Many of Alaska's streams are of glacial origin. In these the water is very cold and heavily laden with silt and the current is very swift. Quicksand is often encountered. Such streams are always crossed at considerable hazard.

Alaska is well provided with navigable streams which now serve the same purpose in the Territory as did the rivers in the states before the construction of the railroads. The Yukon, Kuskokwim, Innoko, Iditarod, Koyukuk, Tanana, Kantishna, and Tolovana Rivers, together with The Alaska Railroad, the Copper River and Northwestern Railway, the White Pass and Yukon Railway, and the Richardson Highway form main highways of commerce. From the seacoast or from points on these main highways freight is moved still closer to its destination on the smaller streams in light draft scows pulled by horses.

During the winter, extending on an average for the whole interior country from November first to April tenth, the streams are frozen over and the ground covered with snow and movement is much less difficult. The stream beds generally form excellent avenues for movement by dogsled or horse-drawn sleds. Trails for dog teams and sled roads for the heavier sleds drawn by horses or tractors are constructed at relatively little expense by clearing a lane through the timber, constructing occasional bridges over gullies and open streams, and grading down the especially steep approaches to frozen streams. Winter travel on the large streams is more or less hazardous though, due to danger from overflows or of going through holes or thin places in the ice. The trails are gradually being relocated off the river in such places.

During the period from October tenth to November first and from April tenth to May tenth, as an average for the interior country, the streams are just freezing or thawing, movement on or across the streams is impossible on account of running ice, and travel is at a standstill except on the railroads.

The universal occupation of the interior of Alaska is mining. The product is gold. It can be transported by any available means from any point at which it is produced. Other minerals can be mined profitably at present only at localities where railroad or water transportation is immediately available. It follows that in general the problem is to transport supplies of all kinds to the point of consumption rather than from the point of production.

The average cost of transporting a ton of freight one mile by bobsled on a winter sled road, as shown by table on page 45, is 5¢ as compared with a cost for summer movement of 50¢ by auto truck or $1.00 by wagon. It follows that for isolated mines and small mining communities in the remote interior the con-

struction of wagon and automobile roads is not warranted. It is the policy of this Commission to construct sled roads and summer pack trails to such localities from the nearest point on navigable water or on the railroad. If developments warrant, the summer trail can later be improved into a wagon road. Supplies for such points for use during a certain summer must be delivered at the head of navigation during the preceding summer and freighted over the snow during the preceding winter. The small amount of perishable or emergency freight can be moved during summer over pack trails.

Where the operations are of considerable magnitude and around the larger communities the construction of wagon roads is warranted and necessary on account of the increased travel. Even in such cases it is cheaper to transport the heaviest and least valuable freight by sled in winter rather than by truck in summer. In farm communities roads are of course necessary in order that the farm products may be marketed promptly.

CONSTRUCTION.

Road construction is a rather slow and expensive process. After the road has been located, timber cut and removed, stumps grubbed out, moss and vegetation removed, drainage ditches dug and grading completed it requires a period of three or four years for the subsoil to thaw, the ground water level to be lowered to its new level and the subsoil to reach a stage of equilibrium. Meantime the road is unsuitable for heavy loads and maintenance charges are high. In many places it is impossible at any reasonable expense to grade and drain the roadway and corduroy must be resorted to. Fortunately the scrub timber generally available makes good corduroy. Native timber is of insufficient strength and not very durable, hence fir is imported for all important bridges.

Gravel for road surfacing is generally available within a reasonable hauling distance. Graveling is necessary for practically all roads which are used by automobiles. Concrete or other forms of hard-surfaced roads are nowhere warranted in the present stage of development of the Territory.

Metal culverts are being introduced to replace the culverts of native timber heretofore used. The latter rot very rapidly and the frequent replacement required makes them quite expensive.

Sled roads are located in low ground, often swampy, and follow streams or lakes whenever this is advantageous. Clearing of timber, removal of stumps and underbrush, construction of bridges over deep gullies and making down of steep approaches are the principal requirements in the construction of a sled road. Winter

trails for dog teams are constructed on the same principles but require less in the way of bridges or grading of approaches

Summer trails follow the driest—or the least wet—ground available. If grades are not excessive they are susceptible of later development into wagon roads.

It is the general policy on any route or within a certain district to make gradual improvements throughout rather than to make extensive improvements on one route or portion of a route which cannot be advantageously used until the remainder or the connecting routes are so improved.

COMMERCIAL STATISTICS.

A careful traffic census was begun by the Commission in 1911. Comparing the expenditures for freight on each route at the present rate with the cost of transporting the same amount of freight at the rates prevailing before the road was constructed, a figure is obtained which represents the economic saving to the community served by the construction of the particular route in point.

Combining the saving for all the routes built by the Commission, the following table for 1911, 1912 and 1913, has been compiled:

TRAFFIC SUMMARY.

Year	Expenditures for the year	Total expenditures for roads to end of year	Economic saving to shippers
1911	$299,[illegible]	$[illegible]	$1,983,677.00
1912	[illegible]	2,[illegible]	2,141,682.00
1913	[illegible]	2,[illegible]	2,144,667.00
1911-1913	937,199.96	2,[illegible]	6,268,082.00

From this table it will be seen that the saving in these three years alone was almost three times the total expenditure for roads to the end of 1913. Records for succeeding years were burned up in the fire of 1915. No census was taken during the war.

A new census was inaugurated January 1, 1921, and was continued through the last calendar year. Due to poor communications, reports of this census are still incomplete. Such fragmentary reports as have been received show a very gratifying reaction from recent work performed by this Commission, and an astonishing aggregate of traffic upon trails lying in remote sections.

The traffic census table on pages 45 and 47 gives a synopsis of the traffic reported upon a few typical routes for the calendar year 1921.

In the interior, the great cost of moving freight by teaming or packing together with the difficulty and uncertainty of moving

[illegible] all constitute the main obstacle to the growth and development of the district.

During the opening of the new diggings in the Chisana region a few years ago, beans, coffee, sugar, hay, candles, bacon, grain, etc., were sold at $1.50 a pound. The freight charges were almost a dollar a pound, so that the original cost of the article was of relatively little importance. And even at that, the supply could not keep pace with the demand. Last summer the freight charges for transporting supplies from Dawson, in the Klondike, to some mines about one hundred miles away in the American 40-Mile District was greater than the original cost of the supplies plus the freight from the United States to the Klondike. (Dawson is 1,700 miles from Seattle.)

The cost of transportation by the usual modes of transport in Alaska are shown by the following table:

Water:	Per Ton-Mile.
Dob-sled (sled road)	$ 0.37
Double-ender (trail)	1.30
Dog-team (trail)	6.30
Overland:	
Truck (wagon road)	.50
Wagon (wagon road)	1.23
Pack train (trail)	4.80
Man (no trail)	26.67*

*—Average from very widely varying figures. At Iliamna Inlet, in southwestern Alaska, in 1912, I observed lumber, pipe, tar paper, groceries, etc., being carried on the backs of Indians from the beach up a very mountainous trail about 1,500 feet rising to a new gold strike in a little basin at about 2,000 feet elevation at 4 cents per pound, or $80.00 per ton—over 1 cent per ton-foot.

Railroad transportation cannot yet be regarded as a usual form in Alaska, and steamship rates are entirely arbitrary, depending upon competition. They, like the extreme railroad rates, have been fixed by two factors only: last the cost of hauling on some competing wagon road, sled road, or trail, where such competition exists; or, in the case of steamships, sometimes by competing steamer lines; and all by the highest rate the freight can stand and yet be shipped at all.

The table shows the actual cost at the rates for teams, labor, forage, etc., prevailing in the great interior regions of Alaska. They are based also on the costs of hauling large quantities. On the Yukon coast the comparative values are the same, but the actual rates are about one-third less because of lower costs of above mentioned elements.

TRAFFIC CENSUS

District	Route No.	Station	Period 1924	No. of Persons	Autos	Wagons	Sleds	Pack Horses	Tonnage
SOUTHWESTERN									
Seward-Nash	10H	Seward	Jan.-Dec.	630	295	60	73		450
Archangel Extension	35A	Fishhook	Jan.-Sept.	567	37	127	16	20	163
Willow Creek Extension	35D	Fishhook	Apr.-Sept.	423	4	87		209	139
Wasilla-Fishhook	35G	Wasilla	Jan.-Oct.	1965	424	160	12	160	456
Wasilla-Palmer and Wasilla-Matanuska	35H 35J	Wasilla	Mar.-Oct.	2478	258	258	77	60	118
Houston-Willow Creek	35N	Houston	Jan.-Mar.	35	....	....	8	....	120
McKinley Park Trail	46D	McKinley	Apr.	16	....	....	9	....	1
Iliamna Bay-Iliamna	48	Iliamna	Mar.-Sept.	146	....	....	18	87	10
Talkeetna-Cache Creek	51	Moose Creek	Jan-Oct.	801	6	75	223	152	221
Kenai-Russian River	55	Cooper's Landing	Mar.-Nov.	457	....	....	10	5	11
Anchorage-Eagle River	75	6 Mile R. H.	Mar.-Oct.	7509	3353	44	17	8	157
Anchorage-Lake Spenard	75A	Spenard	Apr.-May	6240	1415	12	....	....	6
Cantwell-Valdez Creek	76	Cantwell	Mar.-Apr.	132	....	....	87	....	27
Kanatak-Becharof Lake	95	Becharof	Apr.-June	342	*69	11	7	40	466
FAIRBANKS									
Fairbanks-Chitina-Valdez		Salcha Ferry	May-Oct.	2603	1007	33	....	....	399
Fairbanks-Chitina-Valdez		Grandlier Ferry	May-Oct.	1495	627	16	....	....	368
Fairbanks-Chena Hot Springs	7J	Colorado R. H.	Oct.-Dec.	149	.....	.....	59	.....	39
Chatanika-Circle	15&16	Miller House	Nov.-Dec.	204	.....	.....	69	.....	5
Chatanika-Circle	15&16	12 Mile R. H.	Oct.-Dec.	92	.....	.....	68	2	8
Circle-Ft. Yukon	53A	Ft. Yukon	Nov.-Dec.	66	.....	.....	35	.....	7
NENANA									
Ruby-Poorman	38A&16	Long	Nov.-Dec.	108	4	.....	63	2	49
Kobi-Pedda	46	Kobi	Nov.-Dec.	59	.....	.....	33	14	7
Nenana-McGrath		Knight's R. H.	Nov.-Dec.	137	....	.....	78	12	11
Dunbar-Brooks	63	Log-Jam	Oct.-Nov.	105	*2	.....	34	.....	16½
VALDEZ									
Valdez-Fairbanks		Valdez	Jan.-Dec.	1576	580	43	.....	2	178
NOME									
Nome-Council	8	Nome	Jan.-Dec.	200	50	60	.....	.....	100X
Casa de Paga	8H	Solomon	Jan.-Dec.	150	.....	75	.....	.....	150X

[illegible] Beach	14A	Nome	Jan.-Dec.	6000	3600	500	400		4350N
[illegible] Beach	14B		Jan.-Dec.	500	300	100			700N
[illegible] Creek	14C		Jan.-Dec.	4000	3000	350	50		3500N
[illegible] Beach	14E	Nome	Jan.-Dec.	200	100	60	20		100N
Bonanza-Ruby	14K	Dexter R. II	Jan.-Dec.	1095	205	74	283		183½
Nome-Kalfag	18	Jenne's Point	Feb.-Apr.	141			81		9
Nome-Kalfag	18	Solomon	Jan.-May	862			666		130
Bonanza-Kotzebue	18A	Haycock	Jan.-May	214			108		47½
Unalakleet-St. Michael	21	St. Michael	Jan.-Apr.	432			293		31
Nome-Wireless	25C	Nome	Jan.-Dec.	1200	1200				100N
Month Center Creek	25D	Nome	Jan.-Dec.	1200	1200				30N
Submarine-Paystreak	25E	Nome	Jan.-Dec.	2000	1800				25N
Anvil-Glacier	25F		Jan.-Dec.	400	300	50			100N
Candle-Candle Creek	26	Candle	Jan.-Dec.	800		200	400		500N
Deering-Immachuk	27	Deering	Mar.-Apr.	163			263		17
Nome-Taylor	28A	U. S. Roadhouse	Jan.-May						
			Nov.-Dec.	291			220		42
Nome-Teller	67	Nome	Jan.-Dec.	370		3	218	6	184½
Teller-Prince of Wales	67A	Wales	Jan.-June	236			217		31½
Kotlik-Marshall	73&73A	Marshall	Jan.-Apr.	1512			992		110
Old Hamilton-Scammon Bay	73C	Old Hamilton	Jan.-Apr.	312			221		26
Seward Pen. R. R.	89A	U. S. Roadhouse	June-Oct.	474	197**				103

* Tractors.

** Both motor and dog propelled cars.

X All Items estimated.

SUBSISTENCE COSTS

Location	Av. No. Men Crew	No. Days Worked	Cost per Day per man
Valdez District			
Richardson Highway			
Miles 9-17	21	125	1.52
Miles 17-43	21	125	1.50
Chitina District			
Richardson Highway			
Miles 53-92	19	114	1.56
Miles 92-125	21	90	1.59
Miles 125-161	12	66	1.57
Miles 161-205	10	54	1.58
Miles 205-265	16	224	1.33
Miles 28-92*	23	120	1.39
*—Mileage from Chitina; other mileage shown from Valdez.			
Fairbanks District			
Richardson Highway			
Miles 253-260*	22	62	1.59
Miles 291-302*	10	86	1.68
Miles 315-349*	18	85	1.69
Miles 348-371*	8	116	1.83
Chatanika	46	70	1.71
Summit	8	51	1.98
Circle	8	31	2.10
Beaver	7	68	2.10
*—Mileage from Valdez.			
Nenana District			
Nenana	12	95	1.65
Ferry	12	45	1.63
Hot Springs	8	58	2.01
Long	14	137	1.33
Southwestern District			
Anchorage	12	120	1.38
Wasilla	20	156	1.47
Talkeetna	15	141	1.43
McKinley Park	38	164	1.41
Kodiak	6	71	2.06
Kenai	6	77	2.13
Kuskokwim District			
Tagotna	23	122	2.28
Nome District			
Shelton Tram	16	58	1.90
Southeastern District			
Haines	27	130	1.59

TWENTY-ONE YEARS' SERVICE.

At this, the completion of twenty-one years' operations of the Alaska Road Commission, an outline of the progress of the work performed is of great value. The work naturally divides into three phases or periods.

The first was that covered by the period of time during which General Wilds P. Richardson, U. S. Army, Retired, was President of the Commission and extended from 1905 to 1917. This was essentially a period of pioneering. While this period covered nearly all the stampedes into the Territory, settlements and traffic lines of communication were very unsettled. With small but increasing appropriations, the pioneer development of the Territory was followed with great intelligence through this period. By 1913 a comprehensive program of operations was drawn up calling for the expenditure of $7,500,000 during the succeeding ten years. During the last two years of General Richardson's direction, Congress appropriated $500,000 each year for the work.

The largest project of the Commission, the Richardson Highway from Valdez to Chitina to Fairbanks, was located and improved for nearly the entire distance to wagon road standard. By 1907 it was passable throughout for dog-teams; by 1911 for a light horse-drawn wagon; and in 1913 the first light automobile made the through trip from the interior to the coast. This period laid the foundation for all future work and terminated with the opening of the so-called War Period, 1917-20.

This second period was one of general stand-still for the work of the Road Commission, as well as industrial development within the Territory. Appropriations were small, expert personnel was not available for supervision, prices were high and labor scarce. The work was applied to a few projects only and much of the mileage established in the previous period went into disrepair or almost entirely passed out of existence. During the last two years of this period, appropriations were reduced to $100,000 per year. This period closed with the organization of the present Commission in 1920.

The third period, 1920 to the close of the fiscal year 1925, was characterized by increased appropriations, broader legislation, close cooperation with the Territory, procurement of mechanical equipment, reopening of old trails and roads, heavier construction to withstand motor traffic, and adjustment of lines of communication to the vast change brought about in Alaska by the approaching completion of The Alaska Railroad from Seward which reached Fairbanks in 1923. Federal appropriations increased from $350,000

to $900,000 per year, and other resources were secured, so that funds available for the current season's work aggregate $1,350,000.

The pioneer period of the Alaska Road Commission is largely over. All existing mileage has been opened and improved, so far as funds have permitted. The present network of roads serves as an infallible guide for the future development of overland routes through the Territory. This development only calls for additional funds for construction.

The present Commission, soon after its reorganization in 1920, prepared a new ten-year program calling for an expenditure of $10,000,000 during the succeeding ten years. Appropriations, exclusive of the Alaska Fund and Territorial contributions, for the first five years have aggregated $3,220,000. The program as now revised, in order to speed up the completion of the work, calls for the expenditure of $9,000,000 during the second five years of the ten-year period.

PROPOSED OPERATIONS.

This report covers operations up to June 30, 1923, or practically the working season of 1924. Current operations (working season of 1925) will be covered in the annual report for 1925. About $1,350,000 is available for the year. These funds will be expended on the rehabilitation and maintenance of the existing system. Little can be done to meet the pressing need for improvements and extensions of the system, without much greater annual appropriations than have been made up to the present. An estimate of $1,750,000 for the fiscal year ending June 30, 1927, has been submitted, and approved by the Department.

THE FUTURE.

A program of operations, prepared by the Alaska Road Commission in cooperation with the Governor of Alaska, the Territorial Board of Road Commissioners and other interested Federal and Territorial officials, was submitted in the annual report of the Commission for 1920. It proposed three classes of work: first, the construction of about 700 miles of arterial or feeder highways, mainly following old routes (estimated cost $7,000,000); second, the construction of development roads to be constructed from time to time on locations left for future determination (estimated cost $1,000,000); third, the maintenance of existing road and trail system (estimated cost for the 10-year period, $2,000,000). Total estimated cost, $10,000,000.

The proposed annual appropriations and the amounts actually appropriated to date are shown in the following table:

1920 PROGRAM.

Amounts required each year of the 10-year period of road and trail development.

Fiscal Year		Working Season	Amount Estimated	Amount actually Appropriated
First	(1922)	1921	$ 955,000	$425,000
Second	(1923)	1922	1,200,000	465,000
Third	(1924)	1923	1,500,000	650,000
Fourth	(1925)	1924	1,600,000	750,000
Fifth	(1926)	1925	1,400,000	960,000
Total for first 5 years			$ 6,655,000	$3,250,000
Sixth	(1927)	1926	1,045,000	.....
Seventh	(1928)	1927	750,000	.....
Eighth	(1929)	1928	600,000	.....
Ninth	(1930)	1929	500,000	.....
Tenth	(1931)	1930	450,000	.....
Total for second 5 years			$ 3,345,000	.....
Total for 10 years			$10,000,000	.....

The appropriations for the first five years were slightly less than half the estimates. About three-fourths of the available funds were required for maintenance and repair. Construction should now be speeded up so as to get the maximum benefit from the work already accomplished

The 1920 program was, therefore, revised in 1924. For the second five years of the Ten-Year Period, 1927-1931 (working seasons 1926-1930), the following appropriations are recommended:

(a)	For Maintenance of Existing Routes 9,736 miles @ $542,000 per year	$2,710,000
(b)	For Improvement of Existing Routes to the same standard throughout	2,600,000
(c)	For Completion of Projects already Undertaken	1,735,000
(d)	For Completion of Projects already Approved but not yet Undertaken	1,780,000
(e)	For Completion of Projects likely to arise with Development during the 5 years	1,135,000
	Total for five years	$9,960,000
	Less Alaska Fund and Territorial Contributions (estimated)	960,000
	Net Federal Appropriations	$9,000,000

Item (a), Maintenance of Existing Routes, is necessary in order to hold the existing system in service and to prevent further deterioration. The present condition and needs of the 9,736 miles of the existing system are described in detail under the different district reports herein.

Item (b), Improvement of Existing Routes, is necessary to enable existing through routes to be utilized throughout in all kinds of weather by the same class of traffic without the necessity of breaking loads. The principal routes requiring substantial improvement are the Richardson Highway, Fairbanks System, Circle Sys-

tem. Beaver-Caro, Knik-Willow Creek, Wasilla-Matanuska, Anchorage System, Roosevelt-Kantishna, Ruby-Long and Nome-Bessie. Several winter trails, notably that between Eagle and Circle, require relocation in part to take them off dangerous sections of the streams, while a considerable portion of the 2,467 miles of winter trails on the Seward Peninsula requires permanent staking or tripoding.

Item (c). Completion of Projects already Undertaken, is necessary to raise the classification of parts of existing routes and to complete new projects within a reasonable time, especially those undertaken to provide highway and trail feeders to the Government Railroad. 173½ miles of new construction estimated to cost an average of $10,000 per mile, including maintenance of completed sections during the construction period, will be required. The following routes are included:

	Miles
Haines System	3
Gulkana-Chistochina	26
Fairbanks-Circle	53
Talkeetna-Cache Creek	29
Iliamna Bay-Iliamna Lake	12
Ophir-Takotna	11½
Long-Poorman	17
Eagle-Fortymile	22
Total	173½

Item (d). Completion of Approved New Projects is necessary to permit aggressive action toward completing the proposed system so as to provide Alaska with a complete road and trail system, such as immediate needs justify and probably sufficient to meet all reasonable demands until the Territory shall be sufficiently developed to take over internal public works as a part of its own government. 175 miles of new construction will be required, including the following routes:

	Miles
Brooks Tramway (Extension)	12
Willow Creek System	5
Kanatak-Pearl Creek Dome	31
Homer Spit	12½
Kantishna-Park Boundary	8
Nome-Dahl Tramway (Extension)	12
Immachuck-Candle Creek Tramway	30
Deering-Immachuk	12
Dahl-Immachuk	25
Kodiak-Abbetts-Mill Bay	27½
Total	175

Item (e). Completion of Road and Trail Projects to Arise with Development during the Five Year Period, provides a reserve to meet new conditions or changes in existing conditions. Among the many possible development routes, the following are of most immediate importance and warrant further study:

Eagle-Seventymile.
Ferrymile-International Boundary.
Grundler-Telling.
Chistochina-Slate Creek.
Chistochina-Nabesna-Chisana.
Chitina-Kotsina.
Kenai-Homer.
Iliamna Lake-Lake Clark.
Talkeetna-Iron Creek.
Fairbanks-Chena Hot Springs.
Lignite-Kantishna.
Flat-Georgetown.
Alatna-Shungnak.

Distributing the above work over a five-year period in such manner that the entire project may be handled with the greatest eventual economy, we have the following table of proposed appropriations:

PROJECT OF 1924.

Federal appropriations required each year of 5-year period of road and trail development.

Fiscal Year	Working Season	Maintenance* Existing Routes	Improvement Existing Routes	Completion approved projects already underway	Construction approved projects not yet underway	Construction new projects likely to develop	TOTAL
1927	1926	$ 350,000	$ 600,000	$ 510,000	$ 290,000	$	$1,750,000
1928	1927	350,000	500,000	475,000	575,000	100,000	2,000,000
1929	1928	350,000	500,000	400,000	550,000	200,000	2,000,000
1930	1929	350,000	500,000	250,000	300,000	350,000	1,750,000
1931	1930	350,000	500,000	100,000	65,000	485,000	1,500,000
Total		$1,750,000	$2,600,000	$1,735,000	$1,780,000	$1,135,000	$9,000,000

*Exclusive of Alaska Fund and Territorial Contributions for maintenance estimated at $192,000 per year.

The amounts submitted in the above estimates are necessary for the development of Alaska. The postponement of the construction outlined will only postpone the economic use of the Government Railroad, now completed and operating at a deficit of 1¼ millions annually, and the development of Alaska. The above amounts can be profitably and economically expended by this commission with its existing organization.

The above program is the result of over five years of intensive study of the transportation system of the Territory by the President of the Commission. During this time he has repeatedly visited practically every inhabited district of any importance, and has made reconnaissances into remote and little known regions. This program, calling for an expenditure of $9,000,000 including 5 years' maintenance, is very modest compared with the recommendations of the Alaska advisory committee in 1926. That committee recommended about $25,000,000 worth of new construction, including the following wagon road projects which this Commission has not yet adopted and some of which it has definitely disapproved so far as any consideration during the present generation is concerned:

	Approx. Mileage.
Kantishna-McGrath-Iditarod	350
Cache Creek-Rainy Pass-McGrath	280
Fairbanks-Ruby	300
Poorman-Ophir	125
Ruby-Nome	375
Total	1,430
Estimated Cost	$15,000,000

THE RICHARDSON HIGHWAY.

INTRODUCTION

The Richardson Highway is the name locally applied to the U. S. Military Wagon Road extending from Valdez, an open-all-the-year south coast port of Alaska, to Fairbanks, on the Tanana River, the main distributing point for the great Yukon Valley and other interior regions of Alaska. It was so named after its builder, General Wilds P. Richardson, U. S. Army, who was President of the Alaska Road Commission from the date of its organization in 1905, until he was called away in December, 1917, for overseas service in the Great War.

For history and description, see Part II, Annual Report for 1924, beginning on page 45.

PRESENT CONDITION.

The entire route is now standard graded on final location and the gravel surfacing is rapidly going forward.

The following table indicates the condition as of March 1, 1925:

	Miles
Heavy Gravel Surface	168
Light Gravel Surface	32
Natural Gravel or Broken Rock Roadbed	77
Unsurfaced, (to be surfaced)	133
	410

All bridge structures have been overhauled and reconstructed where required. The following important bridges were constructed during the year:

Tsaina River, 45-ft. truss, 80 ft. approach.

Mile 30½, 40-ft truss.

Upper Tonsina River, 2-100-ft. trusses, 148-ft. approach.

Lower Tonsina River, 2-100-ft. trusses, 32-ft. approach.

Tazlina River, 80-ft. truss.

Jarvis Creek, 315-ft. pile trestle.

Salcha River, 150-ft steel truss; 345-ft. trestle approach.

Shaw Creek, 165-ft. pile trestle.

CONCLUSION.

The Richardson Highway is an important traffic feeder both to the Alaska Railroad and to the Copper River and Northwestern Railway. With these two rail systems it forms a circular route which has now become widely known on the outside as the Golden Belt Line Tour. During the current season many hundreds of tourists made this truly magnificent scenic trip without any delays or inconveniences other than are incident to motoring in any mountainous country.

During its first fifteen years of development, the Richardson Highway was the only overland means of access to the interior of Alaska. In addition to its value in aiding local travel and development, its function of bringing into the Territory new people and new money for permanent investment is of constantly growing importance. It is truly remarkable that the Federal Government should have constructed and maintained this excellent overland

...way in such a remote and sparsely settled region so long ... the Federal aid idea was accepted in the States. Its cost ... less than $10,000 per mile, including twenty-one-years' maintenance, ...ied with the fact that it has been rendering service in the ...portation of mail, express, passengers and freight, throughout ...length from the very start in 1905, first by dog-team, then horse- ...then wagon, and since 1913 by motor, is even more remarkable. ...nds as a permanent and outstanding monument to its pro- ...

EXTENSION TO CIRCLE.

The all-American route will not be complete until it is extended ... upper Yukon and serves as a portage between the Yukon ... Tanana Valleys. The plans of the Commission contemplate ...eventual extension of the Richardson Highway from Fairbanks ...rcle, a distance of 160 miles. This will make a total distance ... Valdez of 521 miles, about the distance from Boston to Rich- ... or from Vancouver to Banff.

...bout two-thirds of this extension is now passable for wagons. ...ular winter mail stage service is maintained, using double bob- ... horse-drawn. Automobiles can now travel for fifty miles out ... Fairbanks, or twenty miles beyond Chatanika, during the open ... On the Circle end, fifty miles are now passable for wagons. ...mobile service to Circle Hot Springs uses the 21 miles be- ... Circle and Central House. This fifty miles can be improved ... to standard at relatively small expense, once the intervening ... about sixty miles is completed.

The following description, prepared by Mr. Harry G. Watson, ...ber of the Territorial Legislature and until recently Superin- ... of River Boat Transportation for the Alaska Railroad, is ... of conditions throughout the great Interior of the Territory ...ves an interesting picture of transportation problems. Mr. ... has spent practically his entire active life in the Territory ... thoroughly familiar with conditions throughout the country.

...URCES AND POSSIBILITIES ALONG THE ROUTE OF THE CHATANIKA-CIRCLE ROAD.

By Harry G. Watson, Secretary to the Governor.

...anika, the terminal of the Narrow Gauge Line, is 39.2 miles ...airbanks by rail or 30 miles by auto and is the junction point ... Alaska Railroad and the Circle Road. Large placer opera- ...ve been working in the vicinity of Cleary Creek, Chatham ... and Chatanika River since the early discovery of the Fair- ...ning District in 1902, and to date have produced approxi-

mately $25,000,000.00 from the placers alone. There is still a large amount of virgin placer ground untouched, and at the present time there are large corporations making extensive investigations of this district with a view of installing dredges and hydraulic works on a large scale. Survey has been completed on a 10½ mile ditch to be constructed from the sources of the Chatanika, (McManus River) and the Chena River to be used in working the placers of Cleary, Chatanika Dome and Goldstream Creeks. It is now generally believed by those most interested that all options will be taken up in time, and that at least several hundred additional men will be working on this project alone within the next year. Tonnage should be greatly increased to this district in 1925.

26 Miles—Chatanika to Cassiar Roadhouse.

The Alaska Road Commission has been busily engaged with the work of connecting the end of the Chatanika Road with the Miller House Road. (Miller House Road is in fair shape for Wagon Traffic from Circle to Miller House, a distance of 49 miles). The present road from Chatanika is completed for automobile travel to near Boston Creek, about 21 miles from Chatanika, leaving a distance of about 60 miles to be finished.

When this road is completed it will add greatly to the development of this district, as there are large areas of known low-grade placers along this route, which are at the present time unworkable on account of lack of transportation facilities. The present rate for freight from either end to the Birch Creek flats is about six cents per pound. All freighting must be done on the winter trail, which follows the creek bottoms. As these creeks all overflow and glacier very badly during the winter months, travel is extremely difficult and hazardous. With the completion of this road the rate of freight will decrease to the point where numerous small owners can begin operations on their holdings, thereby increasing the traffic in all lines.

Leaving the end of the constructed road it is five miles to the Cassiar Roadhouse which is the point of departure for the Beaver River District, a distance of 14 miles to the headwaters of which is over an easy gradient. Beaver River has had a few prospectors working continuously for the last ten or twelve years, and has some very promising prospects. However, with one exception, nothing of importance has developed as yet, though there are three outfits working in the length of the creek now (about 100 miles).

16 miles—Cassiar Roadhouse to Faith Creek Roadhouse.

Faith Creek forming a junction with McManus River at this point forms the Chatanika River. This is the point of departure for the Faith, Hope and Charity Creek Country, which embraces numer-

...s miles of known low-grade placer ground, practically all of which will be workable when favorable roads are completed for transport. This is also the outlet for the Preacher Creek country, which embraces large numbers of creeks with possibilities that will bear further investigations, all of which are dependent on the completion of this road. All of this country is infested with caribou and moose; either may be had at all times of the year.

17 Miles—Faith Creek Roadhouse to Twelve Mile Roadhouse.

Fifteen miles of the winter sled route is on the ice of the McManus River, which overflows almost continuously, the survey of the new road takes the ridge from Faith Creek to the 12 mile Summit where it joins the old trail. Travel on this part of the route is extremely difficult; often a traveler meets an overflow of from a few inches to two or three feet deep which means serious damage to horses or dogs, as well as to supplies being thus transported. Very often it causes the loss of limb to freighter, because of getting wet in the extreme cold. This country abounds with caribou and moose and the streams are alive with greyling, which are to be had with the simplest of fishing tackle.

12-Mile Roadhouse is just below the Summit, which bears the same name. On this summit, and the adjoining hills, the caribou annually pass in the spring and fall in herds of thousands. At times the hills seem to be a moving mass as far as the eye can see.

13 Miles—Twelve Mile Roadhouse to Eagle Creek.

Eagle Creek, the head of Birch Creek, was one of the first discoveries of gold in the Interior, and has been producing from the placers since 1894. At present there is a hydraulic plant working here employing about a dozen men each year. Below the confluence of Eagle Creek and Ptarmigan Creek, which forms the head of Birch Creek, are Gold Dust Creek, Frying Pan Creek, The Great Hollow Creek, Butte Creek, Harrison Creek, and numerous other creeks, as well as the main Birch Creek, for a distance of over a hundred miles, all of which are known to carry low-grade values, but will sometime be worked on a large scale. This, however, is not possible until proper roads are completed.

12 Miles—Eagle Creek to Miller House.

Miller House is the supply point for the surrounding mining operations of Miller Creek, Mastodon Creek, Mammoth Creek. This section was also one of the early discoveries, and has been producing continuously since 1894. At present there are about fifteen small plants in operation in addition to a dredge.

25 Miles—Miller House to Central House.

Central House is the point of departure for the Circle Hot Springs, 3 miles (a system of springs of considerable importance) which is patronized by interior people from all districts. There is maintained here a roadhouse which has made itself locally famous for its splendid meals and rooms, bathhouses and other buildings incident to a resort of its description. Room with board, including the use of bathhouses and all other properties of this institution are to be had for $3.50 per day. Fresh milk, butter, eggs and vegetables are on the table at all meals. These are raised on the farm, which is run in connection, and which is quite extensive.

This is also the supply point for the Deadwood Creek, Swiss Creek, and the lower Birch Creek mines which annually produce considerable bullion.

12 Miles—Central House to 12 Mile House, Birch Creek Crossing.

From Central House to the Crossing of Birch Creek, the trail follows the flat country, and there is very little hope of any mining in this section.

12 Miles to Circle.

Circle City, supply point for one of the oldest mining districts in the Interior of Alaska, has been continually producing mineral since 1894. This town has long been famous in story and poem for its early-day history, which includes important events in the lives of many of America's now famous and important men. The Circle Mining District has produced approximately $7,000,000.00 since its discovery, and there are still large areas of ground which without doubt hold goodly reward for the operator who is in position to work when the proper advantages are offered for handling his supplies.

Tourist Route.

When the road, which is now building, is completed, it will make one of the most attractive tourist routes in Alaska, outlined as follows: From Fairbanks to Chatanika, either along the Railroad or on the present Automobile Road, a distance of 39.2 miles by rail or 30 miles by auto, every minute is filled with interest, including the working of placer mines by almost every method known to miners, including dredging, all of which is to be seen from the car if the tourist feels inclined to accept the ease which is possible.

From Chatanika to the Faith Creek Roadhouse the trail follows the Chatanika River bottom. Along this portion is unsurpassed fly fishing. Large numbers of almost all Alaska game animals are to be found here. At Faith Creek the new road takes a ridge, and from the summit to the 12-Mile Roadhouse, for ten or twelve miles,

the route will be practically a Sky Line Drive, overlooking miles of virgin and unexplored hills and mountains. Leaving the 12-Mile House the road follows the creek, winding around beautiful waterfalls and rapids, to its confluence with Birch Creek, following up Birch Creek to Ptarmigan and Eagle Creeks, through thick growth of spruce and birch timber. From the mouth of Eagle Creek to Eagle Summit is a gradual climb, until an altitude of 4,000 feet is reached, then drops down into the flat until the Central House is reached. Central House is about 135 miles from Fairbanks, which will make a good day's drive with an auto. A stop of a day or two could be made at the Springs, which are nine miles away, enjoying bathing in warm springs and eating as fine food as is to be had in any country. Proceeding on to Circle, and viewing all methods of placer mining, another day of interest can be spent. At this point connections can be made with the White Pass river steamers for Dawson in the Klondike or Nenana, furnishing luxurious accommodations and excellent cuisine.

Along this route one can see the most gorgeous scenery. Down the Yukon Flats to Old Fort-Yukon, which has furnished much history in mining, trading and as a Mission. Here are seen most of the Wolf-dogs in the North; literally hundreds of them meet every boat, ravenously watching for bits of food to be thrown to them. Also natives from most of the upper villages are to be seen here, while on their trading expeditions. The Porcupine River joins the Yukon River at this point. Then on down to Beaver City, supply point for the Chandlar District, a placer mining camp of considerable importance.

Below here, we again reach the mountains, and rolling hills reaching back in growing magnitude until they reach the Endicott Range, which possesses unknown mineral possibilities. Down through the Rapids to Rampart, famous for its early day production of rare minerals, and still producing considerable dust each year. Here many of the early characters of the North won and lost large fortunes, not the least of whom was Rex Beach. His cabin is still intact, and it is looked upon by tourists with interest. Then on down to Tanana, where the Tanana River flows into the Yukon, showing its milky water for miles below before it is finally absorbed by the Great River. At this point is located Fort Gibbon, long maintained as a Military Post. Here our trip continues up the Tanana River to Nenana.

It is the opinion of the writer that, if this Circle-Chatanika road is rushed to an early completion, it will add a source of revenue to the Alaska Railroad, which will be of large importance, not only for the advantages offered to tourists, but especially to many miners, who have been holding properties in this district for the last quarter of a century.

DETAILED OPERATIONS BY DISTRICTS.

The nature of the construction work varies from primitive pioneer cruising and blazing of pack trails to surveying and locating well graded gravel roads. In Southeastern Alaska and the centers of population of Southwestern Alaska and of the Interior, several hundred miles of roads exist, well surfaced and well graded and meeting adequately the increased motor transportation thereon. A considerable amount of work is constantly required in improving portions of old roads, involving regrading, realignment, and gravel surfacing. The condition of roads here in Alaska continues to improve by thawing and drying out from year to year. For this reason, the carrying along of construction through protracted periods has not always been a disadvantage. The cruising, location and clearing of the right-of-way and the gradual grading results in a road structure of less total cost than would have been possible had the construction been completed the first season. In many cases the construction of the road in one season is impossible. This applies to the large areas of marshy and permanently frozen ground which always require two or three seasons of exposure to the sun's rays to become dried out and compacted.

The work of the Commission is carried out almost entirely by its own forces. A few small contracts are let. In the general case no organization competent to do our work can be found in the district in which it is executed. The preparing of our work for letting by contract would involve elaborate surveys and constant engineering supervision, finally resulting in an overhead cost totally out of proportion to the extent of our funds. At the same time, no location without elaborate clearing and digging of test pits could, previous to construction, predetermine the road cross section or the road alignment. After a road has been opened up and cleared many improvements can be made in alignment and grade. This is done. The work is so scattered that the foreman, assisted from time to time by the district superintendent, must be competent to make local improvements and locations.

In wagon road construction a maximum grade of ten per cent and curvature of not less than one hundred feet radius are permitted. The width of our roads is generally such as to afford one wagon track. In a few cases, where congested traffic occurs, the road section has been widened out to provide for two tracks.

Winter dog trails, of extreme importance in the interior bare tundra areas, must above all, be carefully blazed and marked so that travelers can easily follow them. Shelter must be provided, as it is inconvenient, if not dangerous, to camp out in the interior in the winter time. The marking of pack trails is equally important with that of winter dog trails.

JUNEAU HEADQUARTERS.

The general office of the Commission is located at Juneau, the capital of the Territory. This is the headquarters for all activities of the members of the Commission.

The field activities of the Commission extend to all inhabited parts of the Territory, but the largest projects and the bulk of its expenditures are located in the central part of the territory tributary to the Richardson Highway and The Alaska Railroad. Close contact is maintained with all other Federal or Territorial bureaus or offices.

The President of the Commission has general charge of the operations of the Commission, conducts hearings, investigates new projects, allots available funds, and approves and certifies, on behalf of the Commission, all vouchers and expenditures. He spends a majority of his time in the field keeping in close touch with the progress of the work and of conditions generally in the Territory.

The Engineer Officer supervises the work of construction in the field, prepares estimates, requisitions, etc., and oversees the design of major structures. He spends most of his time in the field and undertakes a great deal of pioneer reconnaissance work. The President and the Engineer Officer interchange functions in different parts of the Territory, thus expediting the handling of emergency matters.

The Secretary and Disbursing Officer is in general charge of the office, handles purchases and supply, and disburses the funds of the Commission. He has a bonded disbursing clerk in each district who draws overdrafts on the nearest bank or commercial agency to make prompt payment for labor and supplies. These overdrafts are met monthly by the disbursing officer and carried as "cash advanced" until the covering vouchers arrive, usually several months and frequently two years later. He visits each district office periodically to standardize methods and accounts. By means of the cable, telegraph, and radio, the general office is in constant touch with each district office.

WASHINGTON, D. C., SUB-OFFICE.

Routine business with the War Department is carried on through the Chief of Engineers, U. S. Army. The President of the Commission is required to defend the annual estimates of the Commission before the Appropriations Committees of Congress. He is frequently called upon to testify upon Alaskan affairs before various Congressional committees and to confer with other bureau chiefs in Washington. To meet these conditions, he maintains a sub-office in Washington, D. C., for several weeks each winter.

SEATTLE, WASH., ENGINEER OFFICE.

By informal arrangement, the District Engineer, U. S. Engineer Department, Seattle, Wash., has consented to act as a purchasing agent of the Commission. Upon request he advertises and canvasses bids, inspects and ships supplies, answers inquiries, secures information, and, in general, represents the Commission in Seattle. For this service he charges the Commission only for the actual time of such of his subordinates as may be actually engaged in this work. This accommodation results in a considerable saving to the United States, as otherwise the Commission would be compelled, during the busy season, to maintain a high-priced representative in Seattle and to provide for office space, fuel and light, clerical help, etc.

The services rendered to this Commission through such purchases and shipments are invaluable. The low prices obtained and the prompt shipments made have been an important factor in extending its work.

During the fiscal year $192,082.70 worth of supplies were secured at a cost of $3,933.91 or 2.05% for purchase and inspection.

SOUTHEASTERN DISTRICT.

Supervised from Juneau Office

1st. Lieut. H. E. Fisher, Supt.

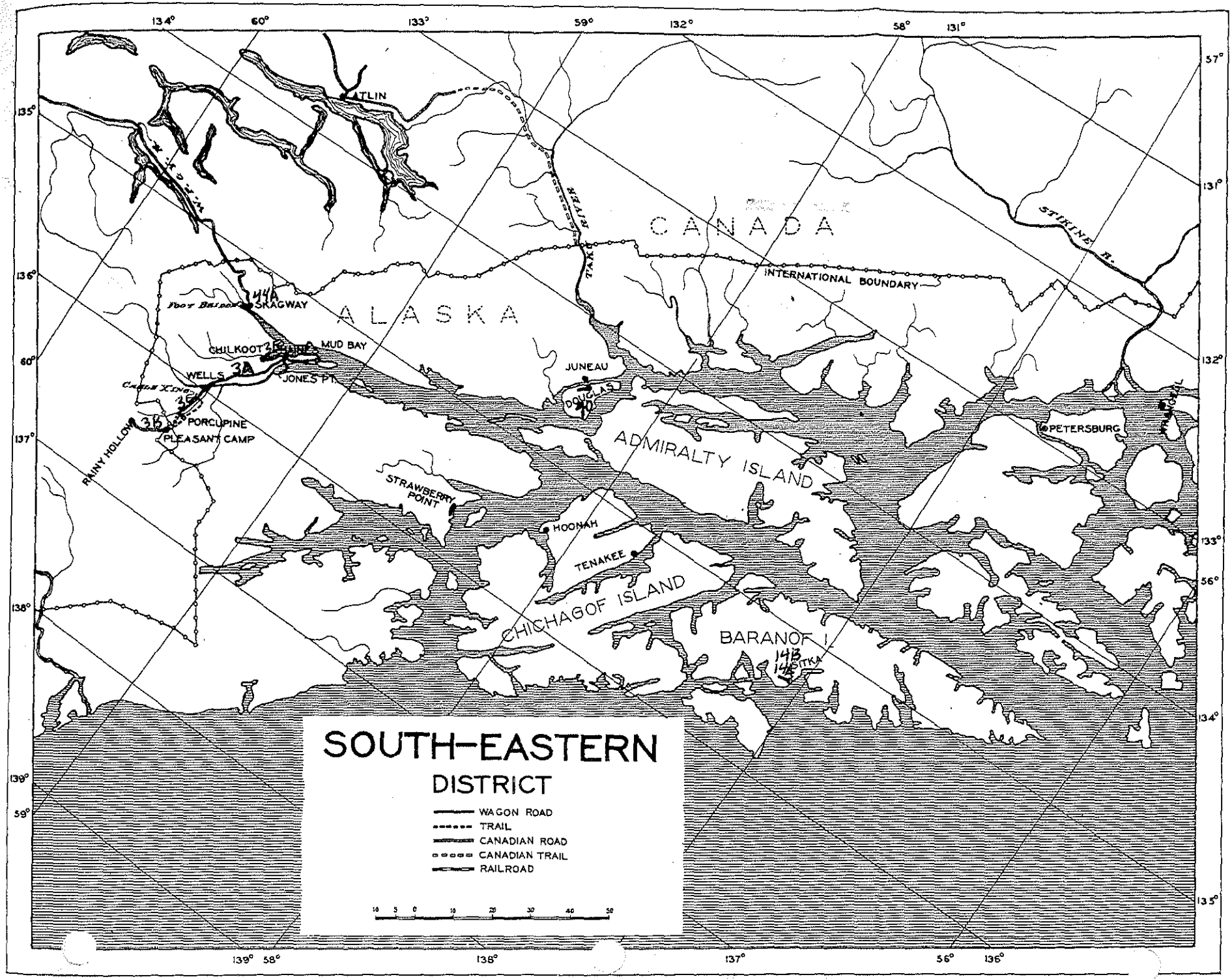
R. J. Shepard, Asst. Supt., Haines.

This district embraces all the territory east of the 141st meridian, the so-called panhandle.

Due to the rugged topography and the excellent system of sheltered waterways the main transportation will always be by water.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Trail	Total Miles
9A	Haines-Wells	25	---	25
9B	Pleasant Camp Extension	18	---	18
9C	Porcupine Extension	20	---	20
9D	Haines-Mud Bay	10	---	10
9E	Haines-Chilkoot	3	---	3
14A	Sitka National Monument	---	2	2
14B	Sitka National Cemetery	½	---	½
16	Douglas-Gastineau Channel	2	---	2
16A	Skagway-Smuggler's Cove	---	3	3
21	Gold Creek-Salmon River	11½	---	11½
7A	Shelter Cabins	---	---	---
		89½	5	85



ENGINEER REPRODUCTION PLANT, U. S. ARMY, WASHINGTON BARRACKS, D. C. 8084

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	Total
3A	$ 744.14	$ 1,000.00	.....	$ 1,744.14	$ 1,744.14
3B	22,928.86	13,127.45	$2,656.81	[illegible]	35,056.31
3C	.....	.....	.....	.....	.....
3D	407.59	450.00	.....	857.59	857.59
3E	.....	.....	.....	.....	.....
14A	410.11	692.37(a)	350.00	752.48	1,102.48
14B	358.40	600.00(b)	250.00	[illegible]	958.40
40	2.00	1.00	.....	3.00	3.00
44A	1,747.23	1,000.00	.....	2,747.23	2,747.23
51	326.90	750.00	950.00	126.90	1,076.90
60A	.....	340.35	340.35	.....	340.35
Totals	$26,325.23	$17,961.17	$34,446.66	$10,439.74	$44,886.40

(a)—Includes $342.37 contributed by National Park Service.
(b)—Includes $600.00 contributed by Quartermaster General.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following additions should be noted.

44A—This trail extends from the town of Skagway across Skagway River and up the mountain a distance of 3 miles. The Skagway River is crossed by means of 175 foot suspension bridge.

OPERATIONS DURING YEAR.

The important operations other than routine maintenance may be summarized as follows:

3A—Some additional gravel surface was placed on this route.

3B—Construction was continued on the new location along the left limit of the Klehini. Four and one-half miles of new road were completed and right of way cleared to ¾ miles ahead of construction. The road was completed to 35½ miles from Haines.

14A—Additional paths were constructed, benches built and placed and a fallen totem pole reinforced and re-erected. The beach around the Park was cleared of all debris and the grounds were kept in neat condition. The signs were repainted. Repainting of totem poles was begun. The approaches to the suspension bridge were graded up and graveled. An ornamental gateway was constructed consisting of two totem poles and two concrete pillars connected by a heavy chain.

14B—The Sitka National Cemetery was created by Executive Order of June 12, 1924, and placed under the direction of the Alaska Road Commission. Mr. Peter Trierschield was appointed Caretaker August 22, 1924. Minor improvements were made such as clearing brush, planting grass seed and graveling paths.

A concrete rostrum with pipe railing was erected in the cemetery to provide a speaker's stand for appropriate ceremonies. A 60-ft. flag pole was erected; flags, halyards, and small decoration flags were secured. A comprehensive plan of gravel paths and roads was drawn up and work started. The boundaries are to be marked with a permanent fence. Several bodies of civilians were removed and a definite system of arrangement of graves established.

44A—The east abutment of the suspension bridge over Skagway River was seriously endangered by a shift in the main channel of the river. A rock filled log crib was constructed to act as a sheer and prevent further encroachment of the river.

81—A contract to ditch and grade up this short section of road has not yet been completed. A landing float 30 feet by 40 feet was installed in the channel opposite the mouth of Good River. This will provide a landing for the mail boat and will make it possible for this small community to have regular boat service.

90A—Cabin constructed on Stikine River. Cost $340.35.

PRESENT CONDITION AND NEEDS.

The most important project in this district, the Haines-Pleasant Camp road, should be completed to the boundary. Several minor projects should be constructed as additional funds become available. No extensive road projects should be undertaken in this district. The aim should be to provide transportation where needed from the nearest point on the inside waterways.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	57		
Trail	5		
Totals	62	$44,546.05	$ 718.48

EAGLE SUB-DISTRICT.

Supervised from the Juneau Office.

Fred Price, General Foreman in Charge, Eagle,

July 1 to Oct. 31, 1924.

May 1 to June 30, 1925.

This sub-district includes that part of the Territory north of 63° 30' north latitude and east of the 144th meridian. It includes a region of early development in the history of Alaska. During the past few years, no extensive development has occurred. The system of winter sled roads and summer trails giving access from Eagle to the Fortymile and Seventymile districts, includes the most important projects within the sub-district.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
11A	Eagle-Liberty	20	7		27
11AA	American Summit-King Solomon			5	5
11B	Liberty-Fortymile		23		23
11C	Steel Creek-Jack Wade		15		15
11CC	Steel Creek-Jack Wade			15	15
11D	Steel Creek-Walker's Fork		27		27
11E	Eagle-Seventymile	4	16	40	60
11F	Jack Wade-Chicken			20	20
11G	Steel Creek-Canyon Creek			5	5
11H	Liberty-Dome			10	10
11I	Dome-Steel Creek			12	12
11J	Fortymile-Franklin		30		30
11K	Fortymile-Steel Creek		8		8
11L	Franklin-Chicken		19		19
11LL	Franklin-Chicken		20		20
11M	Jack Wade-Walker's Fork			18	18
11MM	Jack Wade-Walker's Fork		25		25
83	Eagle-Circle			160	160
85D	Kechumstuk-Tanana Crossing			60	60
85E	Chicken-Kechumstuk			25	25
86	Fourth of July Creek	5	5		10
87	Woodchopper Creek			8	8
	Totals	29	186	381	596

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	Total
11A	$ 5,524.69		$ 2,000.00	$ 3,524.69	$ 5,524.69
11AA					
11B					
11C	423.51			423.51	423.51
11CC					
11D					
11E	1,147.50			1,147.50	1,147.50
11F	241.50			241.50	241.50
11G	253.00			253.00	253.00
11H	3,514.27		2,714.27	800.00	3,514.27
11I					
11J					
11K					
11L					
11LL					
11M					
11MM					
83	533.94			533.94	533.94
85D	204.52			204.52	204.52
85E	199.50			199.50	199.50
86	1,311.66			1,311.66	1,311.66
87	365.00			365.00	365.00
Totals	$13,749.38		$ 4,714.27	$ 9,035.11	$13,749.38

DESCRIPTION.

For detailed description see Part II, Annual Report for 1934. The following changes and additions should be noted:

11A—Route name changed to Eagle-Liberty. The improvement of the winter sled road to wagon road standard was continued for 7 miles so that a road suitable for wagon traffic now extends 20 miles south of Eagle.

11AA—The improvement of Route 11A has eliminated part of this pack trail which is now used only from American Summit to King Solomon, a distance of 5 miles.

11B—Name changed to Liberty-Fortymile.

11CC—This summer pack trail lies to the northwest of the winter sled road instead of the northeast as stated in the 1924 report.

11D—This winter sled road is an extension of Route 11K. From Steel Creek it follows the bed of the Fortymile River to the mouth of Canyon Creek, up the latter to its head, over a divide and up the right limit of Walker's Fork to within 5 miles of the International Boundary.

11E—Improvement to wagon road standard was continued to a distance of 4 miles from Eagle.

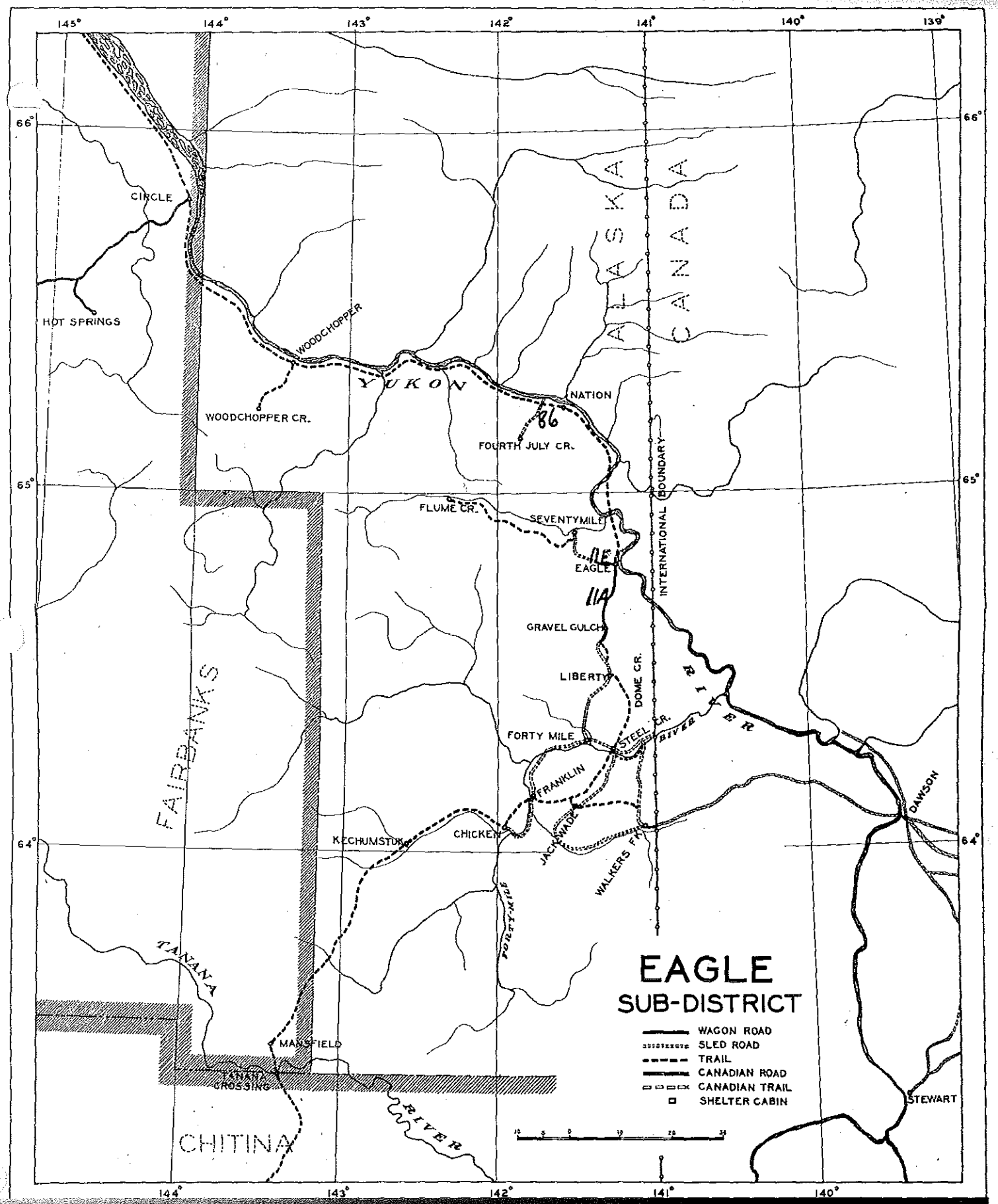
11F—This trail is incorrectly described in the 1924 report. It climbs the ridge west of Jack Wade postoffice following around the head of Napoleon Creek and drops down to the crossing of the Fortymile River at Franklin. It then climbs the ridge following the right limit of Kettle Gorge and drops down to a fork of Chicken where it joins the winter sled road following the right limit of Chicken Creek to Chicken postoffice. The distance from Jack Wade to Franklin by this route is 12 miles and from Franklin to Chicken 8 miles.

11G—This is a summer pack trail, constructed this season, which extends from the mouth of Steel Creek along the right limit of the Fortymile River for a distance of 5 miles to the mouth of Canyon Creek.

11MM—This winter sled road is a continuation of Route 11C leading from Jack Wade postoffice down Wade Creek to Walker's Fork and up the latter to the hydraulic works located near the head of Canyon Creek.

53—Numerous cutoffs have reduced the length of this route to 160 miles.

86—This trail and winter sled road was improved into a serviceable wagon road to a distance of 5 miles from the Yukon River.


145°
144°
143°
142°
141°
140°
139°
66°
65°
64°
CIRCLE
HOT SPRINGS
WOODCHOPPER
WOODCHOPPER CR.
YUKON
NATION
86
FOURTH JULY CR.
FLUME CR.
SEVENTYMILE
EAGLE
11E
11A
GRAVEL GULCH
LIBERTY
DOME CR.
FORTY MILE
STEEL CR.
FRANKLIN
KECHUMSTUK
CHICKEN
JACKWADE
WALKERS FK
FORTYMILE
DAWSON
STEWART
TANANA
MANSFIELD
TANANA CROSSING
CHITINA
FAIRBANKS
ALASKA
CANADA
INTERNATIONAL BOUNDARY
YUKON RIVER
RIVER
EAGLE
SUB-DISTRICT
WAGON ROAD
SLED ROAD
TRAIL
CANADIAN ROAD
CANADIAN TRAIL
SHELTER CABIN

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized as follows:

11A—The wagon road was extended 8 miles from Gravel Gulch to the junction of Queen of Sheba and King Solomon Creeks. Work consisted of ditching, grading, installing 85 culverts, and corduroying boggy places totaling about one half mile.

11E—Road was extended to a distance of 4 miles from Eagle.

11G—This trail was constructed this year. The work consisted of brushing out the trail, removing rock slides, and construction of one foot bridge.

11H—About 8½ miles of this trail, leading from Liberty to the ridge, was in very bad condition, almost impassable, at the beginning of the season. By corduroying, ditching and construction of water breaks it was placed in excellent condition except for about one half mile.

11MM—This is a natural route, following the creek beds, on which no improvement had previously been made. Windfalls were removed and several approaches leveled.

53—Three cut-offs totaling 4½ miles in length were constructed on this winter mail trail.

86—This trail and sled road was improved into a serviceable wagon road for a distance of 5 miles.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	29	$ 6,[illegible]	$ 253.55
Sled Road	43	1,409.55	32.78
Trail	331	5,589.55	16.[illegible]
Totals	403	$13,749.35	$ 34.12

BETHEL SUB-DISTRICT

Supervised from the Juneau Office.

Earle M. Forrest, District Superintendent, Bureau of Education.

Akiak, Inspector.

This sub-district includes the lower Kuskokwim Valley and the Yukon-Kuskokwim portage routes. It contains no road projects. The important activities are located along the coast line or the Kuskokwim River so that summer transportation is by boat, supplemented by short trails. Winter transportation is by dog sled.

During the past two years this Commission has established a much needed winter trail extending from McGrath in the upper Kuskokwim Valley, via Aniak, Bethel, Goodnews Bay, Togiak, Dillingham and Naknek to Kanatak.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
90C	Shelter Cabins—3d Division				
90D	Shelter Cabins—4th Division				
92A	Bethel-Quinhagak			89	89
92B	Bethel-Akiak			26	26
92C	Akiak-Russian Mission			75	75
92D	Bennett's Cutoff			18	18
92E	Yukon-Kuskokwim Portage			120	120
92F	Quinhagak-Goodnews Bay			60	60
92G	Goodnews Bay-Togiak			53	53
92H	Togiak-Nushagak			125	125
92I	Lewis Point-Naknek			86	86
92J	Naknek-Egegik			50	50
92L	Napaimut-Aniak			26	26
92M	Aniak-Tuluksak			69	69
92N	Akiak-Canyon Creek			45	45
	Totals			849	849

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial Construction	Maintenance	Total
90C		$ 1,774.75	$ 1,774.75		$ 1,774.75
90D		1,199.75	1,199.75		1,199.75
92A					
92B	$ 4.50	25.09	29.59		29.60
92C					
92D					
92E					
92F					
92G	1,045.33	970.00	2,018.33		2,018.33
92H	1,969.03	1,400.00	3,369.03		3,369.03
92I	1,447.34	860.00	2,307.34		2,307.34
92J	1,155.00	740.60	1,895.60		1,895.60
92L	415.00	310.00	725.00		725.00
92M	1,125.00	1,120.00	2,245.00		2,245.00
92N					
Totals	$ 7,155.20	$ 8,399.59	$15,528.39	$ 29.59	$15,554.70

DESCRIPTION.

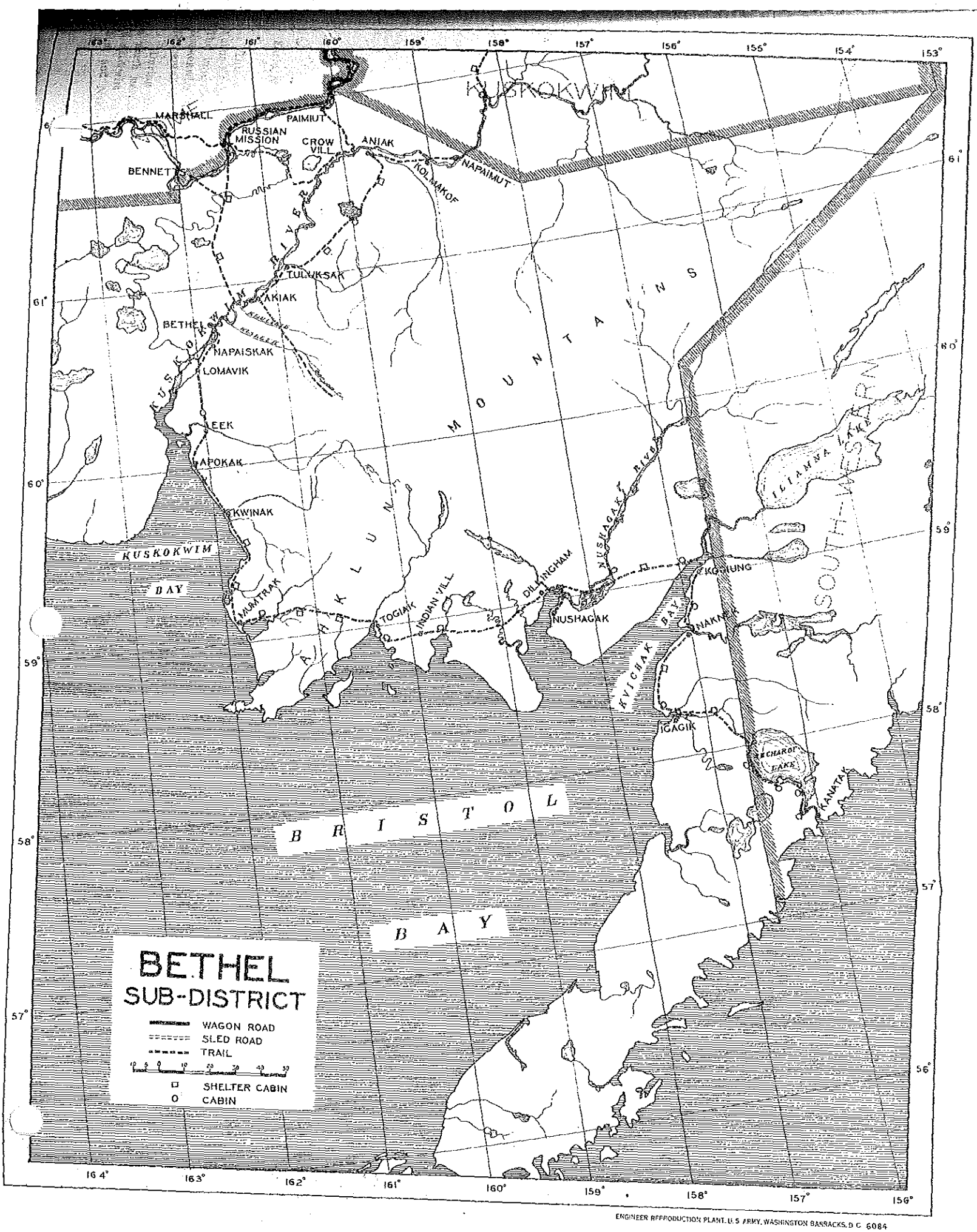
For detailed description see Part II. Annual Report for 1924. The following changes and additions should be noted.

92I—Route name changed to Lewis Point-Naknek. 86 miles trail.

92J—Distance should be 50 miles instead of 65.

92L—Route name changed from Kolmakof-Aniak. A short but important piece of new work between Napaimut and Kolmakof takes the trail off a bad section of the river and shortens the total distance to 26 miles.

92N—Akiak-Canyon Creek (45 mile trail). This route extends from Akiak to the placer mines on Canyon Creek. The Kiselakik and Kuskluk Rivers are crossed enroute by ferries.



ENGINEER REPRODUCTION PLANT, U.S. ARMY, WASHINGTON BARRACKS, D.C. 6084

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

90C—Four shelter cabins for which contracts were let in January, 1924, were erected and paid for as follows:

Route	Contractor	Item	Amount
Goodnews Bay-Togiak	Harry Barnes	1 igloo built	$ 499.75
Nushagak-Naknek	Ernest Olson	2 cabins built	750.00
		2 cabins inspected	25.00
Naknek-Egegik	Frank Altonen	1 cabin built	500.00
Total			$1,774.75

90D—Three shelter cabins, for which contracts were let in January, 1924, were erected and paid for as follows:

Route	Contractor	Item	Amount
Aniak-Tuluksak	W. J. Cribbee	2 cabins built	$ 700.00
Goodnews Bay-Togiak	W. M. Noden	1 igloo built	499.75
Total			$1,199.75

92G—This route was permanently staked and two igloo shelters were erected on the Quigway River and the south fork of Goodnews River.

92H—This route was permanently staked.

92I—This route was permanently staked and two shelter cabins were erected at Lewis Point and Patch of Wood.

92J—This route was permanently staked and a shelter cabin was erected about midway between Naknek and Egegik.

92L—This route was permanently staked.

92M—This route was permanently staked and two shelter cabins were erected at Swift Creek and Bogus Creek.

92N—A contract was let to provide ferry boats for crossing the Kiselalik and Kushluk Rivers.

PRESENT CONDITION AND NEEDS.

The trails within this sub-district have been considerably improved within the past three years and are now generally in fairly good condition. Two shelter cabins are needed between Kolukuk and Dillingham, one at Ophir Creek between Aniak and Tuluksak, one at mouth of Portage Creek between Dillingham and Kogiung and one near Gas Rock on Becharof Lake. The trail from Egegik to Kanatak still requires staking. Most of the above work will be done this year.

An examination will be made this summer of a proposed route from a point on the Aniak River to some very promising placer workings on Bear Creek. If found satisfactory the first sled road within this sub-district will be constructed on ground which will permit its later improvement into a wagon road.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Trail	426	$12,580.20	$ 29.52

VALDEZ DISTRICT.

T. H. Huddleston, Supt., Valdez.

This district embraces that portion of Alaska lying between 145° 10' and 147° west longitude and extending south from 61° 49' north latitude. It also includes at present the Gulkana-Chestochina road, route 65A, formerly in the Chitina district.

The principal work within this district is the maintenance and improvement of the Richardson Highway from Valdez, which is the northernmost open all-the-year-round port in Alaska to Willow Creek, a distance of 92 miles. This section of the Richardson Highway passing through Keystone Canyon and across the summit of the Coast Range, is probably the most scenic route in Alaska and has required the most expensive construction.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Trail	Total Miles
4BA	Valdez-Ptarmigan Drop	23	---	23
4BB	Ptarmigan Drop-Ernestine	30	---	30
4C	Ernestine-Willow Creek	29	---	29
36*	Valdez-Mineral Creek	6½	1½	8
36A*	Granby Road	5	---	5
36B*	South Second Street, Cordova	¼	---	¼
60	Valdez Dike	---	---	---
65A	Gulkana-Chestochina	4	36	40
90C	Shelter Cabins, 3d Division	---	---	---
	Totals	107¾	37½	145¼

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	Total
4BA	$61,514.27	----------	$43,600.00	$17,914.27	$61,514.27
4BB	37,077.43	----------	21,577.43	15,500.00	37,077.43
4C	58,242.15	----------	41,500.00	16,742.15	58,242.15
36	3,722.34	100.00(h)	3,122.34	700.00	3,822.34
36A	----------	----------	----------	----------	----------
36B*	----------	----------	----------	----------	----------
60	----------	----------	----------	----------	----------
65A	8,726.08	----------	6,726.08	2,000.00	8,726.08
90C	----------	----------	----------	----------	----------
Totals	$169,282.27	$ 100.00	$116,525.85	$52,856.42	$168,382.27

(*)—Expenditure by the Territory.
(h)—Also cooperation with Divisional Chairman.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. Routes 1BB, 4C, and 65A will be found described therein under the Chitina District.

36B—This is an extension of South 2nd. Street outside the city limits of Cordova.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized by routes as follows:

4BA—One mile of new road (relocation) was completed and an addition mile was cleared and grubbed. Material improvements were made all along the route including 13 miles regraded, 46 culverts (382 lin. ft.) and 7 bridges (114 lin. ft.) constructed.

4B—A new bridge was erected over the Tsaina River. The route was materially improved throughout including 2 bridges (180 lin. ft.) and 70 culverts (354 lin. ft.) constructed, 10 miles light resurfacing and 450 cu. yds. rock excavated.

4C—A new bridge including two 100 ft. spans and 140 ft. approach was erected over the Tonsina River. General improvements were made including one half mile new road (relocation) constructed, 5 miles gravel surfaced, 19.5 miles regraded, and 42 culverts constructed.

35—A new bridge of 100 foot span was erected across Mineral Creek near its mouth. Expenditures by Divisional Chairman, Territory of Alaska were $35.55.

35B—[illegible] lin. ft. of road graded and surfaced. Expenditure by the Territory of Alaska, Divisional funds, $500.00.

65A—The extension of the wagon road from the Gakona River [illegible] was begun.

PRESENT CONDITION AND NEEDS.

The section of the Richardson Highway through this district is now in fair condition throughout the summer months for the operation of motor vehicles not heavier than the one ton truck. From the early part of October to the latter part of June the road is closed to auto traffic by snow at Thompson Pass. Two and a half miles of the road require relocation to avoid floods of the Klutina River and one mile should be relocated to avoid damage from the Tsaina River. General improvements throughout, including widening, regrading, gravelling and construction of culverts, are required in order to bring this portion of the highway up to the standard of other parts.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	102½	$169,007.27	$1,648.85
Trail	37½	375.00	10.00
Totals	140	$169,382.27	$1,209.87

CHITINA DISTRICT.

Frank Shipp, Superintendent, Chitina.

Antone Anderson, Asst. Supt., McCarthy.

This district includes that part of Alaska lying between the 141st and 147th meridians, west longitude, and south of 63° 30′ north latitude, with the exception of the area west of 146° 10′ west longitude and south of 61° 49′ north latitude which comprises the Valdez district. The Gulkana-Chestochina road, route 65A, is also under the Valdez district at the present time.

The most important project within the district is the Richardson Highway extending from Chitina on the Copper River and Northwestern Railway up the Copper and Gulkana River Valleys and then across the Alaska Range through Isabelle Pass to Rapids on the Delta River.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
6B	Chitina-Tonsina	15	....	....	15
6A	Tonsina-Willow Creek	24	....	....	24
4D	Willow Creek-Gulkana	36	....	....	36
4E	Gulkana-Sourdough	21½	....	....	21½
4F	Sourdough-Mile 168	18	....	....	18
4G	Mile 168-Delta River	38	....	....	38
4H1	Delta River-Rapids	25½	....	....	25½
54	Nizina-Chisana Trail	....	....	78	78
56A	Katalla-Yakataga	....	....	60	60
57	McCarthy-Nizina	9	....	....	9
57A	Nizina River Bridge	....	....	....	....
61*	Strelna-Kuskulana	12½	....	....	12½
61B*	Nugget Creek Extension	6	....	....	6
65B	Chestochina-Slate Creek	....	....	40	40
65C	Chestochina-Tanana Crossing	....	....	140	140
9C	Shelter Cabins, 3rd Division	....	....	....	....
	Totals	205½	....	318	523½

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial Construction	Maintenance	Total
6B	$23,263.70	$15,765.70	$ 7,500.00	$23,263.70
6A	34,424.32	22,424.32	12,000.00	34,424.32
4D	21,751.99	4,251.99	17,500.00	21,751.99
4E	15,614.50	4,614.50	11,000.00	15,614.50
4F	24,835.92	15,635.92	9,200.00	24,835.92

Sub-Project Number	Federal	Territorial	Construction	Maintenance	Total
1-7	23,342.44	.....	4,342.44	19,000.00	23,342.44
61-61	31,425.65	.....	18,925.65	12,500.00	31,425.65
54	.....	.....	.....	.....	.....
56A	.....	.....	.....	.....	.....
57	19,047.00	.....	14,547.00	4,500.00	19,047.00
57A	46,976.95	.....	46,976.95	.....	46,976.95
61*	.....	.....	.....	.....	.....
61B*	.....	.....	.....	.....	.....
62*	.....	.....	.....	.....	.....
63*	.....	.....	.....	.....	.....
4-0	.....	200.00	.....	200.00	200.00
Totals	$340,657.47	$ 200.00	$147,457.47	$93,400.00	$240,857.47

(*)—Expenditures by the Territory.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1921. Routes 57, 57A, 54 and 56A will be found described therein under the Valdez district. The following changes and additions should be noted:

57—This is a wagon road extending 9 miles from McCarthy to the Nizina River.

57A—This bridge has been completed. It consists of two wood-Howe Truss spans of 150 ft. resting on concrete piers and 1650 of pile trestle approach.

61—This road leads from Strelna on the C. R. and N. W. Railroad, to the right limit of the Kuskulana River to Mile 11 where it crosses to the left limit and extends to Bergs Mill. A substantial bridge across the Kuskulana River built by the Territory gives access to the operations on the left limit.

61B—This road, originally carried as part of Route 61, Strelna-Kuskulana, branches from the latter route at its Mile 10 and extends to copper properties on Nugget Creek. It was built by one of the mining companies and has since been maintained by the Territory.

OPERATIONS DURING YEAR.

The important operations, other than routine maintenance, may be summarized as follows:

Richardson Highway, Chitina to Rapids:—A new bridge including two 100 ft. Howe Trusses and 32 feet of approaches was constructed across the Tonsina River. A new 60 ft. truss was installed in the Tazlina River bridge. One hundred and sixty-four culverts were constructed and 26 miles of road were gravel surfaced.

The following are comparative costs on the above bridge over the Tonsina River located 15 miles by trail from Chitina and a

similar structure over the Tonsina River on Route 4C, 39 miles from Chitina by the winter freighting route. All material was freighted over snow and spans erected during March and April.

Type	Upper Tonsina 2-100 ft. trusses 148-ft. approaches	Lower Tonsina 2-100 ft. trusses 82-ft. approaches
Foundation	$ 2,651.81	$ 2,252.48
Material for trusses, f.o.b. Chitina	4,519.05	4,519.05
Freighting to Bridge site	2,901.47	1,402.00
Framing, Erection, and Approaches	5,284.79	3,317.11
Total Cost	$15,838.62	$11,490.62
Cost per Lin. Foot	44.89	49.53
Cost per meal in camp	.63	.54
Cost thawing holes per foot (7'5")	1.33	...

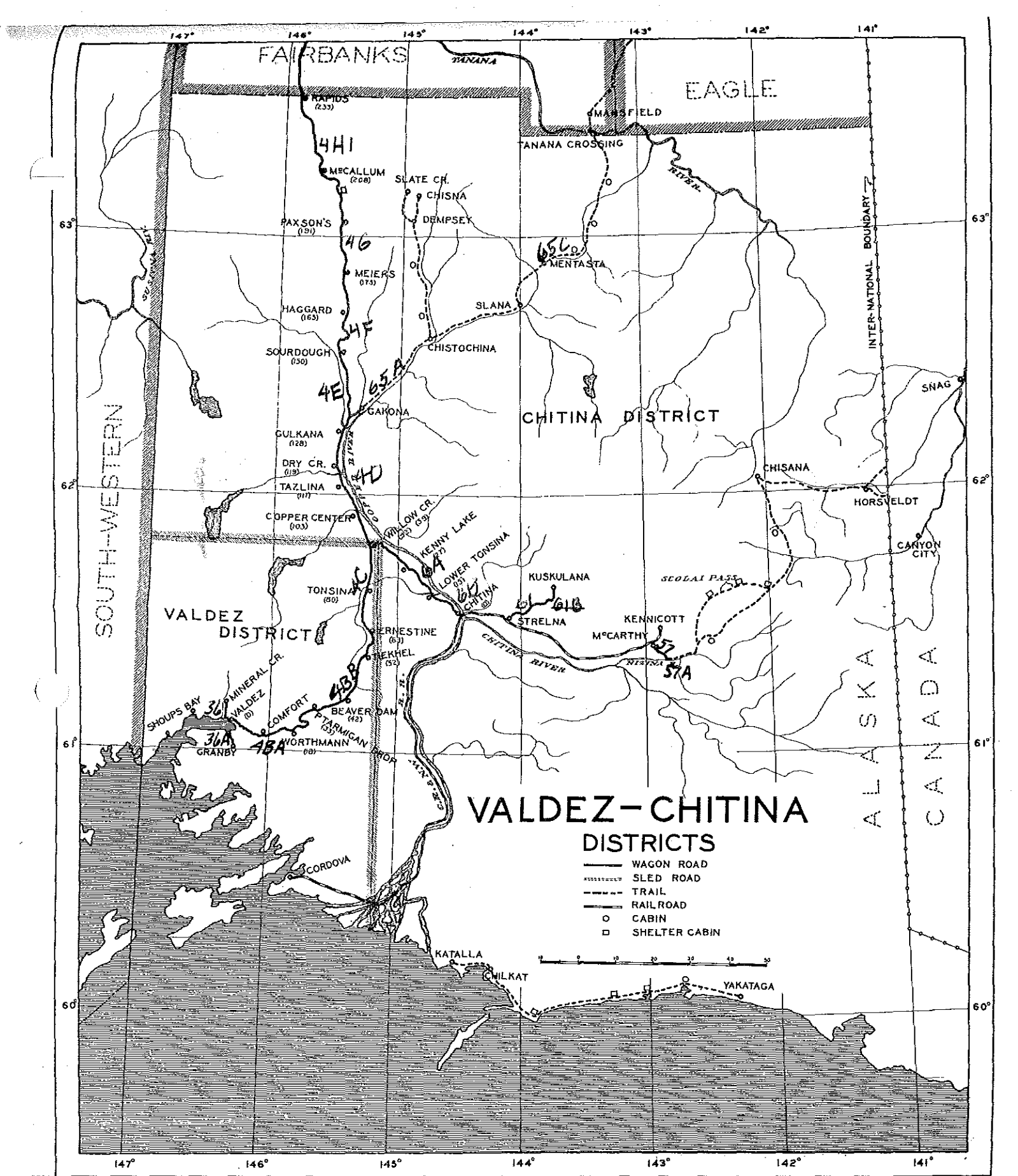
57—A new road 1380 ft. in length, mostly rock sidehill cut, was constructed as an approach to the new bridge across the Nizina River.

57A—This bridge was completed. The work included erection of two Howe truss spans of 150 ft. each on the concrete piers previously prepared and the construction of 1680 feet of pile trestle approach.

Work was first started on this project in the spring of 1921. At that time the crossing was selected and borings made along the center line to determine the position of bedrock. During the winter of 1922 preparations were made and work started on the construction of five pairs of steel sheet piling cylinders of 8 ft. diameter placed 12 ft. centers, the pairs being spaced 180 ft. centers. This work was completed in the spring of 1923. These cylinders were excavated below water line and piling driven inside the cylinders. In the spring of 1924 the cylinders were filled and capped with concrete. In the winter of 1924 material was assembled at the site and the bridge completed in the spring of 1925. Only two spans were placed, the plan being to place additional spans as needed. The following are costs of the various features of the work:

Preliminary investigations	$ 8,190.38
Driving and Excavating steel cylinders. (Includes driving falsework piling and cost and freighting of material)	51,076.94
Placing concrete, (Includes cost material and freighting)	21,697.58
Cost superstructures, driving approach and erection superstructure (Includes cost freighting)	46,976.95
Total	$127,941.80
Cost per linear foot (2040')	62.72

61—Work was begun on a new location of 1.5 miles from the Kuskulana bridge to Berg's Mill. The right of way was cleared 40 ft. wide for a distance of 5300 feet and 700 ft. of sidehill exca-


FAIRBANKS
EAGLE
TANANA
RAPIDS (233)
4H1
McCALLUM (208)
SLATE CR.
CHISNA
DEMPSEY
PAXSON'S (191)
4G
MEIERS (173)
HAGGARD (165)
4F
SOURDOUGH (130)
CHISTOCHINA
SLANA
MENTASTA
SMARTSFIELD
TANANA CROSSING
INTER-NATIONAL BOUNDARY
SNAG
4E
65A
GAKONA
CHITINA DISTRICT
GULKANA (128)
DRY CR. (119)
4D
TAZLINA (117)
COPPER CENTER (103)
WILLOW CR.
KENNY LAKE
LOWER TONSINA (57)
64
TONSINA (50)
4C
CHITINA
KUSKULANA
SCOLAI PASS
CHISANA
HORSFELDT
CANYON CITY
SOUTH-WESTERN
VALDEZ DISTRICT
ERNESTINE (51)
TEKKHEL (52)
STRELNA
KENNICOTT
McCARTHY
CHITINA RIVER
NIZINA
57
57A
MINERAL CR.
SHOUPS BAY
36
VALDEZ (0)
COMFORT
PTARMIGAN (35)
BEAVER DAM (42)
4B
36A
GRANBY
4BA
WORTHMANN (68)
VALDEZ-CHITINA
DISTRICTS
WAGON ROAD
SLED ROAD
TRAIL
RAILROAD
CABIN
SHELTER CABIN
CORDOVA
KATALLA
CHILKAT
YAKATAGA
ALASKA
CANADA
147°
146°
145°
144°
143°
142°
141°
63°
62°
61°
60°

ration was accomplished. Expenditure by the Territory of Alaska, Divisional Funds, $1,000.00.

900—Repairs, cabins Nizina-Chisana Trail $200.00.

PRESENT CONDITION AND NEEDS

The Richardson Highway from Chitina to Rapids is suitable for motor cars not larger than one ton trucks. Many stretches require gravelling to put them in first class condition. About half a mile of sidehill cut partly in rock, must be made along the Delta River where the road is now on the river gravel and subject to overflow.

The McCarthy-Nizina road, except the two miles adjacent to McCarthy which is in excellent condition, is barely passable for light motor cars in good weather. It requires grading and drainage.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	187	$193,716.52	$1,036.21

FAIRBANKS DISTRICT

M. C. Edmunds, Supt.
Donald McDonald, Asst. Supt.
Abe McKinnon, Asst. Supt.

This district embraces that portion of the Territory between the 144th and 148th meridians and between the Yukon River on the north and the Alaska Range on the south; also that territory north of the Yukon River from the 144th to the 150th meridian.

The most important project within this district is the Richardson Highway from Rapids to Fairbanks and its extension to Circle, construction of which is now in progress. The maintenance and improvement of the local road system around Fairbanks serving the mines and farms is also of extreme importance. A number of minor projects serve isolated mining communities.

FEDERAL PROJECTS.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
48A	Rapids-Brandlier	48	....	....	48
47	Chitina-Richardson	20½	....	....	20½
46	Richardson-Salchaket	30	....	....	30
45	Salchaket-Fairbanks	90	....	....	90
45A	Delta-Circle	....	....	....	....
44	Nizina-Chisana	11	....	....	11

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
7C*	Summit-Fairbanks Creek	13	---	---	13
7D*	Ester Creek	13	---	---	13
7G	Fairbanks-Gilmore	13	---	---	13
7I	Gilmore-Summit	6	---	---	6
7R	Goldstream-O'Connor Creek	---	6	---	6
7V	Wireless Road	½	---	---	½
15	Circle-Miller House	49	---	---	49
16	Chatanika-Miller House	24¾	56¼	---	81
23A	Snowshoe-Beaver	---	---	101	101
23B	Beaver-Caro	75	---	---	75
23C	Big Creek Trail	---	---	20	20
23D	Caro-Flat Creek	---	45	---	45
23E	Caro-Coldfoot	---	---	85	85
31	Caribou Creek	---	46	---	46
53A	Circle-Ft. Yukon	---	---	97	97
59	Fairbanks Bridge	---	---	---	---
59A	Fairbanks Depot	---	---	---	---
65E	Grundler-Tanana Crossing	---	---	113	113
90D	Shelter Cabins	---	---	---	---
	Totals	339½	157¼	386	882¾

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES

Sub-Project Number	Federal	Territorial	Construction	Maintenance	Total
4H2	$34,942.87	.....	$10,942.87	$24,000.00	$34,942.87
4I	14,698.02	.....	5,000.00	9,698.02	14,698.02
4J	18,731.22	.....	4,000.00	14,731.22	18,731.22
4K	30,528.49	.....	10,528.49	20,000.00	30,528.49
4KA	38,162.78	.....	38,162.78	.....	38,162.78
7A	5,224.33	360.00(j)	.....	5,584.33	5,584.33
7C*	52.50	50.00	.....	102.50	102.50
7D*	1,514.83	100.00	.....	1,614.83	1,614.83
7G	15,499.95	.....	8,999.95	6,500.00	15,499.95
7I	2,237.74	.....	.....	2,237.74	2,237.74
7R	.....	.....	.....	.....	.....
7V	35.00	.....	.....	35.00	35.00
15	3,156.04	.....	.....	3,156.04	3,156.04
16	49,980.76	.....	42,480.76	7,500.00	49,980.76
23A	386.87	.....	.....	386.87	386.87
23B	4,325.01	.....	.....	4,325.01	4,325.01
23C	.....	.....	.....	.....	.....
23D	1,618.69	.....	500.00	1,118.69	1,618.69
23E	668.37	.....	.....	668.37	668.37
31	325.34	.....	.....	325.34	325.34
53A	4,166.57	.....	4,166.57	.....	4,166.57
59	108.30	.....	.....	108.30	108.30
59A	9,253.91	.....	9,253.91	.....	9,253.91
65F	.....	.....	.....	.....	.....
90D	.....	542.40	382.40	160.00	542.40
Totals	$235,517.59	$ 1,052.40	$134,417.73	$102,152.26	$236,569.99

(*)—Also Territorial Projects.
(j)—Contributed by Tanana Valley Dredging Co.

DESCRIPTION.

For detailed description see Part II, Annual Report, 1924.

The following changes and description of new routes will be noted:

4KA—Salcha Bridge. This is a bridge over the Salcha River on the Richardson Highway, 49 miles south of Fairbanks, replacing the ferry formerly used at this point.

16—Chatanika-Miller House. Construction of the winter road extended 6¼ miles, reducing sled road mileage by this distance.

23A—Snowshoe-Beaver. This route extends from the old Snowshoe Roadhouse, 14 miles from Olnes on the Olnes-Livengood trail, route 7K to Beaver on the Yukon River.

53A—Circle-Ft. Yukon. This winter trail, constructed during the past year extends from Circle at the end of Route 11 to the trading center of Ft. Yukon. The route parallels the Yukon River on its left limit to within 16 miles of Ft. Yukon from which point it follows the river ice.

59A—Fairbanks Depot. This comprises a warehouse 30x100 ft., an oil house 20x30 ft. and a dog barn 20x30 ft. located in the Alaska Railroad Terminal reserve. These buildings were all constructed during the past year and together with a 30x36 ft. repair shop and a 20x70 ft. equipment shed erected the preceding year afford a centralization of the office, motor equipment, and supplies for this district.

OPERATIONS DURING YEAR.

The important operations other than routine maintenance may be summarized by routes as follows:

Richardson Highway, Fairbanks to Rapids. [illegible] cu. yds. of surfacing material were placed, resulting in a heavy gravel surface over 10 miles and a light surface on 9 miles. 2½ miles of new grading were accomplished on relocations. 420 linear feet of pile trestle bridge constructed on renewals, and 55 corrugated iron culverts installed.

4KA—This bridge consists of one 150 ft. steel Pratt truss span, together with 345 feet of pile trestle approach on the north end. Three hundred and fifty feet of bank protection was placed along the south shore. Work on this structure was started in October, 1924 and completed in April, 1925.

Cost of the various features of the work follow:

Approach:		
Material f.o.b. Fairbanks	$3,798.20	
Freight Fairbanks to Bridgesite (40 miles)	1,[illegible]	
Erection (includes driving piles)	2,[illegible].45	$ [illegible]
Foundation (including falsework)		
Material f.o.b. Fairbanks	2,[illegible].40	
Freight Fairbanks to Bridgesite	[illegible].24	
Labor	2,513.80	$ [illegible]

Steel Span

Fabrication at Pittsburgh, Penna.	9,145.18	
Freight to Fairbanks	1,561.87	
Other material f.o.b. Fairbanks	2,337.30	
Freight Fairbanks to Bridgesite	1,923.73	
Labor (erection)	4,973.91	19,931.99
Revetment		5,087.39
Total		$37,640.79
Unit Costs, 345 feet approach, per foot		19.73
150 foot steel span in place, per foot		143.03
Total crossing, 825 feet, per foot		71.70

16—6¼ miles of new road were constructed, including clearing, grubbing, grading and some surfacing. Clearing and grubbing were completed for ten miles beyond present end of road.

53A—Built 67 miles of dog sled trail.

59A—Constructed 30x100 ft. warehouse, 20x30 ft. oil house and 20x80 ft. dog barn.

90D—

Route	Location	Work Done	Cost
53A		2 cabins built stoves installed	$481.40
31	29 Mile	Stove installed	21.20
93A	Beaver Bluff and Bull Creek	Stoves installed	39.80
	Total		$542.40

PRESENT CONDITION AND NEEDS

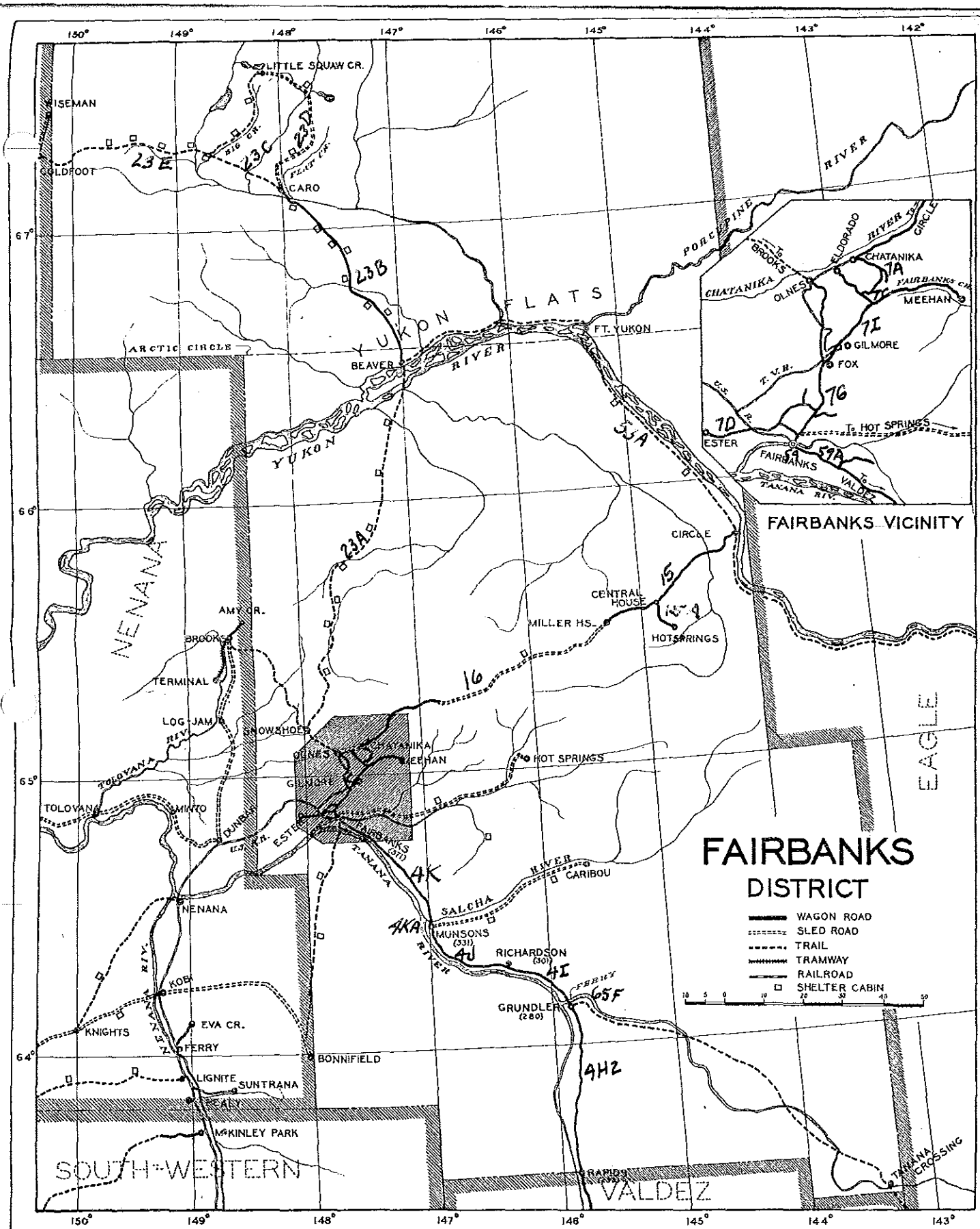
Richardson Highway. This road is entirely suitable for automobile travel only in dry weather, there being sections badly in need of some kind of surfacing. Several short relocations are necessary to safeguard against washouts and to eliminate excessive grades, and a number of old native timber bridges will require renewal.

Fairbanks Local Roads. Increased motor traffic makes necessary the continued improvement of these roads to provide good drainage and some kind of surface.

Chatanika-Circle. This project should be pushed to connection with the Miller House-Circle Road as fast as possible. Sixty miles remain to be constructed to make this connection.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	313½	$178,155.43	$ 568.28
Sled Road	152½	3,444.03	22.77
Trail	253	5,221.81	20.64
Totals	718½	$186,821.27	$ 260.28


FAIRBANKS
DISTRICT
WAGON ROAD
SLED ROAD
TRAIL
TRAMWAY
RAILROAD
SHELTER CABIN
FAIRBANKS VICINITY
ARCTIC CIRCLE
YUKON FLATS
YUKON RIVER
PORCUPINE RIVER
NENANA
SOUTH-WESTERN
VALDEZ
CIRCLE
FAIRBANKS
BEAVER
FT. YUKON
CARO
WISEMAN
COLDFOOT
LITTLE SQUAW CR.
BIG CR.
FLAT CR.
CHATANIKA
OLNES
MEEHAN
GILMORE
FOX
ESTER
HOT SPRINGS
TO BROOKS
TO CIRCLE
TO VALDEZ
TANANA RIV.
FAIRBANKS CR.
ELDORADO
U.S.R.
T.V.R.
AMY CR.
BROOKS
TERMINAL
LOG JAM
SNOWSHOES
MILLER HS.
CENTRAL HOUSE
HOTSPRINGS
TOLOVANA
MINTO
DUNBAR
U.S.R.
TOLOVANA RIV.
NENANA
KOBA
KNIGHTS
EVA CR.
FERRY
LIGNITE
SUNTRANA
SCALY
McKINLEY PARK
BONNIFIELD
SALCHA
CARIBOU
MUNSONS (331)
RICHARDSON (301)
GRUNDLER (280)
RAPIDS (293)
TANANA CROSSING
FERRY
23E
23C
23D
23B
23A
55A
15
16
4K
4KA
4J
4I
4H2
65F
7A
7I
7G
7D
5A
5B
10 5 0 10 20 30 40 50

TERRITORIAL PROJECTS.

Territorial Road Commission, Fourth Division.

M. C. Edmunds, Chairman and Secretary.

Jake Mutchler, Member. John Sm[illegible], Member.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
7AA	Cleary Creek Road	2	—	—	2
7B	Fox-Olnes	13	—	—	13
7C*	Summit-Fairbanks Creek	13	—	—	13
7D*	Ester Creek	13	—	—	13
7DA	College Spur	½	—	—	½
7DB	St. Patrick's Creek (proposed)	—	—	—	—
7GA	Lazelle Road	2½	—	—	2½
7H	Little Eldorado Creek	6	—	—	6
7J	Fairbanks-Chena Hot Springs	—	64	—	64
7K	Olnes-Livengood	—	—	54	54
7N	Farmers-Birch Hill	9	—	—	9
7NA	Isabelle Creek	2	—	—	2
7S	Graehl Bridge	—	—	—	—
7T	Farmers-Chena Slough	4½	—	—	4½
15A	Central House-Circle Hot Springs	9	—	—	9
	Totals	74½	64	54	192½
	Totals**	48½	64	54	166½

(*)—Cooperative projects with Alaska Road Commission.
(**)—Exclusive of cooperative projects.

SUMMARY OF EXPENDITURES.

TERRITORIAL DIVISIONAL FUNDS

Sub-Project No.	Construction	Maintenance	Total
7AA	$ 718.41	[illegible]	$ 718.41
7B	.....	566.42	566.42
7C*	.....	[illegible]	[illegible]
7D*	1,000.00	[illegible]	[illegible]
7DA	.....	[illegible]	[illegible]
7DB	189.00	.....	189.00
7GA	.....	[illegible]	[illegible]
7H	.....	[illegible]	[illegible]
7J	.....	[illegible]	[illegible]
7K	.....	[illegible]	[illegible]
7N	.....	[illegible]	[illegible]
7NA	.....	[illegible]	[illegible]
7S	.....	.....	.....
7T	.....	.....	.....
15A	.....	[illegible]	[illegible]
Totals	$ 1,907.41	$ [illegible]	$ [illegible]

(*)—Routes on which Alaska Road Commission expended funds.

DESCRIPTION.

For detailed description see Part II, Annual Report for 1924. The following changes will be noted:

Route 7AA—Cleary Creek Road. This route was a portion of road formerly included in Route 7A, Summit-Chatanika, which was abandoned in favor of a new location. It serves mining operations along Cleary Creek above the town of Cleary.

Route 7DB—St. Patrick's Creek. This is a proposed route branching from Ester Creek Road, Route 7D, and serving quartz mines around the head of St. Patrick's Creek.

OPERATIONS.

During the past year the work consisted largely of maintenance on the Fairbanks local roads. The Ester Creek road was improved and additional gravel surfacing accomplished.

PRESENT CONDITION AND NEEDS.

A large part of the roads included in this group are of graded earth type serving small farm areas or mines. These roads are only suitable for motor traffic in dry weather, but need only yearly maintenance to keep them in their present condition. The roads to St. Patrick's Creek and Fish Creek should be constructed and the Ester road should be continuously improved to provide a surfaced road. Minor improvements and extensions should be made as needed.

DISTRIBUTION OF EXPENDITURES.

Type	Miles	Expenditure	Unit cost Dollars per Mile
Wagon Road	70	$ 8,463.57	$ 120.91
Sled Road	64	75.00	1.17
Trail	54	202.43	3.75
Totals	188	$ 8,741.00	$ 46.50

NENANA DISTRICT.

H. C. Haslem, Superintendent, Fairbanks.

This district is roughly described as extending south from the Arctic Ocean between 150° 11' and 150° west longitude as far as the Arctic Circle, thence south between 148° 30' and 158° 41' west longitude to the northern boundary of Mt. McKinley National Park. It is more accurately shown on the accompanying map. It includes the important mining districts of the Kantishna, Livengood, Hot Springs and Bonnifield.

This district is well served so far as summer transportation is concerned by a number of navigable rivers, the most important of which are the Yukon, Tanana, Koyukuk, Tolovana and Kantishna. These rivers and The Alaska Railroad have made the construction of long roads unnecessary. A number of short roads have been built connecting important mining centers with navigable water or the railroad.