

41st Alaska Surveying & Mapping Conference

The Copper River Highway

A DOT&PF Perspective

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March 23, 2007
Fairbanks, Alaska

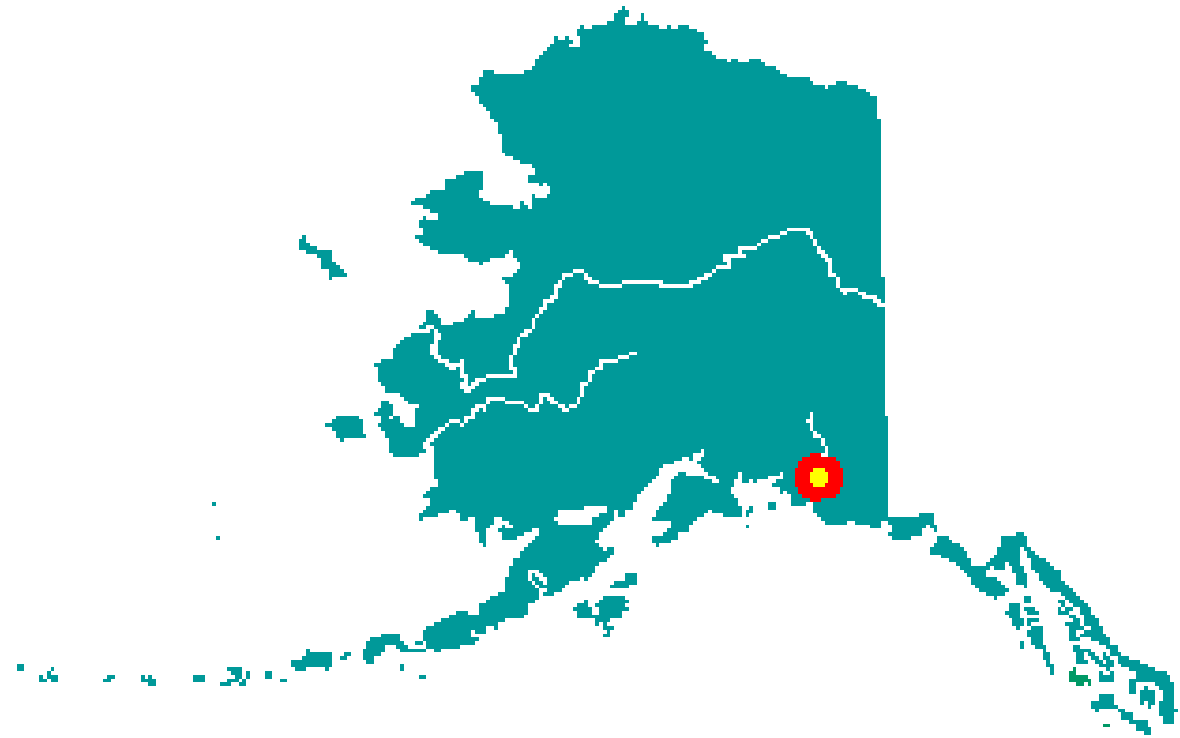


Copper River Highway

- Highway ROW from Cordova to Kennecott Mine - DOT&PF Management Jurisdiction
- History of the CR&NW Railroad
- Conversion of Railroad to Highway
- Legal, Title & Survey Issues
 - Nature of Title Interest
 - Width of Right of Way
 - Location of Right of Way
- Conflicts
 - O'Brien Creek
 - McCarthy
 - Chitina



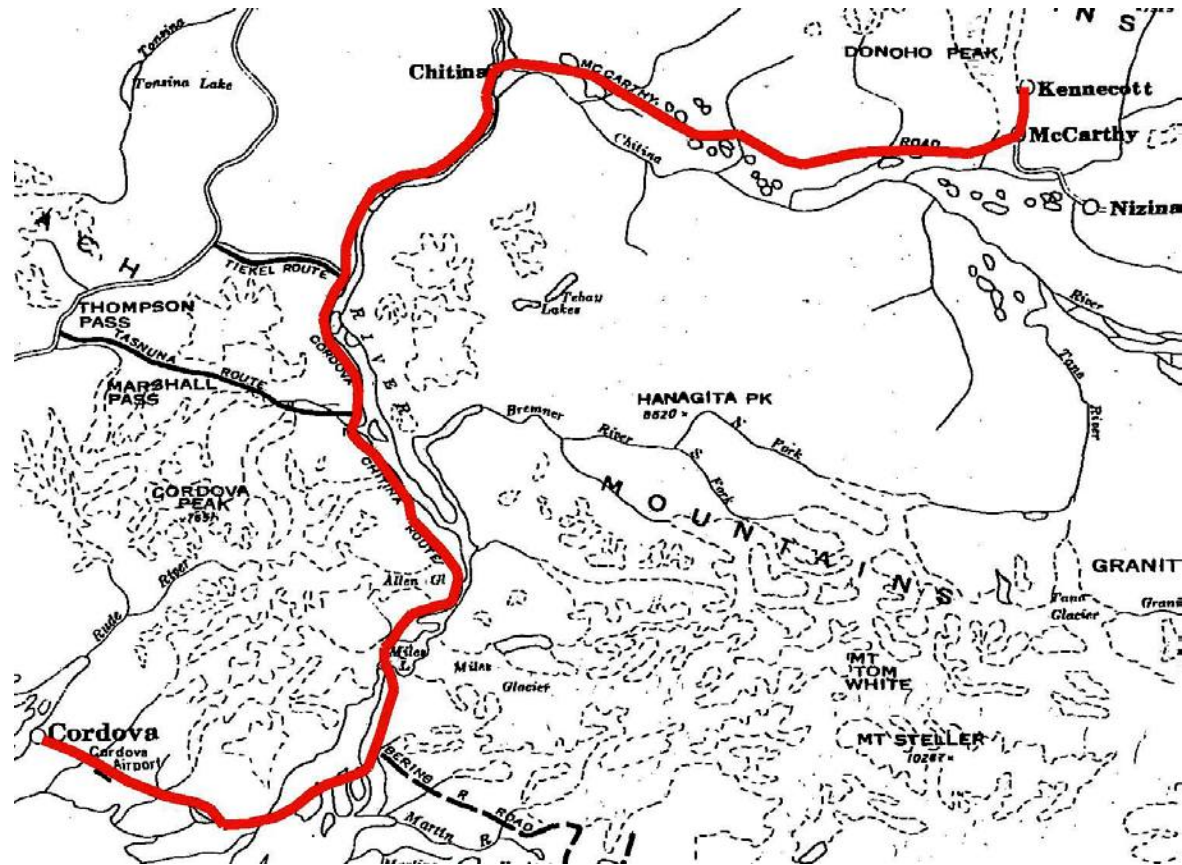
Vicinity Map Copper River Highway (Chitina)



Route Map

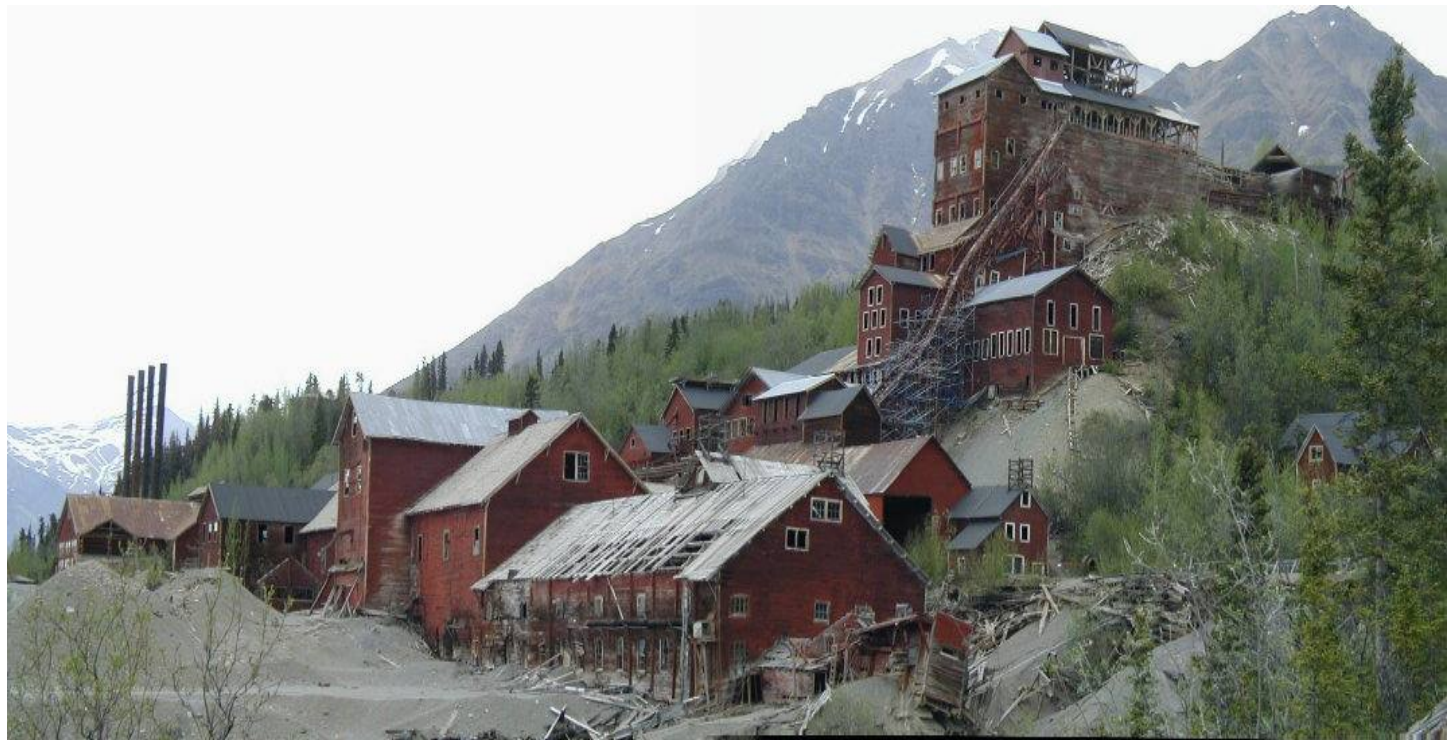
Copper River Railroad

Copper River Highway/McCarthy Road



Copper in the Wrangells

- Copper was known to the Ahtna Indians
- Chief Nikolai presented copper bullets to early military explorers in 1885
- Copper claims explored and staked in 1899
- Kennicott claims discovered in July, 1900



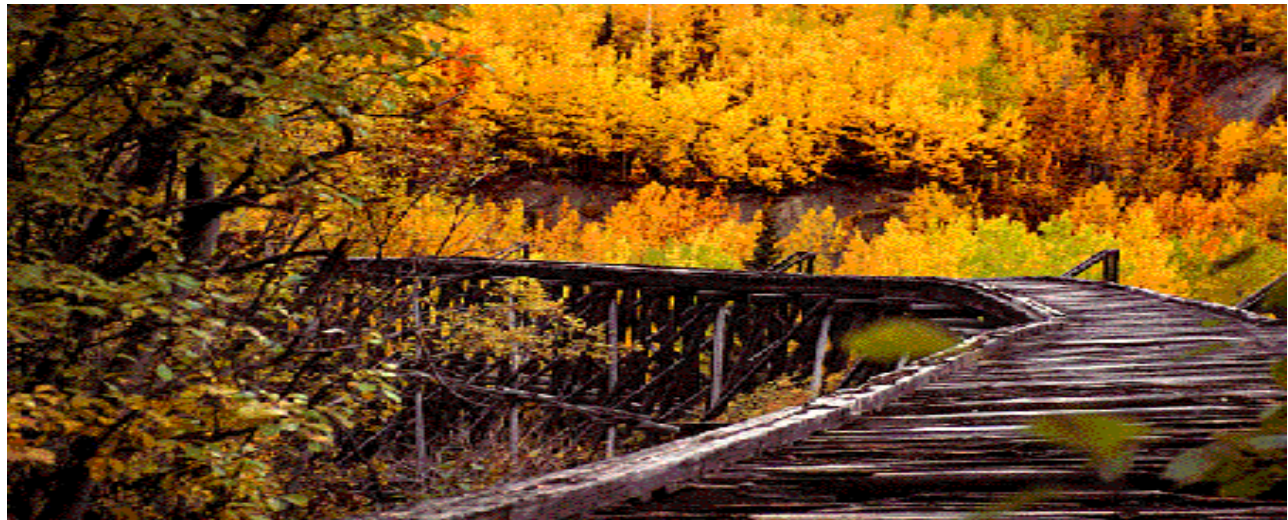
Copper in the Wrangells

- By 1903 it was recognized that the only feasible way to move enough ore to make the mine profitable would be by railroad
- Ore would be transported by aerial tramway at Kennecott, railroad (CR&NWRR) to Cordova and steamship to Tacoma
- All transportation controlled by the Morgan/Guggenheim "Alaska Syndicate"
- 1915 - Syndicate became "Kennecott Copper Corporation"



Copper River & Northwestern Railway

- Katalla Company organized to build railroad
- Railroad construction started in 1906 and was completed in 1911
- From Cordova, 30 miles east to mouth of Copper River, then along Copper River 100 miles to Chitina, then easterly along the Chitina River 65 miles through the town of McCarthy and on to the Northern Terminus at Kennicott.



Copper River & Northwestern Railway

- ROW for CR&NW Railroad granted under the Alaska Right of Way Act dated May 14, 1898. Generally the width was 200 feet, 100' feet each side of centerline.
- Railroad continued until 1939
- Applied to ICC for Abandonment



Abandonment of CR&NWRR

- April, 1939 - ICC granted request to abandon
- Under terms of Act of March 8, 1922 all interest in relinquished railroad ROW would vest in patentees of lands crossed by the railroad
- Due to interest in conversion of railbed to a highway, Congress passed the Act of July 15, 1941 which vested all of the railroad property into the United States to be used as a public highway, tramway or tram road under the provisions of the Act of June 30, 1932. (Alaska Road Commission Authority)
- For a over a half century, Alaska has presumed the 1941 Act to have maintained the railroad ROW intact, but converted the use to a highway.



Conversion to a Highway

- In 1941, the first 13 miles was appropriated by the federal government to provide rail services to the new Cordova airstrip
- Due to lack of maintenance and track settlement the Forest service eventually completed a road in the railroad ROW to the airport by the summer of 1945
- Between 1953 and 1955, 49 miles of rail bed had been converted to road using federal appropriations
- Road conversion continued to mile 59 when the 1964 earthquake dropped a span of the Million Dollar bridge and damaged many others

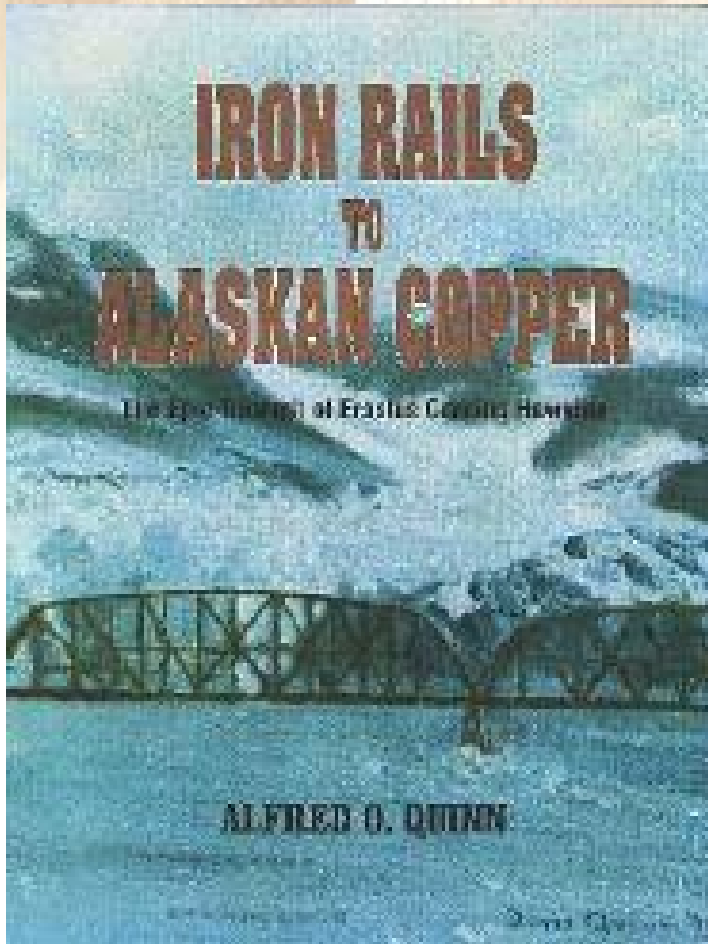


Conversion to a Highway

- A project re-evaluation selected a connection to the Richardson Highway up the Tasnuna river valley as the preferred alternative
- Conversion from railbed to highway continued from Cordova to milepost 72 when stopped by a Wilderness Society injunction claiming an inadequate EIS in 1973
- Debate continues as to whether the highway connecting Cordova to the Interior of Alaska should be pursued

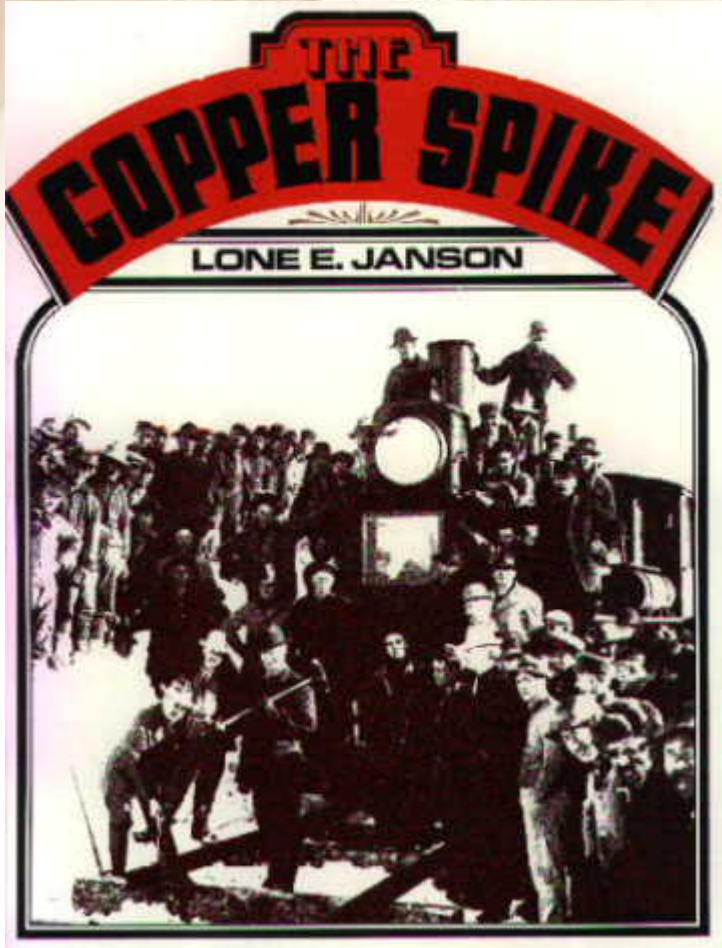


Iron Rails to Alaskan Copper



- Alfred O. Quinn, P.E., P.L.S.
 - Author and Chief Engineer of Aerial Mapping Company Contracted by the Alaska Road Commission in 1950 to map the Copper River area from its delta to Chitina.
 - D'Aloquin Publishing Co. September 1995

The Copper Spike



- Author: Lone E. Janson
- Alaska Northwest Publishing Co. 1975
- "In 1975 the Trans-Alaska Pipeline was the headline story, the focus of attention in Alaska. but way back in 1905 to 1911 there was another Alaska construction job that was comparable in magnitude and interest."

Nature of the Highway Right of Way

- Activities requiring assessment of existing ROW over last 20 years
 - McCarthy Airport
 - Kennecott River Pedestrian Bridges
 - Long Lake Reconstruction
 - Chitina Wayside
 - McCarthy Road EIS
 - M&O Activities
 - Public Access Conflicts
 - Encroachment Control
- Copper River Highway & McCarthy Road ROW
 - Follows old bed of the CR&NW Railroad
- *What is the title interest held by the State?*
- *What is the width and location of the ROW?*



1959 Omnibus QCD

Conveyance of Highways to State – 6/30/59

BOOK misc PAGE 72
 Rampart Recording District

BOOK VII PAGE 2
 Nenana Recording District

BOOK 235 PAGE 173
 Fairbanks Recording District Deed

BOOK 2 PAGE 88
 Fort Gibbon Recording District
 QUITCLAIM DEED

BOOK 17 PAGE 196
 Bethel Recording District

BOOK 90 PAGE 275
 Juneau Recording Dist.

BOOK 391 PAGE 12
 Seward Recording District

Book 8 Page 2
 Manley Hot Springs Recording District

Serial No. 70-5
 NULATO
 BOOK 2 PAGE 2
 Nulato Recording District

KNOW ALL MEN BY THESE PRESENTS that the Secretary of Commerce, United States Department of Commerce, Grantor, under and pursuant to the authority contained in Section 21 of the Act approved by the President on June 25, 1939 (73 Stat. 141), does hereby devise, release, and quitclaim unto the State of Alaska, Grantee, its successors and assigns, subject to the condition set forth below, all rights, title, and interest of the Department of Commerce in and to all of the real properties listed in Schedules A, B, and C, attached hereto and made parts hereof, which properties are now owned, held, administered, or used by the Department of Commerce in connection with the activities of the Bureau of Public Roads in Alaska, and which said Schedules are more fully identified as follows:

- Schedule A--Highways, consisting of 60 pages.
- Schedule B--Improved Real Property, consisting of 54 pages.
- Schedule C--Unimproved Real Property, consisting of 62 pages.



Nature of the Title Interest

- **Omnibus Act QCD Conveyance Description**
- FAS Route No. 851 – 130 Miles
 - From Ocean Dock at Cordova paralleling the Copper River to junction with FAS 850 at Chitina...
- FAS Route No. 850 – 59 Miles
 - From Junction with FAS 851 at Chitina to McCarthy
- FAS Route No. 8501 – McCarthy Roads – to Kennicott



Nature of the Title Interest

- What interest did June 30, 1959 Omnibus QCD Convey?
 - Only what Dept. of Commerce held...
- What interest did Dept. of Commerce hold?
 - Railroad Grant of Right of Way? (easement?)
 - Act of May 14, 1898 offered grant
 - Subject to Act of March 8, 1922 – transfer to owners of occupied land upon abandonment
 - Act of July 15, 1941 – Negates effect of Act of March 8, 1922 with respect to CR&NWRR abandonment – ROW to be used for highway
 - May 11, 1945 CR&NWRR relinquishment accepted by DOI



Nature of the Title Interest

- Highway ROW by Public Land Order?
 - Initially Highway PLO's were withdrawals
 - S.O. 2665 10/16/51 Withdrawals converted to easements for "Local & Feeder" routes
 - PLO 1613 4/7/58 Withdrawals for "Through" roads converted to easements
 - Language of AS 9.45.015 & AS 9.25.050 and 2/19/93 AGO Opinion support "easements"
- Something else altogether.."Dedication"
 - Offer – Act of July 15, 1941 – That the CR&NWRR ROW would be used as a highway
 - Acceptance - May 11, 1945 - CR&NWRR relinquishment accepted by DOI
 - Dedication - Congressional dedication of 200' wide railroad ROW for highway purposes



Width of ROW Interest

- State received original 200' wide railroad ROW?
- April 18, 1989 Copper River Highway AGO Opinion
 - Alaska received by Omnibus QCD..
 - 200' railroad ROW by dedication
 - 300' wide PLO ROW by DO 2665 Am. 2
 - DO 2665 Am. 2 dated 9/15/56 added Copper River Highway to list of "Through" roads subject to 300' wide withdrawal
- Ahtna/Chitina v. SOA – April 3, 1992
 - Case relates to trespass claim when State attempted to open Copper River Highway
 - Summary Judgment states that the State acquired by QCD a 300' wide highway easement through the lands of the plaintiff



Width of ROW Interest

- IBLA 89-614 - August 25, 1993 – Billum Allotment
 - Appeal of 1989 BLM Decision that McCarthy Road was only subject to 100' wide ROW
 - IBLA said – upon July 15, 1945 acceptance of CR&NWRR relinquishment, railroad grant interest merged with full interest held by the U.S. and ceased to exist
 - The Act of June 30, 1932 and subsequent PLO's was the only basis for McCarthy Road ROW
 - IBLA held that the McCarthy road was not a part of the Copper River Highway
 - McCarthy road was unnamed in PLO's and so fell into "Local" road category subject to a ROW width of 100', 50' each side of centerline

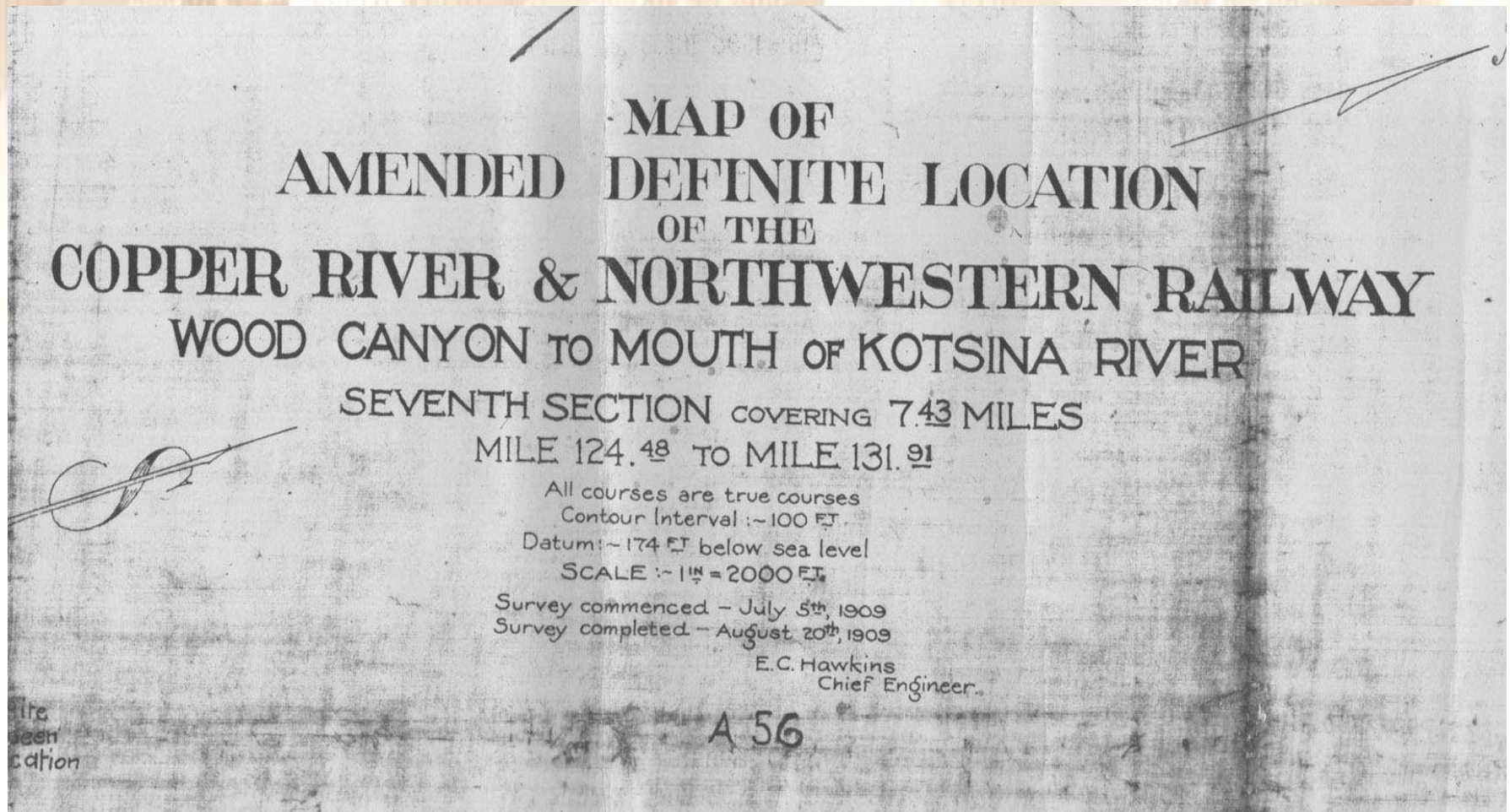


Width of ROW Interest

- AGO Opinion regarding McCarthy Road ROW requested as a part of Billum IBLA Decision
- AGO McCarthy Road Opinion Issued May 17, 2002
 - Supports Congressional dedication of 200' wide ROW as stated in April 18, 1989 AGO Copper River Highway Opinion.....but....
 - McCarthy road is also subject to PLO's
 - October 19, 1951 PLO 757 & DO 2665 intends to "fix the width of all public highways in Alaska"
 - "It is inconsistent to conclude that DO 2665 was effective to increase the right-of-way width of the Copper River Highway but ineffective to reduce the right-of-way width for the McCarthy road..."
 - Generally, the PLO ROW for the Copper River Highway is 300' and 100' for the McCarthy Road



CR&NW RR Map Of Definite Location



CR&NW RR Map of Definite Location



CR&NW RR Map of Definite Location



CR&NW RR Map of Definite Location

ALIGNMENT								
Cur. No	Station	Cur. Pt.	Degree of Cur	$\alpha =$	Spiral Angle	Main Cur. Angle	Total Angle	Bearings of Tangents
INITIAL POINT -		EQUATION		1553+53.9 =		3685+18.7		N. 53° 39' E.
1	3685 + 18.7	P.S.	9° 30' L	5	9° 01' 36"	68° 12'	86° 15'	
	3683 + 28.7	P.C.C.						
	3678 + 10.8	P.C.C.						
	3674 + 20.8	P.T.						
2	3672 + 08.2	P.S.	12° R.	12	6° 00'	36° 52'	48° 52'	N. 32° 36' W.
	3671 + 08.2	P.C.C.						
	3668 + 01.0	P.C.C.						
	3667 + 01.0	P.T.						
3	3666 + 76.3	P.S.	12° L	12	6° 00'	25° 00'	37° 00'	N. 16° 16' E.
	3665 + 76.3	P.C.C.						
	3663 + 68.0	P.C.C.						
	3662 + 68.0	P.T.						
4	3662 + 33.0	P.S.	12° R.	12	6° 00'	12° 00'	24° 00'	N. 20° 44' W.
	3661 + 33.0	P.C.C.						
	3660 + 33.0	P.C.C.						
	3659 + 33.0	P.T.						
5	3659 + 20.4	P.S.	12° L	12	6° 00'	4° 15'	16° 15'	N. 03° 18' E.
	3658 + 20.4	P.C.C.						
	3657 + 85.0	P.C.C.						
	3656 + 85.0	P.T.						
6	3652 + 35.0	P.S.	12° R.	12	6° 00'	12° 00'		N. 12° 59' W.
	3651 + 55.0	P.C.C.						
T	3650 + 55.0	P.T.	12	6° 00'				
	3649 + 71.1	P.S.	9° L	5	0° 34'	3° 38'	5° 44'	N. 0° 59' W.
	3649 + 11.1	P.C.C.						
3647 + 80.0	P.C.C.							

CR&NWRR ROW Location

- Using the Maps of Definite Location the original railroad ROW could be located by the provided geometry and controlled by ties to trestle remains and portions of the original railbed
- The ROW width was presumed to be the original 200-foot width unless a greater width was provided by subsequent authorities
- This basis was used to locate existing highway ROW on 1970's project "Chitina East" from the intersection of the Edgerton – Copper River Highway – McCarthy road to the East side of the Copper River. Many parcels in this project were condemned for title purposes due to conflicting claims



PLO Highway Location

- 5,400 miles of highway conveyed to the State by the Omnibus Act QCD
- Little mapping associated with conveyed ROW
- Most of the highways were based on PLO's
- PLO's are centerline based (100, 200, 300')
- Generally, an unmapped PLO ROW is located based upon an as-built survey of the physical centerline and then mathematically defined using best fit tangents and tangential curves
- Centerline may have shifted since statehood
- ROW width still remains fixed
- As-built location is generally best choice if there are no conflicts or contrary evidence
- Railroad and Highway centerline generally coincide except at trestles





O'Brien Creek Access

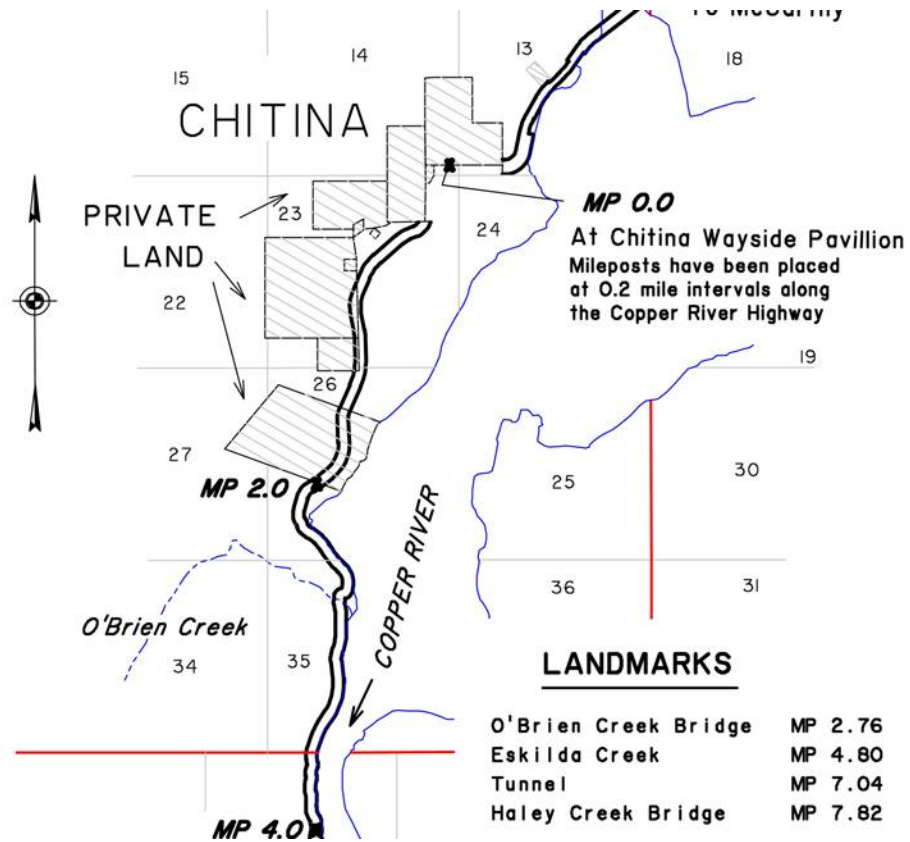
**Copper River Highway ROW
&
Copper River OHW Surveys**

O'Brien Creek

- O'Brien Creek has been focal point of Chitina Dipnet fishery for decades
- Site is used by individuals and charters to launch boats, fish, camp and park
- 1990 – a \$10 fee was implemented to pay for toilets, access and administration
- Fee eliminated in 2004



O'Brien Creek



O'Brien Creek - 2.7 Miles South of Chitina



2001-02 Record of Survey

- Legislature appropriated funds for a survey to assist Fish & Game in their management of the Chitina Dipnet fishery
- The intent of the survey was to identify where the OHW for the Copper River fell inside the 300' wide ROW line for the Copper River Highway
- Generally, the highway ROW was based on a centerline as-built (PLO Location) and the OHW determined photogrammetrically
- The survey indicated that more than 60% of the river from O'Brien to Haley Creek was legally accessible from within the ROW corridor
- The survey also indicated that there were significant gaps between the ROW and OHW at O'Brien and Haley Creeks



2001-02 Record of Survey



**Haley Creek – 7.8 Miles south of Chitina
CMJV, Inc - RS 2002-10 – 12/10/02**

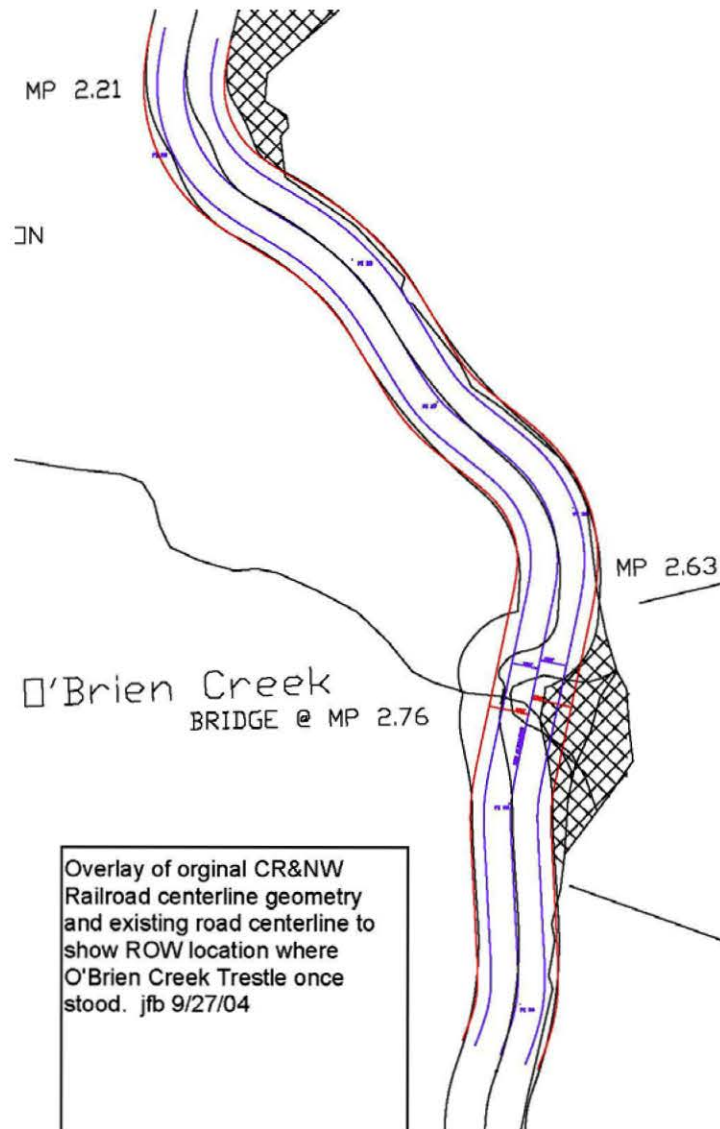


Conflict at O'Brien Creek

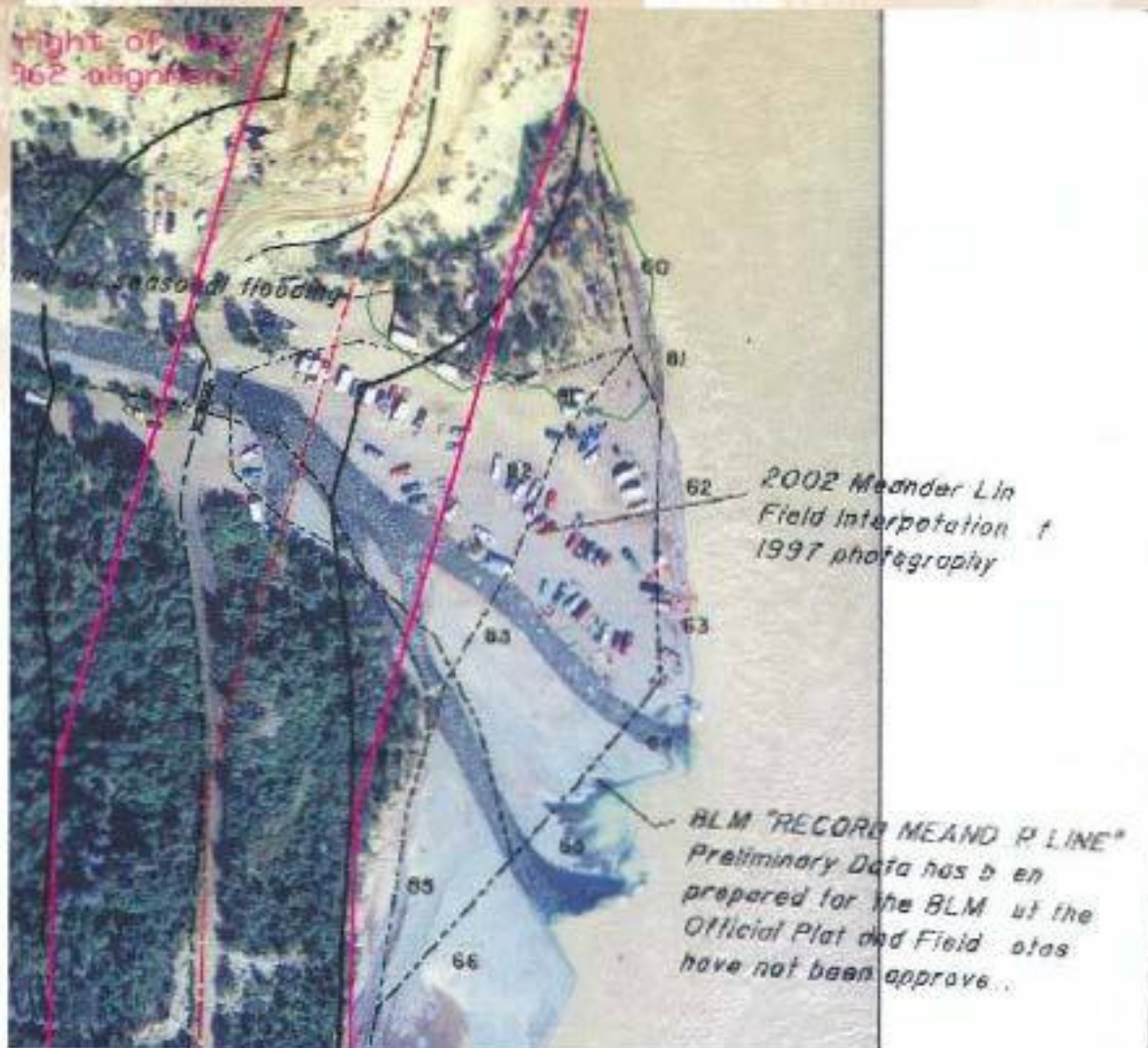
- Some members of the public argued that by centering the highway ROW on the railroad trestle and using the seasonal high water mark at the bridge to fix the Copper River boundary we could eliminate the gap and conflict
- O'Brien Creek is non-navigable
- DNR has jurisdiction to establish OHW
- Seasonal high water mark is not OHW
- Centering highway ROW on railroad trestle would not eliminate gap
- Trestle alignment could place part of existing road in trespass



O'Brien Creek Overlay



O'Brien Creek Gap - 2002 ROS



O'Brien Creek Options

Closing the Gap

- ANCSA 17(b) Easement - IBLA 82-1161 (4/25/84) determined that a 17(b) at O'Brien Creek was unnecessary due to alternative available access to the South
- Prescriptive Easement – Most undeveloped ANCSA lands are protected from adverse possession by federal law
- Prescriptive Easement – Would fail under State law due to permissive nature of access fee
- RS-2477 – Pre-ANCSA public use could have established a 100' ROW for the highway in absence of other options – but assertion of an access to the Copper River would be difficult



O'Brien Creek Access Blocked



- July 2004, Chitina Native Corporation places jersey barriers between highway ROW and OHW



The O'Brien Creek conflict continues....

"Native corporation to put up chain link fence

The Associated Press

Published: April 9th, 2005 Last Modified: April 9th, 2005

FAIRBANKS (AP) - The Chitina Native Corp. plans to put up a chain-link fence to keep dipnetters from crossing private land this summer to get to the Copper River.

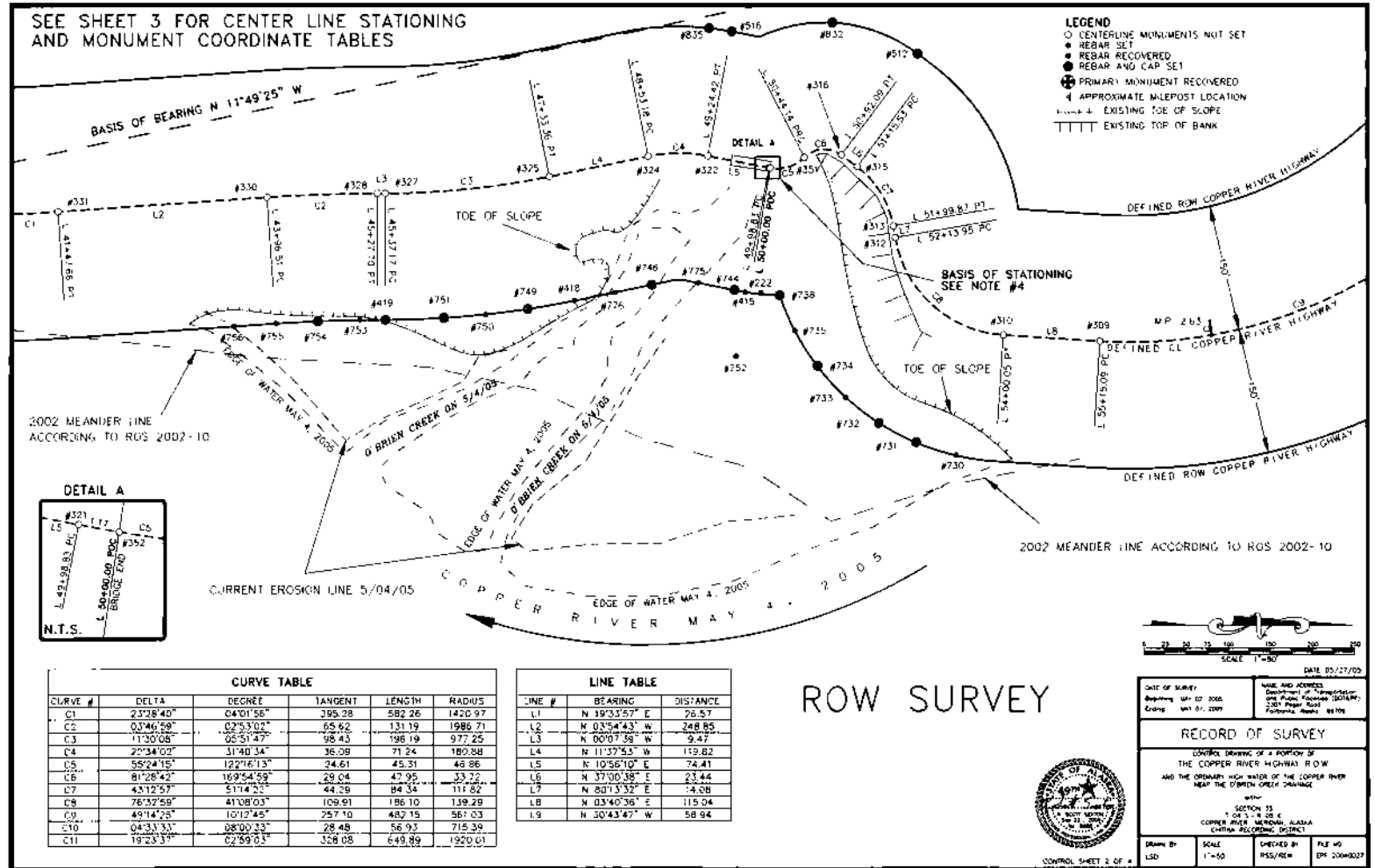
The land in question at O'Brien Creek is a 2 1/2-acre strip that is located between the state right of way and the ordinary high water mark. The Native corporation has told the state it wants \$200,000 to \$300,000 in trespass fees for dipnetters to use O'Brien Creek for access.

Chitina Native Corp. turned down the state's offers to purchase the land or negotiate a land or easement swap...."



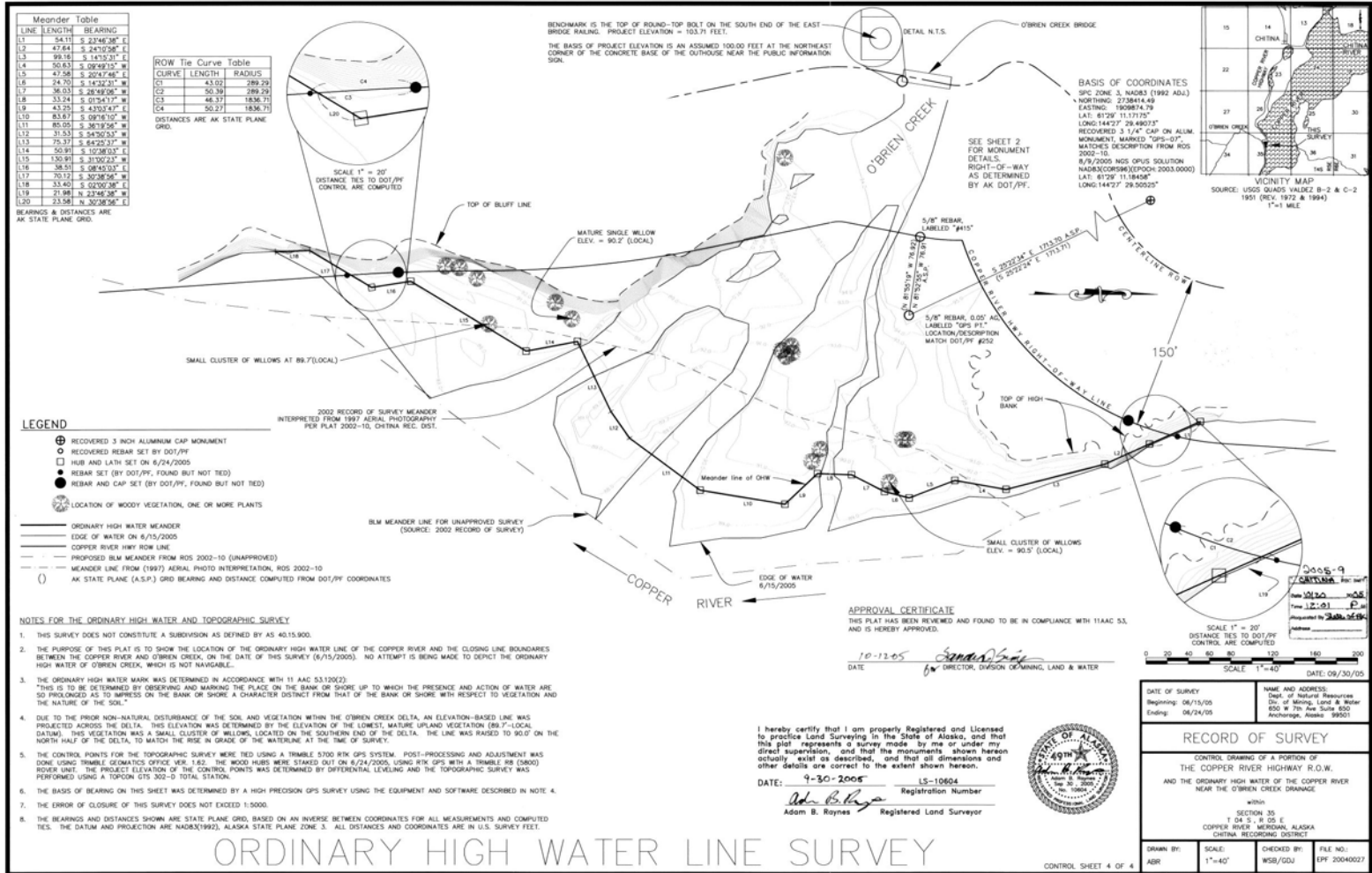
O'Brien Creek Plat 2005-9

ROW Line Staked in Field



O'Brien Creek Plat 2005-9

DNR Survey of OHW Line



Issues in Selecting an Alignment

- Conflicting legal elements as to nature of interest and width – Location not discussed
- Do we have railroad ROW (200'), PLO ROW (300'), both (300-500') or neither (0')?
- Had railroad alignment (trestle) converted to road use (PLO) at statehood?
- Did the Congressional dedication lock in the railroad alignment?
- What problem would be solved by selecting the railroad alignment?
- Was the PLO ROW fixed at a certain time or could it "float"?
- In a scenario with no good solutions...which is the least offensive?



O'Brien Creek Aerial 6.9.62



Note that trestle has collapsed within 3 years of statehood

O'Brien Creek Aerial 6.28.65



45 '64 Earthquake destroys trestle...note road & bridge to the north

Asserting the As-Built Centerline – Why?

- A ROW centered on the existing road is generally best for the public
- A solution acceptable to both dominant and servient estates is generally a reasonable solution – or – A solution that leaves all parties equally unhappy is usually the best
- Pre-ANCSA “floating” PLO easement
 - Relieved administrative burden of re-aligning roads crossing federal lands
 - 1976 BLM to DOT letter notes that “floating easement” concept no longer acceptable
- Post statehood, Pre-ANCSA realignment of O’Brien Creek road was not without merit



2001 Landslide – South of O'Brien Creek



- 1 mile South of O'Brien Creek
- Hillside very unstable
- Cost prohibitive to fix
- Increased pressure on access

- 2006 – Charter Operators reach launch and access agreement with Chitina Native Corporation



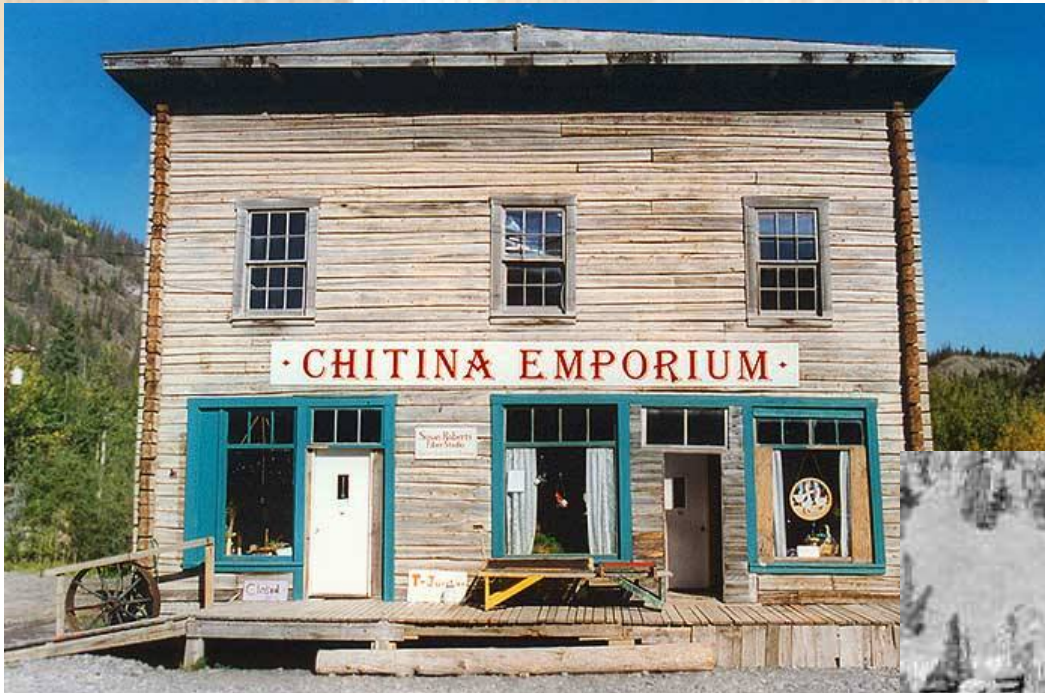


Chitina Townsite

**Copper River Highway
&
McCarthy Road ROW**

[Railroad Centerline Alignment Conflicts]

Chitina Townsite

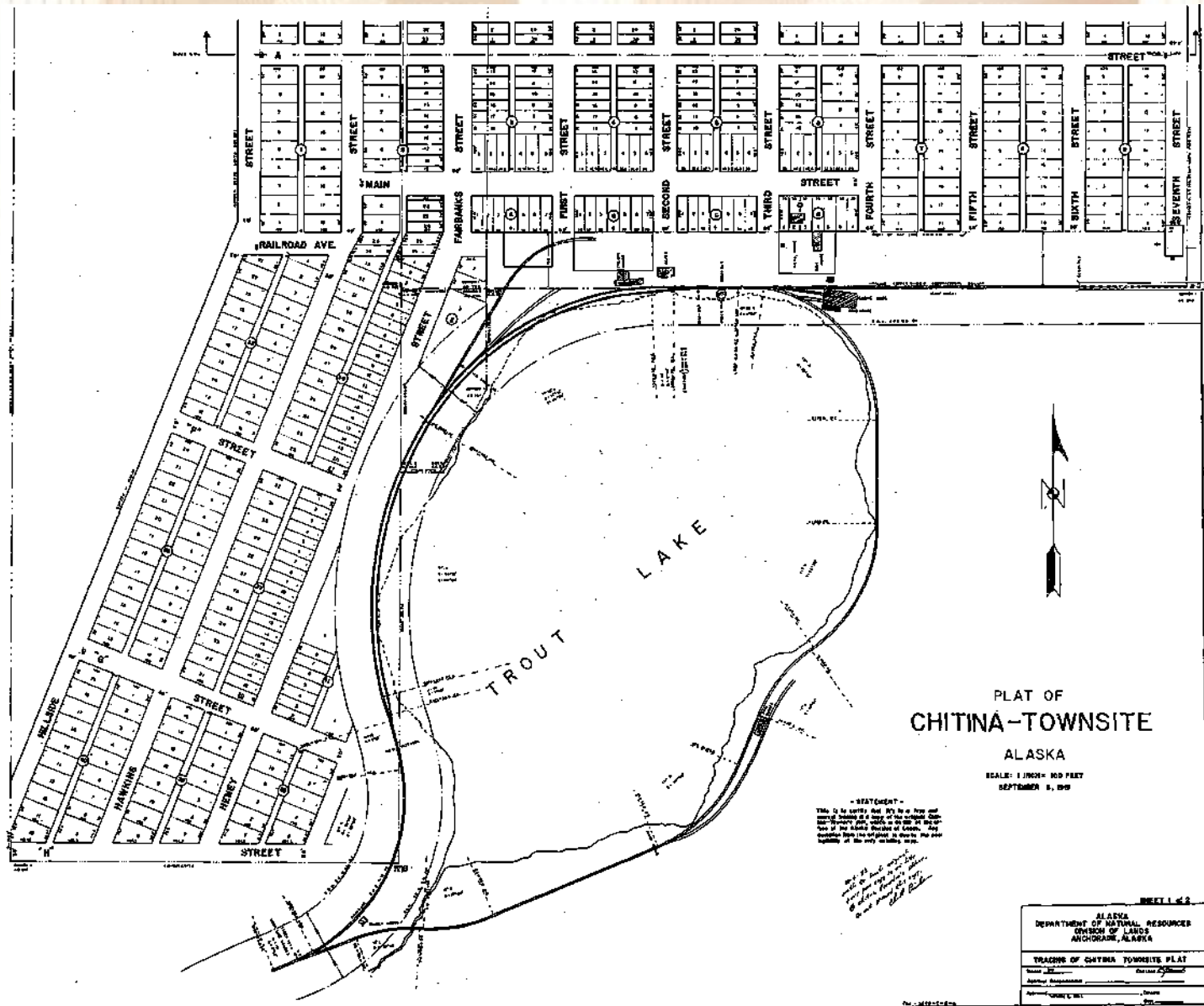


- Private Townsite
- Plat filed 9/28/1919
- Alaska Development & Mineral Company
- Subsidiary of Kennecott Copper Co.



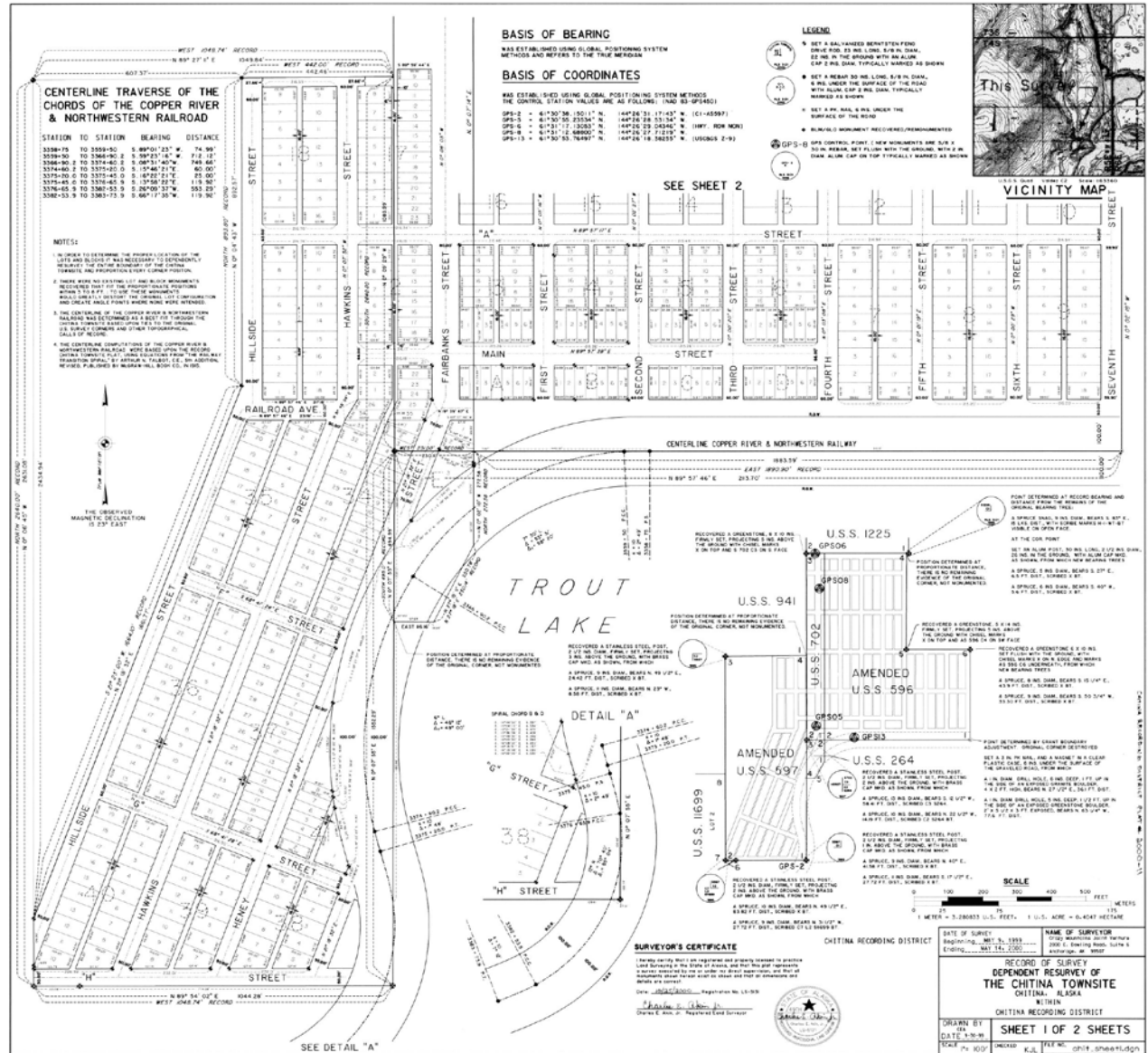
Original Chitina Townsite

- Bounded by Railroad ROW
- Intersection of Copper River Highway, McCarthy Road & Edgerton Highway



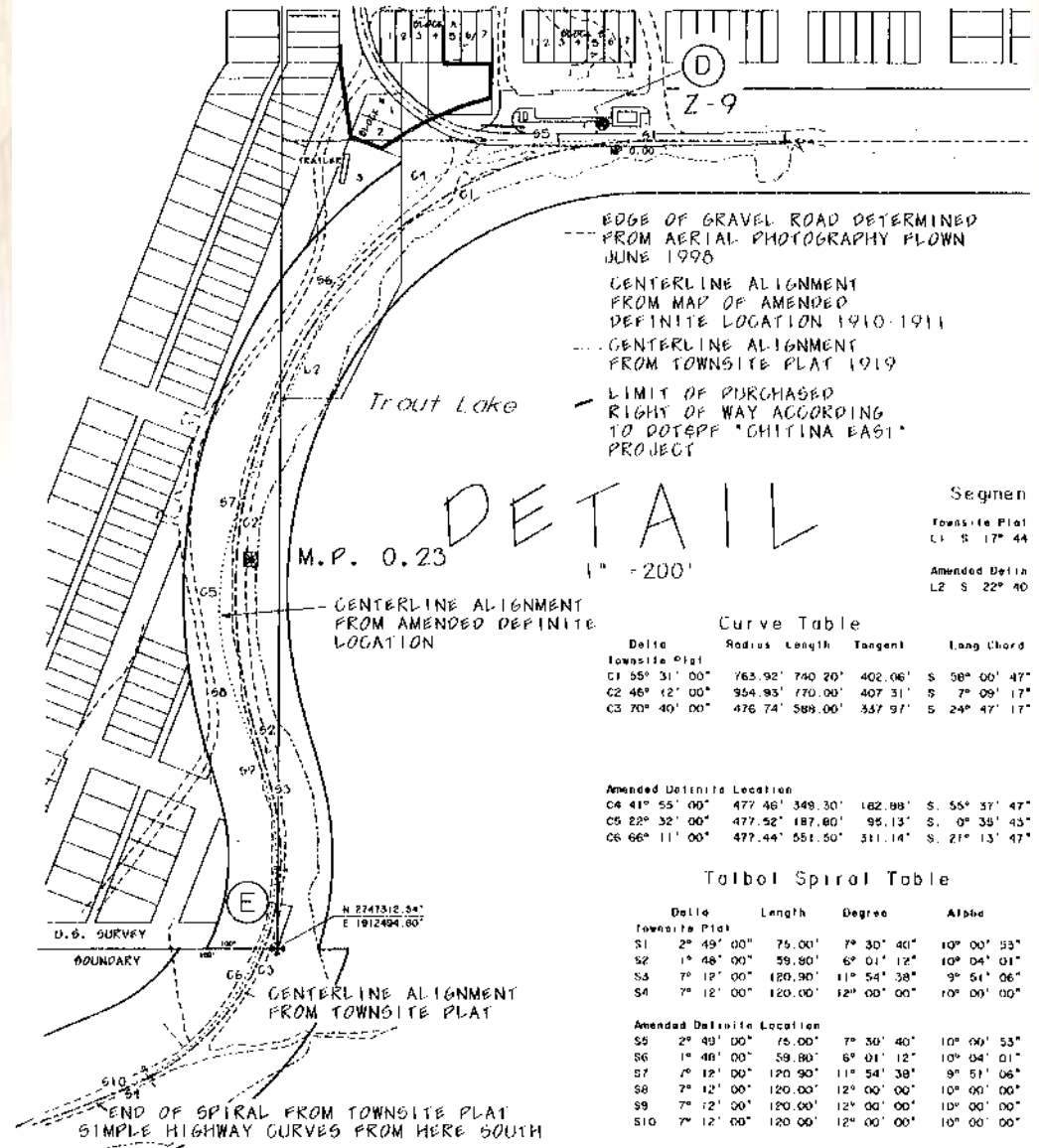
Chitina Townsite Retracement

- 1999-2000 Retracement by CMJV, Inc. for BIA Road Project from Chitina Townsite to Chitina Native Village
- Resulted in Retracement of entire Townsite CR&NW Railroad ROW as depicted on Townsite plat



Chitina Townsite Retracement

- Retracement found that CR&NW RR geometry as defined by the Townsite plat was inconsistent with the geometry set out by the original Map of Definite Location
- Alaska Development & Mineral Co. was a subsidiary of Kennecott Copper and prepared the Townsite plat
- DOT argued that the Map of Definite Location fixes the CR&NWRR geometry



Chitina Townsite Retracement

- As the CMJV assignment was to retrace the Townsite according to the original plat, they used the Townsite definition of the railroad geometry
- The 1970 DOT "Chitina East" and the 1998 "Chitina Wayside" projects used the Map of Definite Location geometry
- Conflict in geometry caused problems with adjoining owner during Chitina Wayside Project

4. The right of way of the Copper River Highway from Chitina through the Chitina Townsite is portrayed on this plat. Two conflicting definitions of the right of way exist.

A. Definition based upon the Plat of Chitina Townsite: The right of way lines graphically shown on this map reflect the original Townsite boundaries according to the Plat of Chitina Townsite filed on 9/28/19 in the Chitina Recording District and retraced by CMJV as a part of the "Dependent Resurvey of the Chitina Townsite" filed as Plat 2000-11 in the Chitina Recording District. As the Chitina Townsite plat defined the boundary adjoining the railroad using spiral geometry, this map and the CMJV Plat 2000-11 also define the centerline and right of way using railroad spiral geometry.

B. Definition based upon the Map of Amended Definite Location of the Copper River & Northwestern Railway, filed in The US Land Office in Juneau on April 4, 1910; and the Plat of Chitina Townsite, filed in 1919 provide the information portrayed. This map was the basis for the federal grant of right of way to the railroad under the Act of May 14, 1898 (30 Stat. 409.). As these filings preceded the entry dates for the US Surveys that comprised the Chitina Townsite, the townsite boundary should have been subject to this definition. The railroad geometry depicted on the maps of Amended Definite Location and the geometry depicted on the Chitina Townsite differ significantly.

Resolution of the conflicting definitions will likely require an action to quiet title.

Chitina Townsite Retracement

ALIGNMENT NOTES		NOTE:- Spiral used is TALBOT'S RAILWAY TRANSITION SPIRAL							
Total Angle	Bearings of Tangents	Cur. No	Station	Cur. Pt.	Degree of Cur.	$\alpha =$	Spiral Angle	Main Cur. Angle	Total Angle
	N. 53° 39' E.		3516 + 48.0	PRS.		6	12° 00'		

- Railroad ROW is based on 100' each side of railroad centerline
- Railroad centerline incorporates "spiral" curves
- Map of Definite Location cited "Talbot's Railway Transition Spiral" as basis for spiral geometry
- One of many spiral "flavors"
- Internet search located a 1915 edition of "Talbot's" Spirals in a small California bookstore

THE Railway Transition Spiral

BY

ARTHUR N. TALBOT, C. E.

*Member American Society of Civil Engineers, Professor
of Municipal and Sanitary Engineering
University of Illinois*

FIFTH EDITION, REVISED
ELEVENTH THOUSAND

NEW YORK:
McGRAW-HILL BOOK COMPANY
1915



McCarthy Road ROW

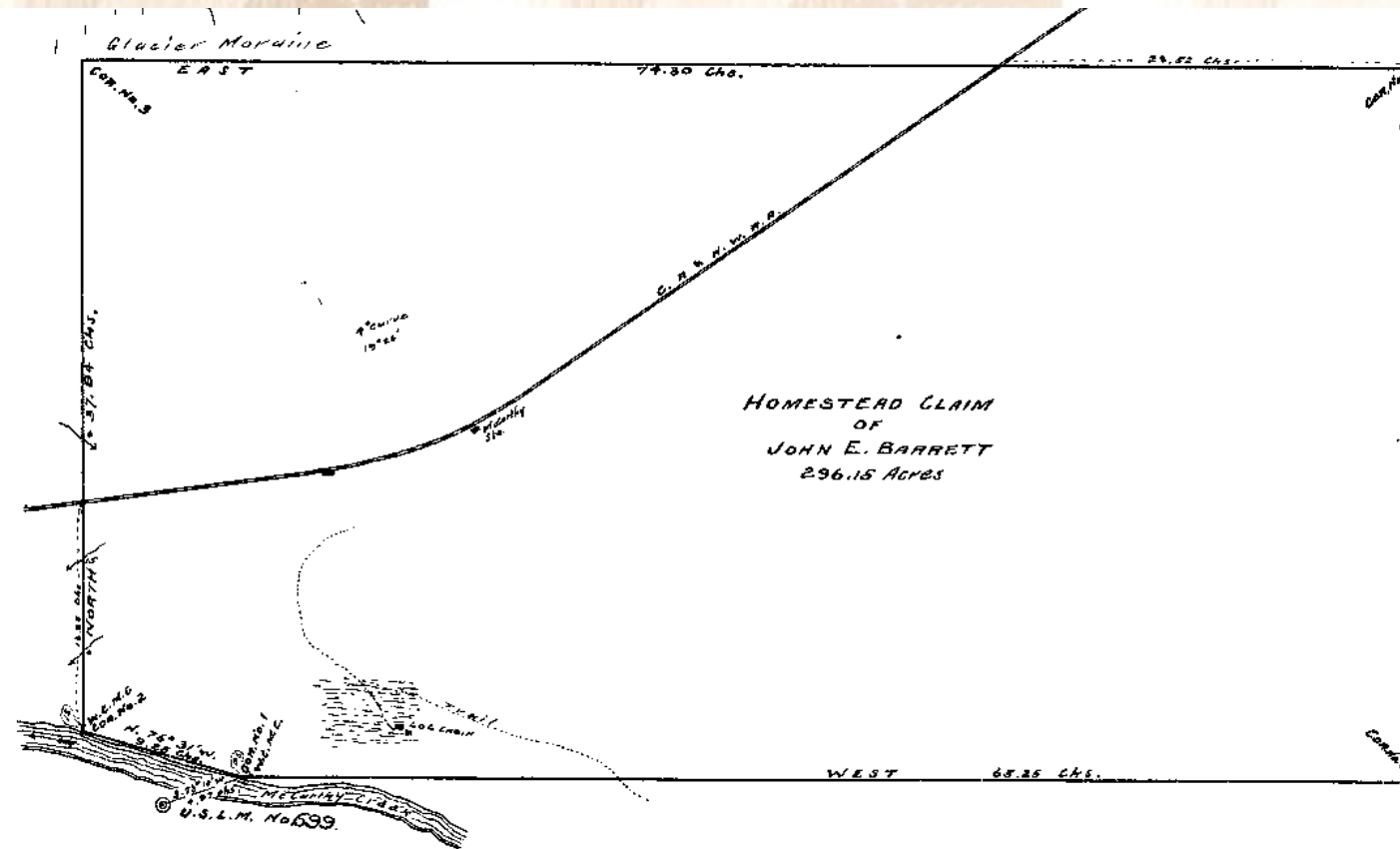
[Plat Dedication and ROW Width Conflict]

McCarthy Townsite



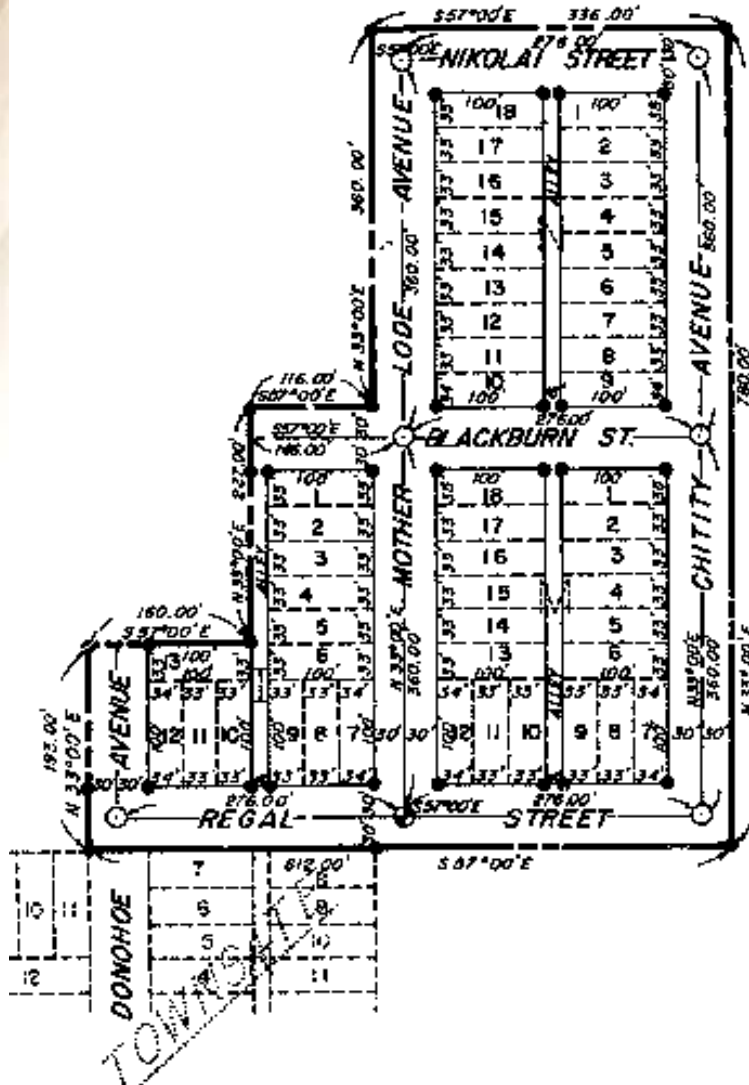
- AGO Opinion May 2002 determines McCarthy Road ROW to be 100' in width
- However, prior dedications & quiet title actions created 200' wide ROW in certain areas

McCarthy Townsite – Barrett Homestead – USS No. 699



PLAT
OF
U. S. SURVEY NO. 699
OF THE
HOMESTEAD CLAIM
UNDER ACT OF MAY 14, 1896
AS AMENDED BY ACT OF MARCH 3, 1909
OF
JOHN E. BARRETT

McCarthy Townsite USS No. 699



- 1978 Quiet Title action determined that McCarthy Road through McCarthy Townsite was subject to a 200' wide ROW
- 2002 AGO opinion does not change the court judgment

PARTIAL RETRACEMENT SURVEY OF ORIGINAL PLAT OF THE TOWN OF McCARTHY			
DENALI PROPERTIES, INC. P.O. Box 80164 College, Alaska 99708 (907) 479-2084			SURVEYOR Noel F. Stragier 3337-S
DRAWN: SMG	DATE: 8-31-78		
CHECKED: N.F.S.	SCALE: 1" = 100'		

McCarthy West Subdivision Plat 77-7


- Subdivision surveyor may have requested McCarthy road ROW info from DOT in 1976
- DOT, in good faith would have asserted the 200' wide ROW based on the CR&NWRR right of way
- 200' wide ROW for McCarthy road dedicated by Plat 77-7
- 2002 AGO Opinion regarding McCarthy Road ROW would not change act of dedication

CERTIFICATE OF OWNERSHIP AND DEDICATION

We hereby certify that we are the owners of the property shown and described hereon. We hereby dedicate to the public, all easements, streets, thoroughfares, parks and other public spaces as shown hereon.

Date: March 4, 1977


LESTER K. SYREN
7027 LAKE OTIS PKWY
ANCHORAGE, ALASKA


ALVIN N. SYREN
3002 KARLUN STREET
ANCHORAGE, ALASKA



Kennicott River Bridge & Tram



- Foot bridge completed in spring of 1997

- Prior to foot bridge, access across Kennicott River was provided by tram



The End

