Form No 10-300 (Rev 10-74) Notify: Senators Ted Stevens/Mike Gravel Congressman Don Young

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE P4067235'

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR HCRS USE ONLY
RECEIVED NOV 9 1977
DATE ENTERED NOV 28 1977

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
Tunnel #1 (AHRS SITE NO. SEW-139)

AND/OR COMMON
Loop District Tunnel #1

2 LOCATION

STREET & NUMBER
Alaska Railroad Mile 48.2 _NOT FOR PUBLICATION

CITY, TOWN
Seward _X_VICINITY OF

CONGRESSIONAL DISTRICT
Alaska, at Large

STATE	CODE	COUNTY	CODE
Alaska	02	Seward Division	210

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
_DISTRICT	X PUBLIC	_OCCUPIED	_AGRICULTURE	_MUSEUM
_BUILDING(S)	_PRIVATE	X UNOCCUPIED	_COMMERCIAL	_PARK
X STRUCTURE	_BOTH	_WORK IN PROGRESS	_EDUCATIONAL	_PRIVATE RESIDENCE
_SITE	PUBLIC ACQUISITION	ACCESSIBLE	_ENTERTAINMENT	_RELIGIOUS
_OBJECT	_IN PROCESS	X YES RESTRICTED	_GOVERNMENT	_SCIENTIFIC
	_BEING CONSIDERED	_YES UNRESTRICTED	_INDUSTRIAL	_TRANSPORTATION
		_NO	_MILITARY	X OTHER Bypassed

4 OWNER OF PROPERTY

NAME
Chugach National Forest (907) 272-4485

STREET & NUMBER
2221 E. Northern Lights

CITY, TOWN
Anchorage _VICINITY OF

STATE
Alaska 99504

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC
Chugach National Forest (907) 272-4485

STREET & NUMB
2221 E. Northern Lights

CITY, TOWN
Anchorage

STATE
Alaska 99504

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
Alaska Heritage Resources Survey (AHRS)

DATE
August 14, 1975 _FEDERAL X STATE _COUNTY _LOCAL

DEPOSITORY FOR SURVEY RECORDS
Alaska Division of Parks - Suite 210 - 619 Warehouse Avenue

CITY, TOWN
Anchorage

STATE
Alaska 99501

DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
__EXCELLENT	X_DETERIORATED	__UNALTERED	X_ORIGINAL SITE
__GOOD	__RUINS	X_ALTERED	__MOVED DATE_____
__FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Railroad construction on the route that ultimately became the Alaska Railroad from Seward to Fairbanks was begun by a predecessor company in 1905. Its most difficult grade problem on the entire route was encountered the second year of construction and was attacked in 1906. This was the area to be traversed as construction moved along the line between miles 47 and 53 north from Seward. This area required crossing a high point through the mountains and traversing or avoiding the paths of two glaciers that cut a valley through the mountain range at that point.

During the winter of 1904-1905 a preliminary survey line was run for the route from Mile 34 northward toward Turnagain Arm. The survey party worked through snows from ten to 20 feet deep in the mountain passes. Frank Bartlett, a Locating Engineer for the Alaska Northern Railway, began locating sites for structures in the critical area north of Mile 48 in March 1905, and in November 1905 completed location of the road through Mile 54. North of Mile 48 he designed the route to begin a curve that formed an almost complete circle. At approximately Mile 48.2 the line passed into a tunnel for a distance which was sometimes cited as 699 feet and sometimes as 714 feet, turning to the right on a 14 degree curve, with a total curvature of 235 degrees. Approximately 100 degrees of this curve was in a long tunnel, the remaining 135° of curvature was completed upon exiting the tunnel onto a trestle 1600 feet in length and from 40 to 90 feet in height. This tunnel was named Tunnel #1 in the Loop District.

Tunnel No. 1 was built by company forces. Construction was begun January 16, 1906. It was driven entirely from the north end (the end opposite the end of steel on the railroad construction). On account of a snow slide on the south end, it was impossible to work from that end, since the work was accomplished mostly during winter months. The first 250 feet was driven with steam power and drills. The bore was on a 14° curve designed to give a minimum clearance of 18 inches for the maximum length of passenger car to be used on the line. The bore was 17 feet wide between timbers and 21 feet from top of rail to clearance at top of the tunnel. Timber was used for lining the first 396 feet at the north end. The balance of the tunnel was left unlined until some years later.

The steam plant used for the initial boring was discontinued on April 14, 1906, as the heat from the escaping steam at the drills made the tunnel too hot for the men to work, though progress with the steam plant had been satisfactory. Drilling with pneumatic power was begun on April 28, 1906, 14 days after the steam plant had been discontinued. Drilling the bore was completed on September 25, and the tunnel was declared completed on October 8, 1906. Actual working days numbered 234, during which progress was made at a rate of approximately 3 feet per day. Total cost for labor and materials was $96,782.66.

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Tunnel #1

CONTINUATION SHEET ITEM NUMBER 7 PAGE 1 of 2

In 1914 the survey crew of the Alaska Engineering Commission studied the area for routing the proposed government railroad, and to determine the value of the Alaska Northern (later the Alaska Central) route through the Kenai Peninsula. The AEC decided that the Loop District had been engineered effectively, and recommended that the line be purchased for incorporation into the proposed government railroad. The recommendation was followed and the work done became the basis for the Alaska Railroad route from Seward north to Turnagain Arm. The Alaska Engineering Commission began repairs to this segment of the line early in the summer of 1916, under supervision of R. J. Weir, a railroad engineer, formerly employed by the Southern Pacific Railroad. The predecessor operating companies had never been well funded, and had never been able to utilize the line from Mile 48 north on a regular basis. With the beginning of operation of the Alaska Railroad, the fruits of those earlier labors were harvested.

Tunnel #1 and the balance of construction through the Loop District, extending from Mile 48 through Mile 53, continued for many years to be the most difficult segment of the entire railroad to maintain in operation through the winter season. In winter the Alaska Railroad stationed men in the tunnel to maintain a steam heating plant and to open and close huge doors at either end which were installed to keep the tunnel and its tracks ice free. The expense of this maintenance mounted.

Prior to relocation and use of diesel locomotives an Engine Helper Station was maintained and manned at Tunnel Station, north of the Loop District, providing helper engines for trains going up the north and south grades. In addition, the Railroad was faced by the prospect of rebuilding original trestles to replace rotting, untreated, timber with treated material, to accomodate the new heavier diesel locomotives scheduled for service to Seward. Due to the heavy costs required for this work, the railroad decided to reconfigure the Loop District.

In 1951 the railroad spent about one million dollars to reroute the line around the Loop District between Miles 47.5 and 50.8. Relocation was made possible by the receding face of Bartlett Glacier. Need for Tunnel #1 and all the trestlework connected with it was eliminated. The route was changed in a ceremony on November 6, 1951, in which ARR General Manager J. P. Johnson drove a "Golden Spike". While the maximum grade in the area was raised from 2.2 to 3%, 1.1 miles of the most difficult track to maintain on the Alaska Railroad was eliminated, and immediate savings in yearly maintenance costs of approximately $35,000 were realized.

Tunnel #1 remains in place, by-passed by the changing face of the glaciers it avoided for the early railroad, and superseded by new techniques of surveying and operating the railroad.

SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
_PREHISTORIC	_ARCHEOLOGY-PREHISTORIC	_COMMUNITY PLANNING	_LANDSCAPE ARCHITECTURE	_RELIGION
_1400-1499	_ARCHEOLOGY-HISTORIC	_CONSERVATION	_LAW	_SCIENCE
_1500-1599	_AGRICULTURE	_ECONOMICS	_LITERATURE	_SCULPTURE
_1600-1699	_ARCHITECTURE	_EDUCATION	_MILITARY	_SOCIAL/HUMANITARIAN
_1700-1799	_ART	_ENGINEERING	_MUSIC	_THEATER
_1800-1899	_COMMERCE	_EXPLORATION/SETTLEMENT	_PHILOSOPHY	X TRANSPORTATION
X 1900-	_COMMUNICATIONS	_INDUSTRY	_POLITICS/GOVERNMENT	_OTHER (SPECIFY)
		_INVENTION		

SPECIFIC DATES Constructed 1906
Rebuilt 1916

BUILDER/ARCHITECT Frank Barlett, Location Eng.
Alaska Central Railroad

STATEMENT OF SIGNIFICANCE

In tackling the project that resulted in the boring of Tunnel #1, the original Alaska Northern Railroad Company almost succeeded in realizing the long held dream of creating an artery of transportation between a warm water port on the southcentral coast and the interior of Alaska. As an engineering undertaking it was successful. The failure was an economic one. When the economics of the venture was later undertaken by the federal government, the validity of the engineering accomplishment was recognized and the tunnel served in its intended capacity for 45 years. Its passage through this mountainous area hastened the way for development of southcentral Alaska. The existence of the tunnel in 1914 was a major factor in the selection of the actual route of construction of the Alaska Railroad.

HISTORICAL NARRATIVE

Colonel Frederick Mears described succinctly the background of this section of the Alaska Railroad and of Tunnel #1 in an article published in 1918:

> The first link in the chain to connect tidewater with the interior of Alaska and the coal fields was the single-track, standard-guage railroad, starting at the town of Seward, at the head of Resurrection Bay.
>
> This railroad, originally called the "Alaska Central" and later changed to "Alaska Northern", was first conceived by certain Seattle capitalists in the year 1903 for the purpose of securing a more direct route from the Pacific Ocean to the interior of Alaska, in the hope of getting a portion of the trade between seaports in the United States and the Fairbanks and Klondike mining regions, both of which, at times, showed great prosperity. The ultimate intention was to extend the line northeasterly to Circle City, about 130 miles from Fairbanks. Later it was hoped to open extensive coal deposits known to exist on the Matanuska River.
>
> Actual construction began at Seward in 1904, and continued under several changes of management for five years. By April 1906, grading was finished and track laid to Mile 47, and during the balance of the year 1906, the grading was continued with a largely reduced force, the company's efforts being concentrated on the tunnels and heavy work between Mile 49 and 54. Grade and track were gradually built northward from Mile 54 to Kern Creek, Mile 71, and some work was done along Turnagain Arm north of Kern Creek, but in 1909, all construction work was suspended by the former owners and never resumed.

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In 1914, many of the tunnels needed enlargement, the cross-sections being insufficient to pass standard equipment. The construction of snow sheds had been entirely neglected at several points where these structures were very necessary.

The statement has often been made that the portion of the Alaska Northern Railroad from Mile 48 to Mile 58, the crossing of the second summit of the Kenai Mountains, had been erroneously located, on the theory that much better results could have been obtained by following a line along the west wall of the valley of the Placer River with side hill support, on grade of 1 per cent to 1.5 per cent gain, reaching the present line near Mile 58. It was further suggested that a survey would show an economy in abandoning the present location along this stretch in favor of the side hill line when traffic had reached warranted proportions.

. . . the results of this field work during the summer of 1914, showed very conclusively that the present line followed the proper general route.. The steep transverse slopes along the mountain side, which would require the line to be benched heavily, together with the numerous and costly snow sheds necessary to protect the line from the snow slides, prevent any serious consideration of the "west-valley line," in comparison to the present route.

The first prediction of Col. Mears was self fulfilling. Tunnel Number 1 was upgraded and pressed into service, and continued in that service until 1951. His second prediction, concerning rerouting of the section when". . . traffic had reached warranted proportions," was not correct. This came about in 1951, due to circumstances not accounted for in Col. Mears purely engineering-oriented considerations. The added conditions were some improvement in technical materials, but more important, a desperate need by the railroad to cut maintenance costs.

Scant documentation is required to illumine the vast differences in conditions of the construction worker, the field location engineer, or the executive engineer, of the work represented by Tunnel No. 1 with similar jobs today. The brutal conditions they lived with, endured, and overcame, contrast with the relative luxury and repeated near failures of comparable recent major construction projects in Alaska. These 1906 and 1916 tunnel borers are the souls to whom one must refer in drawing value judgements upon those who bring technology and change to areas of virgin land. The challenge of passing steel rails through the mountain ranges and over the glacial moraines was theirs. The engineers designed and located the route. The laborers strove mightly and succeeded. The monument remains.

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Tunnel #1

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"Methods and Cost of Tunneling on the Alaska Central Railway." Engineering-Contracting, Vol. XXVI, No. 14. April 7, 1909, pages 276-281.

Prince, Bernadine L., The Alaska Railroad in Pictures 1914-1964, Volumes I-II. Anchorage, Ken Wray's Print Shop, 1964.

"Progress on Government Railway in Alaska," Railway Age Gazette, Vol. 62, No. 16, April 20, 1917, pages 828-834.

Munrs, Col. Frederick. Papers, University of Alaska Archives, Rasmuson Library.

GEOGRAPHICAL REFERENCES

See Continuation Sheet

GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one acre

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	0 6	3 6 7 5 0 8 (6 2 5)	6 7 2 5 3 5 0 (8 7 5)
B			
C			
D			

VERBAL BOUNDARY DESCRIPTION

Not Applicable

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

FORM PREPARED BY

NAME / TITLE

Alfred Mongin, Architectural Historian

ORGANIZATION	DATE
Division of Parks	December 30, 1976
STREET & NUMBER	TELEPHONE
Suite 210, 619 Warehouse Avenue	(907) 274-4679
CITY OR TOWN	STATE
Anchorage	Alaska 99501

STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS

NATIONAL ___ STATE ✓ LOCAL ___

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service

STATE HISTORIC PRESERVATION OFFICER SIGNATURE William Shandelee

TITLE Deputy SHPO DATE 4/19/77

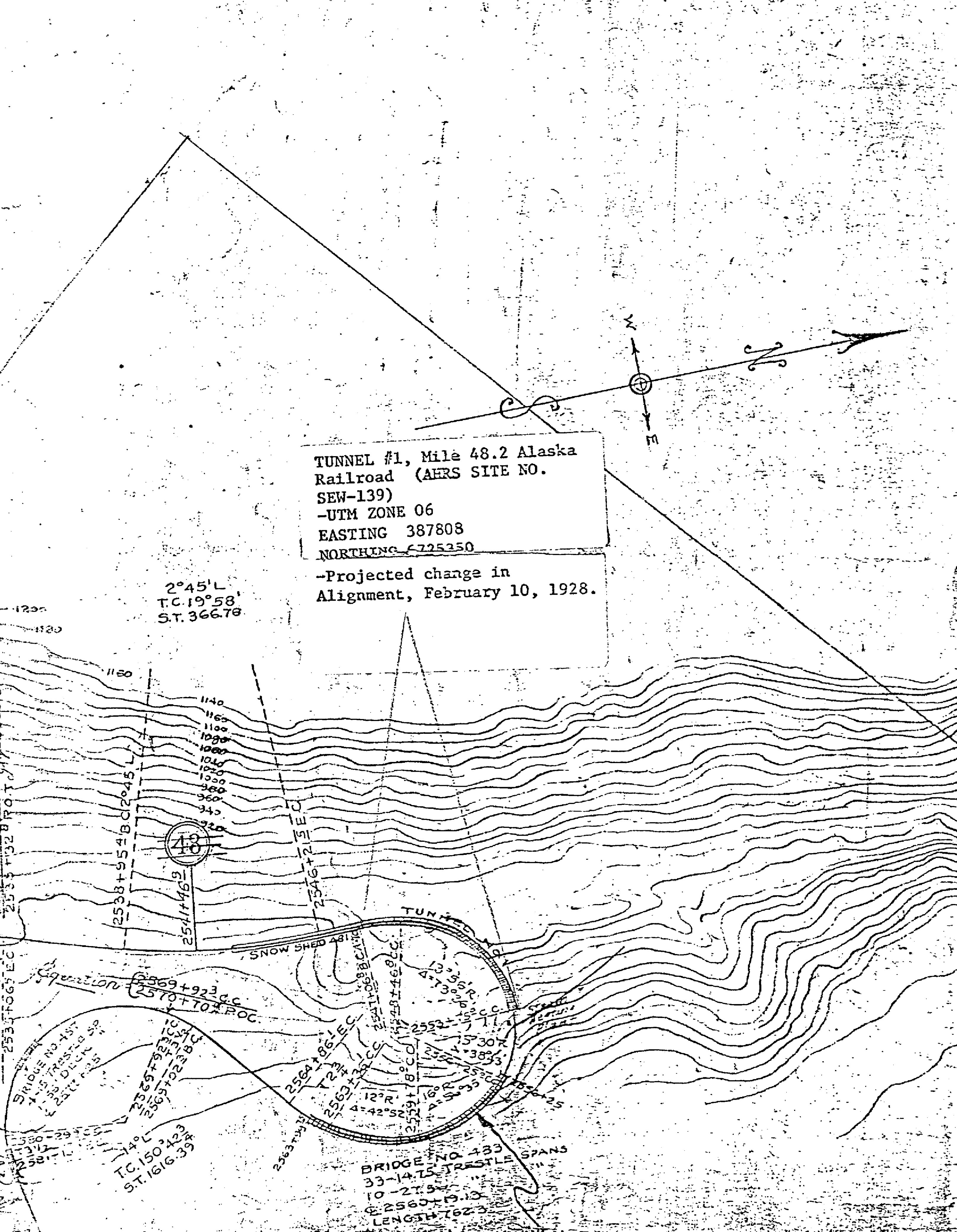
FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

[illegible] DATE 11/28/77

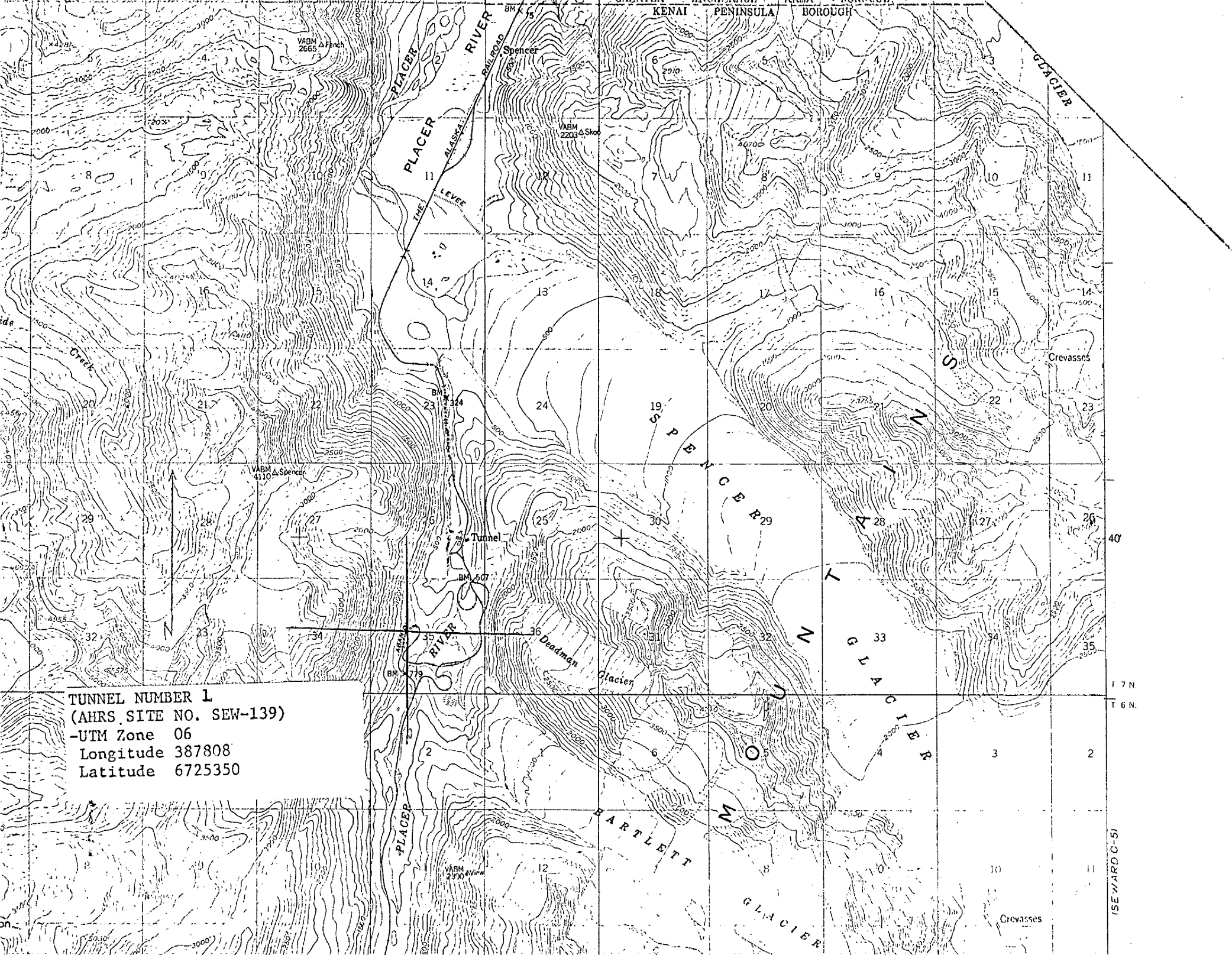
[illegible] DATE 11/28/77

GPO 892-453



TUNNEL #1, Mile 48.2 Alaska Railroad (AHRS SITE NO. SEW-139)
-UTM ZONE 06
EASTING 387808
NORTHING 6725350

-Projected change in Alignment, February 10, 1928.



TUNNEL NUMBER 1
(AHRS SITE NO. SEW-139)
-UTM Zone 06
Longitude 387808
Latitude 6725350

TUNNEL #1, Mile 48.2 Alaska Railroad (AHRS SITE NO. SEW-139)
-UTM ZONE 06
EASTING 387808
NORTHING 6725350

-Projected change in Alignment, February 10, 1928.