

“Highway Right of Way Surveys”

Presented by John F. Bennett, PLS

Biographical Sketch

A resident of Alaska since 1966, John Bennett is a licensed Professional Land Surveyor, a U.S. Mineral Surveyor, and an SR/WA (Senior Member International Right of Way Association). He has been a active member of the Alaska Society of Professional Land Surveyors and served as statewide President between 1995 and 1996. John has served as the IRWA Fairbanks Chapter president and is also an IRWA Certified Instructor for engineering related courses.

Currently, John is the Land Surveyor/Right of Way Engineering Supervisor for the Alaska Department of Transportation, Northern Region. In this position he manages the department's field surveyors and Right of Way engineering staff. His background includes private sector responsibilities in various land, construction, oil field and mineral surveys.

Abstract

Existing highway rights of way in Alaska can be located using a variety of methods. The primary physical evidence for locating these boundaries may range from the road itself to an overwhelming number of potentially conflicting monuments. Along with the ambiguous processes which created these boundaries, the establishment of a right of way can be one of the more difficult aspects of any given land survey. The purpose of this paper is to provide a Department of Transportation perspective into these issues.

Definitions

Right of Way: Generally, the right of a person, class of persons, or entity to use the land of another in some particular line.

Right of Way Survey: Right of way surveys are those surveys performed to accurately locate and describe the land taken for the right of passage for some facility across the land of other individuals. This right of way may have been acquired by fee purchase, easement, dedication, or prescriptive use. (ACSM Guide to Right-of-Way Survey Practices)

Background

In a previous International Right of Way Association seminar entitled "Access Law and Issues Affecting Public and Private Lands", I presented a paper which discussed "Highway Rights of Way in Alaska". This paper was also made a part of the 1994 edition of the Alaska Society of Professional Land Surveyors *Standards of Practice* Manual. In that paper, the focus was on research techniques and the legal basis for Public Land Order rights of way, RS-2477 trail and section line easements and rights of way created by certain patent reservations. Unfortunately, that information will only tell you whether a right of way does or does not exist. There is a relative abundance of case law in Alaska on proving the existence of a right of way as opposed to cases on boundary location. Therefore, the primary focus of this paper is to discuss issues relating

to locating a right of way based upon recovered evidence and the intent of the documents which have established the right of way.

We have all heard a non-surveyor wonder out loud why it is that no two surveyors can survey one piece of property and reach the same conclusion. Those of us who have performed surveys know that the variances are a combined result of many factors. Even if the same evidence is recovered, each surveyor may weight it differently. Equipment and field procedures differ between surveyors and the resulting normal survey errors, although within acceptable tolerances will rarely result in exactly the same positions. Larger discrepancies are usually found in the evaluation and interpretation of documents which are the basis for re-establishing the boundary. Nonetheless, it is always satisfying when you find that another surveyor has retraced a boundary you have previously run, and although his dimensions were slightly different, they were found to be in "reasonable agreement" or within "acceptable tolerance".

The major difference I find between this typical boundary retracement and the re-establishment of a right of way is that, between any two surveyors, there are usually far greater discrepancies in the weighting of evidence and in the interpretation of the source documents. I believe this is primarily due to the obscure nature of highway "rights of way" in general and the fact that the agencies managing the rights of way have made little effort to clarify these issues.

Right of Way Interests & Methods of Description

Many times I have heard the term "right of way" used as if it defined a specific type of interest. As in, "is it a right of way or an easement?". The general definition I have used in this paper is a common interpretation used among right of way professionals. Lumped together within the term "right of way" are a multitude of interests ranging from a limited and revocable permit to fee title. For example, the following list summarizes the types of interests which make up the majority of the DOT&PF highway system. I have arranged them in four groups from those interests which are most predominant in the Alaska highway system to those that are the least.

Group I

- *Public Land Order Rights of Way* - These rights of way for highway purposes were established across unreserved federal lands under the authority of the Departments of the Interior and Commerce between April 4, 1942¹ and April 7, 1958². The PLO right of way constitutes the majority of varying interests in the DOT&PF inventory. At statehood, the federal government transferred 5,400 miles of these rights of way to the State of Alaska³.

¹ The first of a series of highway withdrawals, Executive Order No. 9145 reserved a 200 foot wide right of way for the "Palmer-Richardson" (Glenn) highway between Chickaloon and Glennallen.

² The last Public Land Order for highway rights of way issued, PLO 1613 effectively eliminated the remaining withdrawals established by the prior Public Land Orders by converting the "Through" roads to easements.

³ On June 30, 1959, pursuant to section 21(a) of the Alaska Omnibus Act, the Secretary of Commerce issued a quitclaim deed to the State of Alaska in which all rights, title and interest in the real properties owned and administered by the Department of Commerce in connection with the activities of the Bureau of Public Roads were conveyed to the State of Alaska.

Although most of these rights of way were established as withdrawals, subsequent PLO's converted them to easement status⁴. Typically, the PLO right of way was described as 50, 100, or 150 feet on each side of the road centerline according to the road's classification.

- *Title 23 Highway Easement Deed* - These rights of way, issued by the Federal Highway Administration were authorized as a part of the development of the Interstate highway system.⁵ Through this authorization, FHWA could appropriate lands managed by certain other federal agencies and transfer those lands to the state highway department. Typically, in Alaska, deeds are prepared by DOT&PF and accompanied by a metes and bounds description and plats of the proposed right of way which are then to be forwarded to FHWA for execution by their Regional Solicitor prior to construction. This provided for an expeditious means to acquire right of way across most federal lands. Lands administered by the Army, Air Force, Navy and Veterans Administration must be applied for directly to those entities.
- *DNR Right of Way Permit* - This process⁶ is used when the required highway right of way crosses lands under the management of the Alaska Department of Natural Resources. DNR typically issues an "Early Entry Authorization" prior to construction and requires an as-built survey and metes & bounds description of the facility before the final "Right of Way Permit" is issued.
- *ROW Acquired by Negotiation/Condemnation* - DOT&PF was created by virtue of Executive Order No. 39 on July 1, 1977. This action transferred the powers previously held by the Department of Highways and the Department of Public Works to acquire rights of way and other real property by negotiation or condemnation.⁷ DOT&PF policy is to acquire rights of way in fee whenever possible. Rights of way acquired for an access-controlled facility must be acquired in fee simple.⁸ For any individual parcel of right of way acquired by the Department, it is necessary to review the recorded document to determine the type of interest acquired. Current parcel descriptions are typically metes and bounds with an attached plat or a description which refers to a portion of a recorded subdivision lot lying within the proposed right of way. The subdivision description also has an attached plat which provides the dimensions of the parcel. Older projects with uniform rights of way also made common use of strip descriptions.

Group II

⁴ Whether or not the State received a fee or easement interest had been a subject of debate for several years. On February 19, 1993 the Attorney General's Office issued an opinion concluding that "under the Alaska Omnibus Act and resulting Quitclaim Deed, the State of Alaska received, in general, easements for its roads at statehood."

⁵ The Act of August 27, 1958, as amended, 23 U.S.C., Sections 107(d) and 317. Implementation through 23 CFR Sections 712.501-503.

⁶ See A.S. 38.05.850. Permits

⁷ See A.S. 35.05.040 and A.S.19.05.040 both titled Powers of the Department.

⁸ A.S. 19.20.040 Acquisition of property and property rights.

- *Section Line Easements* - These highway easements which are typically associated with surveyed sections lines throughout the state may be based upon either the federal RS-2477 grant or a statutory provision which established section line easements on State owned lands⁹. The easements, if proven to exist, are 33 or 50 feet on each side of the section line.
- *FLPMA Title V Right of Way Grant*¹⁰ - This process is used to acquire a grant of right of way from BLM for projects that are not federally funded and therefore cannot take advantage of the previously mentioned Title 23 process. Although this process has not been used to a great extent by DOT&PF, it is likely to become more prevalent as the Title 23 process is phased out.¹¹ Typically the proposed right of way is defined with a written description and plat, although in certain circumstances, the application may be for a general corridor to be followed with an as-built survey upon completion of construction.
- *Federal Patent Reservation ('47 Act)* - Beginning in 1947, federal patents in Alaska included a reservation for highway rights of way which were non-specific as to their location and width. These rights of way were implemented through the filing of a document called a "Notice of Utilization".¹² The parcel acquired was generally described by metes and bounds.

Group III

⁹ The 4 rod (66 foot) wide federal section line easement is based upon the offer of the RS-2477 grant and the initial acceptance of that grant on April 6, 1923 by the Territorial legislature (Ch 19 SLA 1923) for highway purposes. On March 26, 1951, the legislature enacted Ch. 123 SLA 1951 which stated that "A tract 100 feet wide between each section of land owned by the Territory of Alaska or acquired from the Territory, is hereby dedicated for use as public highways..." The 1953 law was amended on March 21, 1953 by Ch. 35 SLA 1953, to include "a tract 4 rods wide between all other sections in the Territory..." (See Alaska Statute AS 19.10.010 Dedication of land for public highways, and the 1969 Opinions of the Attorney General No. 7 dated December 18, 1969 entitled Section Line Dedications for Construction of Highways.)

¹⁰ Title V of the Federal Land Policy and Management Act of October 21 (P.L. 94-579), 1976 (90 Stat.2776; 43 U.S.C. 1761)

¹¹ On July 1, 1995, FHWA initiated a policy that would limit the circumstances under which the Title 23 process could be used in the future, therefore, leaving it up to the State to deal directly with a federal landowning agency. "With the Interstate system now completed, few land transfers for highway purposes will be critical to the national interest."

¹² The Act of July 24, 1947 (Pub. L. 229 - 61 Stat. 418)(48 U.S.C. 321d) applied only to lands which were entered or located after this date. This act reserved rights of way for roads, roadways, highways, tramways, trails, bridges, etc. Also commonly known as the "'47 Act'".

The Act of 1947 was repealed by Section 21 of the Alaska Omnibus Act, P.L. 86-70, June 25, 1959 (73 Stat. 146). The repeal became effective on July 1, 1959. This repeal only eliminated the insertion of the reservation into the patents of lands as of July 1 date, therefore lands patented or entered after this date are not subject to the act. Lands patented before the repeal were still subject to the reservation.

Right of Way Act of 1966 - This act repealed the use of '47 Act reservations by the State of Alaska (HB 415 Ch. 92, 1966 - April 14, 1966)

- *Federal Patent Reservation (General)* - Rights of way for roadways may be provided and specifically described as to location and width in the patents of certain types of federal conveyances. An example of such conveyances would be BLM Small Tracts parcels.¹³
- *Statutory dedication* - The appropriation of land, or an easement therein, by the owner, for the use of the public, and accepted for such use by or on behalf of the public.¹⁴ A statutory dedication is one made under and in conformity with the provision of a statute regulating the subject¹⁵. These rights of way are described with reference to a plat.
- *Common Law dedication* - Dedication is a mechanism for transfer of real property which need not comply with the Statute of Frauds. There are, however, well-defined requirements for a valid dedication. "Dedication is the intentional appropriation of land by the owner to some public use."¹⁶ In Alaska, there are two basic elements of common law dedication: an intent to dedicate on the part of the landowner, and an acceptance by the public¹⁷. An intent to dedicate is a factual issue which the claimant must clearly prove. Acceptance may occur through a formal official action or by public use consistent with the offer of dedication or by substantial reliance on the offer of dedication that would create an estoppel. Acceptance may also be implied from acts of maintenance by public authorities.¹⁸ No acceptance is necessary when a public body having capacity to do so makes a formal dedication.¹⁹ Federal townsite plats generally offer no words of dedication, however, the roads and alleys depicted upon them are considered to have left the jurisdiction of the federal government and are dedicated to public use.
- *RS-2477 Trail Rights of Way*²⁰ - Certain rights of way for roads which were constructed prior to Public Land Orders may have been established across unreserved public lands by virtue of

¹³ Small Tracts - Act of June 1, 1938 (52 Stat. 609)

¹⁴ Blacks Law Dictionary 5th Edition - *Dedication*

¹⁵ A.S. 29.40.070 Platting Regulation "...platting requirements that may include, but are not limited to, the control of ... (4) dedication of streets, rights of way, public utility easements and areas considered necessary by the platting authority for other public uses." also A.S. 40.15.030. Dedication of streets, alleys and thoroughfares. "When an area is subdivided and a plat of the subdivision is approved, filed, and recorded, all streets, alleys, thoroughfares, parks and other public areas shown on the plat are considered to be dedicated to public use."

¹⁶ Seltenreich v. Town of Fairbanks, 102 F.Supp. 319, 323 (D. Ak. 1952)

¹⁷ Swift v. Kniffen, 706 P.2d 296, 300-01 (Alaska); State v. Fairbanks Lodge No. 1392, Loyal Order of the Moose, 633 P.2d 1378, 1380 (Alaska 1981).

¹⁸ Bruce & Ely, Law of Easements and Licenses in Land 4.06(3)

¹⁹ State of California v. U.S., 169 F.2d 914, 921 (9th Cir. 1948)

²⁰ The Mining Law of 1866 - Lode and Water Law, July 26, 1866 (Section 8 - 14 Stat. 253) The Federal offer for road easements over public lands was made through the following: "The right of way for the construction of highways over public lands, not reserved for public uses, is hereby granted."

The above referenced Section 8 of the 1866 Mining Law was redesignated as Section 2477 of the Revised Statutes 1878. (43 U.S.C. 932) RS 2477 was repealed by Title VII of the Federal Land Policy and Management Act on October 21, 1976.

the RS-2477 grant²¹. The width of an RS-2477 trail right of way is generally considered to be “ditch to ditch”²². However, RS-2477 right of way may be 100 feet in width if the public lands which it crossed were unreserved as of 1963²³.

- *BIA Easement* - BIA grants or approves all actions that affect Native title on Tribal Trust (owned by the USA) or Restricted (Native Allotments or restricted townsite owners) lands.²⁴ BIA typically grants easements for highway rights of way. Often these grants are issued across unsurveyed allotments which can cause confusion when the final surveyed boundaries of the allotment do not conform to the original location.

Group IV

- *Prescriptive Easement*²⁵ - Alaska case law has established that a prescriptive easement can be acquired by the public across private lands. However, the ability of the State to acquire a right of way by this method requires a greater burden of proof due to a conflict with the constitutional provision that property not be taken without just compensation.²⁶ The Alaska statutes dealing with adverse possession²⁷ are also the statutory basis for prescriptive easements.
- *USFWS Special Use Permit* - These right of way permits are required for lands under the authority of the National Wildlife Refuge System Administration Act of 1966.²⁸

²¹ A footnote to the Alaska Supreme Court case State v. Alaska Land Title Ass'n, cited a memo from the Chief Counsel of BLM dated 2/7/51 noted that "Prior to the issuance of Public Land Order No. 601..., nearly all public roads in Alaska were protected only by easements. Right of way easements were acquired under section 2477 of the Revised Statutes (43 U.S.C. sec. 932) by the construction of roads."

²² In the 1963 Superior Court case State v. Fowler regarding Farmer's Loop road in Fairbanks, the Highway Department claimed that 43 U.S.C. 932 (RS-2477) provided for a 66 foot wide right of way where a claim of RS-2477 was appropriate. The Superior Court sustained defendant's position that the state "only has a right of way for the width of the road utilized in the past and now by the Highway Department".

²³ In order to establish a 100 foot width for an RS-2477 right of way, the State legislature enacted Sec. 1, Ch. 35, SLA 1963 (Effective April 7, 1963):
Establishment of Highway Widths. (a) It is declared that all officially proposed and existing highways on public lands not reserved for public uses are 100 feet wide. This section does not apply to highways which are specifically designated to be wider than 100 feet. AS 19.10.015.

²⁴ See Act of February 5, 1948 (62 Stat. 17; 25 U.S.C. 323-328). Regulations under 25 CFR Part 169.

²⁵ See Public Prescriptive Rights across Public Lands by Daniel W. Beardsley. This paper is included in the 1994 edition of the Alaska Society of Professional Land Surveyors *Standards of Practice Manual*.

²⁶ Ault v. State, 688 P.2d 951, 956, (1984) "Because of the obvious tension between state's ability to acquire land by adverse possession and constitutional prohibition against state's taking private property without just compensation, it is appropriate to narrowly view circumstances under which state may acquire property by adverse possession and, for such purposes, good faith should be defined as honest and reasonable belief in validity of the title."

²⁷ A.S. 09.25.050 Adverse Possession and A.S. 09.10.030 Actions to recover real property in 10 years.

²⁸ Public Law 89-699 (80 Stat. 928, 16 U.S.C. 668dd. Regulations under 50 CFR Part 29.

- *ANCSA 17(b) Easement* - 17(b) easements were reserved for public access across lands conveyed to Native corporations pursuant to the Alaska Native Claims Settlement Act.²⁹ These easements are specific as to width but may be ambiguous as to location unless they were established for an existing trail. Unless there is a transfer of administration, BLM is the manager of the easement. Due to their limitations, these easements are rarely considered for use by DOT&PF projects.

It is the policy of DOT&PF to acquire rights of way in fee simple whenever possible. As you can see from the preceding list of interests, the majority of existing highway rights of way in Alaska are easements. However, in the urban areas where most rights of way have been purchased or form a part of an access controlled facility, the interest is typically in fee.

The purpose of listing all of these types of rights of way is to impress the fact that our highway properties are very non-uniform with regard to title interests and the methods by which they are described.

Monumentation

Certain monuments are considered to be without positional error. Generally, these monuments are those set by the sovereign (BLM/USA - State of Alaska) to identify lands for conveyance purposes. (i.e. cadastral survey monuments, U.S. Surveys, ASLS surveys) Also included in this class of monuments may be original interior subdivision monuments or monuments established prior to a conveyance and stated in a deed description. The concept of holding the monument position fixed is derived from the belief that the physical position of the monument best reflects the intent of the parties when it is in conflict with the written description.

In the case of section line easements or rights of way dedicated by subdivision plat, this principle should generally apply. However, the majority of monuments established for highway rights of way do not fall into this category. For the most part, monuments set for a highway project that either mark or reference a right of way are established after a conveyance and are not called for in the deed. They generally are marking or referencing a line between unencumbered private or public lands and that which is encumbered by the highway easement. As these monuments do not fall into the class of monuments without positional error, they might be interpreted as "one" surveyors opinion as to where the right of way line may be and not necessarily binding on the next surveyor who finds that were not established within a reasonable tolerance.

When retracing DOT&PF rights of way, you will generally find the following six categories of monuments:

- *Centerline Defined by As-built Survey*: The previously mentioned 1959 Omnibus Act Quitclaim Deed transferred over 5,000 miles of rights of way to the State, and typically, these rights of way were unmonumented. The Public Land Orders that created most of these rights of way used the strip method as a basis for description. Although subject to a bit more interpretation than the typical rebar/cap or pipe monuments, the physical location of the road

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ANCSA - P.L. 92-203 (85 Stat. 688), 43 U.S.C. 1601. - Regulations 43 CFR 2650.4-7.

centerlines do in fact represent a legitimate man-made monument which can be used to locate the right of way. Also, at the time, the value of using a standard, identifiable survey monument was relatively unimportant, given the fact that the road was typically the first improvement into the wilderness and there were few existing boundaries with which to conflict. Many of these roads were constructed across federal lands prior to the rectangular survey net. In fact, often the control for the beginning of the next project was where the last project ended. As we approach the year 2000, it may be surprising to note that much of our highway system falls into this category. The majority of the Elliott, Taylor, and Denali highway rights of way are still based upon an as-built centerline. Also, portions of our primary system roads such as the Richardson and the Tok-cutoff fall into this category.

- *Centerline Referenced with Right of Way monuments:* Generally this means the 8" x 8" yellow concrete monuments. I have also found mid-1950's brass cap monuments set by ARC on the Tok Cutoff and Alaska highways and on more recent projects, we have used standard primary and secondary monuments to mark the right of way. The use of the concrete monuments ranged from approximately 1960 to 1975. Typically, the yellow concrete monuments were established on the right of way lines at PC's, PT's, at jogs in the right of way and generally every 1000 feet at even 10's of stations.

The yellow concrete monuments have always been a subject of debate as long I can remember. I have heard some surveyors state that they would not use them because they were not set by "licensed land surveyors". Although the crews that established these monuments were rarely under the supervision of a "licensed land surveyor", they were generally performing these monumentation surveys using procedures and under an authority that was acceptable and appropriate at that time. During much of this timeframe and until 1972, licensed engineers, which represented the majority of Department of Highways licensed professionals, were by law considered competent to perform land surveys.³⁰ Although many of the Department engineers did obtain registration as land surveyors through the *grandfathering* process, responsibilities for surveys eventually made the transition to "practicing" surveyors licensed by examination. Also during this time period, without regard to the type of license held by the employee in responsible charge, State employees were exempt from the statutory licensing requirements.³¹ Typically, the monuments were set in place by the construction contractor's labor force, after the point and cross-tie references had been established by the state's survey crew. As with any large scale organization, the quality of the survey and monumentation may vary from project to project depending upon the experience and attitude of the people performing the work. However, in general, these monuments reflect the best evidence as to the location of the original centerline.

- *Centerline Monuments:* This is the current standard. Generally, the Department began using centerline monuments on rural roads in 1979, although they can be found on certain urban and suburban projects constructed in the early 1960's. Commencing in 1976, the Department

³⁰ Section 6, ch. 179, SLA 1972 provides: "An engineer holding a valid registration under prior provisions of AS 08.48, who may by inherent right under those prior provisions practice land surveying, is entitled to be registered as a land surveyor if he makes application for registration to the board within 365 calendar days after July 1, 1972, at which time his right to practice land surveying under prior provisions of AS 08.48 expires.

³¹ 2 ch 85 SLA 1981 amended A.S. 08.48.331 (4) to eliminate the state employee exemption from the licensing act.

began a transition from using state survey crews in construction to contractor provided surveyors. By the early 1980's, all construction surveying including the final monumentation was turned over to the contractor's surveyors. Generally these monuments were cased and established at PC's, PT's and other points on centerline as warranted.

- *Centerline Referenced with Shoulder Monuments:* This refers to uncapped rebar set on a parallel reference line on the shoulder for certain rural roads in the mid-1980's. This method was fairly short lived and was only used on a few projects. The idea at the time was that centerline cased monuments were becoming more of a problem both for construction and maintenance. Construction would have to reference the monuments and adjust the casings even for a relatively simple overlay project, and Maintenance was forever hitting the casings or paving them over in the course of their normal duties. The intent was to set the rebar far enough from centerline to be off of the pavement, yet sufficiently clear of the shoulder to avoid any conflict with Maintenance. These points would also be close enough to the road prism to allow for long intervisible shots.
- *No monumentation:* This category represents a conscious decision on the part of DOT&PF management to delete any form of monumentation from the project. Unfortunately, this was also applied to projects that did not have a uniform right of way, therefore an as-built of the centerline would not necessarily provide adequate definition of the right of way limits. This occurred on several projects which were constructed between 1975 and 1979. This time period basically represents the gap between the end of the concrete ROW monuments and the beginning of the centerline monuments. Interestingly enough, the DOT&PF management believed that by deleting the monumentation, they were actually benefiting the private sector surveyors. The monumentation was deleted in part for three reasons. First, due to the lack of stability of the yellow concrete markers, it was determined that their limited benefit was not offset by their cost. Secondly, it was believed that by eliminating monuments, and therefore conflicts, the State would be reducing its liability exposure. Third, if DOT&PF did not survey its right of way, then there would be that much more work for private sector surveyors. Unfortunately, in spite of the good intentions, surveying a property adjoining one of these unmonumented rights of way can be a very expensive proposition. On certain projects that were not monumented, I have noted that the locations survey references were labeled on the construction as-builts. In these situations, it may still be possible to accurately recover the design centerline.
- *Alternatives for the Future:* Based upon shortcomings of certain types of monumentation used in the past, we are now reconsidering how the right of way can be most effectively referenced. In essence, I believe that it will be beneficial to get the monuments out of the road for the following reasons:
 1. Safety - Monumentation off the road will reduce surveyors exposure to traffic.
 2. Maintenance - In some situations, unstable road foundations have resulted in cased centerline monuments being paved over by M&O. While this makes the monument difficult to recover, a new consideration involves the increased use of milling machinery on pavement overlay projects. This type of equipment shaves a portion of the asphalt down in preparation for new pavement. Expensive damage has occurred to these

“rotomills” when they run into a monument case that was not apparent because it had been paved over.

3. Quality Control - Monuments placed within a roadway are typically established by the construction contractor's surveyor. I have always considered this as the weak link in the "Locations survey - ROW mapping - final monumentation" process. DOT&PF staff surveyors certify as to our retracement of boundaries and as to the location, shape and size of the parcels acquired, but we have limited control or knowledge as to the procedures used to establish the final monumentation. By moving monumentation outside of the construction limits, we can in most cases, remove that responsibility from the construction contractor. This will also eliminate most of the cased monument item from the project, although certain existing monuments such as section corners will still have to be referenced, replaced and cased.
4. At statehood, the majority of our rights of way were uniform in width and centerline based which made it easy to pull a distance from centerline to locate the ROW. Now, rights of way are either considered corridors in which the physical road meanders or a very non-uniform ROW is acquired because of high land values and other concerns. This trend is making it more difficult for property owners as well as our own maintenance forces to locate the limits of the ROW. Also, as we head toward a hard metric conversion for rehabilitation (3R) projects, the metric centerline curve parameters will, by definition, not be the same as the original English unit centerline that was used as the basis for right of way. This will result in having a construction centerline that rarely coincides with the centerline of right of way.

We can minimize these problems by getting out of the road and using right of way monuments and random control monuments.

Random control monumentation: This type of monumentation is being proposed for some rural highways where there are few private parcels and little ROW acquisition is anticipated. Random control monuments will be set at protected, stable locations and will be related to centerline or right of way by coordinates. This provides suitable control while minimizing the level of monumentation required. This was performed on certain segments of the Denali highway in 1994 and will be used on the 1995 Elliott highway surveying and mapping contract.

This type of monumentation would also be a natural extension of the DOT&PF Georeferencing project. Between 1988 and 1994, DOT&PF began the establishment of a network of geodetic control stations along the federal aid highway system using GPS technology. The stations are generally spaced 10 kilometers apart. The long range intent of this project was to develop a framework for a statewide highway GIS/LIS. The majority of new projects are now tied into this system. As time and funding allows, we intend to densify the network such that will become more useful for control of conventional surveys.

Although most cost effective and secure, this type of monumentation suffers from the fact that it does not result in a readily apparent right of way line.

Right of Way Monuments :

Urban and suburban areas with a higher land use density may benefit with a return to right of way monumentation for several reasons. It will solve one of the primary concerns of adjoining property owners and private sector surveyors. That is, the right of way line is apparent without a lot of computations required of offset, reference or other control monuments. Also, certain platting authorities currently require that secondary monumentation be established on the new ROW line as a replacement for existing monuments. It is a relatively small step to include primary control monuments on the right of way as well.

Of course, there is also a downside with right of way monuments. Typically, these monuments are placed in pre-defined locations that may not coincide with the most stable and protected positions available. It is more costly as it will increase the monumentation density by at least a factor of 2 particularly when you consider ROW angle points and jogs. Lines must be brushed from the road to the ROW in order to establish the monuments, therefore increasing the cost of survey. This additional cost will be partially offset by the elimination of the casing requirement. They will be more difficult to locate and use once the brush grows up. They are not impervious to jacking in swampy areas. They are more susceptible to damage by utility construction, brushing crews and excavation in close proximity to the right of way line.

As previously stated, the 35 years since statehood has left us with a large part of our system yet to be monumented, and that which is, may be less than perfect. Although it will still be several more decades before the system is adequately monumented, our goal will be to provide control which will be more secure and beneficial to the user.

Procedures, Intent & Resources

A. C. Mulford's 1912 publication of Boundaries and Landmarks included a chapter titled *Re-running Old Highway Records*. Mulford stated, "The actual process of 'running out' an old road record is even more difficult in practice than it is in theory. No actual rules can be given, but some general suggestions may be helpful."

And that is essentially what follows: one surveyor's opinion with regard to locating highway rights of way.

- *Should the monuments always control?*

In the Northern Region, our new right of way plans typically have a table of recovered property corners with stations and offsets to both the "recovered" position and to what we call the "adjusted" position. In some cases the table only shows the "recovered" position and the "adjusted" positions are noted on the plan view. The purpose of showing two positions is to reference and protect the existing corner evidence by showing the "recovered" position. The "recovered" position is identified with a station and offset from the project centerline. This station and offset basically represents where we found a piece of evidence without any judgment as to whether the evidence is good or bad, original or replaced, controlling or not controlling. If we determine the evidence to not be controlling, then we will provide a station and offset to the point that the recovered monument should have been had it been established using the appropriate control. This "adjusted position" essentially represents the DOT&PF interpretation of the right of

way location based upon the intent of the source documents and our interpretation of what should be used to appropriately control the location.

I have heard other surveyors state that it would be real convenient if we could treat right of way monuments established by the State as “original” monuments. That is, “they are where they are” and everyone accepts them. With regard to boundaries between private landowners, a monument which cannot be classified as “original” may become fixed after adverse rights have set in or by long acceptance by surveyors as a point of local control. Although it would generally be easier to blindly accept corners set by others to mark the right of way, there are several reasons why we feel it is necessary to make a distinction between boundaries separating private owners and boundaries separating a private owner from a public interest.

Adverse possession by the State against private property. Although the Courts have ruled that it is possible for the State to acquire property through adverse possession, it places a much greater burden of evidence on the State than that placed on an individual. (See Ault v. State - footnote 26)

Adverse possession by private owner against the State. Both in common law and in statute³², a private owner may not gain title to property through adverse possession against the sovereign. Therefore, an individual who occupies land within a State right of way is ineligible to claim title by adverse possession, even if he relied upon incorrectly established monuments and meets all of the statutory provisions typically required to obtain title. (See footnote 27)

Another question is whether the state can be estopped from claiming the full width of a right of way when it has made representations (in the form of monuments) that the right of way is narrower than described in the source documents. The issue of estoppel has been raised in several Alaska Supreme Court cases relating to rights of way.³³ Unfortunately, none of them included monuments as a factor. Estoppel, according to the Alaska Supreme Court requires “the assertion of a position by conduct or word, reasonable reliance thereon by another party, and resulting prejudice.”³⁴

The typical right of way/estoppel case involves a situation where the private adjoiner has assumed a narrower right of way than is due the state by virtue of the instruments which created it. Estoppel was argued either because the property owner claimed that the state had not affirmatively asserted its right of way (in the form of mapping and monuments) or because the state had made a previous assertion as to width which was contrary to its current assertion. To date, the state has prevailed in these cases for two primary reasons. First, property owners had been placed on constructive notice as to the true width of the right of way by virtue of instruments filed at the recorder’s office or published in the federal register. Secondly, unless

³² A.S. 38.95.010 State's interest may not be obtained by adverse possession or prescription. "No title or interest to land under the jurisdiction of the state may be acquired by adverse possession or prescription, or in any other manner except by conveyance from the state."

³³ State v. Simpson, 397 P.2d 288, 291 (Alaska 1964); State v. Alaska Land Title Ass'n, 667 P.2d 714 (Alaska 1983)

³⁴ Jamison v. Consolidated Utilities, Inc., 576 P.2d 97, 102 (Alaska 1978)

improvements are constructed by the adjoiner in the conflict area, it is difficult to show detrimental reliance.

Most recently this issue was raised in the 1995 Fairbanks case, Keener v. State of Alaska³⁵. In this case the plaintiff argued against the application of a 50 foot PLO right of way where the patent only called for a 33 foot right of way. The Keeners argued that the State was now claiming a right of way width which was inconsistent with previous assertions and therefore was estopped from making the wider claim.

Keener argued “quasi estoppel”, where detrimental reliance is not so much a factor as whether the changed position of the state was unconscionable. The court had previously stated³⁶ that quasi estoppel “precludes a party from taking a position inconsistent with one he [or she] has previously taken where circumstances render assertion of the second unconscionable.” In applying the doctrine of estoppel, the court stated that it would consider “whether the party asserting the inconsistent position has gained an advantage or produced some disadvantage through the first position; whether the inconsistency was of such significance as to make the present assertion unconscionable; and whether the first assertion was based on full knowledge of the facts.” Once again, the state prevailed as the court concluded that “the Keeners have not shown that the State gained an advantage or produced a disadvantage to them by depicting the Davis Road right of way at thirty-three feet rather than fifty feet.”

This still, however, leaves the question of whether the state would be estopped from claiming its full right of way if an adjoiner constructs improvements in the right of way in reliance upon monuments erroneously placed by state surveyors. This may be clarified in the future. However, as the law stands, we generally apply the philosophy that even when in conflict with monuments purporting to define the right of way, the State is due the full width of right of way intended by the instrument which created it. And except for unusual circumstances, the State should receive no more than what was intended.

- *Data Collection*

You will likely acquire more data points than you need to solve the tangents and curves. Gurden Wattles, in his 1976 book Writing Legal Descriptions, said “Remember that redundancy in the form of excess information often causes impossible/or unadjustable conditions.” He was talking about redundant information in a legal description, however it also proves true in the data acquisition phase. A best fit solution for the tangents and curves will rarely result in record curve data, rarely agree with record stationing and never pass through the center of every data point. In short, there are an infinite number of solutions for the centerline.

The majority of our rights of way are based upon Public Land Orders, section line easements, RS-2477 easements or other acquisitions defined by "strip" descriptions. The intended width for these types of rights of way is based upon a fixed number of feet on each side of a described centerline, no more and no less. The location of these rights of way must be founded upon a re-establishment of the centerline (or section line) upon which the ROW is based.

³⁵ Keener v. State of Alaska, Supreme Court No. S-5650, Opinion No. 4168 - February 17, 1995.

³⁶ Dressel v. Weeks, 779 P.2d 324, 329 (Alaska 1989)

Centerline defined by As-built Survey: Generally, if the road is considered the monument, an as-built survey is necessary to locate the apparent centerline of the tangents and curves by splitting the shoulders of the road.

Centerline defined by centerline/offset line Monuments: Simply, tie in all of the project monumentation relevant to your area of interest.

Right of Way Monuments: As the objective is to locate the original centerline, it is important to tie pairs of ROW monuments on both sides of the right of way.

- *Data Analysis and Determination of Centerline:*

Centerline defined by As-built Survey: Tangents are defined by the as-built survey and projected to determine the point of intersection. One or more points on the curve will then solve for the curve data. Typically, these roads were engineered, so there should not be great difficulty in developing a series of tangents and tangential curves. Obviously there can be a lot of room for interpretation in developing a centerline by as-built. Quite often I see the largest differences depending upon the size of the project. That is, if your objective is to define 20 miles of right of way, you may tend to take more liberty in applying a best-fit solution to a generally straight segment of road that has a lot of sinuosities. If your objective is to define a few hundred feet of right of way for an adjoining lot, the above mentioned sinuosities may appear much more significant.

Centerline referenced by Right of Way Monuments: The located monument positions are generally split as the best evidence of the original ROW centerline. In this scenario, we are considering the project centerline as the basis for the right of way location and the ROW monuments are used as references to that centerline. In fact, these ROW monuments typically replaced the centerline references used for the construction project. If you have tied several pairs of undisturbed right of way monuments, and find that the record dimensions between certain pairs compare favorably with your measured dimensions, then these can be split for centerline points and used to evaluate pairs where the record/measured distance did not compare well. This evaluation may result in throwing out one or both monuments of the questionable set.

Once you have reduced your data to a series of recovered or computed centerline points, you must decide what to use. You might begin by throwing out the obviously disturbed centerline monuments and the recovered/computed outliers that would tend to skew the majority of the data. If you end up with several centerline points, you might select the pair that results in the least separation between the line they define and the other points or create a best fit tangent using all of the points. Given all of the forces at play, I would find it hard to believe that a formal least squares analysis would provide a significantly more defensible solution than a low tech common sense approach. However, if you have a lot of data to crunch, a least squares analysis may be appropriate.³⁷

³⁷ An article entitled Least Squares, by John A. Loch, PLS, PE (New York) in the Dec./Jan. 1995 edition of P.O.B. magazine discussed the application of least squares analysis to the re-establishment of highway right of way control. Loch said, "In my area of practice, the state department of transportation (DOT) seems to do all it can to make impossible the replication of state-taking surveys (performed when the state acquires land for highway

The intersection of any two tangents will give you the as-built delta angle at the P.I. As any two pieces of curve data will solve the curve, the next step is to decide which other piece of data you wish to use as control. If there is no monumentation and no record data for the centerline, your next step may be to pick a centerline point at the middle of the curve and use the resulting “external” distance (between the PI and centerline) to compute the remaining curve data. As an alternative, you might select 3 points on centerline to solve for a curve radius.

If you have monuments, unfortunately, you have several other choices for your second piece of curve data. You will have computed two tangent lengths from the PC and PT to the PI. Then you might select one or the other or average the two to minimize the shift of the computed PC and PT. You will also have a measured/computed chord length between the PC and PT that could be used. Or you might find an acceptable or even the best solution by reviewing the record design data in order to determine if a certain piece of curve data was used as a design parameter. Typically, for highway projects, this will be the degree of curve. The resulting tangents and tangential curves should then be compared to the record data (if available) and the survey data points to see if a reasonable solution has been reached.

Stationing, PC's and PT's - Fixed or Flexible

One of the most difficult aspects to accept in re-establishing a highway centerline is the fact that by requiring tangential curves, the record or recovered PC's and PT's will rarely match the newly computed points. Generally, for rural highway projects, the curves should be made tangential even when the newly computed PC conflicts with a monumented PC for the following reasons:

The curves were designed and intended to be tangential. Unfortunately, they will only be so on the design drawing. Once the design is carried into the real world of field surveys, the curves cannot be established absolutely tangential and they will never be recovered absolutely tangential.

The PC and PT may be just two of the many points monumented on the centerline tangents or curves. Accepting the physical position of these points would logically extend to accepting the physical position of all of the recovered points creating differing bearings between every two monuments on tangent and several definitions of a curve throughout its monumented length.

An as-built location of a monumented sharp curve with a large delta angle will usually result in computed PI, PC and PT positions that are reasonably close to record. Flat curves with small delta angles typically result in computed PI's that are significantly shifted from the record position due to the poor geometry when intersecting the two as-built tangents. This of course, results in significantly shifted PC's and PT's. On rural highways, the movement of the PC/PT on a flat curve, although significant in distance along tangent from the record point, is rarely

building or expansion). The baselines are usually accurately surveyed; however, they are usually created for a construction project and are subsequently destroyed by the building of the construction project....The care with which these boundary markers are set is often questionable and I have had a DOT employee explain that the monuments are so the DOT workers know where to mow the lawn and the baseline is the only real accurate reference. So, the question is, how can the baseline be reconstructed?" Loch then goes on to suggest that a least squares analysis may be the most efficient way to obtain the best solution to a highway right of way problem that includes recovered monuments as well as redundant record data such as stations/offsets and bearing/distance ties.

significant with regard to the change in offset from the tangent. Therefore, for practical purposes, the PC's and PT's can be considered similar to a point on line.

The following example depicts two curves, both of which were determined to have a as-built delta angle 2 minutes less than record. Note that the flatter curve accentuates the shift in the PC and PT positions. The sharp curve tangents change by 1.03 feet and the flat curve tangents vary by 6.67 feet.

Figure 1 - Sharp Curve

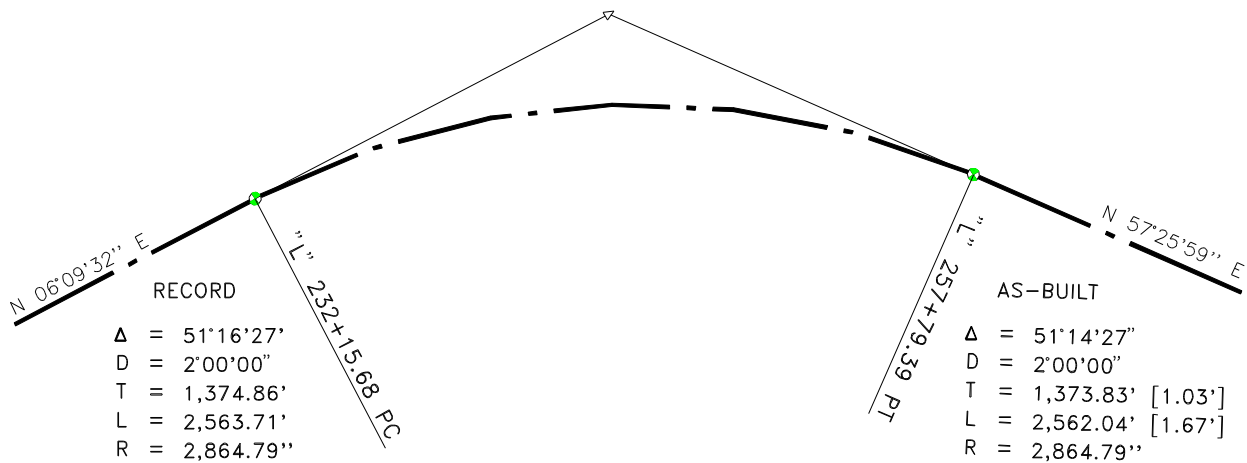
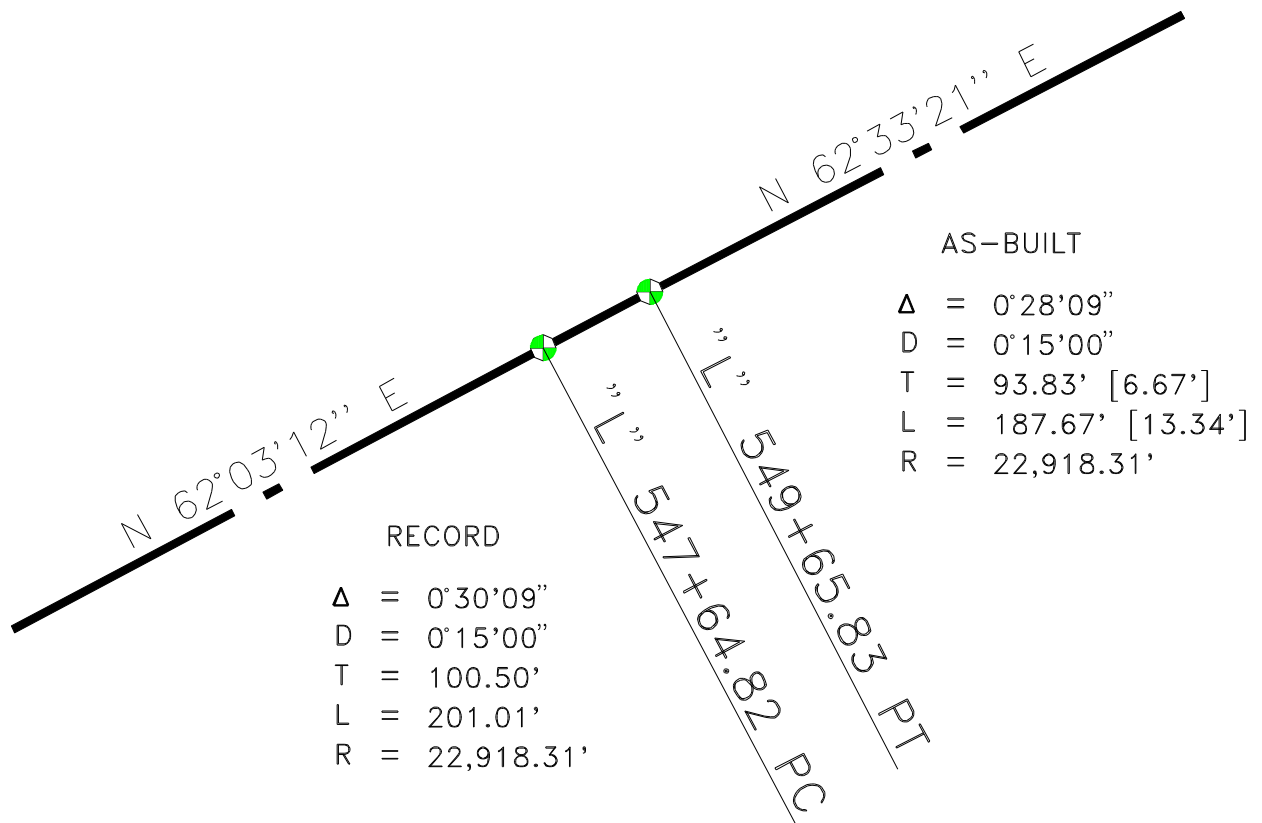


Figure 2 - Flat Curve



These examples depict a situation where half of the 2 minute angular difference is attributed to each tangent. Therefore, the shifts in the PC and PT locations are merely due to the recomputation of the tangent length using a new delta angle. That is, although the tangent lengths vary from record, the re-established curve is still centered on the PI. Typically, the angular error is not balanced between the tangents which will result in a shift of the entire curve. Because we have a large delta angle in figure 1, there is a reasonable expectation that the intersection of the tangents will result in a PI field location that closely resembles the record PI location. However, in figure two, the flat delta angle could result in a significant shift of the PI location.

In urban areas, where the frontage of adjoining lots may be relatively small, these shifts can be very significant. The redefinition of a curve along properties where "sliver" acquisitions had been previously made may result in the apparent elimination or shifting of a record taking or even the apparent creation of a taking where none actually occurred. In these situations, constraining the re-established right of way line to meet tangential curve and record offset requirements may not be appropriate.

I had assumed that this procedure of letting computed PC's and PT's float without regard to monuments was made up for the sake of convenience by some long departed predecessor of mine at DOT&PF. However, I did find a similar procedure in the 1974 Wattles book Land Survey Descriptions.

“If both the P.I. and B.C. and/or E.C. monuments on a curve are recovered and together will not fit the record tangent or radius or both, then additional information must be obtained and the most probable relocation made, keeping fixed, either the radius or tangent length as above analyzed, and ignore the located monuments as defining the indicated B.C, P.I. or E.C. except possibly the alignment of lines extending beyond the curve. The frequent practice of some engineers in accepting supposedly correct monuments and changing fixed radii or semi tangents to produce approximate agreement is definitely poor if not inaccurate procedure insofar as it is an attempt to re-establish the record.”

Section 700 Survey Location - Relocation from Maps

Another important consideration in the re-establishment of curves is the determination of a “basis of stationing”. Stations and offsets are often used as a basis for defining right of way acquisitions and the point used for the basis of stationing must be necessarily fixed. For obvious reasons it would be inappropriate to use a computed PC which has shifted 5 feet as the record basis of stationing. In situations where there are no monuments to fix stationing, yet there are record as-builts which provide the geometry and stationing for a project, the “basis of stationing” might be determined by location of improvements. This can include the record station for the end of a bridge deck, or the record station of a PI on a sharp, well defined curve.

Data Analysis for Rights of Way not defined by “strip” Descriptions

This includes metes and bounds descriptions with redundant calls and the common acquisition description format where the area is described as “all that part of which lies within the right of way lines as depicted upon the attached plat”. With these types of descriptions you may find conflicts between the bearings & distance calls, the calls to adjoiners & monuments, and references to station and offset ties. Essentially, you are given more information than you need or want.

The excess information presented in these formats arose from a desire to precisely dimension the relationship between the right of way and the adjoining property as well as the relationship of the right of way to the centerline. Unfortunately, where the relationship between right of way and centerline was accurately known, the relationship with the adjoining property was often based upon record information. A typical project would have the survey crew tie the readily available rectangular monuments and primary subdivision monuments along the existing right of way line. Ties were rarely made to all of the front corners and few of the back corners of any given property adjoining the right of way. Therefore, a subsequent retracement of a property in which all relevant monuments were recovered, would typically find inconsistencies with the acquisition description.

A few years back I visited the Washington State DOT hoping to find some better ideas and techniques for mapping parcels for acquisition. I expected that their much greater developed highway system and longer history would provide some new insight. Unfortunately, WashDot was not the best choice as they had exempted themselves from licensing regulations and were unaware as to whether they even had any licensed land surveyors working for them. They had solved the problem of conflicting data by presenting little more than the centerline geometry and a right of way width on their plans. Surveying the remainder of an acquisition parcel involved a

three step process. First, retrace the property as if there were no right of way acquisition. Second, retrace the centerline of the right of way. Finally, compute the intersection of the right of way offset with the original property boundaries, and what you get is what you get. No conflicting dimensions.

In a sense, we have the same situation. The spine of our right of way mapping is the project centerline. It is the control from which our right of way needs are defined. Generally, it is surveyed as a part of the design and is monumented or referenced during construction. The parameters for right of way acquisition are handed to us from our designers in the form of stations and offsets. It is from this source data that all of the computed intersections with record or monumented boundaries are generated.

Given that in many cases the stations and offsets represent the parameters of the new right of way and therefore the intent of the conveyance description, it may be appropriate to use them as control when they conflict with the bearing and distance dimensions.

Current standards for right of way surveys require ties to all relevant monuments and a higher level of precision and accuracy than were considered acceptable in past years. Therefore, dimensions based upon retracement surveys when compared to the dimensions as stated in the right of way conveyance descriptions are expected to be much more consistent.

- *Resources for Re-establishing a Highway Right of Way*

Generally, there are three primary document sources that should be consulted prior to re-establishing a highway right of way:

Right of Way Plans - ROW plans vary in the quality of information they provide depending on their vintage. Rural projects in the 1960's might not show much more than centerline geometry, station ticks and two uniform right of way lines. They may not show the rectangular system (it may not have been there at the time), and if they show monuments, they will probably not distinguish between record and recovered. Newer projects should show all monuments recovered, monuments to be set, existing rights of way and property boundaries, dimensions around the area of acquisition as well as station and offset ties. Although the right of way plans are all eventually recorded, it is often many years after construction pending the outcome of condemnation actions. The primary outlet for good copies of these plans is the DOT&PF regional right of way office.

Due to the cost of acquiring land, the concept of maintaining a uniform right of way width is no longer appropriate. Therefore, the constructed centerline of a newly built road may now meander within the old 200 and 300 foot wide PLO rights of way. Generally, the right of way plans will show computed ties between the design centerline and the existing right of way line. However, you should never assume that the design and right of way centerlines are coincident.

Construction As-builts - Prior to the 1980's, the construction as-builts would be the only source of information regarding where and what type of project monumentation was established. The as-builts will either list a summary table for monumentation or note their placement on the plan view sheets. These plans will also tell you whether the project centerline was laid out as planned or

whether there was a design change during construction. This unfortunate situation has occurred more than once as will be further discussed in the case studies.

When there are no monuments, the as-built ties to improvements such as bridge decks and culverts may provide the best evidence available to establish the record stationing.

Bureau of Public Roads and Alaska Road Commission as-builts prepared for primary highways in the mid-1950's may show hub & tack references to PC's, PT's and PI's. Although difficult to find, a private surveyor under contract to retrace several miles of the Tok Cutoff in 1994 had substantial success recovering these references.

Acquisition Documents - If you are surveying a property adjoining a right of way whose boundary was modified by acquisition, you should obtain a copy of the appropriate document from the recorder's office or the DOT&PF Regional Right of Way office. I have noticed on older projects (1960's - 1970's) that the metes and bounds descriptions or attached plats in some of these documents are more detailed than the dimensioning shown on the right of way plans.

Conflict Resolution - Case Studies

From time to time we find large discrepancies between our interpretation of the ROW location based upon the preceding principles and the monuments set by other surveyors purporting to mark the right of way. Assuming our location is correct, the conflict with the private monuments may be due to blunder or misinterpretation of the instruments establishing the ROW. For example, if a surveyor did not understand the relationship between the date of entry on a U.S. Survey and the effective date of a Public Land Order, he may locate the Glenn highway right of way at 100 feet from centerline based on one PLO when he should have held 150 feet from centerline according to a later PLO. On the other hand, as will be shown in a couple of the following cases, sometimes DOT&PF can be its own worst enemy.

In each of the case studies, an equitable resolution was reached by accepting a definition of the existing right of way that was in favor of the adjoiners. I recently discussed these cases with one of our Assistant AG's who is very experienced in right of way law. He commented that each of our resolutions was very "generous" and not necessarily required given his experiences in defending the state's claim to all the right of way it is entitled to. He also acknowledged that another case, with differing facts could change the law and the way we deal with locating highway rights of way.

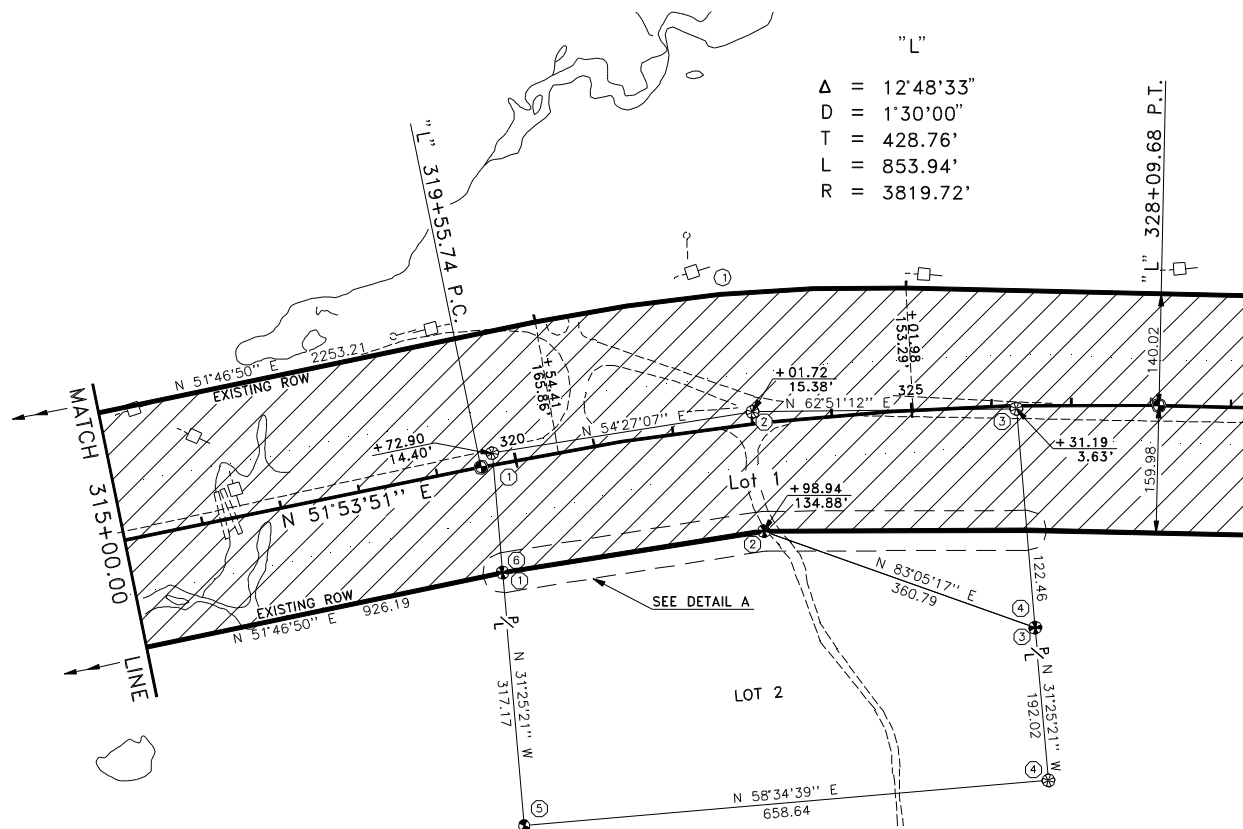
The following case studies discuss three particular right of way conflict situations, and how we decided to resolve them.

- *Glenn Highway MP 118 North (MP 118- 135)*

The right of way plans for this project were developed in 1981. Although this section of road had never been monumented, we did find 1952 as-builts that provided centerline stationing and curve data. To define the existing right of way, we located the center of the existing road and in combination with the record curve data, developed a centerline that best fit both the record and

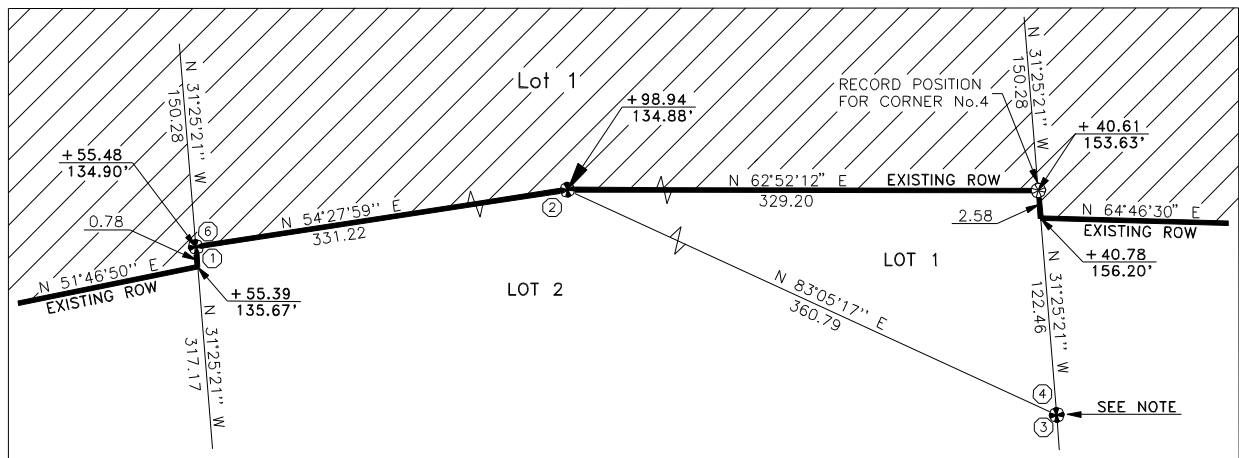
existing conditions. Although the lands adjoining this project were generally undeveloped, there were a few previously monumented U.S. Surveys which had defined the existing right of way. There was a period of time when BLM used chords instead of arcs to define a curve along a right of way. Not wanting to create problems where none of significance existed, and recognizing that the BLM survey was a reasonable interpretation of the existing right of way, we generally conformed our line to match the U.S. Survey line in those areas.

Figure 3 - Glenn Highway



An example of this type of situation is U.S. Survey No. 3571. Our definition of the right of way intersects the U.S. Survey boundaries at points ranging from 0.78 to 2.58 feet further offset from centerline than the right of way as monumented by the U.S. Survey. It is interesting to note that Lot 1 of U.S.S. No. 3571 is a "highway lot". That is, it was intended to represent that portion of the survey encumbered by the PLO right of way such that the underlying fee estate could be conveyed to the adjoiner. In this survey, we found the monumented C-4, Lot 1/C-3, Lot 2 approximately 125 feet out of position when compared to the plat and field notes. Although this erroneous monumentation changed the configuration of the line separating Lot 1 and Lot 2, we did not believe that it had any effect on the area encumbered by the PLO highway right of way. To define the PLO limits, we used the record position for corner number 4.

Figure 4 - Glenn Highway

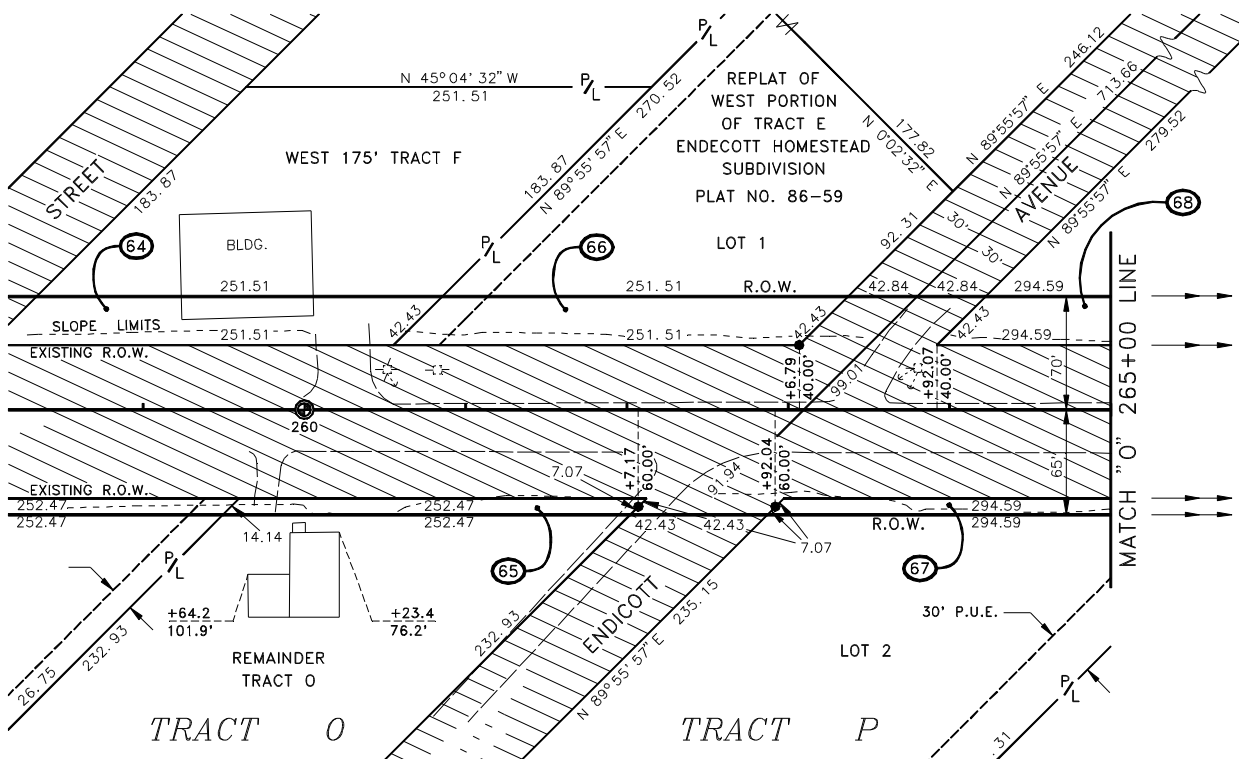


DETAIL A
NTS

- *Badger Road Reconstruction*

There have also been cases where we have identified a right of way conflict that we were certain was caused by DOT&PF. This 200 parcel, 8 mile long project, which was prepared in 1988, was the largest acquisition project taken on by the Northern Region up to that date. The existing right of way was nominally 50 feet on each side of centerline as acquired during its last major reconstruction in 1961. The land use was rural residential and heavily subdivided on both sides of the road.

Figure 5 - Badger Road



Between 1960 and 1961, right of way was acquired for a widening and realignment of the existing Badger road. A project centerline was defined and the acquisitions were described with respect to

that centerline. The acquisition documents and the right of way plans were recorded depicting the “proposed” project centerline.

During the 1962-1963 construction project, two segments of road totaling approximately 2.4 miles in length were shifted 5 feet to the right of the planned centerline. The new alignment was then monumented at PC’s and PT’s as was the remainder of the unchanged original alignment.

The majority of the subdivisions along this 2.4 mile section were developed subsequent to the construction project. The Badger road right of way for most of those subdivisions was established as 50 feet on each side of the “monumented” centerline. The right of way should have been established at 55 feet left and 45 feet right of centerline as the monumented “construction” centerline was not coincident with the centerline of right of way. The result was a conflicting 5 foot gap or overlap with all adjoining properties along the 2.4 mile segment.

In figure 5 , the proposed 1988 centerline is 10 feet north of the 1960 “as-monumented” centerline. Therefore, the recovered monument offset 40 feet left of centerline should actually be 45 feet from centerline to mark the record right of way. The recovered monuments offset 60 feet right of centerline should be 55 feet right of centerline. The 5 foot gap between the record and monumented right of way line to the right of centerline is graphically apparent. The 5 foot overlap on the left right of way line is not shown as a result of our conflict resolution.

Advice from our Attorney General’s office suggested that there was no basis for claiming the “gap” area as existing right of way under the doctrines of “boundary by acquiescence” or “implied dedication”. Essentially, up till this point, 30 years after the original project, neither the State nor the adjoining realized that there was a conflict and there were no significant improvements within this strip. The “overlap” area was more difficult to deal with as it would require notification of the adjoiner that they owned less property than they believed to have purchased. The landowners could not claim adverse possession against the state.

However, it was more likely they might make a claim that the state should be estopped from asserting the 1960 right of way line. As stated previously, it is questionable whether an estoppel argument due to an error in monumentation would be successful. However, the facts in the Badger road situation might have resulted in an alternate decision. In the other estoppel cases, the issue was typically one of constructive notice. On Badger road, the state did take affirmative action to put the public on notice as to where the true right of way line was located by recording the acquisition documents. It erred, however, when the right of way plans were not revised to reflect the construction monumentation.

Some responsibility for the conflict should also be attributed to the private surveyors who subdivided along Badger road. It is likely, in some cases, that their evaluation of the existing right of way was limited to a phone call to DOT to get a verbal statement as to how wide the right of way was, where a review of the acquisition documents, right of way plans and as-builts would have indicated a conflict.

As we were in the midst of another multi-million dollar right of way acquisition project, it was unnecessary to test the application of “estoppel” to resolve this conflict. The project involved the strip widening of both sides of the road through the 2.4 mile segment of road in question. We decided that the equitable solution was to give the adjoiner the “benefit of the doubt” and claim

only the 95 foot wide existing right of way that was not in conflict. The conflicting 5 foot strip was essentially acquired a second time in order to avoid what would have been much more costly and time consuming litigation.

- *Chena Hot Springs Road MP 0-7*

This project is currently in the acquisition phase and is expected to be reconstructed during the 1996-1997 seasons. Chena Hot Springs road intersects the Steese highway approximately 5 miles north of Fairbanks. From the intersection it runs easterly 57 miles to Chena Hot Springs. The first 7 miles of the road generally runs along the east-west section lines. The existing right of way is based upon acquisitions made for the first major reconstruction project in 1962. This section of road had also be repaved in 1980.

During the right of way plan development, our consultant identified a conflict between their determination of the existing right of way and monuments established for some adjoining subdivisions. The area of conflict was near the Steele Creek road intersection where the Alyeska pipeline crosses Chena Hot Springs road. The consultant had based their existing right of way on recovered DOT&PF right of way monuments and found them to be in conflict with both the adjoining subdivision monuments and the section corner for 22/23/26/27 which is encased in Chena Hot Springs road at its intersection with Love Road/Juniper Drive. The largest discrepancies appeared to be occurring along the northerly right of way within South Slope subdivision.

The first obvious error with the South Slope subdivisions was the fact that the subdivision surveyor missed or ignored two angle points in the right of way which should have reflected an approximate 10 foot shift in the ROW line over 1600 feet. At first glance I believed that this was the sole reason for the conflict. However, a second obvious problem arose when it was noted that the section corner at Love road had apparently changed position between the 1962 project and the current project. The 1962 project indicated that the section corner was 7.06 feet north of centerline. The current survey indicates that the section corner is 7 feet south of the 1962 reported position or essentially on the old centerline. This can be visually verified by driving by the section corner and observing that the case is located on the south side of the yellow centerline stripe. Although the evidence is sketchy, I believe that the 1962 plan tie was correct but that the section corner was reset in the wrong location during the 1962 reconstruction project. In any event, the result was a conflict between the 1962 ROW monumentation and the section line control at the Love road section corner of 7 feet.

Problems arising from the incorrect resetting of section line monuments on DOT&PF projects have occurred from time to time. It is usually the result of poor references, poor notes or an inexperienced crew. In 1981, the South Slope subdivision surveyor notified DOT&PF that as a result of the 1980 repaving project, the section corner 1 mile to the east of the Love Road section corner was incorrectly reset. They made this claim based upon ties made to this corner prior to the 1980 project. DOT&PF subsequently reset the section corner in the correct location. If the Love Road section corner was in fact reset incorrectly in the 1960's it would have likely gone unnoticed by the private sector surveying community as there were no subdivisions within the surrounding 4 sections prior to the 1962 project which would have tied the original location of the section corner. Even if we could prove that the original location was 7 feet north of the current

location, it would serve no purpose to move it now that it has been used and accepted by a multitude of surveyors.

Four subdivisions adjoining the right of way in this vicinity were performed by the South Slope subdivision surveyor. In reviewing these subdivisions and the corners that were recovered for the current project, I was able to partially determine the basis for their layout of the existing right of way. None of the plats indicate the recovery of the concrete ROW monuments. It is possible that they did find some of the ROW monuments and elected not to use them because of the apparent 7 foot conflict with the section line control. If that was the case, they probably decided to use the section line control due to the fact that it was the basis of the conveyance document descriptions and believed that it represented superior control. The surveyor then laid out the distances north and south of the 1/4 corner to the west, the Love Road section corner and the computed intermediate 1/16 corner position as were indicated on the ROW plans and acquisition documents. To this point the surveyor's plat would have closely matched our existing right of way had the tie or position of the section corner not been in error. The surveyor then connected his offset points by straight lines which disregarded the angle points intended for the ROW and monumented by the concrete markers. A comparison of the section line control to the recovered subdivision corners indicates that with regard to measurements, the survey was reasonably executed, however, with regard to the true location of the right of way, it was significantly in error.

Figure 6 - Chena Hot Springs Road

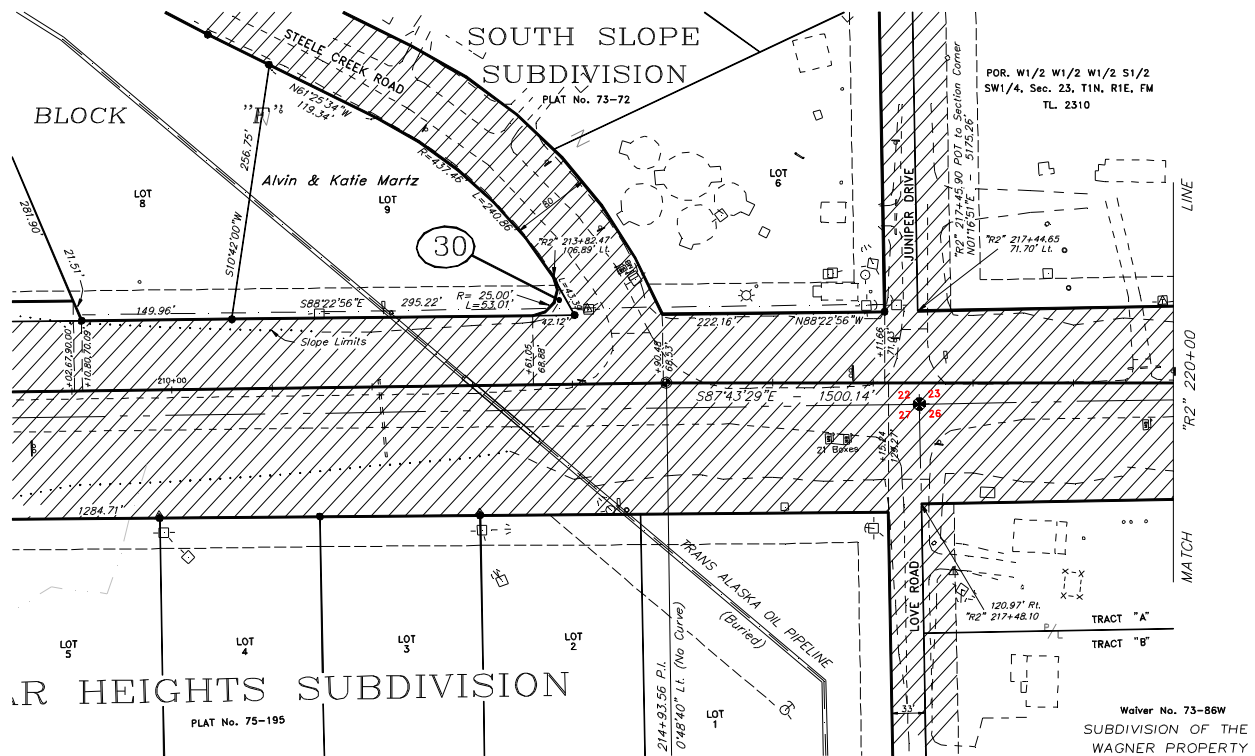
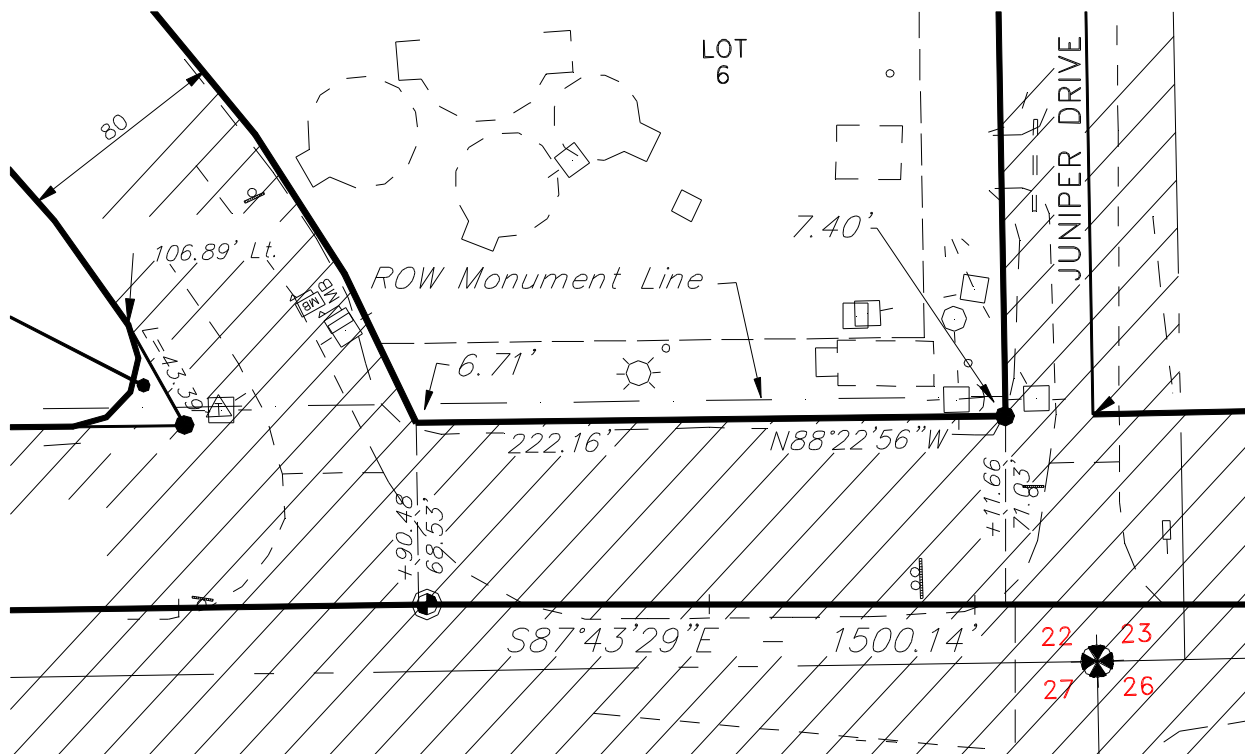


Figure 7 notes the "ROW Monument line" which is the true right of way line based upon the DOT&PF concrete monuments and the original position of the section corner. The heavy line is the right of way line according to the subdivider's surveyor. If the entire blame for the conflict could be laid on subdivision surveyor, DOT could take the position of claiming the existing right of way approximately 7 feet into the adjoining lots.

The monuments set in the subdivision to the south had been generally accepted as the best evidence to define the existing right of way. This resulted in a right of way width in this area ranging from approximately 200.4 feet near the 1/4 corner to the west to 207.7 feet near the Love Road section corner. This was contrary to our philosophy of claiming no more than that to which we were entitled.

Our resolution for this conflict was to basically accept the right of way as defined by the subdivision plats. Although acceptance of the subdivision control would not technically clear title to the conflicting area, it is unlikely that the issue would ever be raised. The subdivision surveyor breathed a sigh of relief that he would not have to explain the conflict to the property owners, the property owners ended up with all they were entitled to according to their plat and the State ended up with the width it was entitled to, although not exactly in the record location.

Figure 7 - Chena Hot Springs Road



Conclusion

I don't expect that this paper will greatly reduce the large variation in interpretations that we have come to expect when locating highway rights of way. It is hoped however, that the historical background will clarify the logic that DOT&PF uses when it maps or surveys these boundaries.

The three examples represent situations where a conflict was identified between the DOT&PF interpretation of a right of way location and an interpretation by others. In each of the three scenarios, the appropriate solution was for DOT&PF to accept the location defined by others. This does not mean that the Department will or should accept every conflicting monument it finds along the right of way. However, monuments set within reasonable tolerances based upon a

well reasoned analysis of the evidence and the law should be respected. Right of way location conflicts can be limited by consulting with the Department's land surveyors and reviewing the appropriate documents.

As land surveyors, we have many treatises on principles for locating boundaries. In general, these books provide widely accepted guidelines that may be appropriate for the majority of situations that arise. However, the facts in any two cases will rarely be the same and different jurisdictions may vary in how they apply the law. Therefore, until we are provided with fixed rules or cases on point in Alaska law regarding right of way surveys, it will be necessary for each surveyor to weigh the evidence and reach their own reasonable conclusion.

In closing, I have two quotations to be considered when attempting to make sense out of the right of way survey quagmire. The first I found in the 1990 seminar text The Surveyor and The Law by Jerry R Broadus, LS, Esq. In this publication, Broadus himself quoted Mitchell Williams and Harlan Onsrud from an American Bar Association book entitled Land Surveys, a Guide for Lawyers.

“If the surveyor’s evaluation of the evidence in the example is eventually upheld in a court of law, it is because the surveyor has arrived at a comprehensive and well-reasoned answer rather than because he has arrived at the theoretically correct answer. Again, there are no ‘true’ answers waiting to be discovered; only well-reasoned ones.”

In the 1974, 10th Edition of Land Survey Descriptions by Willam C. Wattles and revised by Gurdon H. Wattles, the interpretation of deeds was discussed:

“You sometimes have multiple possible combinations of physical and record solutions to the determination of a line or point to be shown on a map and used in a subsequent revision of a description. The decision as to which one or combination to use is not based on one rule only; the decision should be the result of careful analysis of both the singular facts and the different combinations of them together.

When one grouping of a set of facts conforms more closely than any other combination to the conditions set forth by the description on record and the original survey, you then have the most reasonable solution that is probably available. This is known as the theory of majority probability, and would likely carry the most weight in court.”

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