why I put this out there as fundamental. By fundamental law upon the issuance of a patent for land by the Federal Government it is just as if the monuments, survey plat, and field notes, and the laws, regulations, and rules governing how to survey the land described in the patent are stapled to the face of the patent. That's one of the principles in our Public Land Survey System, one of the fundamental laws, it's just as if when you have a patent from the United States Government, it's just as if stapled right to it is the plat, field notes, the laws, rules, and regulations governing how to locate that legal description.

That is basically came from a U.S. Supreme Court case **Cragin v. Powell**, 1888 out of Louisiana. The facts of that case are not particularly exciting but the principles of the Public Land Survey System are well stated in that U.S. Supreme Court case, and it's one that everybody should read at one time or another.

The survey rules then based on that portion of the survey rules as if they're stapled to the patent, what are we talking about when we're talking about survey rules? The survey rules are spelled out in the manuals, circulars, instructions, and regulations issued by the GLO, General Land Office, and later by the BLM.

Those are sort of conclusions to summarize of where I'm going to go through and we'll see if I go through there and when we get to the end you'll see if you can agree with my opinion on that.



**HANDOUT** A copy of Bob Dahl's presentation that he uses during topics 9-12 can be found in the Handout section at the end of the Evaluating Corner Evidence –Part 9 study guide.

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### Administrative Issues

Now, let's talk about the government's regime; administrative, management, organization, the system for the survey rules. Again, I'm talking about for the Public Land Survey System. Perspective when conducting a resurvey on the Public Land Survey System, Federal survey, and Federal Resurvey Authority, who is the Secretary of the Interior and why do we care if she has an opinion about surveying on the public lands?

Why do we care what the Secretary of the Interior says about surveying on land that is now private land, but is part of the Public Land Survey System? Who cares? That's what I'm going to try to talk about to put into context in this legal system the role of the Secretary of the Interior and her designated officials.

So, let's look at Federal statute law first. Federal statute law, **United States Code USC, Title 43, Public Lands, Chapter 18, Survey of Public Lands, Section 2 often written down as 43USC2**; the Secretary of the Interior or such officer as he may designate shall perform all executive duties appertaining to the surveying and sale of the public lands. I think you want to circle two things in that summary of that statute law; by the way that law was passed in 1812 initially. Executive duties, all executive duties you should circle that, and public lands.

Let's speak a little bit; in 1812 when this act was first enacted, what lands was the Congress thinking about? Some people suggest today reading that act that, oh public lands, well then that means this authority to perform all executive duties appertaining to surveying only pertains to the lands under the administration of the Bureau of Land Management, and only the public lands that's administered by the Bureau of Land Management. I'm going to suggest to you in 1812 they never even heard of the BLM. In 1812, the clear intention of Congress was to include, what? All land with a Federal interest.

They basically started the system in 1785, by the time they got to 1812, they realized they were going to have to consolidate this land business that they were in and they consolidated, of course, the Secretary of the Interior didn't exist in 1812; but they created the General Land Office within the Department of Treasury because the whole system was about raising money, conveying land.

It wasn't about surveying; it was about raising money and conveying land,

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getting the land into the hands of the landowners. Surveying was almost a secondary by-product of it. They decided that they wanted to have a survey prior to the conveyance because it was easier to administer. That way the settlers knew where they were getting, where their land they were going to get, there was not going to be gaps and overlaps in the system as designed.

So, in 1812 it was the Commissioner of the General Land Office that was given all these executive duties. In 1849 when the Department of the Interior was created, then that duty was transferred to the Secretary of the Interior where it's been ever since. My point is, on interpreting public lands there, you will find the reading through it for the duties of surveying that you should read any land with a Federal interest, any land with a Federal interest.

That's probably the interpretation that's going to get you closer to the reality when you look at the expanse of 43-2. **43-USC-1201**, the Secretary of the Interior is authorized to enforce and carry into execution by appropriate regulations every part of the public land statutes. Congress has delegated significant amount of authority to and through the Secretary of the Interior, now I'm going to relate that eventually down to surveying on Federal Interest Lands and the role that the Secretary plays.

The Secretary of the Interior may in his discretion cause to be made such resurveys or retracements of the surveys of the public lands as he may deem to be essential to properly mark the boundaries of the public lands remaining undisposed of. Again, be careful. Don't try to narrow that definition of public lands as lands administered by the Bureau of Land Management because many, many court cases and administrative rulings have said it is much broader than that, any land with a Federal interest.

What **43-USC-772** is generally called the **General Resurvey Act**. It was enacted in 1909. You have to remember, prior to 1909, every time the Federal Government wanted to do a resurvey they had to go to Congress for special legislation. By the time they got up to 1909, Congress was tired of the General Land Office coming to them for authorization to do a resurvey. So they said, "We're going to settle this. We're just going to give you, the Secretary of the Interior, general resurvey authority." When you make certain findings, now you have the authority go forth and do resurveys.

That act is still relevant today and that is where most of the resurvey

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authority comes from. The Secretary of the Interior, upon application of the owners of three-fourths of the privately owned lands or by any court of competent jurisdiction accompanied by a deposit, may make a resurvey or retracement of any or all of the lines of said township; and to set permanent corners and monuments of private or Federal lands in accordance with the laws and regulations governing surveys and resurveys of the public lands. In essence in 1918 Congress expanded the general resurvey authority and says, “Secretary of the Interior, if the private landowners want you to come in, and there’s certain regulatory process they have to go through, then you too can go and resurvey private lands.”

### Indian Country Applications

And finally, let’s talk about Indian land, Indian country. Whenever it becomes necessary to survey any Indian or other reservations or 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 under which other public lands are surveyed.

Couple different things are going on there in **25-USC-176**. That was enacted in 1864. What was happening prior to 1864 is you still had the Department of State doing Indian land surveys, and you still had the Department of War doing Indian land surveys, and you still had the Department of the Interior doing Indian land surveys, and believe it or not, when a couple Federal agencies start doing stuff that’ll overlap there can be confusion.

So Congress says, “We’re going to roll this all up into the General Land Office.” The Commissioner of the General Land Office will have the authority to survey any and all Indian lands. And then the General Land Office was reorganized into the Bureau of Land Management in 1946, and this authority has been within the BLM ever since.

Some more about what we’re talking about is the Federal laws, Federal statute laws, governing the surveying of Federal Interest Lands. We need to know the Federal regime, and then of course, later we’ll learn the State regime and then under those now you begin to get the picture of what’s going to govern you when you are out there surveying. And what the judges are going to look at when they are looking over your shoulder.

In general terms, these are the statutes that you should be familiar with. I

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want to point particularly to 751, 752 and 753. Those are the ones that the general survey rules. Those were enacted in 1796, 1805, 1820, and 1832. By 1832, the rules for surveying were generally in place.

For example, the original monument will control, 1896; the statutory method to subdivide a section, 1805; the statutory method of how to subdivide a quarter section, 1820. You see the drift? Those are the statutory laws governing the rules to survey and locate lands that have descriptions based on the Public Land Survey System. So, these you have to be familiar with. These are the fundamentals.

We've identified that Secretary of the Interior has been given the authority by Congress to survey Federal Interest Lands. Now when you go into the Department of the Interior Delegation of Authority Manuals, every bureaucracy has a Delegation of Authority Manual, the Secretary of the Interior clearly is not going to go out and conduct the surveys herself. All executive duties appertaining to the surveys of the Federal Interest Lands has been delegated to the Director of the Bureau of Land Management, and the Director of the Bureau of Land Management you'll notice on the plat of an official survey the Chief Cadastral Surveyor is signing for the Director. That's what it is.

The Director of the BLM has been delegated this survey authority. Further, that authority has been further parsed to the Director of the BLM has delegated the authority to approve official surveys to the Chief Cadastral Surveyor for the state. There are, of course in the Public Land Survey System, there are 30 states from Ohio west. The BLM has organized itself into 12 states. Clearly some of the BLM State offices have jurisdiction over more than one state. You always should be aware of, when you're dealing on Federal lands, which BLM State has jurisdiction in the state you're working in. What I'm getting at there's 12 BLM offices, there's 12 Chief Cadastral Surveyors State office Chief Cadastral Surveyors. Those are the individuals that the people that sit in those seats have been delegated the authority to approve surveys.

### Role of The Manual

I want to talk about one other delegation of authority that comes down through the Secretary and the Director of the BLM. The other delegation of authority I want to talk about is to make the final interpretation of the Manual of Survey Instructions. What does the Manual really say? Who has final interpretation of it within the Department of the Interior? That

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authority has been delegated to the **Chief Cadastral Surveyor** of the BLM. That's the one cadastral chief in the Washington office, the current incumbent is Don Buhler.

So, now that we see where the Secretary of the Interior fits into this scheme of carrying out the public mandate of survey duties and the delegations of authority, now lets dive into a little bit of how the General Land Office, and the BLM, and the Department of the Interior conducts that business. One of the things lets look at the Manual of Survey Instructions.

What is the Manual of Survey Instructions? So what? Who cares? Well, I'm a private surveyor I don't need to know the about the Manual of Survey Instructions that's dealing with the government guys and the BLM guys. That don't pertain to me. Well, let's see what the BLM Manual calls itself. The Manual of Survey Instructions describes how cadastral surveys, Federal Authority Surveys, official surveys of the public lands, Federal Interest Lands, are made in conformance to statutory law and its judicial interpretation. That's the Manual's representation to you. It's saying that if you follow what's in the Manual, the Manual believes that the instructions are in conformance to statutory law and its judicial interpretation. Let's see what else it says.

By the way, could the Manual be wrong? Absolutely, if the Manual is not in conformance to statutory law or their judicial interpretation, the Manual's wrong. The Manual does not trump statute law. What else does the Manual call itself? It is within the province of the Director, the Director of the Bureau of Land Management, to determine what are public lands? What lands have been surveyed? What are to be surveyed? What have been disposed of? What remains to be disposed of? And what are reserved? When you step back and look at that sentence that says a lot. That the Director, it's within the province of the Director, via the Secretary of the Interior via the United States Congress to determine if a piece of ground has been surveyed.

One of the ways the government determines if a piece of ground has been surveyed is, has it been returned on an official plat? Returned meaning, does it show up on an official plat? If land is not returned on an official plat it's unsurveyed. Where is the boundary of that surveyed land? Does it go to here or does it go to here? Who determines for the government? That's what this is saying, one official making the determination. They have to boil it down to one person. They come through there.

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Let's talk about the Manual of Survey Instructions a little bit more. Who's the Manual of Survey Instructions written for? Who's the intended audience for the Manual of Survey Instructions? In general terms, the intended audience is a Federal Authority Surveyor. What is a Federal Authority Surveyor? We talked about that early up. You have all of those ingredients. What was it? 7 or 8 ingredients, if you didn't have every one of those you didn't have a Federal Authority Surveyor. So, in general terms, the Manual's intended audience is that individual that's going to conduct the Federal Authority Survey. But you know what? I found out there's 5 types in that audience. Can you name the 5 types that the Manual is intended for?

Well, of course, the easy one is well the field surveyor. The person that's going to go out and conduct the field part of the survey. The Manual is a compilation of general instructions. Does the Manual give you minute specific detailed instructions for every possible factual scenario you can ever dream up? No, course not. It can't. How thick a book would that be?

The Manual of Survey Instructions is a compilation of general instructions. There's 5 intended audiences. The field surveyor, the other person is the special instructions writer. To have a Federal Authority Survey you have to have special instructions. There are instructions how to prepare special instructions in the Manual. The reviewer, the person that's going to review the returns by the field surveyor. There are instructions to that person. The drafts person, the person that's going to create the plat.

You know those silly looking BLM plats that have just one or two, three narrow little lines and just a couple dimensions that look like there's nothing on them? There's enormous amount of information coded in there and it takes an expert to develop those plats and part of what we need to work on is being able to how to interpret what's the information on the plat. That's the fourth kind. The fifth person is the Chief Cadastral Surveyor that's going to approve it. That person should get and does get some general instructions.

There's another thing about the Manual of Survey Instructions that has occurred to me as I've had the opportunity to work on developing the next edition of the Manual. Which by the way, I just going to talk about the current process of the development of the next edition of the Manual. I believe in the current edition of the Manual which is 1973 as we're



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speaking today is the current edition of the Manual of Survey Instructions.

I believe most of the content in there is good, solid language. And the worst thing the BLM can do is just wordsmith to be a wordsmith, and changing something to be changing something. That's the worst thing the BLM can do. I believe most of that language is good and solid and nothing needs to change on it. But I also believe that the law has changed and moved in some areas, for instance water boundaries, the Federal courts have decide a lot of cases since 1973 pertaining to water boundaries so that needs to be updated, for instance. That's the process of developing the next edition of the Manual which will be very little change from this current Manual with some areas that needs to be updated. Some areas that the law has changed and therefore we need to remove some stuff.

### Chasing the Law

But what I was getting at in terms of developing the next edition of the Manual and thinking about it is there's kind of two parts to the Manual. And I think some of us forget this when we pick up the Manual. This is the current edition of the Manual, the 2009 edition.

When we pick it up and start reading that there's kind of two parts to it. One is what I call chasing the law, chasing the law. This is where there is statute law. There is Federal common law, U.S. Supreme Court decisions. There is regulations governing surveying. Those are laws. There's the United States Constitution. Those are laws that are in place that are inviolate to the Manual of Survey Instructions. So, part of what the Manual is attempting to do is compile and condense those laws into a language that surveyors can understand and relate to, general instructions. Now if the Manual does not interpret those laws correctly, does that make the law wrong or the Manual wrong? Well of course, the Manual's wrong.

So, when you pick up and read your Manual you have to be thinking about, now am I reading where they're chasing the law and they're trying to interpret and give you like they said their conformists to statutory law and its judicial interpretation? Or the second type of part of the Manual. The second type is where and put it in quotes the Manual is "making" the law. And what I mean by making the law, well think about it, I just pretty much outlined all the Federal statue laws pertaining to surveying on the rectangular system.

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Well where do I go in those statutes to find how to determine the true corner point for an offline witness corner? Congress didn't treat that. But by Congress delegating the authority for all executive duties appertaining to the surveys of the public lands, they left it to the Commissioner of the General Land Office, and now to the Bureau of Land Management, to write the rules for all those myriad of factual situations necessary to administer the surveying, and sale, and management of the Federal Interest Lands.

So, when you're picking up and reading the Manual, you sorta have to make sure you know which part of the Manual you're reading. Are you reading the part where it's chasing the law? Which then you can be well, gee, I don't think that they followed the law right here. Or are you reading a part where they're quote "making" the law. If they're within their statutory responsibility, the courts are going to give the BLM wide deference on making the rules.

Like to give an example of what I meant by the Manual is either chasing the law or making the law. How to subdivide a section, when the Manual gives general instructions on how to subdivide a section is it chasing the law or making a law? Well, it's chasing a law because Federal statute law 43-USC-752 enacted in 1805 by statutory says you'll connect the exterior quarter corners and at the intersection will be the center quarter.

How about the primary method to reestablish a lost interior section corner? Is that chasing the law or making the law when the Manual of Survey Instructions gives general instructions of the primary method reestablish a lost section corner? Well, you won't find first of all you have to look at the statute law. There's no statute law describing how to reestablish a lost section corner. So that is making the law. The Commissioner of the General Land Office had the discretionary authority to come up with a system to deal with the factual situation. A lot of the Manual is about that.

The other thing about the Manual of Survey Instructions on the part of, well they're making the law well that's just the BLM procedures, that doesn't pertain to me. Well, if it was the accepted procedure and most that the materials in the Manual has been held in high regards by the judicial system. It has been given great deference in the judicial system on many of its points. It is the policy of the Bureau of Land Management and for most of the land in the 30 western states, that land was conveyed based upon the survey rules compiled in the Manual of Survey Instructions.

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So, you want to be very, very careful when you choose to disregard the instructions in the Manual. Just be careful when you're ready to go that route. There's times when that's the appropriate route but just I think it's very important that if you're going to go down that route that you be able to document why the Manual is not applicable here and then do what's necessary.

### Inherently Federal

Let's talk a little bit more about the Federal regime. We talked about the statute laws and we're talking about the Manual. Section 6-3 of the current edition of the Manual, when Federal lands including Indian lands are involved the final authority to approve or disapprove the official resurvey procedures rest with the Secretary of the Interior acting through the Director of the BLM.

Another way to put that is you've probably will if you haven't already heard the terms inherently governmental activities and the term commercial activities. By the survey statutes that I've cited and other Federal statutes not pertaining to surveying, Congress has basically told the executive branch there are certain decisions appertaining to Federal interests that cannot be delegated, cannot be contracted.

Those activities are called inherently governmental activities. And within an Official Authority Survey which covers many, many activities there's many activities within an Official Authority Survey some of those activities fall in the area of inherently governmental, meaning non-contractible, and some of them are falling in commercial activities, meaning contractible.

For example, to determine whether a scratch on a rock is the original 1883 section corner and whether that rock is in its original position, is an inherently governmental function because, not because the BLM wants it to be, because that will be the final opinion; remember the BLM has been delegated the authority to determine the limits of the Federal interest, that will be the final administrative opinion always subject to appeal higher up, but this is the delegated authority the final opinion of where the limits of Federal property begins and ends. That's the decision that is inherently governmental is that decision of where the Federal property begins and ends. That decision cannot be contracted. That decision is inherently governmental.

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An example of a commercial activity, once the Federal Government through its authorized official, Chief Cadastral Surveyor, through the cadastral surveyor that's under special instructions, once that person has made a decision that this is point A and this is point B, to develop the relationship between them as to measure them, that's a commercial activity. Because that's not determining where the Federal interest lies, that's developing an existing mathematical relationship. You get the idea of inherently governmental/commercial activities tied back the 6-3 portion of the Manual.

Let's talk about something else about the Manual. The failure to conform the resurvey, any resurvey, to the requirements of the Manual of Survey Instructions constitutes gross error. The date there's 1987. 99IBLA; IBLA, Interior Board of Land Appeals, Volume 99 Page 104; **Peter Paul Groth**, in and of its self is not particularly outstanding but it does illustrate the point that in this case the BLM did not follow its own Manual. That was the finding, and if the finding is the Manual was not followed, then that constitutes gross error.

In that case it was a lost section corner, there was some grossly erroneous original surveys, if not frauds, some of the lines weren't run, some of the corners weren't established, and the BLM adopted a 1 point control to reestablish a lost interior section corner. The landowner that was affected appealed that decision, and persuaded the Interior Board of Land Appeals judges that a 2 point method of restoration was the proper method with that factual situation.

So, therefore IBLA says, "BLM when you had this factual situation this is what the Manual says, 2 point, you did not follow the Manual you used 1 point that constitute gross error. Go do it again."

Another area about the Manual, besides the Manual of Survey Instructions which in essence is a technical Manual, every Federal agency has what they call administrative Manuals different from a technical Manual. Administrative Manuals is more how you keep your time, reporting requirements on weekly progress, those administrative issues.

BLM Administrative Manual 1203, delegation of the authority, the Washington office Chief Cadastral Surveyor will provide the final interpretation of the Manual of Survey Instructions. In preparing the next edition of the Manual of Survey Instructions, I work for Don Buhler

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who's the Chief Cadastral Surveyor and he will decide if my draft is pertinent and whoever's in that position will have final say on what it does say.

I want to wrap up a little bit here. And there's a lot more to cover and we will, but everyone once in a while let's summarize a little bit and see if we can agree to where we're at. And if you're finding that you're just not getting here where I'm at then it's time to call me, call other relevant BLM and public land surveyors, call the BLM office, and talk about it. I think one of the great opportunities in the Certified Federal Surveyor Program is this opportunity to increase the communication painlessly, if that's possible, between surveyors who're going to practice in Indian country and the Bureau of Land Management cadastral surveyors. Private surveyors, you aren't on your own out there.

You have public employees whose job it is to assure that surveys on Indian country are done properly. You have an opportunity to tap into that to help you with your decision.

Therefore, when a boundary location is to be run and marked or a boundary location becomes unclear then the Manual is the guidance, the rules, governing, one, the running and marking of lines and corners, and two, the relocation of boundaries and corners. Now, notice that I used guidance in the rules. In conformance to, because the Manual just can't dream this up to do one and two, there has to be in conformance to the controlling monuments, surveyed plats, field notes, rules, regulations, and laws. You see how it all cascades down.

Now, what percentage of the western 30 states of the Public Land Survey System has been surveyed under the Public Land Survey System? A very significant portion of it. What percentage of those 30 states were surveyed under Federal survey rules? A very significant proportion of it. What percentage of those boundaries and corners today are still governed by some portion of the Federal rules, and regulations, and guidance? Of course, that's the \$64,000 dollar question. A significant portion of it is, clearly. Whether in your local situation it is or is not site specific. Now, let's see if we can begin to narrow this down a little bit.

Let's talk about one more thing here before we get too narrow. It is settled law that the United States may survey what it owns and thereby establish and reestablish boundaries, but what the government does in this regard is for its own information and cannot affect the rights of owners on the other

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side of the existing boundary. The principle here is where there is not an existing boundary of another's interest, meaning it's all Federal interest, the government can mark its land, plat its land, describe its land, convey its land by its own rules.

However, it cannot affect the rights of owners on the other side of an existing boundary. Basic 101 resurvey principles that we've all been taught. If it's all under one ownership that owner can survey it and parse it up any way they feel like it. But as soon as it butting a boundary of another, then these rules and regulations begin to kick in. Society wants to have a say.

Limit of jurisdiction of the Federal Authority Surveyor, remember part of it is public domain land, land status surveyed under Federal rules. Federal Authority Surveyor, State Authority Surveyor, No Authority Surveyor. Let's begin to parse those out and get some space between them.

Limit of jurisdiction of the Federal Authority Surveyor, for the most part I'm going to be talking about different parts of the Manual. When was the first Manual of Survey Instructions? The first known one is Jared Mansfield 1804 Instructions of Survey, survey instructions. When was the first Manual issued that had jurisdiction country-wide? The 1855 Manual was the first Manual that was adopted for all the public lands. Since 1855 Manual of Survey Instructions, you have the 1864 instructions, the 1871 Manual, the 1881 Manual, the 1890, 1894, 1902, 1919 advance sheets, 1928 advance sheets, 1930, 1947, 1973, and now the 2009.

Those are all Manuals of survey instructions and when you begin to read them you can see where they all roll into the next one. Very little has changed. It has evolved, like we said the Public Land Survey System, society is always changing and evolving. And this Manual is a part of putting that together. You know, it's been suggested the Bureau of Land Management the country doesn't even need a Manual of Survey Instructions. It could be one page long.

All it has to do is say follow the law and do good. That's all. But, the Manual of Survey Instructions, I believe, it's easy for me I believe the Manual of Survey Instructions has served a greater public good. It's nothing new in the Manual of Survey Instructions or particularly unique, but what it's done is it compiled into one fairly convenient place the rules and regulations, general guidance pertaining to the surveys of the Public Survey System including in Indian country.

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The other thing I think is relevant to the Manual is it's a good way to pass on to the next generation of surveyors the knowledge.

I don't know about you, you know its one thing to come up as a young surveyor and have your party chief tell you well that's the way we do it because we've always done it that way, you know. And you say, "Well that's fine, and boy, I'm going to do it your way because I'm working for you." But you know I'd like to read it myself. Where can I go to read it myself? And the Manual serves that purpose, too. Now, within the Manual, let's see what it says about limit of jurisdiction of the Federal Authority Surveyor. Three types of surveys, three types of land status, we have to know which one we're on.

Manual Section 5-19, in the resurvey process the surveyor would determine whether or not the surveyor will determine. Now, who's the Manual talking about? Again, we talked about who's the intended audience of the Manual, the Federal Authority Surveyor. But you say, "Well, gee, that's not relevant to me, I'm a private surveyor, I'm going to survey on private land.

The Manual's not relevant to me." Well, are you surveying in a state that has implicitly or explicitly included the Manual in either their statutes, regulations, or by common law? If you're in one of those states, the Manual is relevant. And in fact even if you can't make that finding, how is most of the land in the 30 states been conveyed and defined by and the legal descriptions made based upon these rules and regulations that's captured in the Manual? So, when you read the Manual you sorta have to have two lights on. You have to recognize that it's written for the Federal Authority Surveyor, but you're a private surveyor and it still may be, depending on your factual situation, your jurisdiction, relevant to you. In the resurvey process, the surveyor will determine whether or not lands embraced within a claim as occupied, as occupied, have been correctly related in position to the original survey. The surveyor will interpret the evidence with respect to its effect upon the matter in which the survey shall be extended to protect valid rights acquired under the original survey.

Valid rights claim as occupied. Get ready folks, we're going to get into areas that's not about measuring, it's not about mathematics. It's about boundary surveying. Continuing in the same section, it comes within the realm of the surveying process as defined by the public land surveying

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process because that's what the Manual is speaking to. To identify and mark out on the ground the various legal subdivisions of the Federal interest including Indian lands. In the resurvey process, the surveyor will determine whether or not lands embrace within a claim as occupied have been correctly related in position to the original survey.

Who will determine? The surveyor will determine. Who's the intended audience of the Manual? Federal Authority Surveyor, there's 5 Federal Authority Surveyors, one of them of course being the Chief Cadastral Surveyor for that state.

### States Regulate Surveying too

One of the compare and contrasts between the authority of a Federal Authority Surveyor and a private practicing land surveyor, is sometimes the rules governing the practice of the craft not the rules of how to survey but who can practice the craft.

What's the definition of the practice of land surveying? You have to remember all 50 states regulate the practice of land surveying. All 50 states have a definition of the practice of land surveying. Is that the same definition as given by the Secretary of the Interior and Congress? No, it's a different definition.

I think for private practicing surveyors it's sometimes its difficult to realize that the Federal Authority Surveyor is speaking for the Secretary of the Interior and will go much further in ultimately rendering an opinion where the limit of the Federal ownership is. Notice I said ownership. I didn't say "Well, I just locate where the D boundary is and I just stop. I just develop the facts and then I report them to some other decision maker, either the land owner, or a judge, or attorney."

Well, the Secretary of the Interior is told to define the limits of the Federal interest and they have delegated that to the Federal Authority Surveyor. Under official surveys, they will locate, render an opinion subject to judicial review, of where the limit of the Federal ownership is and they will mark it. That's a little bit different than the definition of practice of land surveying in Arizona. So, you have to keep track here.

What authority are you surveying under? Is there a difference? And so what in your case and the case of the resurveyor you're following behind. Where the demonstration of this question of determining where the claim



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is, may be one involving more or less uncertainty, believe it or not there's uncertainty in boundary location out there, as is often the case the surveyor will examine and weight the evidence, examine and weight the evidence relating strictly to the surveying problem involved. Weighting evidence is part of the surveying process.

It is a judicial question beyond the function of the surveyor, so there is a limit to what the Federal Authority Surveyor is, to determine whether or not specific lands have been dually earned under a certain entry. Meaning, well John Smith made an entry for the southeast quarter and Harry Thompson made an entry for that same legal description. That determination, that who has bona fide rights, is not within the realm of surveying process. That's a different process.

The **Quiet Title Act** is the basis now that is the basis to adjudicate a disputed title to real property in which the United States claims an interest. Challenges to the United States title to real property, of which location may be one of the considerations, are authorized by the Quiet Title Act of 28USC2409A. If the Federal Authority Surveyor is to determine where the limits of the Federal interest is at the minimum you're going to have to be able to recognize when you may have a factual situation where the Quiet Title Act is relevant and not Title 43USC751, how to subdivide a section. Both of them are part of the surveying process.

When you get out there in Indian country and there's been a hundred years of activity and of course you have to decide is your roll, is your job, to determine the limit of the trust land, or the restricted fee land, or something less than that. A Federal Authority Surveyor is thinking about all those things when evaluating a local survey. It is within the realm of the survey approval and filing process to provide a record upon which the court of competent jurisdiction in a Quiet Title suit or other reasons may clearly and accurately determine the boundaries of the United States claim of interest and may with security accept the boundaries thus determined in so far as they represent the true location of the Federal Interest Lands. If I can do that, I've done my job.

If I can provide a record to the court of competent jurisdiction that clearly and accurately determines the boundaries of the Federal interest which that court may with security accept, then I done my job.

Let's go to the Manual Section 5-21. Authority to decide boundary

## EVALUATING CORNER EVIDENCE – PART 10

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disputes, we're kind of looking for some parameters and fences here. What's the realm of surveying and what's the realm outside of surveying? The surveyor employed by the BLM, or surveying by BLM assigned special instructions, is to bear in mind that his work is professional, legal, and equitable in character.

The surveyor is not a referee as to the justice or injustice of a situation. The surveyor can only act upon the equities or inequities that may appear to be involved, if they fall within the Secretary of the Interior's duties to do justice appertaining to the survey and location of Federal interest including Indian lands under the law. The surveyor is not clothed with authority to decide boundary disputes, but may be regarded as one qualified by training and experience to testify in such cases. Sometimes your testimony is your written survey record.

The statutory authority to decide boundary disputes is vested in the court. Remember, just because the BLM say, "Oh well," beats their chest, "we're the final survey authority; here's our survey, that decides it." No, they don't really mean they have the final say. They may use that language, but that's not really what they're saying. The statutory authority to decide boundary disputes, because the BLM can render the opinion of the Secretary of the Interior in a boundary dispute, here we're talking about to decide boundary disputes is vested in the court by virtue of its legal capacity to weight the evidence, the facts being shown by the testimony of the witnesses including the surveyors, and by exhibit of the official records.

The court is qualified to weight the evidence, to exercise the discretion as to the preponderance of the evidence, its acceptability, and by court decree to enforce its opinion.

Let's see, if I'm doing my job would I want to know how the court that's going to have final jurisdiction in my case is going to weight the evidence? Would I be interested in how they're going to exercise their discretion as to the preponderance of the evidence, its acceptability? You bet I would. That's the second set of foots following in the footsteps. Fact, we're out ahead.

We're leading with the footsteps and we're hoping that court will follow in our footsteps and we want to leave big enough footsteps with good enough documentation they just end up reading it and say, "Yeah, yeah...you got it." That's the goal. That's the goal. The court will

## EVALUATING CORNER EVIDENCE – PART 10

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determine the facts as to the sufficiency of the control or extent of the monuments; and other marks of the official survey that can be relied upon, and how that control is to be applied.

The court's opinion will be binding in fixing the boundaries of privately owned property and would seldom be contested as to acceptability and affixing the boundaries between Federal lands including Indian lands and the alienated lands, or private lands, or patented lands, accepting as a preponderance of the evidence showing may be made that the monuments of the official survey had been disregarded, overlooked, or otherwise ignored in a testimony in the case, the court itself possessing no authority to set aside the official survey. So, there's even a limit on what the courts can do.

I'm reading out of different parts of the Manual pertaining to trying to find the parameters, the limits, of whose authority where. We're starting to use language that you need to be familiar with because this same kind of language is sounding sorta high-falutin' you know well, gee, just tell me if I can accept the iron pipe or not. You're going to end up couching your answer in this kind of a language. Because that's the law, boundary surveying is about the law and people's property rights.

Section 3-76, subdivision of section by local survey; let's see what the Manual says to the Federal Authority Surveyor when they're out there inside of a section that there's been a surveyor in there. The work of the local surveyor usually includes the subdivision of the section into the part shown upon the approved plat. Approved plat, of course, they're talking about the official plat. In this capacity the local surveyors performing a function contemplated by law. We talked about earlier under the general system, 1785, 1796, 1805, the Federal rule was to determine the section exteriors and stop in terms of surveying. But they were going to convey smaller parcels in sections.

Who was contemplated to survey and locate those boundaries? Local and county surveyors. He, being the local surveyor, cannot properly serve her client or the public unless she is familiar with the legal requirements concerning the subdivision of sections. In the event that the original monuments have become lost or obliterated, the surveyor cannot hope to effectively recover said corners without a full understanding of the record concerning their original establishment, and evidence of location after their original establishment. Nor can the surveyor hope to legally restore the same. These are lost corners or obliterated corners.

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Legally restore the same or properly weight the evidence of subsequent location, use, or occupancy until she has mastered not only the principles observed in the execution in the original survey and subsequent local practices; but also the principles upon which the courts and administrative boards such as IBLA, having jurisdiction over such matters, have based their findings. BLM, still reading from the same section, BLM assumes no control or direction over the acts of local and county surveyors in the manner of subdivision of sections, evaluation of evidence of corner locations, and reestablishment of lost corners of original surveys where lands have passed into private ownership. Neither does the bureau assume control or direction over the acts of Federal employees performing or administering surveys not authorized by the designated Chief of Cadastral Surveys. These are all local surveys. So, the Manual gives a lot of weight to the activity by local surveyors. I think that's significant.

### Secretarial Authority

We talked about the authority of the local surveyor; let's talk about the authority of the Secretary of the Interior. The Secretary of the Interior and the BLM cannot assume jurisdiction over or responsibility for the acts or results of surveys made by county, local, or private surveyors or by surveyors or engineers who may be employed by other branches of the Federal Government or Indian tribes and not conducted under the direction and control of the Chief Cadastral Surveyor.

Let's say you become a Certified Federal Surveyor and you are requested by an Indian tribe or an individual Indian of a federally recognized tribe to locate their boundaries. Because you're working for that sovereign or that individual and the land status is trust lands or restricted fee lands, will the BLM assume jurisdiction over your work and assume responsibility? No, no. You're not conducting a Federal Authority Survey. Remember the definition what all the ingredients for a Federal Authority Survey. We hope, it is the CFed program hope, that at a minimum you will conduct a State Authority Survey.

Talking about the authority of the Secretary of the Interior, Manual Chapter 6 Section 3, on the other hand in the subdivision of sections and in the location of private property lines, generally, it falls to the county or other local surveyor to mark the official corners, and where a required corner is missing, the local surveyor will be called upon to recover the point. Thus it will be seen that the county or other local surveyors, as well

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as cadastral surveyors of the BLM, are constantly called upon to search for existing evidence of original monuments, and in this work, the surveyors will be guided by the same general methods.

Whether you're a BLM Federal Authority Surveyor or local surveyor, both are going to be guided by the same general methods. Should the search for a monument or corner location result in failure, lost corner, the appropriate restorative surveying process to be observed by either surveyor will be based upon the same rules as hereinafter outlined. This presentation draws little distinction; the Manual draws little distinction, between the duties of the two classes of surveyors.

**Private disputes:** where a corner marks the boundary between or in any manner controls the location of lines that form the boundary of privately owned property, dissatisfaction on the part of or dispute between the private owners may be brought before the local court of competent jurisdiction. The Manual is just stating the obvious there. In that case, the Secretary of the Interior will not be bound by a court decision.

If the United States is not a party to a suit affecting Federal Interest Lands when evidence of the official survey was disregarded or there was some other departure from good surveying practice. In general terms, the Federal Government can choose if they're not a party to a local dispute whether they will be bound by the local dispute. Imagine a section, and there's mixed ownership of private and Federal Interest Lands, and down in the lower southwest portion the two landowners had a boundary dispute, and they went to court, and they settled a local decision on how the southwest of the southwest was to be located; which could potentially impact the BLM land or the Acoma Indian land in the northeast of the northeast of the same section. Does that local court decision bind the Federal Government up there? Not necessarily. If the Federal Government was not party to the suit, and particularly if the Federal rules or the proper appropriate rules were not applied or if they overlooked the Federal Original Survey in arriving at their conclusion, in those cases, particularly, it may not be binding on the Federal Government.

Let's talk a little bit about State statutes, State administrative regulations, and State case law. Most states within the Public Land Survey System have incorporated the rules set forth in the Manual of Survey Instructions. The Manual supplements and the circulars governing the weight given original evidence of corner locations, procedures to reestablish lost GLO or BLM corners, and procedures for subdivision of sections. Many states

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have explicitly incorporated the Manual.

Now, I'm not going to go into examples of State statutes, or State regulations, or State Supreme Court cases where they have incorporated the principles examined in the Manual of Survey Instructions. There are numerous ones of them and if you are licensed to practice in your state, which means that's the state you can get your certification in, it's incumbent upon you to know the relationship of the State surveying regime with the Federal survey regime. That's just basic surveying 101 knowledge, that it's expected for you to understand.

Let's talk about the role of local surveyor when conducting a resurvey on the Public Land Survey System. The function of the local surveyor, again this is part of 3-76, 2009 Manual Chapter 3 Section 76, the function of the local surveyor begins when employed as an expert to identify lands which have passed into private ownership. An expert, ok, the expert testimony by local surveyors, who may have identified the original monument prior to its destruction, who protected bona fide rights as to location by a reasonable application of the good faith rule, we will talk further about bona fide rights good faith rule; or have marked the corners of legal subdivisions by law using the accuracy standards for the time and local followed by use and occupancy is by far the most reliable expert testimony.

Manual Section 6-18, acts and testimony of original corner recovery, a corner is not considered as lost if its position can be recovered satisfactorily by means of the reliable **testimony**, reliable testimony has a specific meaning, and acts of witnesses having knowledge; what kind of knowledge? What's a burden? Of the precise location, what's the definition of precise location of the original monument? The expert testimony of surveyors who may have identified the original monument prior to its destruction, and recorded new accessories or connections is by far the most reliable; though landowners are often able to furnish valuable testimony.

So, the BLM is going to give a lot of weight to the reliable testimony, typically, the reliable testimony of a local surveyor is his/her survey plat. Now, you document the bejeesus on your survey plat, right? You give that next surveyor that's going to come along behind you 20, 30 years from now all kinds of reasons and analysis why you did what you did because, why? Because you want him or her to accept you. Why? Because you want to contribute to the stability of the property corners in the United

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States. Why? So people can do business for domestic tranquility.

This pertains to local surveyors, Federal statute. All subdividing of surveyed lands, surveyed lands remember in the Federal context, generally, section exteriors, all subdividing of surveyed lands into lots less than 160 acres may be done by county and local surveyors at the expense of claimants. This law was a section of the 1870 Mining Act.

It was directed towards Placer Mining Claim Patent Applications described by legal subdivisions. You folks from mineral country, placer claims, what's the size of a placer claim? 20 acres, if it's on surveyed lands the legal description will be by legal subdivisions. An association can include up to 8 parties meaning 160 acres meaning a quarter section. In 1870, they passed the first mining act in 1866, well it took them four years to realize that the Federal Government didn't have enough surveyors, there wasn't enough contract surveyors, available to meet the needs and the demands of the claimants, these are mining claimants, big business.

So then they opened it up and says ok for placer claims located by legal subdivisions, then the local and county surveyors can do that, and what that really means is they can survey it, in essence, their subdivision, and again the facts will tell you this, it is an original survey if a patent, in this case a Placer claim patent is issued, subsequent to and reference to that local county survey plat.

That was 43USC766, Federal statute law pertaining to the activity of local surveyors. That's an example of when you're evaluating a local survey, what was the authority that the local surveyor had? That may govern your decision to accept or reject, that's an example.

### Constitutional Guidance

Let's talk about some inviolate rules, rules that cannot be broken if you will, governing resurveys. The Constitution of the United States, Congress shall have the power to regulate commerce with the Indian tribes, that's Article 1, Section 8, Clause 3, the Commerce Clause. Congress shall have the power to dispose of and make all needful rules and regulations respecting the territory belonging to the United States, Article 4, Section 3, Clause 3.

The Constitution and the laws of the United States shall be the supreme

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law of the land, Article 6, Clause 2, Supremacy Clause. If you have a Federal law governing how to subdivide a section and you have a State law subdividing a section and they are in conflict, which one trumps? In general terms, when a State law is in conflict with a Federal law by the Supremacy Clause, the United States Constitution, the Federal law will prevail. No person shall be deprived of property without due process of law. I want you recircle due process of law, that will come back in over and over and over again.

The surveyor needs to know about due process of law, because a surveyor is out there doing work that can violate somebody's due process of law. No person shall be deprived of property without due process of law, nor shall private property be taken for public use without just compensation. That's the 5<sup>th</sup> amendment.

We talked briefly about some of the Federal statutes. I'm not going to belabor them. You can look them up and in fact you should always have a copy of them in your files. Federal statute law 43 USC 752, you can read there, the position of existent and obliterated corners returned by the Secretary of the Interior are unchangeable, and are the corner locations of the described inured or patented lands.

The boundary lines actually run and marked in the surveys returned by the Secretary of the Interior are the property boundary lines of the sections or subdivision for which they were intended, and the lengths of such lines is returned are the true length thereof. Original monument will control 80 change is the official distance. Each section or subdivision of sections returned by the Secretary of the Interior is considered as containing the exact quantity expressed, and the half section and quarter sections the contents thereof shall not have been thus returned shall be held in considered as containing the one-half or the one-fourth part respectively of the returned contents of the sections of which they may take a part.

The Secretary returned the plat that showed the southeast quarter containing 160 acres. That's the official acreage. That's what the settler paid for, whether it turns out to be 158 or 162 the Secretary doesn't care. More than that Congress doesn't care. You hear the term official acreage. Official acreage has a specific statutory meaning. Don't confuse official acreage with GIS Acreage, county acreage, **GCDB** Acreage; you know, pick any acreage you want there's one official acreage on the latest official plat describing the parcel is the official acreage. It may not be the most accurate acreage, that's a different issue.



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And then, 43 USC 752 and 753, the corners of half and quarter sections not marked by the Secretary of the Interior shall be placed as nearly as possible equal distance from those two corners which stand on the line. How do you locate a north-sixteenth in a regular section? Equal distance, midpoint, well did the BLM dream that up? No, that's Federal statute law. The BLM is attempting in different parts in here to talk about that. How many different variations of a sixteenth corner can there be out there? How many different variations of the controlling corners in that establishment of sixteenth can there be out there?

Almost an infinite number, the BLM Manual is an attempt to give you some general guidance under general conditions. If you have an exception to the rule, then it's our recommendation is that you contact your local BLM office to discuss it. The boundary lines which have not been actually run and marked shall be ascertained by running straight lines from the established corners through opposite corresponding corners. All this language will lead us and will be pertinent when we're evaluating local conditions.

And then of course, 43USC772, general resurvey authority. Congress told the Secretary of the Interior, yes, go forth and do resurveys provided, provided that no such resurvey or retracement shall be so executed as to impair the bona fide rights. What are bona fide rights? We're going to talk about that. Why is bona fide rights so significant that Congress put it in the statute governing resurveys? We're going to talk about that. Executed as to impair the **bona fide rights**, or claims, of any claimant, entryman, or owner of lands affected by such resurvey or retracement.

That outlines some of the constitutional framework, some of the Federal statute law framework, both for original surveys and resurveys. And we read different parts of the Manual that talked about the role of the local surveyor in many cases is almost identical with the role of the Federal Authority Surveyor. We need to know that when we're getting down to evaluation of a local corner. This is a good place for a break in this video lecture.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 11 (33 minutes)

**ICON LEGEND**

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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### Resurvey Principles

Let's move on to basic principles of resurveys. We've talked about inviolate rules pertaining to the constitution and federal statute law; now let's talk about some basic principles.

In the Manual Chapter 5, Section 10, dependent resurveys defined: a dependent resurvey is retracement and reestablishment of the lines of original survey. In their true original positions according to the best available evidence of the position of the original corners in legal contemplation and in fact the lands contained in a certain section of the original survey and the lands contained in the corresponding section of the dependent resurvey are identical.

That's the definition of a dependent resurvey; did the local surveyor conduct a dependent resurvey? Can you make that finding? Manual 5-28: bona fide rights in dependent and independent resurveys. The basic principles of protecting bona fide rights in the resurvey to show the original position of alienated lands included in the original description.

The resurvey is an official demonstration by the BLM according to the best available evidence of the former survey. What is the best available evidence? We'll be talking more about that. Manual 5-29: corner of the original survey unchangeable.

The position of a tract of land described by legal subdivision is absolutely fixed by the original corners and other evidence of the original survey and not by occupation or improvement unrelated to the original survey or the by the lines of a resurvey which do not follow the original. So I circled occupation or improvements unrelated to the original survey, that's significant. Under fundamental law the corners of the original survey are unchangeable, even if the original survey was poorly executed it still controls the boundaries of land alienated under it or lands patented under it. Manual 5-36: resurvey restores original conditions. A resurvey is an official remarking of the original lines upon a plan where by existing evidence of the original survey is given primary control over the positions of the lines to be reestablished.

The resurvey is designed to restore the original conditions of the official survey according to the record. A resurvey is based upon identified original corners and other acceptable points of control. A resurvey is



**HANDOUT** A copy of Bob Dahl's presentation that he uses during topics 9-12 can be found in the Handout section at the end of the Evaluating Corner Evidence –Part 9 study guide.

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based upon the restoration of lost corners by proportionate measurements in harmony with record of the original survey. And resurvey is based upon some flexibility allowable in applying the rules of proportion measurement, some flexibility, in order to protect the bona fide rights claimants.

Particularly in those cases where no objection is found to adopting a point acceptably located under the rule of good faith and only at slightly at variance with the theoretical position. Now, here you beginning feel some tension between a rigidly following the rules of proportioning measurements. For instance, meaning you have come to the conclusion that the corner is lost versus accepting a location that is been locally adopted that may not rigidly follow the rules of evidence and may not rigidly follow the rules for restoration of lost corners we're going to always be in this tension of, do I have locally accepted conditions? Am I looking at an obliterated corner?

A perpetuation of the original corner as evidence by a local fence corner? Or am I looking at a local fence corner that was not set in relation to the original survey or the best available evidence of the original survey and therefore will not influence my resurvey and it is a lost corner and the mathematical primary method of restoration will be implemented.

We're always having these tensions. Manual 6-3: the authority of the Secretary of the Interior. The principles of a resurvey and original survey apply to the resurvey of an official resurvey and generally to the resurvey of a local resurvey. Let me say again.

The principles of a resurvey of an original survey, when you're resurveyor number one, apply to the resurvey of an official resurvey when you're resurveyor number two and generally to the resurvey of a local survey. Prior official resurvey, official resurveys, official federal authority resurvey and local surveys subsequent to the original survey must be considered in context of the objectives of each government resurvey.

The objectives of a government resurvey are A: the adequate protection of the existing rights acquired under an original survey and faithfully located by subsequent survey in the matter of location on the Earth's surface. Adequate protection of existing rights acquired under an original survey and faithfully located in the manner of location on the Earth's surface.

The second objective of a government resurvey is to proper marking of

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the boundaries of the remaining federal interest lands. Once you've identified the bona fide rights of the private land what's left over is the federal land.

General rules of resurvey, these general rules are accepted as a means of protecting bona fide rights in the execution of resurveys. The general rules are applicable in cases, the general rule, later on we're going to talk about exception to the general rules right now we're talking about general rules. General rules are applicable in cases; one, showing fairly coordinate relation between conditions on the ground and the record of the original survey.

Two, the original survey was made faithfully and is supported by reasonably good field note record. When those existing conditions of a good original survey then the general rules will be applicable.

### Corner Classifications

Let's talk about **existent, obliterated and lost corners**. The Manual provides guidance on the acceptability on physical evidence and testimony. Manual 6-11, an existent corner is one whose original location can identified by substantial evidence of the monument or its accessories by reference to the description in the field notes or located by acceptable supplemental survey record some physical evidence or reliable testimony.

For you who have been following your Manual reading your section 6-11, you'll notice what I read does not match identical with what's in the 1973 edition. You probably have some language of "beyond reasonable doubt" where what I read was "substantial evidence."

The term substantial evidence is inserted in response to **Stoddard Jacobsen and Robert C. Downey v. the Bureau of Land Management on consideration 103 IBLA 83**. The Interior Board of Land Appeals has changed the standard without going into the discussion on why they did that and how they did that and the full implementation and impact of that, the standards have changed from beyond a reasonable doubt to substantial evidence. So we need to know what substantial evidence is it pertains to the recovery and evidence of an original corner.

A corner is existent or found if such conclusion is supported by substantial evidence. The substantial evidence standard of proof is such

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relevant evidence as reasonable mind might accept as adequately support a conclusion. Substantial evidence is defined by the courts as, more than a scintilla of evidence but less than a preponderance of the evidence. Even though its physical evidence may have entirely disappeared a corner will not regarded as lost if its location can be recovered through the reliable testimony of one or more witnesses who have dependable knowledge of the original location. IBLA has changed the standard for evidence to prove existent corner that definition proactive, prospective it is not retroactive.

Prior to Stoddard Jacobsen decision in 1988, what was the standard that IBLA had supported and the courts had supported? They had supported the language in the 1973 beyond a reasonable doubt. The substantial evidence standard will not be applied to a 1930 evaluation that used beyond a reasonable doubt. From 1988 on that substantial evidence has been the standard by the Bureau of Land Management and it will incorporated into the next addition to the Manual.

Manual 6-12: the need for **collaborative evidence**. What's the definition of collaborative evidence? I recommend that you purchase *Black's Law Dictionary* or the equivalent to begin to get the generic definition of these terms. The need for collaborative evidence is in direct proportion to the uncertainty of the original feature in doubt or dispute. The shakier the corner evidence is around the corner the more you need the topography calls to tighten it up. Collaborative evidence. The firmer the physical evidence of the corner the less the topography has to agree.

Discrepancies in the record allowance for ordinary discrepancies should be made in considering the evidence of a monument and its accessories. No set rules can be laid down as to what is sufficient evidence. Much must be left to the skill, fidelity and good judgment of the surveyor bearing in mind the relation of one monument to another and relation to all to the recorded natural objects and items of topography. The records of official surveys fall under the doctrine of presumption of regularity. The doctrine of presumption of regularity that is, the official record is correct unless it establish by a preponderance of the evidence otherwise. The presumption is, that the surveyor did what the record said that's the presumption, you have to prove otherwise. 6-16, the retracement will indicate the probable position and will show that discrepancies are to be expected.

Any supplemental survey record or testimony should then be considered

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in the light of the facts thus developed. What's an example of a supplemental survey record or testimony? A local survey record. This language in sections 6-12, 6-13, and 6-16 you might think about your describing the evidence that you have found during your survey that this is what the judge or the IBLA Judge or Judicial Judge is going to hold you up against. I think it just makes sense to use the same language that their going to use. Can you make a finding that you have collateral evidence that's substantiates a position with weak physical evidence? That's the kind of language you want to think about using.

Let's go to 6-17: an obliterated corner. And again as you follow along in your Manual you're going to see that I'm not going to use the term "beyond reasonable doubt" I'm going to use "substantial evidence" for the same reason we talked about in existent corner. An obliterated corner is one at whose original position there are no remaining traces of the monument or its accessories, but whose location has been perpetuated or the point for which may be recovered by substantial evidence by the acts or reliable testimony of the interested landowners, competent surveyors, other qualified local authorities or witnesses, or by some acceptable record evidence.

Continuing on an obliterated corner a position or location that depends upon the use of collateral evidence, not collaborative but collateral evidence can be accepted only as dually supported generally through proper relation to known corners and agreement with the field notes regarding distances to natural objects, stream crossings, line trees and off line tree blazes etc. or reliable testimony. Manual 6-18: the greatest care is necessary in order to establish the bona fide character of the record intervening after the destruction of an original monument. The bona fide character of that local survey, can you establish it? Or can you not establish it? How do you go about establishing the bona fide character of that intervening record?

Full inquiry may bring to light various records relating the original corners and memoranda of private markings and the surveyor should make use of all such sources of information. We have rich opportunities for research possibilities that's another way to say not all the relevant survey records are in the county court house, but we are held accountable for them to locate them.

The manner of boundary disputes should be carefully looked into as so far as adverse claimants may base their contentions upon evidence of the

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original survey, if such disputes have resulted in a boundary suit the record testimony and the court's decision should be carefully examined for information that may shed light upon the position of an original monument. That's another way of saying "talk to the locals" it don't take very many talks if they know you're a surveyor before they start talking about if there's issues in the neighborhood or there's been disputes or somebody didn't like what somebody did, somebody's great grandfather messed with somebody's grandfather. Those are all relevant, possible collateral evidence.

Finally, **lost corners** 7-2 and again you'll see the substitution of substantial evidence for beyond a reasonable doubt. I'm not an attorney, in general terms the judges and the legal profession when they were reviewing the language in the Manual they landed on that "beyond a reasonable doubt" in their world was used for criminal cases and that substantial is a standard used in civil cases. So they determined that the proper standard is substantial evidence and when you read these cases that I cited over here starting with Stoddard Jacobsen you'll be able their analysis. Why they evolved the way they did.

A lost corner is one whose location can not be determined by substantial evidence either from substantial evidence, more than a scintilla less than a preponderance and certainly less than beyond a reasonable doubt, either from traces from the original marks or from acceptable evidence or reliable testimony that bears upon the original position and whose location can be restored only by reference to one or more independent corners.

Implicit with this paragraph is the test; if the corner is lost does the restorative method and the position of the restored corner protect bona fide rights as to location? In other words once you determine that a corner is lost now you got to make sure select the proper restoration procedure that protects **bona fide rights**. Thus if substantial evidence of the location of the original corner exists that position will be employed in preference to the rule that would be applied to a lost corner. In addition, once a corner is considered lost it is the surveyors responsibility to ensure that the restoration method and the restored position comply with statutory protection of bona fide rights requirements delineated in 43 US Code 7772.

Well we all know how to establish a lost interior section corner the primary method in the Manual is double proportion. But if the facts are such that for whatever reason, if the facts are such that to do a double



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proportion method was to make a finding that you're going to impair bona fide rights for different reason and we'll have case studies on that to apply double proportion would impair bona fide rights then it's incumbent upon you to pick a different restoration method a three way proportion or a two way proportion.

Manual 7-1, 7-4, 7-5, and 7-7 provides rules for lost corners and that proportionate measurement harmonizes survey practice, survey practice as practiced by the original surveyors. How they were supposed to do it, the rules and regulations. Proportionate measurements harmonizes the surveying practice with legal and equitable considerations.

In the Manual 7-8, 7-16, 7-53, 7-54, and 7-56, 7-57 describe proportionate measurement methods. 7-5 the manifest errors in measurements are removed from the general average difference and placed where the blunder was made prior to proportionate measurement. Got a section corner, section corner, section corner, section lines, lost quarter corner. Record says eighty chains turns out it's seventy-five chains there's a call for a creek, here the record is ten chains, clear creek hasn't moved. Eighty is the record; seventy-five is the measured, record of ten. When you measure from here to here you get five chains that's measured. Record from here is seventy chains, seventy chains is record.

Here to here you measure seventy chains measured. You got a lost section corner on an East West line the standard method for reestablishing a lost quarter corner is midpoint on line. If you determine you have a manifest error in the measurement then that will be removed and the general average will be placed where the blunder was made so now you're going to proportion between here and here. Proportioning in general terms just removes the systematic and random errors not the blunders.

### Indexing

Another part of portioning that we need to be aware of 7-57 is index correction. You know I spent half my career in surveying trying to learn what the rules, are the first half of my career in learning what the rules are and then discovered the second half of my career is about learning the exceptions to the rules.

And remember we talked the general rules are applicable when you don't have blunders. The original survey was faithfully done in a workman like fashion.

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### Special Cases

Now 5-75 and 5-76 begin to talk about identification of exceptions to the general rules. It is an axiom among 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 field note record.

That is the condition for which the basic principles have been outlined and for which the general rules have been laid down. The general rules can not be elaborated to reconstruct a grossly erroneous survey or a survey having fictitious field notes that leads us into the exceptions to the general rules. The Manual provides exceptions to the general rules where rigid application of them, the general rules, will be contrary to legal requirement to protect bona fide rights as to the location.

In general terms, the Manual has three exceptions to the general rule. One good faith location rule exception, two satisfactory local condition exception and three local points of control exception. I want to talk about on page 48 of your handout is a sheet that describes a little more in detail bona fide and good faith. This is a sheet that has title **43 USC 772** and you remember that's the **General Resurvey Act** and the Secretary of the Interior may conduct resurveys provided that no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entry men or owner of land affected by such resurvey or retracement.

We need to get a handle on bona fide and what is bona fide? **Bona fide** is Latin for good faith. In bona fide in or with good faith, honesty, openly and sincerely without deceit or fraud truly actually, without pretense, innocently in the attitude of trust and confidence without notice of fraud, real, actual, genuine made with the earnest intent. Neither spurious nor specious nor counterfeit.

Bona fideism has been in Public Land Survey System since the beginning now bona fideism clearly goes back 3,000 4,000 years. In the Public Land Survey System is started out generally bona fideism as to the entry men. Remember the Public Land Survey System was about conveying getting land marked and identified and described and then conveyed from the government to the citizen. For the first part of the PLSS it was about, was the entry man a bona fide settler?

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For example, believe it or not there was some folks in the 18<sup>th</sup>, 19<sup>th</sup> century that tried to bend the rules and they would do different things that they would make an entry on land that they were not qualified to make or they would fudge about the amount of time they have stayed on the land or the amount of improvements they've made on the land. And it became a land office business to determine who was a bona fide settler from people that were not bona fide settlers. Did they intend to follow the law?

Then as you read in the 1820's, 1830's, 1840's era and then particularly up into the 1900's bona fideism as to location. Cause that's what the surveyor deals with is, did they locate themselves in good faith by bona fide? Because it was early recognized in some of the public land system townships that the monumentation of the original survey was poorly done or not done at all or there was a long period of time between the survey and the entry men coming or there was townships where the surveys were very poorly done they were not in any relationship to each other that was apparent to the settlers.

All types of factual situations where the settlers did not have a good grid to locate on. Well did the government rush out there and correct it all? No, the settlers were for the most part left to their own devices many of them did business they best they knew the best they could cause you know they all had money right? No they were settlers.

Of course there were numerous surveyors just hanging around, no there weren't very many surveyors. The survey would cost more than the land would cost. That reality went on for years and years and years and then Judges and courts have said "Surveyors you just can't go in and lay out your surveyed grid over the top of these local conditions." That's why in the Manual they have these survey exceptions, bona fide error a mistake made unintentionally inadvertently on good faith. Bona fide purchaser, one who has purchased property for value without any notice of any defects in the title of the seller. Good faith, Good faith. We're going to talk a lot more about good faith.

Good Faith is an intangible abstract quality with no technical meaning or statutory definition and it encompasses among other things an honest belief, the absence of malice and the absence of design to defraud or to seek an unconscionable advantage. And an individual's personal good faith is concept of his own mind and his inner spirit and therefore may not be conclusively be determined by his protestations only. Honesty of intent

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and freedom from knowledge of circumstances which ought to put the holder upon inquiry. An honest intent. Do you to prove the fence corner or do you have to disprove the fence corner? Was that fence corner located in good faith? Meaning, good faith in that giving the existing conditions did the settler attempt to locate their land without taking unfair advantage of others? One of your findings in a complex area with discrepancy between monuments may come down to good faith determination.

That sort of sets the stage to where the next video lecture is going to go to. We're going to explore in much more detail the exceptions to the general rules, the good faith location rules, satisfactory location conditions and the local points of control. So that ends this part of this video lecture. Thank you.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 12 (90 minutes)

ICON LEGEND

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 12

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### Introduction

Welcome back. Before we start going down path of exceptions to the general rules and special cases I just want to recap a little bit of what I believe is important in the material that we have covered. I believe we have covered the role of the Secretary of the Interior in the surveys of federal interest lands including Indian lands. I believe we have talked about the significance of the Bureau of Land Managements Manual of Surveying Instructions.

I believe we have talked about the role of the local surveyor and the surveys on the Public Land Survey System. I believe we've talked about the importance of knowing the land status and proper jurisdiction in evaluating local surveys.

I believe we have talked about the inviolate rules of resurveys meaning the constitution and federal statute law. I believe we have touch upon the basic principles of resurveys all in the context of, how do we go about evaluating local surveys to accept or reject what has been done previous to us and subsequent to the original survey.

We touched upon the general rules of resurveys and now we're going to head down through the exceptions to the general rules for resurveys and specials cases involving resurveys. One of the things we need to keep track of is, how do we know when to apply the general rules, the exceptions to the rules or the special cases? And the best way I found to figure out which set of rules I should be reading about and depending on where we're at and the situation we have.

### Three Original Survey Types

I've broken down into three categories three types of original surveys. First type where the general rules are generally applicable are where the surveys were faithfully executed and well monumented and those types of situations most of the corners are out there there's a good relationship between the corners and the general rules are written for those cases. How to proportion? How to sub divide sections?



**HANDOUT** A copy of Bob Dahl's presentation that he uses during topics 9-12 can be found in the Handout section at the end of the Evaluating Corner Evidence –Part 9 study guide.

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Those are the general rules those are applicable when you have a faithfully executed and well monumented original corner.

The second type of original survey where you begin to migrate from the general rules to the exceptions to the general rules or where the original surveys may be were made faithfully but less than workmen like and or poor monumentation. And there are significant differences between the original record and measured values between corners. And there is use occupancy and improvements by the settlers located often without a rigorous application of corner evidence standards, without a rigorous application of restoration of lost corner procedures and without a rigorous application of sub division of section rules.

That's the second type and when you find yourself in those where generally there is the PLSS net on the ground but there's gaps in it or its obvious where the original surveyor stubbed out and so that the record may show things being perfect but the reality is they're far from perfect. Followed by the settlers coming in and trying to do business the best they could based on what they knew, they weren't surveyors but they were going to do business and they have done business and now you're coming in later 150, fifty years later to do a resurvey.

What does the law and the Manual talk about when you find yourself in that type of original survey scenario?

Then the third type is where the original surveys were fictitious, fraudulent or grossly erroneous. These townships will be evidenced by lack of corners. Where corners are found there are large discrepancies between the corners and there is use occupancy and improvements by the settlers located without a rigorous application of corner evidence standards, restoration of lost corner procedures and sub division of section rules. These latter ones are what I've categorized and what the Manual has categorized are special cases where the general rules are not applicable, the exceptions to the general rules really don't apply and then you have special cases.

So now lets talk about the second type where the original surveys were made faithfully but less than workman like or with poor

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monumentation and there are significant differences in original record and there is use and occupancy and in this case there has been local surveyors as well as local landowners attempting to locate the Public Land Survey System and now you're coming in to do a resurvey. Exceptions to the general rules. The Manual provides exceptions to the general rules where rigorous application of them, the general rules, would be contrary to the legal requirement to protect bona fide rights as to location. Earlier we reviewed about the definition of **bona fide rights**, good faith. And concept of bona fide in the Public Land Survey System is a key component to understand the principles underlying the rules and regulations governing the location of property rights and the public land survey system.

Let's go to what the Manual talks about good faith location rule exception. Manual section 6-34 and 6-36 the good faith location rule. It may be held generally that entry man has located his land by the good faith location rule if, such care was used in determining his boundary as might be expected by the exercise of ordinary intelligence under existing circumstances.

Good faith rule location, exercise of ordinary intelligence under existing circumstances, is that subjective or an objective criteria? Extremely subjective isn't it? This is boundary survey this is not geodesy. Good faith location referred to here in as satisfactory location of a claim or of a local point is when it is evident that the interpretation of the record of the original survey as related to the nearest corner existing at the times the lands were located is indicative of such a degree of care and diligence upon the part of the entry man or that of his surveyor in the ascertainment of his boundary as might be expected for the time and place.

The relationships of the lands to the nearest corners existing at the time the lands were located is often defined by his, meaning the settlers, fences, culture or other improvements. Lack of good faith is not necessarily chargeable if the entry man has not located himself according to a rigid application of the rules laid down for the restoration of lost corners where there are complicated conditions involving a double set of corners often of which may be regarded as authentic.



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There's two sets of monuments along the section next exterior, there's a completion survey in the interior that's an the example of what the Manual's talking about on that point. Second point, there is no existing corners in one or more directions for an excessive distance. Three existing marks are improperly related to an extraordinary degree. Improperly related meaning the record tells you there is a certain relationship, the reality, your resurvey relationship between the corners shows something extraordinarily different. Four, all evidence of the original survey which have been adopted by the entry men as a basis for a his location have been lost before the resurvey is undertaken.

How much weight to do give to the settler who was there 100 years ago when more evidence of the original survey existed than when you go there today? That's what they're talking about. Lack of good faith is not chargeable when you have these conditions. Section 3-92 good faith location and sub division of sections. This previous section that we talked about was generally about how did the settler or the local surveyor handle the work around a section exterior? Now we're going to talk about good faith location and sub division of sections. Lack of good faith is not necessarily chargeable if the entry man has not located himself according to a rigid application of the rules laid down for the subdivision of sections.

The law pre-proposes, pre supposes the fact taught by experience that measurements of land can be repeated with absolute precision and that that the work of no two surveyors will agree exactly. A decision to set aside previously located legal subdivisions must be supported by evidence that go beyond a mere demonstration of technical error such as in measurement or non conformity to strict adherence to reestablishment of corners or subdivisions of section rules.

The concept of technical error, don't confuse that with random error or accounting for systematic error, we're talking about boundary surveys here. A technical error not only is in measurement but also a technical error in, did he rigorously follow the method of proportioning, yes or no? Did they rigorously follow the rules for a subdivision of a section? If they didn't rigorously follow them were they close to following them? Was the difference a technical error? We're going to explore that train

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a little more as we go along and try to fill in some ground that you can stand on there we'll see.

The Manual goes on to say were the federal government obligated to open to adjudication the question as to the location of a particular tract or tracts over technical differences controversies would be constantly arising and resurveys and re-adjudications would be interminable. For proof of impairment a bona fide rights has to do with location. When making legal subdivisions as defined by **43 USC 7772**.

Some of the folks working in metes and bound states are dealing with blocks and blocks and metes and bounds descriptions that are off the PLSS there's a different set of rules. My context here is 43 USC 7772, impairment of bona fide rights as to location as it pertains to the Public Lands Survey System. The system, not Public Lands, the system. For proof of an impairment of bona fide rights as to location when making legal subdivisions there must be positive evidence of an intentional departure from the legal principles governing recovery of an original corner location, reestablishment and establishment of corner location or subdivision of section.

Now there's a lot said in there, who carries the burden the person that wants to over turn existing conditions or the person that wants to accept existing conditions? This seems to say the person that wants to over turn satisfactory local condition, satisfactory conditions to the landowner not to the surveyor whose learned the rules and techniques from a survey book. Satisfactory locations to the landowners now there are requirements there that landowners don't have free reign to do whatever they want, no that's not where we're going to either. We are trying to find where the law has found as medium of what is acceptable for the purpose of boundary adjudication and boundary location.

The other thing I wanted to point out in that section is there must be positive evidence of an intentional departure from the legal principles governing the Public Land Survey System. Note that the term didn't say the legal mythology, it's the legal principles. Its one thing to the statute describes the mythology and the Manual Survey Instructions fill out the policy with mythology of double proportioning or determining the true corner point from an on line

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witness corner. And that's the prescription but those rules, those premises have a underlining principle, stabilization of property corners minimize questions of title. A simplified system so citizens can do business without the fear of people coming along many, many years later and upsetting what they believed they owned.

The legal intent of stability of monuments and title to lands would've been met when the evidence of an extant subdivision of section survey indicates. An existing subdivision of survey if it indicates this, you probably can make a finding that the legal intent of stability of boundaries and titles have been met. Judgment call; but your call. When the local survey indicates on the subdivision of section the use of correct exterior controlling monuments, conformance to legal subdivision principles, reasonable accuracy standards for the time and place, sufficiency for identification of the legal subdivisions, are they marked? The work was conducted without fraud or gross error and followed by usage by landowners and others.

I want to go to the index, on March 13<sup>th</sup> 1805 less than ten years after the birth of the Public Land Survey System, Albert Gallitin Secretary of the Treasury, remember from 1785-1849 the business of the Public Land Survey System was within the Department of Treasury so the Secretary of the Treasury was in responsible charge of the administration of the Public Land Survey System. Albert Gallitin wrote to Isaac Briggs, surveyor of the land south of Tennessee, referring to the just enacted act of February 5<sup>th</sup> 1805 now codified at 43 USC 752. Quote the "The principle objective which Congress has in view is that corners and boundaries of the sections and subdivisions of sections should be definitely fixed and that the ascertainment of the precise contents of each is not considered as equally important. Indeed it is not so material either for the United States or for the individuals that purchasers should actually hold a few acres more than or less than they surveys call for as it is that they should know with precision and so as to avoid any litigation what are the certain boundaries of their tracts." End of quote.

These fundamental principles while addresses to yesterday's original surveyors also pertain to today's re-surveyors. It is far better for the landowner to know where his boundary is than

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exactly how much he owns. You have to remember if you go back to 1805 prior to February 5<sup>th</sup> 1805 when this was enacted the original corner will control how to subdivide sections, they had done a lot of surveys between 1785 and then they enacted the act in 1796 and there was some intervening acts of governing how to survey that are no longer on the books.

And then in 1803 Jared Mansfield became the Surveyor General in Ohio and Jared Mansfield had been out on the land in Indiana and Ohio about a year by now. And Jared Mansfield who superseded Rufus Putnam and was very acquainted with Rufus Putnam and they talked and Jared Mansfield had a over a year on the ground he had and Gallatin had an extensive amount of correspondence about issues and problems that were coming out based on the system developed to date. And when you go back and look at the correspondence Jared Mansfield and Albert Gallatin probably wrote the language for the act of 1805 and so to really understand what they were trying to get at, what was the problem trying to be solved?

You can read the correspondence between Mansfield and Gallatin and then you can see why that language was written the way it was written, what was the problems that they were trying to solve? And part of the problems they were trying to solve is surveyors are going in after the original survey and locating the patent lands in a multiple different ways. And they were disputing each other on measurements and starting from different points and it was evolving into a chaotic system. They were redoing the original surveys without thinking of the consequences of over turning existing acceptable conditions even as imperfect as they were the plan was perfect but it was implemented by men it was not going to be a perfect plan.

So what were going to be the controlling principles in this society and Gallatin and Mansfield were talking about them. These provisions recognize the fact taught by experience that measurements of lands can not be performed with precise accuracy and that the work of no two surveyors would exactly agree. Gallatin points that the very purpose of the declarations of the law was to obliterate any inquiring and contention in respect to survey inaccuracies.

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In petition 49 LD 583 Volume 49 land description page 583 decided by the Secretary of Interior in 1923. The Secretary of the Interior decision 1923 equivalent to a Interior Board of Land Appeals decision today. In Snibley, speaking to the same law, the Secretary declared “Doubtless the wise purpose of the law was to forestall and preclude vexatious disputes as to the actual area of land. If such transactions were not made final controversies would constantly be arising concerning patented lands and resurveys and re-adjudications would indeterminable.”

The original surveys and monuments of the Public Land Survey System form an enduring basis upon which depends the security of title to all lands acquired there under.

Resurveyor number two must exercises the greatest care so that resurvey will relieve existing difficulties as far as possible without introducing new complications. Moving corners relatively short distance is less important than maintaining the stability of boundaries. To me that helps me understand the underlying principles that I need to follow if I’m going to be a dependent resurveyor. And one of the basis’s here is implicit with this is original surveyors followed by use and occupancy and people doing business.

Now if you don’t have that set of conditions the rules will be a little different. If you have original surveys and nothing has happened and there is no use and occupancy then the general rules will be applicable even though you have distortion. But as soon as you put the layer of people attempting to make good faith location other property rights based upon what evidence of original surveys they could locate that was prudent and ordinary care under existing circumstances then the survey technique inquiry takes a different complexion.

The law gives these activities **repose**, repose, finality let it rest. The doctrine of repose is interweaved throughout boundary law in this country in fact it goes back thousands of years. A resurveyor needs to understand that doctrine and how it is to applied when they conduct a resurvey. Along this same line of reasoning the IBLA in a recent case in 1996 Longview Fiber 135 IBLA 170 said in some instances bona fide rights are protected where BLM departs from a rigid application of resurveying principles to ensure

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that long accepted survey lines are not disturbed so that property boundaries are stabilized and title is secured.

After a long period in time when acquired rights and boundary recognition have become established, boundary should become fixed. Lines long accepted should not be lightly cast aside for greater conformity to recent surveys. How old is old? How long is long? Of course there sort of begging the question and they're not going to say "We'll if it's been used and occupied for seventeen years and three months that's long and then you have to accept it if its shorter than that then you don't have to give it weight." No, it's always going to a sliding scale. And to begin a get feel or a sense so you don't feel like some arbitrary pull it out of the air kind of answer your going to have to read case law and IBLA decisions and land decisions that speak to the factual situations and also the BLM has had numerous case studies.

The BLM Case Study book is a good example of taking actual cases, applying their principles, the rules, the exceptions to the rules to actual case and coming up in the case of the BLM the Secretary of the Interiors opinion on the limit of the federal lands. That's good study that's what certified federal surveyors need to get a handle on when they're out there evaluating the local surveys.

Let's continue in what else the Manual talks about in good faith location rules exception. The Manual part 6-35 and 6-36 the extent of recognition given by neighboring claims to a local point used for the control of the location of claims very often carries with it the necessity for the consideration of its influence in the manner of acceptability of such locations under the good faith location rule. Manual 6-37 the surveyor should neither rigorously apply the rules for restoration of lost corners nor the rules for subdivision of sections without regard to effect on location of improvements nor accept the position of improvements without question regardless of their relation or ill relation to existing evidence of the original survey and the description contained in the entry.

Yes you need to know where the rules for restoring a lost corner would put a corner position. Yes you need to know how the rules to subdivide a section would locate a subdivision of section corner. Does your job stop there? Do you say "Well, that's the

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survey rules? I'll tie in a fence corner or use an occupancy line or county road center line and say "There I'm done. I've laid out the legal subdivisions." Well when you're working for the Secretary of the Interior when you're on Indian country that's not acceptable. You need to then go into a evaluate the use an occupancy. Let's flip it. "Oh well I'm just looking for the nearest fence corner or the nearest center line road intersection there I'll hang my head on that. I'm done this is easy."

No you have to go back and evaluate what is the source of that fence? Who built the fence? What did they know when they built the fence? What was the condition of the original survey when they built the fence? All of those things will go into coming into a conclusion, was it located in good faith based on existing conditions for the time and place it was? And if the conclusion is yes then the accepted would be to accept bona fide rights to reject it would impair bona fide rights as to location.

Between these extremes of whether to accept nothing or accept everything in terms of evidence in use and occupancy between these extremes will be found the basis for determination of whether improved lands have been located in good faith or not. No definite specific set of rules can be laid in advance until you author the book that writes about every possible factual scenario that ever be, there will not be a rule written down for everyone will there? The solution to the problem must be found on the ground by the surveyor it is upon his judgment primarily that the responsibility to resolve the question of good faith as to location.

Remember we talked about the Manual written for the federal authority surveyor and there were five federal authority surveyors, the Cadastral Chief, the draftsmen, the reviewer, the special instructions writer and the field surveyor. Which one of those is this part of the Manual talking to? The field surveyor, that cadastral chief will be dependent upon the field surveyor to resolve the question, to do the research to do the analysis to get to the bottom of to the best of your ability the question of good faith as to location. And I'm going to talk about the 1947 edition of the Manual which was the edition previous to the 1973 edition and the edition previous to the 47 was the 1930 edition of the Manual Surveying Instructions and prior to that it was the 1902 edition of the Manual of Surveying Instructions.

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Well between 1902 and 1930 two big events took place, what were they? One in 1910, Congress decided to move from the contract system to the direct system. In other words for general rules there's always exceptions there's always overlap in 1910 Congress enacted by law that instead of letting contracts to private surveyors to do the surveys on a public land survey system that the General Land Office will hire a surveyors those same surveyors and put them on salary to do the survey.

This is not the place to go into why they did that there is an extensive history and it's a fascinating read as to why it finally got to the condition that Congress has changed the law that was enacted in 1796. That's one major change between 1902 and 1930. The second major change is that nature of the work of the General Land Office was evolving from almost 100 percent original surveys to an increasing amount of resurveys. Remember the act of 1909, the General Resurvey Act gave the Secretary of the Interior authority anytime certain findings was made the Secretary could authorize a resurvey without getting special legislation from Congress.

Well during that period of the 1902 Manual to the 1930 Manual what the General Land Office did was that in 1919 they issued what often called advanced sheets, 1919 advanced sheets. In general terms these are chapters one through six of what became the 1930 Manual. And in 1928 they issued advanced sheets for chapter nine which is plats. So I'm going to make reference to section 4-14 of the 1947, 1930 and 1919 Manuals when you compare the language between the three Manuals there very close to be the same but there some differences.

The question to be determined is whether the position of the lands claimed, are occupied or improved is to be adopted under the good faith location rule? And rather is so adopted the claims thus acceptably located can all be properly protected by the dependent plan of resurvey. What should be the dependent plan of resurvey? Well it's tough to write the dependent plan of resurvey until you understand the conditions on the ground. If the position of any claim fails to qualify under the good faith location rule it may be disregarded as to the affect produced thereon by the plan of dependent resurvey. If the surveyor makes a finding that the fence



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corner was located with total disregard of the Public Land Survey System that's what they're talking about. It fails to qualify under the **good faith location** rule, don't use it.

On the other hand if these claims are held to be acceptably located under the same rule they may be adopted as the determining factor in the position of the missing corner or corners. What was your finding? Your finding will lead to your next step. You got to document your finding but I'm getting ahead of myself documentation is going to be so critical. If the claims are in such concordant relation to each other and to the identified evidence of the originals as to receive full protection by the dependent plan of resurvey the surveyor may proceed with full assurance of the adequacy of the plan. Of course what the Manual is talking to you there about is the special instructions aren't they?

Typically the **special instructions** are created in an office setting after the request for survey comes in then; remember there's five parts the Manual is written to five federal authority surveyors the special instructions writer and special instructions is another word for plan of survey.

The special instructions writer typically will research the records that are on hand the official records that are on hand they may or may not research the local records or just cream the local records, depends and then they'll write a plan of survey.

And of course one of the bottom lines in everyone of the special instructions to the field surveyor who's assigned under assignment instructions assigned to conduct the field work is if you find conditions that make these special instructions inapplicable don't apply them, contact the office for further instructions that's what the Manual saying there. Otherwise the question of other processes analogous to those of special case claim, independent resurvey, correction of conveyance document 43 US Code sections 1746 or Quiet Title Act must be considered.

What they're saying there is if you don't have a township that falls into exception to the general rule you don't have township that falls into the general rules you don't have a township that falls in the exception of the general rules then you have a special case township, come back to the office.

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### More Special Cases

We're going to talk a little bit more about special case townships a little bit but let's continue to look at; do I have a township in which the good faith location rule is applicable? Cause it's a heck of a note to apply the right rule to the wrong factual situation. Good faith location rule isn't applicable to every township that has a few idiocentricity.

If two or more claims are acceptably located but are discordantly related to each other to considerable degree by virtue of irregularities in the original survey it will be clear that the general plan of dependent resurvey may not afford protection to such claims. In this case as before stated some other process must be adopted to protect the acceptably located claims. If the general rules aren't applied because you have a large discrepancy or irregularities in the original survey then you go to an exception to the general rule.

Manual 6-39 in cases involving extensive obliteration at the date of entry at the factual situation you should be able to answer the question every dependent survey and every local surveyor you're evaluating do you have this case? Was there extensive obliteration at the date of entry or selection, yes or no? That in itself isn't going to answer any questions but it is going to weigh on what answer you're going apply.

The entry man or his successor in interest should understand that the boundary of the claim will probably be subject to adjustment in the event of a resurvey. A general control applied to the boundaries of groups or claims must be favored as far as possible in the interest of justice, equal fairness to all and a simplicity of resurvey.

A claim can not generally be regarded as having been located in good faith if no attempts have been made to relate it in some manner to the original survey. What's the standard there of a claim making an attempt to relate itself to the original survey? Is it the standard of the best surveyor in the county in 1910 when that attempt was made? The average surveyor in 1910 in that county the worst surveyor in 1910 not even a surveyor a landowner an

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interested party most of the land subsequent to the original survey in improvements they built were located by settlers doing good faith efforts to locate and mark used what they were entitled to. Can they be wrong? Yes. Are they wrong because they don't follow the, if you laid out the PLSS grid today and they don't fall on top of it? No. Somewhere in between somewhere in between those extremes is the answers.

Cases will arise when the lands have been occupied in good faith but whose boundaries is occupied disagree with the position of the legal subdivision called for in the description.

For instance, this is a part of good faith and bona fideism that the surveyor is out of their realm. The surveyor deals with bona fide rights as to location, good faith location not bona fides as to "Well the guy thought he owned but he was in the wrong township."

No, an example of this one where they have occupied something in good faith but they may not fall under bona fide rights as to location is they located themselves to a mining claim corner thinking it was the section quarter corner. And then they laid out their forty acres and they followed it up by use and occupancy. In that type of factual situation the good faith location rule can not apply these are a not a survey issue but a title issue and relief must be sought through the process of amended entry, correction of conveyance document, quiet title action, tentative approval relinquishment or interim **reconveyance** or **relinquishment** to cover the legal subdivisions actually earned rather than through an alteration of the position of established survey lines.

A case of this character should be regarded as an erroneous location and precisely the same manner as if the question of resurvey were not involved. These are matters for adjudication by the BLM after the resurvey has been accepted and the plats filed in the land office. And that's another way of say that is the case when you do have a case where the person has occupied something in good faith but there is evidence that they did not locate it in any manner in relation to the original survey but there are occupying it in good faith followed by use and occupancy. That is the case where your role is to tie in their boundaries, their lines and return it on your survey.

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Now you have laid the facts along with your research and your documentation in front of the decision maker because at this point the survey process the **BLM Cadastral Chief** is not going to be the final decision maker of “Well, where do they own? Where is the limit of the federal lands?”

We’re going to continue to talk exceptions to the general rules, lets remember now we’re looking at a township that the original survey was may be faithfully made but a less than workman like manner and/or with poor monumentation and/or there are significant differences between the original record and measured value between the corners and followed by use and occupancy improvements by the settlers.

The second exception to the general the Manual has is satisfactory local conditions exception. Manual 6-41, “It is not intended to disturb satisfactory local conditions with respect to roads, fences and other evidence of use and occupancy. The surveyor has no authority to change a property right that has been acquired legally nor can he accept the location of roads, fences and other locations of use or occupancy as evidence prima facie of the original survey.” Clearly they’re just stating the law that the surveyor doesn’t have authority to change of property right to change the location of a property right. And also prima facie means “on the surface” the surveyor needs something other than just the fact that it looks like it was in the vicinity of a section line before you accept a fence or probably need a little more evidence than that.

Something is needed in support of these locations, talking about fences, roads, use and occupancy lines which may or may not be the best available evidence of the section line or subdivision of section line. Something is needed in support of these locations this will come from whatever intervening record there may be a testimony of individuals who may be a acquainted with the facts and the coupling of these things to the original survey. It’s a mystery you’re piecing together the pieces.

Many cases due care has been exercised to place the boundary fences and other evidence of use and occupancy on the lines of legal subdivision and locate the public roads on the section or the subdivision lines. These are matters of particular interests to the adjoining owners and it is a reasonable presumption that care and

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good faith would be exercised with regard to the evidence to original survey in existence at the time. Do you have to prove this fence corner or do you have to disprove this fence corner? Who carries the burden? Well the Manual there in this part says “It is a reasonable presumption that care a good faith would be exercised with regard to the evidence of the original survey in the existence at the time.

The burden of proof to the contrary must be borne by the party claiming differently. Knowledge regarding the construction of a purported property line fence can be obtained from long time landowners and community members and could provide positive evidence whether they were located in conformity with the good faith location rule evidence gathered.

A property corner or a user occupancy position should exercise a regular control upon the retracement only when it was placed with due regard to location of the original survey or agreement is so close as to constitute the best available evidence.

### More State Law Issues

Rules of the state laws and the state court decisions as distinguish from the rules laid down by the BLM. The latter applicable to the public land surveys in all cases. Under state law and matters of agreement between owners, acquiescence or adverse possession property boundaries may be defined by roads, fences, use or **occupancy lines** or survey marks disregarding exact confirmation with the original survey subdivision lines. These may limit the rights as between adjoining owners.

Of course what the Manual is talking about there is alerting the surveyor to have his or her eyes open to the possibility that property rights have vested to a location that is contrary to the legal subdivision lines. And the state law will govern whether that in fact has happened and then to recognize that. Just don't accept every fence corner you find out there until you've researched as best you can evidence of the original survey and evidence of the construction of the fence after you've done that research then you can begin to come to some conclusion.

In cases where the federal government has acquired interest and

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rights have vested to a location by state law prior to the acquired interest disregarding exact confirmation with the title lines or original legal subdivisions the resurvey or must not impair the location of such rights. At the beginning of that they said in the case of the federal government well I'm going to suggest that there are probably exceptions in the case where a federally recognized tribe has acquired interest. Or in the case where an individual member of a federally recognized tribe has acquired an interest and the rest of the sentence would still read true.

The **conflicting title** lines and ownership lines are surveyed and monumented and the conflict area is returned upon the plat. Each intersection of conflicting boundaries is determined upon ground and recorded in the field notes. Now you are recording the facts. The **returns** will describe and show the limits of federal ownership and the limits of the federal title. Ownership and the in some cases aren't identically in the same location. The survey field notes will document the findings of facts duly supporting the conclusion arrived at. Documentation, Documentation, Documentation. You already have recognized you have an exception to the general rule if you're not going to apply the general rule you better document. Why you're not applying the general rule and what exception to the general rule you are applying? And what facts on the ground makes you're exception applicable to this set of facts?

That's got to be written out not only to get your survey agreed to by the BLM but that resurveyor thirty years from now, fifty years from now.

### Local Points of Control

We talked the good faith location, satisfactory local conditions the third exception to the general rule that the Manual speaks to is local points of control exception.

When the retracement shows that the principle resurvey problem is one of obliteration with a comparative absence of large discrepancies. That is the official survey had been made faithfully, the official survey was followed by local use and perpetuation then the official survey can be reconstructed or restored, the official survey being the original survey, as it was in the beginning based

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upon identified existing corners of the original survey and other recognized and accepted local points of control.

Manual 6-45 thru 6-49 local point of control “The acceptance of duly qualified and locally recognized points of control should aid materially in obtaining stability of the public land surveys.” We’re looking at evaluating local surveys and we’re looking at presumptions, burdens, and standards.

Locally recognized points of control should maintain simplicity of the resurvey, don’t add unnecessary complexity. Should avoid the conflicts that would differ only slightly in position in this manner a flexibility will be introduced in the plan of the re survey at least to the point of protecting satisfactory local adjustments.

The surveyor can not however abandon the record of the original survey in favor of a indiscriminate adoption of points not reconcilable with it. Indiscriminate adoption of points “Well the client didn’t pay me enough to do it right to do my full research so I just accepted local conditions. Or the client didn’t pay me enough to do it right so I didn’t research the fences I just proportioned it in. Or I set the center quarter at statutory position.” Do you suppose the court of the IBLA would find that an indiscriminate adoption of points especially if you documented what you did, I think that’s what they’re getting at there.

Among this class of evidence forming the basis of the recognized position of land boundaries are recorded monuments established by local surveyors duly agreed upon by the interested property owners. The position of boundary **fences** determined in the same manner and the lines of public roads, drainage or irrigation ditches and timber lines when intended to be located on the sub divisional lines. The local record in these cases when available may furnish evidence of the original survey.

If a point qualifies as above the presumption is strong that its position bears satisfactory relation to the original survey and its correctness can not be successfully disputed. Sounds like the Manual is saying you have to disprove a local point of control that has these characteristics. Points which can actually qualify may be accepted as the best available evidence of the true position of the original survey. Once it is accepted in the course of an original

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survey a local point of control has all the authority and significance of the identified original corner. Many situations will arise where we'll be manifest that is better to accept a position based upon local interpretation rather than to disturb satisfactory existing conditions.

Rigid application of the survey rules versus acceptance of local conditions by landowners. The surveyor will endeavor to avoid disturbing the position of locally recognized lines when such action may adversely affect improvements. At the same time the surveyor must use extreme caution in adopting local points of control. These may range from authentic perpetuations of original corners down to marks which were never intended to be more than approximations. The age, position and degree to which a local corner has been relied on by affected landowners may lead to its adoption as the best remaining evidence to the position of the original corner.

I want to talk about a couple of things there we've covered a lot of ground. Let's remember we're reading from the Manual Survey Instructions, who's the intended audience for the author of the Manual of Survey Instructions? When they say "the surveyor will endeavor", who are they speaking to? They're speaking to the surveyor that's going to conduct a federal authority survey but also agreed that private licensed land surveyors will be surveying in situations where the Manual is applicable, is the controlling rule.

So in that case the surveyor will endeavor, example on twelve, in that case that is the private surveyor will endeavor to avoid. The other thing to remember is land status in general terms when the Manual is talking about this type of guidance the presumption is they're on a boundary that has federal interests' lands.

### **Non-Federal Interest Lands**

Now if you're on lands that is no federal interest on a boundary with no federal interest or a section with no federal interest or multiple sections of proportioning with no federal interests a different set of rules may kick in. But if you're survey will affect federal interest lands these rules may govern.

So you've got to understand the land status to know which rule



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book to go to and you've got to understand the context and the audience that the Manual is writing for. But I'm going to suggest if you're a certified federal surveyor and your client is a federally recognized tribe or a member of a federally recognized tribe there is going to be federal interest land involved. Now that doesn't mean that there may still be cases there where the Manual is not applicable.

If it's about a housing development with a subdivision and now you're dealing with internal lots inside the subdivision clearly the Manual is probably not going to be the definitive guide. But if you're dealing with particularly portions of the Public Land Survey System Manual will be a guide and I'm going to suggest all the use and occupancy out there in Indian country is relevant here and is being taught to you the surveyor of what to look for so you can serve your client. So the Secretary can serve the beneficiary trust individuals out there.

When a local reestablishment of a lost corner or a local establishment of a minor subdivision of corner has been made by proper methods without gross error it will ordinarily be acceptable. Proper methods, gross error ordinarily be acceptable.

Proper method, a rigorous application of the survey rules don't read it that narrow folks. Gross error "Well gee by my RTK system is gross." Well what was gross in 1912 in the Helin Wind River reservation? For the time and place it was done when monuments of unknown origin must be judged on their own merits but they should never be rejected out of hand without careful study. The recognition of the principle that the restoration of corner may be influenced by the position of one or more existing claims warrants within suitable limits the acceptance of an unofficial determination which would not necessarily agree with that resulting from a rigid application of the general rules laid down for the restoration of lost corners or subdivisions of sections. Thus where the **bona fide rights** are found to a definitely established.

Bona fide rights are rights located in good faith are found to have been definitely established with reference to location of lands by existing evidence, not every possible evidence by existing evidence, age plays a factor. By existing evidence of the original

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survey the theoretical point determined by the general rules will be set aside in favor a nearby duly qualified corresponding point the position of which has been agreed upon by the adjoining property owners. Such a point may then recognized as the best available evidence of a true position for the corner.

The burden of proof to the contrary must be born by the party claiming differently. Who carries the burden? The underlying principle of stability if you're advocating upsetting the stability you carry the burden. And carry it, if that that's appropriate carry it, document it and do it. All such acceptations to the general rules adopted during the resurvey are subdivision of section must be fully documented on the plat or in the field notes. So important documentation, you got to leave your foot steps.

I want to accept what you've done, give me reasons give me handles so I can accept what've done. I want to just go back to something else that was touched upon. It's all about context, its all about the Manual as a whole. You talk about intent. The four corners of a deed, well the four corners of the Manual, and the four corners of the statute. The principles underlying the reason for the statute. Fourteen is an interesting one, the age, position and degree to which a local corner has been relied on by affected landowners.

A sliding scale if you're looking for an equation is probably not going to be there a sliding scale. Age, how long has that local position been in place? The older it is in general terms, in general terms there's an exception in every case, in general terms the older it is the more weight you're going to give it to. The newer it is, if it was set last week, how could bona fide rights vest to it in a week? Maybe they can in some extreme circumstances but you see the drift. Age, use; how has it been used? Who has used it? To what degree?

Clearly the more extensive the use, the older the use, the more obvious the use the more weight you're going to give it. And again the presumption is because fences and roads and use and occupancy are important to the settlers the presumption is they located in good faith in some manner to the original survey. Now you can always prove the contrary and if can prove it, prove it. Age and use. Even if it wasn't a local corner and you've got

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evidence that he didn't the rules to subdivide the section properly and be careful here I'm not just saying excepting the first surveyor out there original survey, I'm not saying that. But the longer it has been used the more its been used, how its been used the courts and the Manual is going to give guidance to you to generally accept it. Age, use and position; how far is too far?

How far is too far? Well there is no answer to that but the older a position has been the more it's been used the further out of its mathematical position that the courts will accept it as bona fide rights as to location and to locate it somewhere else that you would be found to have impaired. The newer it is, the less use it has and may be even a relatively tight for a position there may be no rights vested to it. Another example is " Yeah you've got this very old, old rusted old pipe out there your not sure where it came from it's in the vicinity of a original corner or its in the vicinity of a legal subdivision corner but there is absolutely no evidence of use to occupancy." Now pick that same rusted old pipe and put it over in the next section and it's been followed by extensive use and improvement, you see the two differences?

One you may be inclined to accept the other seemingly the same arithmetic, the same relationship to the other existing evidence to the original corner point but there is no use and occupancy. There is no set answer. Those are the three exceptions to the general rules and knowing when those exceptions are applicable is a big part of our job.

Now I want to, now again there is no bright line between these conditions in these townships to tell which set of rules are applicable. You know that it's a constant grey across the spectrum of the type of townships original surveys that we have to survey behind. I want the make the transition from the exception to the general rule kind of townships to what I call the third category of townships where the original surveys were fictitious, fraudulent or grossly erroneous evidenced by lack of corners or where corners are found there are large discrepancies between the corners, between the record and measured, and there is use occupancy and improvements by the settlers.

When you find yourself in those types of factual situations you've got to go a little deeper into the Manual. Corner positions based on

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the protection of bona fide rights as to location, **34 USC 7772** “the administration, settlement and usage of the public domain was and still is heavily influenced by the bona fide doctrine.” Bona fide is Latin for “Good faith” what is or is not bona fide rights as to location is usually stated in the form of a question. Did the claimant or entry man act in good faith when locating or marking the claim, entry or improvement? Did he or she make a good faith to follow the public land laws and policies?

Were the actions made in good faith without gross error, fraud or deceit? In some sense you are the judge in your quasi judicial capacity. And I suggest when you’re in these factual situations that I just described, these are the type of question you want to be framing. And then if you ask the right question then you know what evidence to go gather to prove or disprove the question. The application of bona fide rights as to location, I always use the term bona fide rights as to location which means the where- w-h-e-r-e.

The surveyor deals with bona fide rights as to where bona fide rights are located, this is within the realm of the surveyor. The bona fide rights have to the what, what is the interest own in a parcel? Or the who, the bona fide rights as to who owns the parcels those both have bona fideism involved is not within the realm of the surveyor those are in the reality specialists and attorneys.

The application of bona fide rights as to location establishes that bona fide rights as to location does not exist in lieu of acceptable evidence of the original corner in a different position. Somebody in 1930 declared the interior section corner lost they double proportioned it in. Somebody comes along in 2007 and find the original section corner in a different location. But in 1930 the settlers were located based on that erroneous resurvey monument. Can bona fide rights vest to an erroneous resurvey monument?

Well you’ve got to ask yourself two things, what was the authority of the surveyor? Was it a federal authority resurvey, a state authority resurvey or a no authority resurvey? I’m going to get to the bottom answer of this but I’m going to lead down a path of the things you need to actually ask. The application of bona fide rights as to location established that bona fide rights as to location does not exist in lieu of acceptable evidence of the original corner and

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the different position. And the exception to this may be in the case of an official action by the federal government that represented a corner position as an original corner by mistake followed by long acceptance and usage by local landowners and others.

The Public Land Survey System has not had ninety-year old erroneous General Land Office resurveys that's a fairly new phenomenon. What is the guidance given to the resurveyor today when you have that factual situation? In the current Manual, what guidance if any should be the next edition of the Manual? In addition the following conditions warrants the protection of bona fide rights as to location with the possibility of departure from the general rule.

These are warrant the protection of bona fide rights as to location but to protect the bona fide rights you as a surveyor are going to have to depart from the general survey rules. In some cases rights will trump rules some cases they won't.

When there exists gross error or inadequate original evidence to the extent that the application of the normal methods for restoration of lost corners or subdivision of section will impair bona fide rights as to location as evidenced by usage or improvements. Gross error, inadequate original evidence. Another condition where you may depart there are complicated conditions involving a double set of corners both of which may be regarded as authentic which results in irreconcilable conflicting evidence of the original corner positions or in conflicting positions when these positions are used for the restoration of lost corners or subdivisions of sections.

There are complicated conditions involving a double set of corners. How much more complicated can you get when you go out there and the record says there is one section corner and there's two? Both of them are official one of them may be original one of them may be an official resurvey. I can't think of a much more complicated situation both of which may be regarded as authentic as the government's representation of where the government thinks its land begins and ends or the government's representation of the section corner.

And they are conflicting and then people have used one or the

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other. That's what these general rules, these exceptions to the general rules and these exceptions to special cases are about.

I touched upon and I'm going to have to leave but I touched upon the area where I talked about a ninety-year old erroneous GLO resurvey monument followed by somebody found the original monument of which all the patents are based on the original monument. And then followed by improvements meaning somebody's built a house and now when you locate to the original monument the house is across the boundary.

Whether you can have that where that resurvey the erroneous resurvey is a local resurvey or an official resurvey. Where the improvements are federal improvements across on private lands or private improvements across federal lands. These are so complex and hopefully rare that the recommendation is that when you discover that you are one of those factual conditions you should immediately contact your BILS , the Bureau of Land Management, Indian lands surveyor in that region and/or the Chief Cadastral surveyor for the state office in the jurisdiction your working in because you have an extreme case that is very complex and probably no single surveyor is going to be able to resolve it anyway.

Its going to take a team effort an interdisciplinary effort to sort out and settle if that's right word where people's property rights are legally based upon this conflicting factual situation. So I'm not going to go into the detail of that with you today other than recommending that you recognize when you have that situation and seek consultation.

I want to talk about are not applicable in the townships where there's adequate control where the grid of the Public Land Survey System is land down on the ground and is easily and readily apparent. Special cases that I'm going to talk about these are not applicable when you have that or when you get into the exception to the general townships where the grid is torn a little bit there are gaps, disconnects but for the most part the grid is kind of there and people have pieced together and been doing business that's exception to the general rules.

Now that third type is where the grid maybe never was really laid

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down on the ground or it was laid down on the ground in a manner with total disregard of how it was supposed to be laid down. Special case claims, fictitious fraudulent or grossly erroneous original surveys the record field notes and plat representing the original survey are fictitious fraudulent or grossly erroneous beyond any tolerable limit.

Now you know to make a finding like that somebody is going to have to do extensive amount of resurvey, extensive amount of searching for original evidence, searching for subsequent local activities before you can even begin to make a finding like this original survey was fictitious, fraudulent or grossly erroneous. And in the township there is use or occupancy, boundary lines or other improvements so the special case is when you have this extreme original survey and you have use and occupancy.

People have made an effort to do something in almost impossible situation. Do you suppose coming in fifty to a hundred years later and say “Oh, sorry landowners you didn’t do it right, you’re wrong. Your property lines are wrong, your fences are wrong.” You think society, the law and the judges will tolerate that? I don’t think so. Now you can have the same type of condition of the original survey and there’s no use or occupancy. Well that’s a totally different situation, you’ve changed the facts. Here were talking about those special case townships where there have been use and occupancy located in good faith.

Your question is has bona fide rights vested to those locations? Then to resurvey and mark those locations in the remaining land in many cases will be federal lands. Special case resurveys provides methods adapted to areas of considerable alienated lands, patented lands or considerable federal lands. Special cases are more applicable is where you have a township with a few patented parcels or a township with these survey conditions with just a few government parcels. The exception to the general resurvey rule and special cases applicable when it has been determined not to identify the alienated lands by tract segregations.

Tract segregations is concept in independent resurveys we’re going to talk about independent resurveys but clearly what I’m talking about here if you’re finding yourself in this type of situation you’re going to want to talk to the Cadastral Surveyor

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and your BILS. These special cases resurveys will be applicable when there will be no projection of new subdivision lines and the original plat will not be cancelled. Special case resurveys are applicable where the original survey can not be identified with any degree of certainty in accordance with the representations of the approved plat in field notes or the prevailing conditions are such that strictly restorative when applied as an inflexible rule between monuments are adapted local corner positions are either inadequate or lead to unsatisfactory results.

That's where I'm going to stop my lecture on special case resurveys. Clearly if you find yourself in one of those types of townships you have an exception to the general rule, you'll have a special case resurvey but the Manual does treat them. And when look through the remaining of the outline you'll see where the Manual has talked about these situations.

### Next Edition

I'd like to step back here and just two things I want to do to wrap up. One, I want to share with you while I have this opportunity on this screen here I've shown the next edition website. If you want to follow the activity of the development of the next edition of the Manual of Survey Instructions that top website address there will get you to the next edition website.

That way you can follow the development of the next edition of the Manual. We'll post activities, we'll let public and everybody know when it is time for comments that sort of thing. And general presentations cause there will be presentations on the development of the next edition of the Manual as well as talking about the content of the next edition of the Manual.

Also that address on the bottom there is a good source of patent records. If patent records and trust allotment, trust patents as well as fee patents that lower address is a good one. Let's see if we did it or not.

Let's look back at our objectives when we started out in local surveys. In this course we have described what a local survey is and the importance of obtaining records of local surveys. We have described how the status the lands may influence the evaluation of



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local surveys. We have compared and contrast the authority of the local surveyor with authority of an official federal authority surveyor. We have recognized the proper jurisdiction and applied the controlling law regulation policy when evaluating local surveys. We have described the significance of United States Code Title 43 sections 7772 with relationship to evaluation of local surveys.

We have recognized situations when nothing can be done by any BLM surveying procedure to correct a conflict caused by a local survey. So that's the end of my discussion on local surveys and evaluation of local surveys. I hope you found some information that will be useful to you. I hope you found some tips where you can go to further educate yourselves and I want to wish the certified federal surveyors good luck and welcome aboard. That's the end of this video lecture, thank you.

## Course 3: Survey Evidence Analysis Study Guide

**COURSE DESCRIPTION:**

This set of videos and other teaching aids addresses one of the most complex tasks in cadastral surveying, the analysis of the field evidence and it's correlation with the written record. The course is essentially presented with three unique sessions on the subject from instructors of varying backgrounds and experiences. Practical on-the-ground advice is offered, as well as a thorough discussion of the legal concepts and issues involved in the analysis of corner evidence.

**COURSE OBJECTIVES:**

Upon completion of this course, students will be able to:

- Provide legal and historical backgrounds for evidence analysis procedures
- Discuss proper use of evidence, including confusing evidence situations
- Practice reading of and interpretation of field notes and plats
- Present proper markings on monuments









**COURSE INSTRUCTOR(S):**

Stan French, Bureau of Land Management  
 Dennis Mouland, Bureau of Land Management  
 Robert Dahl, Bureau of Land Management  
 Ron Scherler, Bureau of Land Management

**VIDEO LECTURE TITLE:**

Evaluating Corner Evidence – Part 13 (15 minutes)

**ICON LEGEND**

 WEB COURSE	 EXERCISE	 DIAGRAM	 READING ASSIGNMENT	 PROBLEM	 HANDOUT	 2009 BLM MANUAL	 QUIZ
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## EVALUATING CORNER EVIDENCE – PART 13

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### So, Where Do I Put the Corner?

Now that you have completed the portions of this course on corner evidence. We've looked at gathering the evidence either in the field, we looked at gathering the evidence through records, we've looked at situations where the evidence maybe is conflicting or we have conflicting evidence.

All of this we have to put together and eventually we have to decide to we where you are going to put the corner in the field. Where are you going to put it? Here is a situation where you can see the original record original record called for a post and pits. Four pits and a post in a mound of earth.

You can see its still there today. This is probably an 1870's survey or so. And we have the original evidence of this. But where are you going to put the corner? Well if it were me, one of the things, I would look at is this situation at least. I would be very careful in excavating this area and probably will find evidence of the original post either discolored soil or maybe even traces or remnants of the post itself as we get a little deeper in the ground so this corner you probably will be able to actually find the original monument or at the least the remains of traces of that original monument.

Sometimes we are a little too quick to monument a position without really looking carefully all the information. I just wanted to talk briefly about some things that might help us to determine where we are going to put the corner.

### Where Are You Going To Put The Corner?



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First of all make sure you have all the evidences, make sure you gather all the evidences and all of the records that you need. We aren't just talking about field evidence, we need to gather that and there's going to be physical evidence there in term of fences, in the terms of location, in the term of roads, original monuments, and stone, posts, bearing trees, accessories.

All of that information, we need to gather that make sure we done a thorough job of researching, a thorough job of determining where to look. Because in the public land surveys, sometime there are some fairly significant errors and if you're not looking in the right place you are not going to find the evidence. Sometime evidence that is very evident can be missed because we have not analyzed the records properly and not actually looking in the right position.

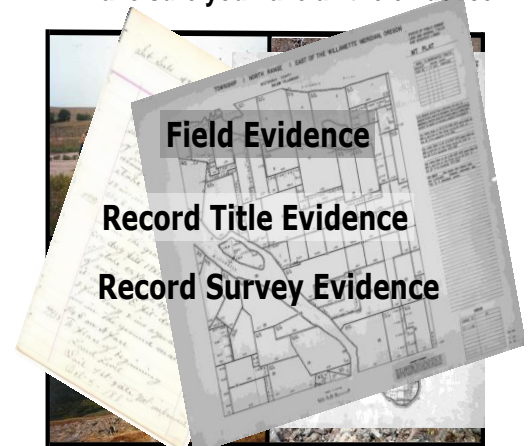
Of course, the records evidence makes sure that we gather all the record evidence and we are not just talking about the original GLO survey plat and field notes. But you need that. But let me say here that it's really important you get both documents the plat and the field notes. It is important that when you get the field notes you get the cover page and introductions.

You get the pages that deal with your portion of the survey and you get the general descriptions and the pages at the end, read those thoroughly make sure you got all the information there. But other record information such as other surveys filed in the county or the state. Adjacent legal description and adjacent land descriptions that are contained in adjacent deeds -- sometime that will shed light on where the corner might be.

There sometimes there court actions if you talk to local land owners they may tell about a disputes that went to court and we get those records and we may find evidence about corners. All of the records information make sure we do a thorough job there. Large lands holders such as timber companies, ranchers may have records that are available about the corner evidence.

And of course title evidence, and again this an area where when we are dealing with a parcel it's important to know what that title of the parcel I'm dealing with. But also the adjacent parcels. What's happened there? And what kind of descriptions and what

### 1. Make sure you have all the evidence



## EVALUATING CORNER EVIDENCE – PART 13

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kind of goings on that happened out there to the adjacent parcel?  
We make sure we have good records of what happened with the title in these area also.

Make sure you apply the proper principles, use the proper standard of evidence. We talked about that earlier. Don't reject the previously reestablished corner unless it wrong. Sometimes we may have what we think is a better solution to a problem but the existing monument – the procedures that the surveyor used is not wrong.

Often time in land survey there may be more than one acceptable solution maybe one solution appear best to us but there are more than one acceptable solutions. If a previous surveyor has used an acceptable procedure and acceptable solutions then we are bound to accept the work and build our survey from that. We don't want to reject previous survey. We only are going to reject previous monument or previous survey if there something is actually something wrong with it so keep that in mind.

Make sure you identify the proper procedures. We don't want to be double proportioning double a corner in. When here in a mineral survey note is a two chain tie to a corner. So make sure you are using the proper procedures and we do that by gathering all the records, analyzing them carefully and making sure we know everything that gone on -- that's going to protect us from using some procedure that really is not the best procedure that not going to give us the good answer make sure we know that and use the proper procedure in identifying our corner points.

### Discrepancies in the Record

Let's talk a little about the discrepancies in our records because often times we going to find discrepancies in the record either sometimes in the original records plat itself, field notes and plat they don't agree. There are discrepancies in the original field notes. That is just the GLO record. Often though there are discrepancies in the local records there may be surveys that disagrees. Bearings and distances to the bearing trees -- obviously in error, there's sometime wrong there and has to be worked out. What do we do with those situations?

### 2) Make Sure You Apply the Proper Principles.

- Use the proper standard of evidence.
- Don't reject a previously reestablished corner unless it's wrong.
- Make sure you have identified the proper procedure.

## EVALUATING CORNER EVIDENCE – PART 13

Well the courts given us some direction and I just want to talk a little about that. In **Beaty vs. Robertson**, the court told us the plat controls. It a case in Indiana and it involved situation where the field notes and the plat don't agree and the court said the plat controlled.

In **Whiting vs. Gardner**, the courts told us that notes control. So in the Beatty vs. Robertson said plat control and Whiting vs. Gardener, the court said notes control. Another court cases **Erickson vs. Wick** said the plat control and a fourth case **Harrington vs. Boehmer** it said the notes control. What's going on here?

Two of these cases said the plat control two say notes control. I can bring out several more that would say either plat controls or the notes control. However if you read these cases carefully, you will find that the courts made basically pretty good decisions. And they made decisions based on the information they were provided on the unique circumstance of each situation.

What really happened is the facts control. If the facts controls that means we have to gather all the facts and we have to assemble the facts accurately into a good picture of what going on to leads us to the correct decisions. If we don't gather all the facts then we may not end up with the right decision -- and in some of these cases I just cited that actually what happened.

All of the facts was necessary to come to a conclusion that was rendered and a couple of situations one side just didn't do a very good job of gathering all of the facts and one side did. So the decision was made based on not all the facts and they ended not doing a good job on deciding where the boundaries are. So if the facts controls then we have to gather all the facts and when you gather all the facts, then you have then a much better chance of making a good decision and getting corner in a proper and defensible position.

### Discrepancies in the Record

- Beaty vs. Robertson – plat controls
- Whiting vs. Gardner – notes control
- Erickson vs. Wick – plat controls
- Harrington vs. Boehmer – notes control

### What does control?

**The facts control!**

## EVALUATING CORNER EVIDENCE – PART 13

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Utilize your resources and by this I mean people resources. First of all, if you surveying in Indian country – the **BILS**.

Those surveyors, those BLM surveyors that are located in the regional office make contact with those guys, make sure you get to know those people. They're experienced, they're knowledgeable and their job is to help maybe as sort of a liaison between you the CFED and the cadastral chief and they are there to provide you with help, with advice and with resources. Get to know them. The other one of course is the State BLM Cadastral Office.

Many of you I'm sure have already have worked with the cadastral office on various issues and are familiar with them. But when you're doing official CFedS works and when you are trying to determine where is a corner of trust land. You gathered all the information and there no clear answer these are the people you may want to talk to. And then last your fellow CFedS, these people are experienced like yourself they have gone through the training that we provided and we're hoping that this build the community experience boundary surveyors who will rely on each other to make good decisions about placing corners and about how to reestablish or monument corners -- good survey decision -- so use all of these resources.

Don't just rely on yourself out there to make decision. Maybe a second set of eyes and a little discussion may reveal a different way to go.

### Documentation!

Next documentation, I think we really can't say too much about documentation. It is important that we document our surveys. They have to be well documented so that they can stand up to the test of time so if challenged they'll prevail. We just need to do a good job with that. The first thing, you got to document the information you gathered. The facts... what's the information you gathered put that in your documentation.

### 3) Utilize Your Resources

- The BILS
- State BLM Cadastral Office
- Other CFedS

## EVALUATING CORNER EVIDENCE – PART 13

Next, solutions you considered. Not just the solutions you chose, all the solutions that you considered. It is important for someone coming after you to know you considered certain things. And then why you chose not to follow that path -- why you chose to go a different way. So always not only documents all the information but document all the approaches you have solutions considered and then you will come back and document the final decision you will justify that final decision you chose and why you chose it.

So your documentation should have these three elements in it. Always in of course, when we talk about all the information you gathered we talking about that plat having good information about the measurements you made, the control you used, the method you used, the corners you found, and the corners you set. All of that information documented right there plat itself and completely and thorough. Basis of bearing that you are reporting true bearing for every line. All of those things should be right there on that plat. So what are you going to put the corner?

How many of you seen one of these? We have the original stone and beside the original stone you have a pipe which is the corner. Where are you going to put the corner? I think if you follow the process we that we have outlined you use the information and the knowledge you gained in this training when you gathered all the facts, when you analyzed all the facts, when you look at all the records, there's are going to be information there that tells you where you going to put the corner.

And you are going to make a good decision and document that decision well so that the next person that follows you is going to build on that survey that you have built.

### 4) Documentation

- Information you have gathered
- Solutions you considered
- Justification for your final decision



**QUIZ**

It's time to take the Course 3 Quiz which you can access from the CFedS website.