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ANCHORAGE, ALASKA  
P. O. BOX 160

December 16, 1953

Mr. Wm. J. Niemi  
Chief Engineer  
Alaska Road Commission  
Juneau Alaska

Dear Mr. Niemi:

The following are the recommendations for the 1954 operations in the Anchorage District, based upon the figures as outlined in your letter of November 6, 1953.

#### SECTION I - MAINTENANCE

This section includes summer and winter maintenance on all district routes. Figures as shown are based on estimates from past experience, except the funds allocated for the depot at Soldotna, and funds for the activity in McKinley Park will probably be covered at the Conference in January.

#### SECTION II - RECONSTRUCTION

Under this section we have included pit run gravel on the Sterling Highway, improvement of Homer, Valley and Mountain road systems and improvement of the Anchorage system. Valley and Anchorage improvements include recommendations for bituminous work on several important roads.

#### SECTION III - CONSTRUCTION (F.A.)

Construction covers two projects only; extension of the Denali Highway and farm road construction. The farm road petition file has been submitted under separate cover.

#### SECTION IV - CONSTRUCTION (CONTRACT)

This section details engineering personnel necessary to accomplish the work set forth in your letter of November 6, 1953.

#### SECTION V - SURVEYS

Detail of engineering personnel and recommended plan of accomplishing the surveys as set forth in your letter of November 6, 1953, are covered in this section.

#### SECTION VI - EQUIPMENT

In making these recommendations we have considered all useable equipment in the district, and this section just includes new equipment required to accomplish work outlined in the above sections.

## SECTION I - MAINTENANCE

### Route 310, 311 - Glenn Highway-4th Avenue Post Road (120.8 Miles)

Shoulder maintenance remains a major problem on both these important highways and is a major operation that continues yearly. The program of brush control should be continued toward Anchorage from Palmer and from 70 Mile to 115. Ditches along the entire road should be widened and cleared, and slides at Miles 53 and 70 require attention each year. Riprap should be placed at 71 Mile where the Matanuska River is eroding embankment. More work is also necessary on the rock point at King River to force the river away from the road at 66 Mile. Work done in 1953 extended the rock dike approximately 50 feet but it should be raised and reinforced as flood waters covered the dike last season.

Pavement maintenance consisting of patching breaks, sealing cracks and removal and replacement of short areas caused by frost action must be continued on the Glenn Highway. Fourth Avenue Post Road is showing signs of wear and although resurfacing is indicated, resealing may save it for another year. Numerous small breaks should be patched before resealing is undertaken. Also, the decking on the Ship Creek Bridge on the Post Road must be replaced as it has rotted until traffic is actually breaking holes through the timber under the bituminous mat.

Unless the wood trestle on the Knik Bridge is replaced early in the year, it must be inspected and fender piles driven on several of the bents. The native piling on them are beyond the point where they will take the lateral thrust of flood waters. Two bents are presently sitting on mud sills. Approach to the Caribou Creek Bridge must be paved and the old bridge removed.

Centerline should be repainted from Anchorage to Palmer and from Anchorage to the MP Gate on the Post Road.

Snow removal, sanding, land ice control, and culvert thawing and cleanout must be accomplished in the winter.

Summer            \$125,000

Winter            \$ 50,000

### Route 410 - Anchorage-Seward Highway (37.2 Miles)

Ditch cleanout and slide removal must be carried on continuously during the summer season on this important arterial. The rock cuts are weathered and seamed rock stratas require scaling weekly to prevent major rock slides. In several areas the rock is covered with from 4 to 20 feet of silt which runs like water after each heavy

rain and during the spring thaw. Work should be continued on channeling the surface water above the road to prevent glaciating on the pavement and catch basins cleaned and enlarged to handle more water.

Pavement maintenance will be necessary, consisting of patching breaks, sealing cracks and replacing short sections between Anchorage and Potter which fracture from frost action, necessary shoulder maintenance continued and the centerline striping repainted.

Summer	\$60,000
Winter	\$40,000

Route 411 - Anchorage-Spenard Highway (3.6 Miles)

Funds recommended are for shoulder maintenance, snow removal, ice control, crack sealing, patching and restriping centerline. Crosswalks should be striped and signed for school crossings at Fireweed Lane and top of Romig Hill. Winter sanding operations must be carried on daily on Romig Hill where opening of the new high school has greatly increased pedestrian traffic. With the new crushing unit in the area, we should reseal this section next construction season as the present surface is badly worn. Culverts are to be cleaned and extensions made where traffic has bent and closed the inlets and outlets.

Summer	\$10,000
Winter	\$ 5,000

Route 312. 313 314 - Matanuska Valley Feeders (59.8 Miles)

Late in the fall of 1953, Army tank maneuvers between Fish Creek and Knik Airfield cut the road up and damaged shoulders and minor drainage structures. Complaints were registered by both the Bureau of Land Management and Alaska Road Commission and assurances given that the conditions would be investigated and practice stopped. The roadway could not be reshaped in 1953 due to freezing weather and importance of shaping up other main roads for winter. This grade should be reshaped and ditched. Approaches to Fish Creek Bridge should be raised and widened. The grade should be raised with pit run gravel between Palmer and Echo Lake on the Palmer-Matanuska Road as this section is subject to severe breakup every spring. Normal summer maintenance consists of brush control, culvert replacement and shoulder maintenance. During the winter season snow removal, sanding, ice control and erection of snow and glacier fence should be accomplished.

Summer	\$30,000
Winter	\$15,000

Route 511 and 512 - Sterling Highway and Feeders (129.9 Miles)

Maintenance of this highway will consist of regravelling soft spots, widening narrow fills, an extensive program of reditching plus culvert placement where required and regular surface maintenance. Numerous areas between Ninilchik and Homer show bad frost heaving due to silt content of the subgrade and these areas must be removed and filled with select material before they will handle the heavy loads to which they are subjected.

Recommendations include one complete maintenance camp of nine men for a period of seven months plus a thawing crew of three men for two months. These crews would be engaged in the above mentioned ditching, widening and regravelling. Funds recommended also include year-round maintenance crew of four grader operators plus necessary office and shop personnel.

Summer        \$140,000

Winter        \$ 50,000

Route 812 and 812.1 - McKinley Park Rds. (91.3 Miles Road, 14 Miles Trail)

Opening of the road should be delayed as long as possible and still reach critical areas in time to prevent major damage by spring runoff. Spring maintenance will include snow removal, repair of washouts, filling of subsided areas and spot gravelling. Also included will be bridge repair as required on those structures not up for replacement in 1954.

Shoulder cleanup and widening as well as brush removal should be continued. Although NPS approved the use of chemicals, we believe the use of tractor and pull grader as tried in 1953 to be nearly as efficient in the type of growth encountered and is better from an esthetic point of view than dead brush left from the result of chemicals. Slide rock on the passes should be removed and present culverts and ditches cleaned.

Funds not allocated, however, appropriation should at least equal last year's program.

Route 813 - McKinley Park - Kantishna (4.5 Miles)

This road should be opened up upon completion of McKinley Park roads, and washout repairs and spot gravelling should be accomplished. Maintenance to consist of culvert cleaning and replacement, slide removal and reditching by motor grader.

Summer        \$1,400

Route 011 - Sterling Landing-Ophir Road (47.0 Miles)

Military traffic between Sterling Landing and Takotna Mountain early in the season while the frost was going out left that section of the road in the worst condition it has been in years. Although most of our work in 1953 was concentrated in that section, much work remains to bring it up to the standard required by the military. Besides military requirements all supplies moved into the Placer Mining area at Ophir must move over this road.

Funds recommended are for continued improvement of surface, replacement of damaged and unserviceable culverts, extensive grade raising with select gravel borrow, re-ditching, brush removal and repair of areas washed out during the winter. Decking should be replaced on the Yankee Creek Bridge at Mile 35.1, and abutments and wing walls straightened and replaced on Little Creek Bridge at Mile 39.6. Work should also be done on the foundation of the foreman's quarters. Three men for a period of five-six months could handle necessary field work with one good mechanic in the shop to handle repair and overhaul.

Summer        \$32,000

Route 012 - Iditarod-Flat Road (8.7 Miles)

Placer Mining continues active in the Flat area and all heavy supplies must come over this road from the landing to Flat. Funds recommended are for summer maintenance to include surface blading, re-ditching, brush control, spot gravelling and widening.

Summer        \$7,600

Route 013 - Dillingham-Kanakanak-Wood River (14.7 Miles)

Surface maintenance, gravelling and drainage improvements should be continued. Yearly the road crossing the muskeg between Dillingham and Windmill Hill must be raised as the previous year's work is lost due to settlement. Winter maintenance covers snow removal, snow fence erection and culvert work. Work in the area requires one full time and one part time employee.

Summer        \$18,000

Winter        \$12,000

Route 310.2, 310.3 - Glenn Highway Locals (50.9 Miles)

Two miles of the increased mileage on these routes opened up a small tract area in the Birchwood area. The land is high, level,

has excellent drainage and is highly desirable for homesites. Funds recommended are for regular surface maintenance, spot gravelling, brush control, drainage, snow removal and sanding.

Summer        \$15,000

Winter        \$ 9,000

Routes 312.1, 313.1, 314.1, 314.3 - Matanuska Valley Locals (81.7 Miles)

Minor improvements as well as surface maintenance should be performed on these routes to handle the increasing traffic. Funds recommended are for minor bridge repair, culvert replacement, brush control, re-ditching, spot gravelling, snow and ice control and sanding.

Summer        \$32,000

Winter        \$16,000

Route 314.2 - Mountain Locals (63.8 Miles)

Although the mines, which were the reason for original construction, have ceased operation, this road carries increasingly more traffic. It is the only access into the village of Willow and traverses one of the best recreational areas near Anchorage. Work should be continued on brush removal, spot gravelling, culvert repair, minor bridge repair and surface maintenance. Winter maintenance should be performed to the Little Susitna Lodge, as the adjacent slopes have become an outstanding skiing attraction.

Summer        \$6,000

Winter        \$4,000

Route 310.1, 410.1, 411.1 - Anchorage Locals (49.7 Miles)

In 1953 a reconstruction program was initiated on sections of this system using various types of low cost bituminous treatment. While several sections stood up very well, others showed rutting and instability under traffic. Repairs must be made on those better sections and preparation of more roadbed should get underway for treatment. Maintenance items such as re-ditching, culvert cleanout, etc., should be done ahead of any reconstruction. Continuous grader work is necessary on sections not treated and dust prevention accomplished during summer months as traffic, which has increased considerably, causes dust and makes driving extremely hazardous.

Winter snow removal, sanding and ice control must be carried on daily as the suburban areas around Anchorage are served by this

system and scheduled service is maintained on them by both city and school buses. Funds recommended cover summer and winter maintenance, reditching, shoulder maintenance and spot gravelling.

Summer        \$45,000

Winter        \$30,000

Routes 511.1, 512.1 - Sterling Highway Locals (51.7 Miles)

These routes include all branch roads along the Sterling Highway between the National Forest Boundary and the Diamond Ridge Road near Homer plus the North Kenai Roads. With the exception of the Skilak Lake Road, all are maintained the year round. Funds recommended are for surface maintenance, spot gravelling, ditch clean-out, snow removal, sanding and ice control.

Summer        \$12,000

Winter        \$ 5,000

Route 511.2 - Homer Locals (47.3 Miles)

Increased activity in and around Homer in farming and tourist traffic is causing complete failure of numerous substandard farm and local roads. Program of constructive maintenance should be continued to bring these roads up to adequate standards. For this reason, the recommended amounts needed may seem excessive for just normal reshaping, widening, reditching, etc., when actually rebuilding of short sections has been accomplished by maintenance. New construction should not be attempted in this area until the present system is improved to where maintenance costs are again reasonable.

Summer        \$24,000

Winter        \$15,000

Route 011.1 - Takotna Locals (24.5 Miles)

Work on these roads should be limited to necessary surface maintenance, brush control and reditching except for spot gravelling on Yankee Creek and upper Gaines Creek Roads. Due to no winter maintenance being performed in this area, washouts must be filled every spring.

Summer        \$9,000

Route 012.1 - Flat Locals (27 Miles)

Maintenance should be continued with a crew of two men, a working foreman and an operator. Work should be continued on brush removal and gravelling the Chicken and Slate Creek Roads. Spot gravelling is necessary over the entire system as is re-ditching and surface maintenance. Funds recommended provide for adequate summer maintenance and spring runoff control.

Summer        \$10,000

Route 014.1 - Kodiak Locals (48.9 Miles)

Improvement of Kodiak roads by surface maintenance, culvert installation, widening, re-ditching and spot gravelling should be continued. Roads beyond the Naval Base around Chiniak Bay have had little work done on them in the past several years and re-ditching and brush removal is a must if they are to handle the traffic. Crew in the area should consist of a working foreman and two operators in the summer time with one or two as required in the winter. We have also included Abbert Road as part of the Kodiak locals maintenance.

Summer        \$35,000

Winter        \$15,000

Route 010.1 - Talkeetna-Cache Creek (40.7 miles, 18 Miles Sled Road,  
16 Miles Trail)

Due to limited activity in this area at the present time, work should be kept to a minimum. Surface maintenance, spot gravelling and ditch cleanout is recommended. Two men should handle the work as in past years but we hesitate to recommend establishing a camp. Quite possibly our crew could be boarded at one of the mines or the men do their own cooking.

Summer        \$8,000

Route 010.2 - Colorado-Bull River (17 Miles)

Indications are that Dunkles Coal Mine will operate only on a minor scale if at all in 1954. Funds requested are for filling minor washouts, slide removal and surface maintenance should operations be resumed. The work recommended could be handled by one man not to exceed three weeks.

Summer        \$2,000

Route 010.3 - Medfra-Nixon Road (12 Miles)



As mining in this area has been reduced to exploratory work, our maintenance should be limited to that necessary to protect our present road investment. The work will be handled by Clint Winans, resident of Medfra.

Summer \$1,000

Route 010.4 - Bethel Locals (4.5 Miles)

As storms along the river continue to erode the river banks, more and more people are either moving back or are building on the hill. The present hill road is now handling all traffic between the airfield, hospital and the town. As it is built of sand overlying permafrost, it is subjected to severe washing and settlement. Maintenance should consist of raising, leveling and widening. This is also true of Hanger Lake Road and Standard Oil Road. Summer maintenance should be performed by a crew of two men working about five months.

Further funds will be requested under Farm and Industrial Roads as the road to the new cemetery should be rebuilt and extended to the new airport.

Summer \$10,000

Route 010.5 - Naknek Locals (14.3 Miles)

The gravel program started in 1953 should be continued if this road is to handle the heavy army traffic to which it is being subjected. Maintenance should consist of ditching, reshaping shoulders, gravelling and surface maintenance in the summer and glacier control, plowing snow and culvert thawing during winter months. Work will be done by a working foreman with one operator as required.

Summer \$17,000

Winter \$10,000

Route 010.7 - Iliamna Lake Locals (28.5 Miles)

Roads were left in very good condition in 1953 and should require minimum maintenance in 1954. Surface maintenance, spot gravelling, minor culvert and bridge repair and slide removal will be required. This work will be handled by one local employee as required over the summer. Consideration should be given to abandonment of this route as the traffic does not warrant present maintenance. The road is used by one man and in 1953, less than 500 tons of freight was moved over it. This freight could have been barged in from Naknek for about 50 cents per ton more than that charged.

Summer \$8,000

010.8 - Red Mt. Road (10.2 Miles)

Reports from the Kenai Chrome Company indicate that they have uncovered a rich vein of ore and expect to be operating on a full scale in 1954. Summer maintenance should be performed on this road in anticipation of heavy ore hauling. The work planned is surface maintenance, culvert and bridge repair, ditching and spot gravelling.

Summer        \$10,000

811.4 - Cantwell-Summit Road (8.5 Miles)

Maintenance should be provided on this route as McKinley Park Hotel plans on remaining open year round and Alaska Airlines plans to stop at Summit field. It appears bus service may be inaugurated in 1954. Funds recommended include spot gravelling, surface maintenance and snow and ice control.

Summer        \$4,000

Winter        \$2,000

MAINTENANCE

<u>Route</u>	<u>Name</u>	<u>Summer</u>	<u>Winter</u>	<u>Total</u>	<u>District Direct</u>
310, 311	Glenn-4th Ave.	\$125,000	\$50,000	\$ 175,000	\$61,250
410	Anchorage-Seward Hwy.	60,000	40,000	100,000	35,000
411	Anchorage-Spenard	10,000	5,000	15,000	5,250
312,313,314	Matanuska Valley Feeders	30,000	15,000	45,000	15,750
511,512	Sterling Hwy.	140,000	50,000	190,000	66,500
812, 812.1	McKinley Park Roads				
813	Kantishna	1,400		1,400	490
011	Sterling Landing-Ophir	32,000		32,000	11,250
012	Iditarod-Flat	7,600		7,600	2,650
013	Dillingham-Wood River	18,000	12,000	30,000	10,500

<u>Route</u>	<u>Name</u>	<u>Summer</u>	<u>Winter</u>	<u>Total</u>	<u>District Direct</u>
310.2, 310.3	Glenn Hwy. Locals	15,000	9,000	24,000	8,400
312.1, 313.1 314.1, 314.3	Matanuska Valley Locals	32,000	16,000	48,000	16,800
314.2	Mountain Locals	6,000	4,000	10,000	3,500
310.1, 410.1, 411.1	Anchorage Locals	45,000	30,000	75,000	26,200
511.1, 512.1	Sterling Hwy. Locals	12,000	5,000	17,000	5,950
511.2	Homer Locals	24,000	15,000	39,000	13,650
011.1	Takotna Locals	9,000		9,000	3,150
012.1	Flat Locals	10,000		10,000	3,500
014.1	Kodiak Locals	35,000	15,000	50,000	17,500
010.1	Talkeetna-Cache Creek	8,000		8,000	2,800
010.2	Colorado-Bull River	2,000		2,000	600
010.3	Medfra-Nixon	1,000		1,000	350
010.4	Bethel Locals	10,000		10,000	3,500
010.5	Naknek Locals	17,000	10,000	27,000	9,450
010.7	Iliamna-Pile Bay	8,000		8,000	2,800
010.8	Red Mountain Road	10,000		10,000	3,500
811.4	Summit Road	4,000	2,000	6,000	2,100
	Soldotna Depot			<u>260,000</u>	78,000
				TOTAL - \$	1,210,000

## SECTION II - RECONSTRUCTION

### Routes 312, 313, 314, 314.1, 314.3, 312.1, 313.1-Matanuska Valley Roads

Continued improvement of the Valley roads are necessary with the ever increasing volume of traffic. Although the changes in 1953 completed realignment originally planned on the Palmer-Wasilla Road, traffic warrants improving grade and alignment for approximately one mile north of the four corners. The farm road from four corners to the experimental farm should be reditched, fills raised and grades reduced. The Palmer-Matanuska Road, one mile from Palmer, should be raised from one to two feet with select borrow for about two miles as it becomes impassable every spring during the breakup. The crusher should be operated and crushed rock stockpiled for use on those sections of the Palmer-Wasilla Road which show signs of requiring more surfacing before bituminous surfacing is applied which is also considered under this activity next season.

Reconstruction     \$90,000

### Route 314.2 - Mountain Road

Reduction of funds on this system in 1953 reduced our reconstruction program to brush removal, a small amount of shoulder work and reditching of the Willow end. Further work of this nature is necessary and one small bridge across upper Willow Creek should be replaced. Work can be handled by two men on brush removal and ditching and a bridge crew of four men operating about two weeks.

Reconstruction     \$10,000

### Routes 511, 512 - Sterling Highway

Funds recommended are for continued improvement of the Sterling Highway and covers regrading and regravelling from Clam Gulch toward Homer. This work should be handled by two crews; one working from Falls Creek and consisting of a grading crew of about eight men; the other from Ninilchik consisting of a gravel crew of seven men. It is suggested that grade reinforcement with pit run gravel be continued as was done last season, before any major project of crushed material is placed.

Reconstruction     \$175,000

### Route 511.2 - Homer Local Roads

During 1953 many of the hill roads in Homer were reconditioned with select pit gravel from Ohlson Mt. Reconstruction in the area in

1954 should complete this program by widening and gravelling the Diamond Ridge Road and the East Hill Road. Widening and regravelling is considered on the East End Road in the Fritz Creek area. One gravel crew working from the beach or from Chilson Mountain would handle the work.

Reconstruction \$40,000

Routes 310.1, 410.1, 411.1 - Anchorage Local Roads

Experimentation with dust palliatives and low cost oil treatment of secondary roads in the Anchorage area in 1953 proved the feasibility of a three-course treatment; one prime and double seal. This type surfacing holds up extremely well where the select pit run base is reinforced with four inches of crushed material. Dust treatment with light oils break up under the excessive traffic and should not be applied on heavily traveled roads. Several less traveled roads should be surfaced with crushed material and a dust palliative again tried.

Improvements recommended are listed below:

1. East Fireweed Lane should be completed and more crushed rock base added and oil surface treatment applied.

2. Lake Otis Road should be completed and bituminous surface continued to Dowling Road. So much preliminary work has been completed on this section it would seem desirable to complete with Government forces rather than contract.

3. DeBarr Road should be continued and bituminous surface placed to the intersection of Muldoon Road. This section could also be considered for inclusion in the paving contract contemplated for the Anchorage-Elmendorf Alternate Through Route as it is adjacent to the project.

4. International Airport Road could also be included with the Anchorage-Elmendorf project as a supplement to the contract with a prime and seal surface rather than a bituminous mat.

5. O'Malley Road traffic is also increasing and this roadway should be reconditioned and crush gravel surfaced.

6. Campbell Station Road is in the same category as the above and should be resurfaced with crush rock.

Reconstruction \$100,000

SUMMARY - RECONSTRUCTION

<u>Route</u>	<u>Program</u>	<u>Field</u>
Valley Roads	\$ 90,000	\$ 27,000
Mountain Roads	10,000	3,000
Sterling Highway	175,000	52,500
Homer Roads	40,000	12,000
Anchorage Locals	<u>100,000</u>	30,000
TOTAL	\$415,000	

SECTION III - CONSTRUCTION (F.A.)

Route 811 - Denali Highway

Several minor permafrost areas between Cantwell and McKinley Park remained frozen and although they were worked in 1953 as they thawed, some work remains to bring them down to grade. This work can be handled by a dozer and scraper working intermittently during the summer. The permafrost areas between Cantwell and Brushkana were worked late last fall and can now be completed early in 1954.

Some of the completed grade from Cantwell east requires gravel surfacing to stabilize; therefore, surfacing with pit run material a program should be started from 4 Mile progressing east covering all areas showing instability. A breakdown of hauling and loading equipment in the District discloses that we will require a fleet of ten new 5 yd. trucks for this work.

A small grading crew should finish grading the permafrost areas between Cantwell and Brushkana as soon as weather permits. Two grading and stripping crews will be stationed east of Brushkana and continue working toward Susitna. Also, at least three tractors and one scraper should be placed across the Susitna River during the winter together with one trailer camp, lubricants and fuel for a small stripping crew to start construction toward the MacLaren River next season. Some thought has been given to a possible temporary crossing on the Susitna but no concrete plan can be recommended at this time.

Construction    \$360,000

## Farm and Industrial Roads

Petitions for farm and industrial roads are classified and evaluated and assigned a priority for construction based on actual merit. Such priority is coordinated with the Bureau of Land Management's recommendations concerning homesite development and agricultural possibilities. Preliminary field investigations have been made and the cost of construction estimated. List of projects, together with location sketches and estimated costs, has been forwarded under separate cover and considered as Appendix A of these recommendations. Total estimated funds are listed to complete the projects together with recommended amount to be spent in 1954.

Please note that extension of the Gilley Road has been omitted this year. It now appears that the Army is planning on taking over that area beyond the end of our present road for a firing range. If they complete their plans, any future work in the area should be left to the military.

We are including one mile of road at Bethel to connect the new cemetery and airport to the existing system. This road will be all overlaid on muskeg and permafrost but is very necessary for access to the new airport.

Construction    \$200,000 (as Appendix A)

### SUMMARY - CONSTRUCTION (F.A.)

<u>Route</u>	<u>Name</u>	<u>Program</u>	<u>Field</u>
811	Denali Highway	\$360,000	\$108,000
	Farm Roads (Appendix A)	200,000	60,000

### SECTION IV - CONSTRUCTION (CONTRACT)

#### Fort Richardson Arterial and Anchorage-Elmendorf Through Route

Work on these two routes will be handled by one resident engineer with necessary crews and inspectors. Tentatively, we plan, besides the resident, one assistant, 2-4 man transit and cross-section parties, 2 grade inspectors, one plant inspector and one laydown inspector.

### Knik Bridge

This work should be contracted in early spring so work can be completed before Lake George breakup. After original field staking and layout we believe one engineer can handle the inspection.

### Chickaloon and Moose River Bridges

After layout these jobs can be handled by one inspector on each project.

### Denali Highway Bridges

Personnel for this construction will be influenced by the contractor's schedule of operations; however, it is believed that two engineers can handle the inspection with possibly two assistants part time.

### Addition to Cantwell Garage

Should be handled by the resident engineer in the Cantwell area as his office is adjacent to construction.

## SECTION V - SURVEYS

### Pittman-Willow

It is recommended that this survey start in the early spring as at that time it would be possible to use tractor equipment for brushing the line. We plan on having Jack Van Zanten head this survey assisted by four men, a cook and one tractor operator.

Survey      \$30,000

### Cadastral Survey

Orville Eggen and his two crews should continue work on this important phase of our survey operations.

### Farm Road Surveys

Work on surveys of proposed new construction should be handled by the crews working in the various areas on force account construction. This method of handling petitioned and recommended roads was initiated in 1953 and worked very satisfactorily.



Farm Road Survey      \$19,000

Snag Point - Aleknagik

Work done in 1953 disclosed the feasibility of this route. A cat trail was pushed to within four miles of Aleknagik Lake and compass tangents of over a mile in length were run in several instances. Line should follow closely the preliminary reconnaissance as it falls almost entirely on high ground. Location should be made upon completion of the Willow Survey with the same crew.

Location      \$20,000

SUMMARY - SURVEYS

<u>Name</u>	<u>Program</u>	<u>Field (10%)</u>
Pittman-Willow	\$30,000	\$3,000
Cadastral	50,000	—
Farm Roads	19,000	1,900
Snag Point - Aleknagik	20,000	2,000

SECTION VI - EQUIPMENT

As an equipment list is being submitted as a separate report, recommendations in this section shall consist of just that new equipment necessary to successfully carry out the program outlined. Consideration has been given to all available equipment in the District and requirements have been kept to a minimum still keeping economical operation in mind. Required equipment is listed below with justification.

Cantwell

3 - 5 KW Witte Diesel Light Plants -

for portable camps. Present gasoline plants are expensive to operate and maintain. They are also ready for replacement.

2 - D-8 Caterpillar Power Control Units -

Replacements for light old model LeTourneau units now in use as they cannot handle big cans now used.

1 - 1 yd. Loader (Hough Payloader) -

Ditch cleanout and spot gravel work in McKinley Park.

1 - 300 Amp Welder, electric, transformer type -

Present gasoline unit from shop truck being used in garage. Necessary that it be returned to truck for field use in summer.

1 - Shop Size Air Compressor, gas driven -

For field use. Presently have no way to inflate carryall and truck tires in field without overloading small ones now in use.

1 - 100 Watt Base Radio Station for Freq. 226k and 5195 -

Replace HT9 which operates on 5195.

4 - 50 Watt - 6 Volt Mobile Radio for 226k.

1 - 50 KVA Light Plant -

Available GA to replace 30 KVA plant now at Cantwell - too small to handle load - use as standby.

#### Kodiak

1 - 1 yd. Wheel Loader (Hough Payloader) -

With increased mileage beyond base and vulnerable fills across several streams, fast moving piece of loading equipment is important for the Kodiak work.

#### Kenai

2 - Motor Graders (Cat 12 or equal) -

One to replace CAA grader returned to CAA in 1953. One to replace one sent Red Mountain and necessary there in 1954.

1 - 1 yd. Wheel Loader (Hough Payloader) -

For maintenance at Ninilchik. Pits so far apart shovel not economical as moving equipment must go from Kenai for move. Small crew on maintenance requires man on shovel waiting while anyone can load with Payloader.

- 1 - Traxcavator attachment for D-4 w/modification parts -

Convert D-4 from Fish & Wildlife to traxcavator for use on beach at Homer. Dragline now used requires operator waiting for trucks from long haul and it will be needed to feed crusher on second move as gravel deep and set-up area small.

- 1 - Low Bed Trailer -

Use at Homer for moving equipment - present lowboy beyond economical repair.

- 1 - 3 KW Diesel Light Plant (Witte) -

For use at Alcatraz Maintenance Camp, Kenai.

- 1 - 75 KWA Light Plant, 110 single phase - 220-3 phase -

Replace present 20 KW 220 single phase as unit too small and difficult to obtain power tools for this type power. New plant should be installed at new camp.

#### Dillingham

- 1 - D-4 w/combination bucket and dozer -

Presently are loading from one pit with D-7 and ramp. Gravels available in other pits in small deposits. Bucket loader reduce haul and do ditching and clearing on muskeg where D-7 can not work.

#### Takotna

- 1 - 3 KW Diesel Light Plant (Witte) -

Present DC plant beyond economical repair. AC plant necessary for radio contact. Automatic desired if available as water pump pressure type from basement tank to stove coils.

- 1 - 16 Cu. Ft. Deepfreeze -

No meat storage available in this area. Freezer should be kerosene operated if possible.

#### Anchorage

- 1 - Motor Patrol w/wing (Cat 12 or equal) -

Replace one transferred to Cantwell and one wrecked at 94 Mile in 1953.

1 - Portable Hot Mix Maintenance Plant (Barber-Greene Mixall) -

Patching bituminous mat at stop streets, intersections and approaches. Cold patch material adequate for ordinary road patch but will not hold up under abnormal wear encountered at these locations.

Sincerely yours,

E. J. White  
District Engineer