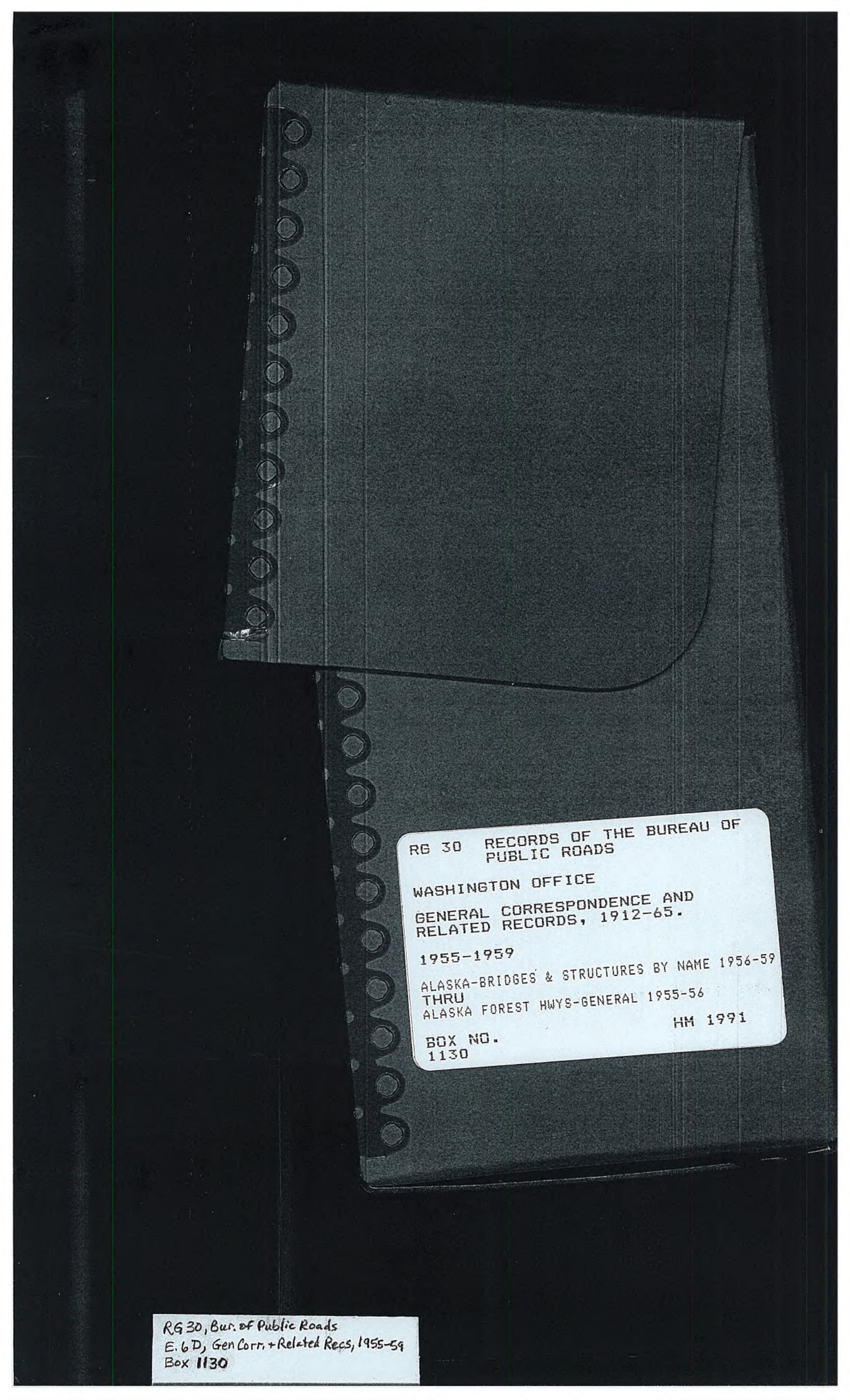

Alaska Design 1957-59

Alaska "Design"

AIR MAIL

BUREAU OF PUBLIC ROADS

10-00

Mr. Wm. J. Nieni, Regional Engineer
Juneau, Alaska

July 23, 1959

22-25

G. M. Williams, Assistant Commissioner JAMES L. SHOTWELL
By: D. W. Loutzenheiser, Chief, Highway Design Division

Materials and route location survey by aerial methods,
Mitkof Island - Stikine River

Herewith we are transmitting the following data and material regarding this reconnaissance survey project:

1. Report of the Potential Sources of Borrow, which is self-explanatory.

2. Set of aerial photographs on which the sources of borrow material are outlined, and

3. Set of aerial photographs, as per attached list, on which nearly 100 miles of feasible route alternatives have been delineated for stereoscopic examination. The photographs are accompanied by a line diagram index of photographs used in making the aerial survey.

Alternatives across Dry Strait will permit, as required, either a high-level bridge under which boats could pass or a low-level bridge which would restrict boat traffic unless some sort of span opening is provided. Should the high-level bridge be required, route B may have significant advantages over route C. Route A, the most northerly route on Mitkof Island, is considered the least advantageous of the three alternatives A, B, or C, as initially designated on the 1:250,000 scale map you previously furnished.

Route C on the north side of Farm Island has topographic advantages as compared to route B on the south side. Route B, however, on this island provides southern exposure. Eastward from this island, route C extends along the north side of Stikine River almost to the border between Canada and Alaska.

An uncontrolled mosaic, which has been assembled for copying, will be forwarded as soon as prints of it are available from our photographic laboratory. On this mosaic the various routes are shown, as they were individually delineated on the vertical photographs providing stereoscopic coverage, of the area through which the routes were located.

Attachments

WTPryor:kd
cc: Files (2)
Mr. Wm. J. Nieni

Mr. G. M. Williams
Mr. D. W. Loutzenheiser
Mr. F. C. Smith

Mr. E. E. Erhart
Mr. W. T. Pryor

RG 30, Bur. of Public Roads
E. 6 D, Gen Corr. + Related Recs, 1955-59
Box 1130

POTENTIAL SOURCES OF BORROW, MITKOF ISLAND AND STIKINE RIVER, ALASKA

(By Division of Physical Research, Bureau of Public Roads)

This report describes potential sources of borrow material on Mitkof Island, Farm and Dry Islands and along the North Arm River.

The proposed routes, A, B, C and D, described in the April 3, 1959 memorandum are shown on the attached Petersburg, Alaska-Canada topographic sheet. A transparent acetate overlay of the topographic sheet shows the flight lines and photograph numbers. The attached 27 aerial photographs (listed below) show the location and extent of the potential sources of granular material. The photograph identifications are as follows:

SEA, 101, 080 and 081
SEA, 104, 067 thru 069
SEA, 23, 022 thru 024
SEA, 105, 066 thru 069
SEA, 106, 057 thru 061
SEA, 106, 117 thru 120
SEA, 113, 118 thru 120
SEA, 113, 075 thru 077

Engineering soil strip maps were not produced since field reconnaissance reports contain more detail about bedrock and general ground conditions than can be provided by an office study of aerial photographs. In this connection, the scale of photography, 1:40,000, and heavy tree cover make the analysis of the photographs rather difficult.

A rather rapid study of aerial photographs along proposed route "A" on Mitkof Island indicated that there is little or no granular material available along this route as was indicated in field reconnaissance reports.

The April 3, 1959 memorandum stated that "the most urgent need for information is on Routes B and C adjacent to and over Dry Strait." A study of aerial photographs indicates no extensive sources of granular material along Route B between Blind River and Dry Strait. There may be minor stream deposits of granular materials along the small tributary streams that cross Route B at distances of 2 to 8 miles south of Cosmos Point.

Therefore, this report is primarily concerned with the probable sources of materials along Route C, including alternate Route D. The detailed study starts along the east side of Blind Slough, southwest corner of Mitkof Island at the southern termination of a previous search for borrow materials reported to the Alaska office in a memorandum dated February 11, 1958. It extends from this point northeastward along proposed Route "C" on the southern part of Mitkof Island, across Dry Strait, along the north side of Farm Island, and along the north side of North Arm River to Kawan Point.

The "Potential material source number" is indicated for each source on the aerial photographs. A brief description or remarks concerning each of the deposits, together with the photograph identification, are also given below.

Potential material source No.	Photograph identification	Description and remarks
1	SEA 101,081	This deposit is questionable as a source of material. It appears on the aerial photograph as a small alluvial fan-like deposit at the base of a cliff. Materials in this deposit have been derived from the granitic uplands.
2	SEA 101,081	This deposit is a small alluvial fan

Potential material source No.	Photograph Identification	Description and remarks
		similar to deposit No. 1 except that it appears to be somewhat larger and more like a typical alluvial fan deposit. It is more likely to be a source of suitable borrow than deposit No. 1
3	SEA 101,081	This deposit consists of an alluvial fan and terrace which occurs in a small cove. The material in the fan is derived largely from the granitic uplands. The small terrace that occurs in the cove should provide a source of granular material. Other small terraces containing granular material occur along the east side of Blind Slough and along the south side of Mitkof Island. At scale of 1:40,000 and because of the heavy vegetative cover, it is impossible to select the terraces or portions of terraces that would provide the most suitable sources of borrow material. In many of the coves along the south side of Mitkof Island, lighter photographic tones seem to indicate that there is sandy material. Some gravel is likely to be present.
4	SEA 101,081	A small fan deposit at base of rather steep cliff. Materials in this deposit are derived from granitic rocks in the upland and should be similar to the materials at deposit No. 3.
5	SEA 101,081	Small alluvial fan deposit similar to deposit No. 4. A portion of this deposit appears to be a terrace.
6	SEA 104,069	Although not evident on the aerial photographs, it appears that a small alluvial deposit at the base of steep escarpment may contain some granular material. This deposit, as well as the others, are derived from upland materials which are predominantly granitic. A portion of this deposit extending to either side of the small fan along the shore is a river terrace. The terrace

Potential material source No.	Photograph identification	Description and remarks
		should contain granular materials, the same as other remnants along the south side of Mitkof Island.
7	SEA 104,069	The terrace occurring in this cove appears similar to that at deposit No. 6. Some materials from the uplands appear to have been deposited on or near the terrace surface. Extension of investigations beyond the outlined area shown along the beach should be made.
8	SEA 104,069	This deposit consists of a combination of an alluvial-fan-like deposit and terrace similar to deposit No. 6.
9	SEA 28,022	Beach terrace near Dry Strait appears to be a suitable source of granular construction material. A portion of the terrace in the cove has been severely eroded by waters from the uplands. Portions of this terrace may be under water during high tides.
9G	SEA 28,022	Rock underlying this point, which juts out into Dry Strait, consists of granitic material having considerable banding (gneiss or schist). Most of the southeastern portion of Mitkof Island near Dry Strait, and Dry and Farm Islands are granite, gneiss or schist. This material appears to be hard and durable since it is quite resistant to erosion and underlies many of the hills in the southern portion of Mitkof Island. Field investigation would probably be required to determine the suitability of this rock as an aggregate source.
10	SEA 105,067 SEA 106,059 SEA 106,118	An extensive, fairly well-drained terrace occurs on Farm Island adjacent to Knig Slough. Portions of the terrace have been dissected by small streams. Numerous poorly drained depressions appear in this terrace. This terrace should be a suitable site for highway location, as well as a source of sand and gravel. Heavily wooded areas on terrace (10 A)

Potential material source No.	Photograph identification	Description and remarks
		are higher and better drained. A small granitic mass similar to rocks that occur on Farm Island appears at 10 G.
11	SEA 106,059	A rather small terrace on Dry Island and adjacent to Knig Slough is somewhat similar to terrace adjacent to Farm Island (No. 10). This terrace appears to be composed of similar materials, although it occurs at a slightly lower elevation.
12	SEA 113,119	Terrace deposits at northeast corner of Farm Island and along the north side of North Arm River. The terraces appear to be similar to the heavily forested portions of deposit No. 10 A.
12 M	SEA 113,119	Foliated metamorphic rocks (predominantly mica phyllites), which are softer and less durable than the gneissic granites that occur on Farm and Dry Island and at 12 G. The rocks at 12 M are probably not suitable as a source of aggregate. Numerous erosion gullies appear in this material.
13	SEA 113,119	Terrace along North Arm River appears to be somewhat similar to terrace 12. Although the deposit No. 13 appears to be lower and somewhat more poorly drained. Bedrock appears exposed at 13 B. Bedrock may be encountered at a shallow depth along the outer portions of the terrace closest to North Arm River.
14	SEA 113,076	Terrace remnants at the base of steep slopes near Kawan Point appear to be much the same as the deposit at No. 13. Kawan Point (14 G) consists of banded granitic rock similar to that previously described.

Although the terraces and other alluvial deposits are described above as containing granular materials, some of the locations may have a cover of fine-grained materials, and there may be pockets or lenses of fine-grained material in the stratified sands and gravels. Some of the material that is not suitable for use in base courses may be suitable for borrow. The possibility of finding granular materials in stream beds should not be overlooked.

Electrical resistivity equipment may be used to advantage in the field exploration for materials to determine extent of gravelly deposits, presence of bodies of fine-grained material in a granular deposit, and depth to bedrock and water table.

The results of the field exploration of the sites shown on the aerial photographs should be reported to the Division of Physical Research for use in other photographic studies that may be made in Alaska.

Reference:

"Geology and Mineral Deposits of Southeastern Alaska" by A. F. Buddington and Theodore Chapin, U. S. Geological Bulletin 800, 1929.

July 23, 1959

Aerial photographs on which route alternatives are outlined, Mitkof Island - Stikine River aerial survey.
South East Alaska

Project Number	Flight Line	Photograph Numbers	Number of photographs
SEA	113	076-077	2
	110	124-126	3
	105	154-156	3
	113	118-120	3
	106	117-119	3
	106	58-60	3
	105	67-69	3
	104	062-069	8
	101	074-081	8
	113	174-181	8
		Total =	44

Alaska "Design" Files

BUREAU OF PUBLIC ROADS

Mr. Wm. J. Hieni, Regional Engineer
Juneau, Alaska

July 22, 1959

10-00

F. D. CROWLEY

G. M. Williams, Assistant Commissioner
22-25 By: D. W. Loutzenheiser, Chief, Highway Design Division

Aerial Surveys - Alaska

In reply to your inquiry of July 17 I shall make arrangements for Mr. Fred W. Turner to go to Alaska and assist your staff in determining route locations and in accomplishing other essential engineering by aerial surveys. It is understood that, during the time Mr. Turner will be in Alaska, you will assign qualified men to work with him for the purposes of learning as well as aiding him in the performance of the vast amount of work with which you are currently confronted.

At present Mr. Turner is on a field assignment in Central America. We expect he will return on or before August 15. Consequently, he will not be available before September 1 or a few weeks later. Moreover, inasmuch as Mr. Turner's services are also needed here in Washington, it is suggested that you accomplish, before his arrival in Alaska, all work preliminary to the actual engineering use of aerial photographs in making the reconnaissance surveys to determine feasible route alternatives for the highway routes which you must locate. This preliminary work will include procuring the aerial photographs, which should be contact printed on double-weight, semi-matte, photographic paper, trimming them, and preparing a line-diagram index of the photographs of each separate survey project.

It is essential, as a basic principle, that photographic coverage be obtained on a stereoscopic basis of the entire area of reconnaissance survey between the terminal points of route location. The area of coverage should extend beyond each terminal point approximately 5 to 10 percent of the airline distance between them. The full photographic coverage must be of an area 40 to 60 percent as wide as the airline distance between terminal points. This wide coverage is essential for ascertaining where each alternate route location is feasible, as well as where routes cannot be located. This broad coverage is also necessary for determination of drainage areas and accomplishment of photographic interpretation to determine soil and ground conditions along the routes as well as sources of granular construction materials.

(more)

RG 30, Bur. of Public Roads
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Box 1130

Considerable time will be required to procure all needed photographs from available sources. Consequently, we suggest that, later on, you advise us the exact date on which you will be ready for his services in an engineering capacity. Moreover, you should not expect Mr. Turner to arrive in Alaska before you have sufficient photographs on hand ready for use and we would like to limit the duration of his assignment to three months or less.

We will be happy to help you expedite the procurement of photographs. This can best be done by furnishing our Aerial Surveys Branch with a suitable map or maps on which you have designated terminal points and outlined the various project areas where aerial surveys are to be made for determining route alternatives.

WTPryor:kd
cc: Files (2)
Mr. Wm. J. Miami
Mr. G. M. Williams
Mr. D. W. Loutzenheiser
Mr. W. T. Pryor
Mr. Fred W. Turner--c/o Mr. Prentice Julian, Regional Engineer
Bureau of Public Roads
Apartado "Q"
San Jose, Costa Rica

Mr. E. E. Erhart

cm 7-24-59

OdM 1 (BPR)
PPM 21-5.1

U. S. DEPARTMENT OF COMMERCE Bureau of Public Roads	POLICY AND PROCEDURE MEMORANDUM 21-5.1 Date of issuance: April 15, 1958
PROGRAM AND PROJECT PROCEDURES Alaska SUBJECT: PLANS, SPECIFICATIONS AND ESTIMATES (Federal-aid Projects in Alaska)	
Supersedes: This is an original issue.	Alaska Manual 5

Alaska 5

1. PURPOSE

The purpose of this memorandum is to prescribe policies and procedures with respect to surveys, plans, specifications and estimates for Federal-aid projects in Alaska under direct supervision of the Bureau of Public Roads.

2. SURVEYS AND PRELIMINARY INVESTIGATIONS

a. Preliminary engineering and the preparation of plans, specifications and contract documents should be performed with sufficient thoroughness, accuracy and care, so that changes and extra work during the construction stage can be held to a minimum and limited almost exclusively to revisions and additions necessitated by conditions that could not reasonably be anticipated before the project was advertised for bids.

b. Surveys and preliminary investigations shall be made by whatever feasible method or combination of methods will produce the best results in each case, with due consideration given to the elements of time, manpower and costs.

c. The survey shall include such operations as are necessary to procure all the field data required for determination and design of the best location, alignment, grades, cross sections and structural features, and for the preparation of adequate plans and specifications, a reliable engineer's estimate of cost, and accurate right-of-way descriptions. Sufficient investigations shall be made to develop adequate data on structure foundations, soils, drainage conditions, availability of local materials, and other conditions that will affect the design and cost of the project.

3. DESIGN STANDARDS

Projects shall be designed in accordance with the standards prescribed in PPM 40-2.

4. SPECIFICATIONS

a. Bureau of Public Roads Specifications FP-57, or latest revision thereof together with the related standard supplemental specifications prescribed in PPM 40-5, shall be used for all projects except as they may be modified by special provisions to fit job conditions on individual projects.

b. It shall be the policy to limit special provisions to the minimum required in individual cases to assure satisfactory completion of the project with high quality work in the specified time at a fair and reasonable price.

5. ENGINEER'S ESTIMATE

a. An engineer's estimate of the cost of the proposed project shall be prepared for each project as a part of the plans, specifications and estimates. The estimated cost of major structures should be segregated from the roadway work on the estimate sheet and the summation of cost shown at the bottom of the estimate.

b. The estimate shall include an estimated quantity and an estimated unit price for each proposed pay item for contract construction. If force account construction is contemplated there shall be an estimated quantity and estimated unit cost for each construction item. Major items shall be designated on the estimate by appropriate symbol. Construction items included in estimate for force account projects may be expressed as units of equipment operation cost for those projects where conventional items and quantities are not available due to the nature of the work to be performed. Estimated unit prices of major items for contract work should be supported by an analysis prepared in sufficient detail to assure that all factors that will have a bearing on the cost of the item have been given adequate consideration. The conditions anticipated to prevail during the proposed contract time limits are to be reviewed again just prior to issuance of invitation for bids and the estimated unit prices and total cost then adjusted as

deemed necessary. A lump sum may be included in the estimate to cover the cost of contingent items for which it is impracticable to determine in advance the extent of the need for the items of work involved and the probable cost thereof. Appropriate separate allowances for engineering supervision and for contingencies shall be added to the estimated total cost for the construction items to obtain the total estimated cost for the project. The allowance for engineering supervision should be an actual estimate of the cost for the particular project and not a percentage of the construction cost.

6. PLANS

a. Plans for all projects, except as stated otherwise hereinafter, shall be complete including title sheet, typical section, summary of quantities, plan and profile sheets, and any standard or special drawings required to cover items proposed for construction. To the maximum extent practicable special provisions should be used in preference to notes on the plans to specify the materials and construction methods and sequence of work and to establish the method of measurement and basis of payment. Notes on the plans should be used to explain and clarify the design features for the benefit of the contractor and engineer.

b. Abbreviated plans consisting of only the title sheet, typical section, summary of quantities, line diagrams and general notes are acceptable for surfacing projects and for force account projects which include minor improvement work only. When emergency conditions justify, abbreviated plans will be acceptable on other types of projects.

c. Reduced size plans are preferred for all projects and this practice is to be followed to the extent that availability of reduction processes will permit. The size of the reduced plans and title sheets should be approximately 11 inches by 18 inches or one-half of the stand-plan sheet.

d. The title sheet of the plans shall include sufficient information to permit ready identification of the project, the type of improvement and length of project. The map should show the route or substantial portion thereof and its relationship to other highway routes, and to towns, rivers and other significant geographical features.

7. PS&E DOCUMENTS ASSEMBLY

a. The following PS&E assembly shall be submitted to the Washington office in single copy for each project:

Complete set of plans
Engineer's estimate
Proposal and contract assembly
Review memorandum in brief outline form setting forth the engineering standards upon which the design is based
Material engineer's statement covering soil types, materials and basis of design for subgrade stabilization, base and surface courses

The assembly should be forwarded so that it will arrive in Washington prior to the date of advertising, or as soon thereafter as practicable.

b. Any unusual features of design, special provisions or construction should be explained in the review memorandum or in the transmittal memorandum. Traffic data shown in the review memorandum should be as complete and informative as conditions will permit. When a major structure is involved or when a comparison of two different types of structures or other alternates is required, the review memorandum should be supplemented by a statement prepared by the bridge engineer.

8. APPROVAL OF PLANS, SPECIFICATIONS, AND ESTIMATES

a. Final approval of PS&E will be by the regional engineer, such approval being indicated by signature on the title sheet. Notice of such approval is to be forwarded promptly to the Alaska highway department.

b. Whenever plans or specifications involve substantial departure from the general requirements set forth herein, due to unusual and complex engineering designs or unusual contract provisions or designs for projects to less than desirable standards as defined in paragraph 3, the consultation and advice of the Washington office should be requested and a joint decision reached at the preliminary stage of development on the acceptable course of action to be followed.

9. AVAILABILITY OF PLANS, SPECIFICATIONS, AND ESTIMATES

Plans and specifications for projects may be furnished free to all who have a bona fide need for them for bidding or construction purposes. All other applicants should be informed that plans and specifications are not available for general distribution, but may be reviewed at the place where they are on file.

The engineer's estimate of cost for projects to be constructed by the contract method should not be made available to prospective bidders nor to the public, except that after bids have been opened and read the total only of the engineer's estimate may, at the discretion of the regional engineer, be announced.

10. EFFECT ON PREVIOUS INSTRUCTIONS

This memorandum supersedes all procedures relating to the subject matter thereof set forth in previous instructions.

B. D. Tallamy
Federal Highway Administrator

BUREAU OF PUBLIC ROADS

Alaska Design 7-1

WIM

J. C. Allen

September 30, 1939

24-50

G. M. Williams

22-00

Consultant Engineering - Alaska

Your September 11 memorandum asked that the Office of Engineering consider whether the actions being taken by the Regional Engineer and by the State of Alaska to secure engineering consultants to conduct aerial surveys, make studies of route selections, and prepare designs for Federal-aid highway projects, will "---place the Bureau in a critical position."

After consideration of this matter, I have the opinion that both the Regional Engineer and the State are proceeding in a most logical manner under the conditions with which they are faced, that both agencies are acting with good faith, and that the actions are in the best interests of the general public as well as of the State and the Federal Government.

As background for this opinion, there is attached a copy of Mr. Niemi's September 8 memorandum of report to Mr. Turner. The first full paragraph on page two discusses the reasons for retention of six consultants. The details of the agreements for the aerial survey work were either established by or reviewed and concurred in by Mr. W. T. Pryor who made a trip to Alaska for this specific purpose. See copy attached of Mr. Pryor's trip report dated September 8, 1939.

While the actions are unusual, the conditions existing during the early period of Statehood are also unusual. It is certain that the Bureau cannot, by its own forces, accomplish all the work possible under the expanded Federal-aid highway program for Alaska, and it is certain that the State cannot recruit and otherwise organize its Department of Public Works with sufficient promptness to do all work of the expanded program during the initial period. From an administrative viewpoint, I consider that the actions taken are sound insofar as advancement of the Federal-aid highway program is concerned, and that such actions are not in conflict with the statutes, regulations, or PRR's. If, however, you have concern as to the legality of the actions, the opinion of the General Counsel should be obtained.

Attachments

GMWilliams:bjt

cc - Files (2)
W. J. Niemi, Juneau (2)
F. C. Turner
C. W. Enfield
Paul F. Royster
G. M. Williams

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

Alaska Design 10

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Paul F. Royster, Assistant Commissioner for Operations, Washington, D. C.

DATE: December 30, 1957

FROM : E. H. Swick, Regional Engineer
Juneau, Alaska

SUBJECT: Complaint on Work by Bureau Forces - Nome Area

Attached are copies of an exchange of correspondence between a Mr. Blodgett and the Commissioner, Alaska Highway and Public Works Department.

No reply to Mr. Blodgett is contemplated by the writer. It will be recalled he corresponded with this office in March, 1957; copies of his letter and my reply were furnished the Washington office, and a reply to him was prepared for Mr. Barnett's signature.

Ltr 3-25-57
sent Carbon 3/29/57

Attachment

mp

RG 30, Bur. of Public Roads
E. 6 D, Gen Corr. + Related Recs, 1955-59
Box 1130

DIVISION OF HIGHWAYS
F.A.D. OFFICE
1228 E. 10TH AVENUE
ANCHORAGE, ALASKA

TERRITORY OF ALASKA
ALASKA HIGHWAY & PUBLIC WORKS DEPARTMENT
BOX 2073
JUNEAU, ALASKA

FRANK A. METCALF
COMMISSIONER

December 20, 1957

Mr. Robert R. Blodgett
Teller, Alaska

Dear Mr. Blodgett:

This will acknowledge receipt of your letter of December 15, 1957, and copy of your letter of December 6 addressed to the A. G. C. in Anchorage.

We are passing copies of your correspondence to the Regional Office of the Bureau of Public Roads here in Juneau and presume you will hear from them regarding the items affecting their organization.

The last Legislature passed a good basic law setting up this Department, creating within it a Highway Division, and abolishing the old titles of Territorial Highway Engineer and Territorial Board of Road Commissioners. Mr. Metcalf was named first Commissioner of the Department. The Board is composed of a representative from each Judicial Division, known simply as Board Members, and Mr. Metcalf.

Mr Lee Hubbard has been named Director of Highways by the Board, and is working with a small staff from an office in Anchorage. Permanent headquarters for the Highway Division has not yet been established.

Our Department is proceeding as rapidly as possible with the very large task of creating a modern and efficient highway organization. We are hampered to some extent by budgetary limitations imposed by the last Legislature. We are trying to build carefully and solidly, factors we consider more important than speed. In the not too distant future we should be able to take over some of the present functions of the Bureau of Public

Roads, and eventually we will become the operating agency.

You will be interested to know that the new Territorial law states that the general policy shall be to place highway construction under contract, although force account work is permitted in certain instances. The Board and the operating personnel of this Department endorse this policy and expect to perform as much work by contract as possible. Further, we hope to design soundly, so that quality and quantity of work will be in proper economic balance.

Very truly yours,

FRANK A. METCALF
Commissioner

By
Dan Baxter
Administrative Assistant

cc: Swick
Goodrich
Hubbard
A.G.C. Anch.
DB/mr

Teller, Alaska
Dec. 15, 57

Frank Metcalf
Terr. Highway Engineer
Juneau, Alaska

Dear Sir:

The information copy of my letter to the Associated General Contractors, Alaska Chapter, is being forwarded to you with my desire that said letter be read before the next meeting of the Terr. Bd. of Road Commissioners.

The entire road program within the Territory of Alaska leaves much to be desired.

The time is long past when our territory should have had a streamlined Territorial Highway Department organized along the lines of the State Highway Department of virtually any state in the continental United States, anyone of which would be an improvement over our present organization.

We are sacrificing quality for quanity in our road program today and consequently we are going to be spending the greater portion of our road dollars for high maintenance costs for many years to come.

Sincerely,

Robert B. Blodgett

Enclosure: Copy of ltr to AGC

Teller, Alaska
December 6, 57

Associated General Contractors
Anchorage, Alaska

Gentlemen:

I am objecting to the force account work conducted by the Bureau of Public Roads within the Territory of Alaska. It is my considered opinion that the Bureau of Public Roads should restrict themselves to survey, design, inspection and maintenance. It would be desirable that they dispose of all road and bridge construction equipment in excess to their needs for maintenance purposes. It is further suggested that monies derived from the disposal of said equipment be utilized in securing some top-flight highway engineers, hydrographers, perma-frost engineers, compaction and soil experts. The Bureau of Public Roads presently has a mining engineer doing design at Nome, Alaska for the Nome-Teller route. Certainly, the mining engineer is not basically considered to be qualified as a design engineer for highways.

The Bureau of Public Roads is building subgrade and bridges on force account throughout the Territory of Alaska in the Nome area. They are not doing adequate compaction. They are building temporary bridges. They are putting in culverts that are too small or poorly located, or both.

Route 97 is the eventual highway from Nome to Fairbanks. From the Nome end it proceeds in a northerly direction out of Nome to Salmon Lake connecting to the Bunker Hill-Taylor Road in the Kougarok Mining District. It is to extend from there in an easterly direction to Fairbanks. All of the road that has been built thus far has been built by the Bureau of Public Roads or the old Alaska Road Commission, and only part of the surfacing has been let out on sealed bid contract.

The surfacing work is being broken up into very small contracts whereas this work could be contracted for less money per yard if larger contracts were let.

The Bureau of Public Roads construction is poor in the following respects: Poor design due to lack of qualified personnel. Poor construction due to poor design and the lack of modern construction equipment and construction methods. For example, they are using obsolete equipment in lieu of DW-20 or DW-21 type wheel tractors and Model 80 type scrapers. In view of poor design and poor construction, the maintenance costs are excessively high, particularly in the Second Division of Alaska. Route 97, now being constructed between Nome and Fairbanks, bears many examples as set forth above. It is my sincere hope that sufficient civic-minded people who are aware of the conditions as set forth will cooperate in helping to bring about changes to alleviate this situation.

I would appreciate it if you would present my position as an Alaskan resident and businessman to the proper authorities, or incorporate this information in your submittal.

Sincerely,

Robert P. Blodgett

Distribution:
AGC
Delegate Bartlett
Senator Bullock, 2nd Div. Alaska
Frank Metcalf (Terr. Bd. of Rd. Commissioners)
Sec. U.S. Dept. of Commerce

FORM CD-14 (12-12-56) U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL SLIP

DATE: Jan. 3, 1957

TO: Mr. E. E. Erhart

REF. NO. OR ROOM, BLDG.: 6036

FROM: Paul F. Royster

REF. NO. OR ROOM, BLDG.:

ACTION

- ☐ NOTE AND FILE
- ☐ NOTE AND RETURN TO ME
- ☐ RETURN WITH MORE DETAILS
- ☐ NOTE AND SEE ME ABOUT THIS
- ☐ PLEASE ANSWER
- ☐ FOR YOUR APPROVAL
- ☐ PER OUR CONVERSATION
- ☐ PREPARE REPLY FOR MY SIGNATURE
- ☐ TAKE APPROPRIATE ACTION
- ☐ PER YOUR REQUEST
- ☐ SIGNATURE
- ☐ FOR YOUR INFORMATION
- ☐ INVESTIGATE AND REPORT

COMMENTS:

No action necessary

[illegible]

GPO : 1957 O - 414035

COMM-DC 969

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

Office Memorandum • UNITED STATES GOVERNMENT

TO : Files

DATE: August 13, 1959

FROM : Marvin L. Harshberger MLH
23-10

Alaska design 12-1
Box 66

SUBJECT: Contracts for Photo-analysis work in Alaska

Confirming my telephone conversation with Regional Engineer Niemi this date regarding the use of consultant engineers in aerial survey work, Mr. Niemi stated that he is advertising 7 projects and has sent the proposals to 7 consultants. The estimated cost of this work is $1,360,000. Six of these projects are for photogrammetric and design work and one for photo-analysis and design.

The presently executed contracts with the Belcher Corporation total some $45,000 for 2 projects involves photo-analysis from existing photographs. The third contract for photo-analysis from existing photography on the Nome-Teller Road has been negotiated with the Belcher Corporation, but not executed to date.

To document the record on the Belcher negotiated contracts it is our understanding that the Belcher Corporation is one of the foremost, if not the foremost, on photo-analysis work, a highly specialized field of engineering.

In a conversation with Mr. Niemi August 12 I was advised that the seven consulting engineer contracts mentioned above, for photogrammetric and design work, would be let by the State and not by Public Roads.

Regarding the work on the Nome-Teller route Mr. Niemi advised that Belcher was given first consideration because this firm had performed similar work on this route for the State (or Territory). This additional justification was not mentioned when Mr. Niemi talked to Mr. Harshberger.

Box 66
6-16-64
5/7

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

BUREAU OF PUBLIC ROADS

This Memo was not sent - see note at bottom

Nome-Teller Road S-0131(6)
X to Aerial Folder ~~Subj.~~
X "Eagle-Circle Hot Springs
X " Kodiak Project
X F.A. General Alaska

Mr. W. J. Niemi, Regional Engineer
Juneau, Alaska

August 12, 1959

Paul F. Royster, Assistant Commissioner
23-10 Washington 25, D. C.

Contracts for photo-analysis work in Alaska

We have now received three contracts with Donald J. Belcher and Associates, Incorporated, for photo-analysis work in Alaska. The first of these was for work in the Kodiak area and the currently considered contract, not yet executed, is for work on the Nome-Teller Road.

The correspondence received with the three photo-analysis contracts did not include any data as to other suppliers contacted or considered before negotiating with the Belcher Corporation.

We assume you selected the Belcher Corporation because of the latter's special qualifications and rather unique background and experience in the type of work involved. If this be true, will you please so advise us and indicate the basis upon which the selection of the Belcher Corporation was made and the extent to which other prospective contractors were considered before your selection of Belcher Corporation? Will you also indicate whether you contemplate having similar work performed in the near future?

NOTE: This memorandum was not sent. Mr. Erhart talked to Mr. Niemi today, August 12, by telephone and requested the data.

TLHaskell/JGuandolo:tb
cc: Files (2)
Federal Hwy. Projs. Div.
Mr. Royster - Room 814

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

Tel. to 7 consultants

Eng. Rpts to Bureau - & to final

7 Projects

6 engr. & Drftg 1,

1 Engr.

7	1.360.000. ✓

1 38000

~~6~~ 7083

45000

~~area~~

BUREAU OF PUBLIC ROADS

Aerial Photo-satg. file
x Alaska FA-genl
x Policy Bk.-Aerial Survey
+ to Consultant Contr.

Mr. W. J. Miami, Regional Engineer
Juneau, Alaska

August 3, 1959

Alaska Memo's, 12-1
Box 66

Paul F. Royster, Assistant Commissioner
23-10 Washington 25, D. C. Paul F. Royster

Aerial Surveys and Consulting Engineering Services in Alaska

Your recent memorandum explained the need for obtaining the assistance of consulting engineers to expedite the survey and design program in your region. You listed a number of projects for which you proposed to negotiate contracts for various phases of the work.

As you requested we are enclosing a number of copies of contracts covering consulting services for different types of work. The information included in these contracts should prove useful to you in implementing your current program. Also attached is a copy of a memorandum from Mr. Pryor which contains comments concerning the scale of aerial photography, map scale-contour interval relationship which should also be of value to you.

Any contract for engineering services, unless confined to aerial surveys and photogrammetric work, should be prepared for execution in the Washington office since this authority has not been delegated.

Concerning the assignment of an aerial survey specialist for temporary assignment to your region arrangements have been made with the office of Engineering to have Mr. Pryor spend about two or three weeks in Region 10 to assist you in initiating the work you have programmed. After he has had a chance to become thoroughly familiar with the situation the determination should be made as to whether or not you will require Mr. Fred Turner's assistance following the completion of Mr. Pryor's assignment which is not to exceed three weeks. This office should be advised promptly of your decision.

Attachments

EEEhrhart:bja
cc: Files (2)
Federal Highway Projects Division
Mr. W. T. Pryor - Room Chief, Aerial Survey Branch
Mr. G. M. Williams - Room 903-A
Mr. Royster - Room 814

RG 30, Bur. of Public Roads
E. 6 D, Gen Corr. + Related Recs, 1955-59
Box 1130

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

Office Memorandum • UNITED STATES GOVERNMENT

THROUGH: Mr. D. W. Loutzenheiser

TO : Mr. E. E. Erhart
23-10

DATE: July 31, 1959

FROM : William T. Pryor
22-25

SUBJECT: Aerial Surveys--7 Projects in Alaska

In response to your note of July 28, the following comments are offered regarding general descriptive material supplied you by Region 10, about seven large projects in Alaska proposed for contract with consulting engineering firms for accomplishment of aerial surveys to determine highway routes, design the highway location, and prepare construction plans.

Region 10's objective to obtain the best consultant engineering services possible for each project is commendable.

Project 1--Talkeetna-Summit (90 miles)

It is not clear from the description of this project and the note regarding Stage 2 whether new photography of the selected route will be required or whether it is intended that route mapping would be accomplished by use of small scale existing photographs. Generally, it requires new photography at larger scale to compile topographic maps for design purposes. Existing small scale photography of large areas will usually not suffice.

Project 2--Willow-Talk Etna (42 miles) -- No comment.

Project 3--Mitkof Highway-Stikine River Route (25 miles)

According to data worked up in my office, it is more than 50 miles from the existing highway on Mitkof Island to where the Stikine River crosses the Alaska--Canada border. Perhaps the 100 foot-to-one-inch scale map is desired because that is the usual scale with which the engineers in Alaska are accustomed to work. The 5-foot contour interval desired for this project could be more economically attained if the mapping by photogrammetric methods is accomplished on map manuscripts at a scale of 200 feet to one inch. Rugged character of topography and dense and tall timber throughout most of the length of this survey project reduces the feasibility of attempting to utilize a 2 1/2-foot contour interval, which would be in balance photogrametrically with the map scale of 100 feet to one inch. In many areas along the route, even 5-foot contour interval would not be practical until after a route band had been cleared of the trees and other dense vegetation.

Copy sent to Juneau

Project 4--Eureka-Tanana Road (48 miles)

Photogrammetrically, the mapping scale of 100 feet to one inch with 2-foot contour interval is beyond the capability of most instruments and photogrammetric engineering firms. Mapping at a scale of 100 feet to one inch with a 2 1/2-foot contour interval is usually commensurate, provided the ground cover and ruggedness of the ground permit. Bridge site topographic mapping at a scale of 50 feet to one inch, with a contour interval of one foot, will require special and larger scale photography of the sites than would be usable for the 100 foot-to-one-inch scale topographic mapping of the route.

Project 5--Richardson Highway-Badger Road to Eielson Field (14 miles)

Comments regarding scale and contour interval for this project are the same as for the preceding survey project (Eureka-Tanana Road).

Project 6--Chena Hot Springs Road (Mile 27 to Mile 60)

If the 500 foot-to-one-inch scale photography (taken of the highway route, in July 1959, between mile posts where mapping is required) covers the proper route band of topography, it will be possible to map at a scale of 100 feet to one inch and to measure cross sections (where the ground can be seen) to an accuracy of approximately 1/2 foot, provided there are no systematic errors.

Project 7--Bering River Road (37 miles)

Comments regarding this project are the same as made previously for the Eureka-Tanana Road.

BUREAU OF PUBLIC ROADS

Alaska Design-12-1

Mr. W. J. Niemi, Regional Engineer
Juneau, Alaska

August 3, 1959

Paul F. Royster, Assistant Commissioner
Washington 25, D. C.

Paul F. Royster

23-10

Aerial Surveys and Consulting Engineering
Services in Alaska

Your recent memorandum explained the need for obtaining the assistance of consulting engineers to expedite the survey and design program in your region. You listed a number of projects for which you proposed to negotiate contracts for various phases of the work.

As you requested we are enclosing a number of copies of contracts covering consulting services for different types of work. The information included in these contracts should prove useful to you in implementing your current program. Also attached is a copy of a memorandum from Mr. Pryor which contains comments concerning the scale of aerial photography, map scale-contour interval relationship which should also be of value to you.

Any contract for engineering services, unless confined to aerial surveys and photogrammetric work, should be prepared for execution in the Washington office since this authority has not been delegated.

Concerning the assignment of an aerial survey specialist for temporary assignment to your region arrangements have been made with the office of Engineering to have Mr. Pryor spend about two or three weeks in Region 10 to assist you in initiating the work you have programed. After he has had a chance to become thoroughly familiar with the situation the determination should be made as to whether or not you will require Mr. Fred Turner's assistance following the completion of Mr. Pryor's assignment which is not to exceed three weeks. This office should be advised promptly of your decision.

Attachments

EEErhart:bja
cc: Files (2)
Federal Highway Projects Division
Mr. W. T. Pryor - Room Chief, Aerial Survey Branch
Mr. G. M. Williams - Room 903-A
Mr. Royster - Room 814

8-3-59

RG 30, Bur. of Public Roads
E. 6 D, Gen Corr. + Related Recs, 1955-59
Box 1130

Alaska Design 12-1

22-25 BUREAU OF PUBLIC ROADS

10-00 Mr. William J. Niemi, Regional Engineer June 5, 1959
Juneau, Alaska

22-25 G. M. Williams, Assistant Commissioner D. W. L.
By: D. W. Loutzenheiser, Chief, Highway Design Division

Stikine River Aerial Survey, F. A. S. 937

Reference is made to our memorandum of May 26 with regard to the Stikine River Aerial Survey, F.A.S. 937.

Inadvertently, the photography scale of 200 feet to one inch referred to in the fifth sentence of the third paragraph (page 1) is in error. Correction of this error will change the affected sentence to read: "The principal reasons for this recommendation regarding the usability of 1,000 feet to one inch scale photography of such areas for mapping ....."

Please make this change on the original memorandum, and copy which you received.

FWTurner/hmd
Files(2)
cc Mr. G. M. Williams
Mr. W. J. Niemi
Mr. D. W. Loutzenheiser
Mr. W. T. Pryor

6.8.59

RG 30, Bur. of Public Roads
E. 6 D, Gen Corr. + Related Recs, 1955-59
Box 1130

Alaska Design 12-1
files

May 26, 1959

Mr. William J. Wiest, Regional Engineer
10-00 Juneau, Alaska

D. W. L.

G. M. Williams, Assistant Commissioner
22-25 By: D. H. Leutzenheiser, Chief, Highway Design Division

Stikine River Aerial Survey, F.A.S. 937

Reference is made to your memorandum of May 1. We now have the portion of the photography printed from film negatives in the Denver office of the Rocky Mountain Region of the U. S. Geological Survey. Yesterday its Washington office, upon our inquiry over the telephone, gave assurance that the remainder of the photography, for which the film negatives are on file at the Sacramento office of its Pacific Region will be printed soon from rolls 59, 90, 105, 106, 107, 110, 113, and 123.

An initial examination of photographs received of part of Mitkof Island indicate that the alluvial fan deposits in the vicinity of Route C will be a source of granular materials. It is difficult to pinpoint on the 1:40,000 scale photographs the most likely portions of the terraces in river valleys where granular materials might be found. It appears, however, that most of the inland portion of Mitkof Island is devoid of granular materials in quantity. The granitic character of rock on the island is a good indication that the places where quarry materials might be found can be identified by photographic interpretation of the 1:40,000 scale photographs and marked thereon for field investigation.

The dense, tall growth of trees covering much of the ground will make photographic interpretation and mapping by photogrammetric methods throughout the entire area of reconnaissance survey very difficult. You stated you would probably negotiate a contract for aerial photography of the area at a scale of 500 feet to one inch to include routes B, C, and D. Due to the rugged character of the topography throughout the area with its abrupt rise from sea level to an elevation of 1,000 feet and more within a short horizontal distance from shore lines and because of the dense tall ground cover, it is recommended that you have the photography taken at a scale of 1,000 feet to one inch rather than 500 feet to one inch, if a 6-inch focal length aerial camera is to be used. This smaller scale will be better, within the accuracies attainable from any photography of the area and each route alternative, then the larger scale for both the detailed photographic interpretation and the route mapping by photogrammetric methods. The principal reasons for this recommendation regarding the usability of 200 feet to one inch scale photography of such areas for mapping are outlined in the paper "Relationships in Contour Interval, Scales and Map Instrument Usage," which was published in 1957 by the Highway Research Board on pages 23-25 in Bulletin 157. Also, the ratio of relief height to flight height within each stereoscopic model to be used in topographic mapping by double projection photogrammetric instruments, as the Kelsh and Ralplex stereoplotters, must not exceed 0.25. This means that a

differential in relief within the stereoscopic area of a pair of vertical photographs of 1,500 feet will demand a flight height of 6,000 feet. If a precision aerial camera is utilized from such a height above the low ground, a photography scale of 1,000 feet to one inch will be obtained. This scale will be suitable for topographic mapping at a scale of 200 feet to one inch with a contour interval of five feet.

Before the area and route photographs are taken, however, it is suggested that control point stakes, or preferably iron pins, be set in the ground at reasonable intervals where they can be seen from the air. Also, a target should be placed on the ground, centered over each stake or iron pin point before photography. These points could then be used in photogrammetrically bridging horizontal control for the mapping. Refer to the paper "Photographic Targets for Markers of Survey Control," which was published in 1950 by the Highway Research Board on pages 49-67 in Bulletin 199. For specification details on bridging control photogrammetrically, refer to Sections 71 and 72 of the Reference Guide Outline-1958. Section 71 is particularly applicable to this project. Section 72 of the Specifications would be applicable for the 1,000 feet to one inch photography, and also for bridging photography which should be taken at a scale of from one-half to one-third the scale of the mapping photography, and on or as near the same days as possible.

The density of ground cover over this project, however, makes use of an eight and one-fourth inch focal length precision aerial camera preferable to a camera of six inch focal length for taking the mapping photography. Should you decide to take advantage of this fact, have the mapping photography taken from a flight height of 6,600 feet above sea level, which will result in a scale of 800 feet to one inch. The bridging photography should preferably be taken with a precision aerial camera of six inch focal length from a flight height of 15,000 feet above sea level. The photography scale will be 2,500 feet to one inch, and the size at which the photographic targets should be placed on the ground are governed thereby.

Two or more basic horizontal control points near the ends and at about the middle of the project would be desirable. These must be appropriately targeted before photography, as should all points for which horizontal control is to be bridged. Such procedure will reduce field work to that of placing the targets and to establishing vertical control for leveling each stereomodel of the 2,500 feet to one inch scale bridging photography.

Procedures outlined herein have been proven successful by our Aerial Surveys Branch.

WTPryor/hmd
cc Files (2) ✓ W.T.P.

cc Mr. William J. Mayo
Mr. G. M. Williams ✓
Mr. E. E. Erhart
Mr. D. W. Loutzenheiser ✓ 5-27-59
Mr. W. T. Pryor ✓
Mr. Harold Allen (Attention: Mr. P. C. Smith)

Alaska Dirgs 12-1.

BUREAU OF PUBLIC ROADS

WTM

23-10

Mr. Paul F. Roynter

May 6, 1959

BMW

G. M. Williams

22-25

Proposed Aerial Surveys School in Region 10

Reference is made to your memorandum of April 20 in which you informed me Regional Engineer Miami desires Mr. William T. Pryor of this office to conduct an aerial surveys school in Region 10, and that he would like to have Mr. Pryor visit Alaska to evaluate the program of photogrammetry and aerial surveys in that region before the school is conducted.

Mr. Pryor's present schedule will make it possible for him to be in Billings, Montana, on June 20 and 21, following an assignment in Wyoming. It is understood that Mr. Miami will be in Billings during the Bureau of Public Roads meetings on June 19 and 20. Consequently, Mr. Miami, Mr. Pryor, Mr. Erhart and I might have an informal discussion and ascertain Mr. Miami's requirements and expectations. Please advise me whether it will be possible for Mr. Miami and Mr. Erhart to get together with me and Mr. Pryor at that time.

WTPryor/kd

cc: Files (2)
Mr. G. M. Williams
Mr. D. W. Loutzenheiser
Mr. W. J. Miami
Mr. W. T. Pryor

WTP

5/7

DWL

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

FORM CD-82
(7-19-37)

"Received--AERIAL SURVEYS"
U.S. DEPARTMENT OF COMMERCE
MAY 4 1959

DATE 4/28

TO: DWL

FROM: WTP DWL 5/4

FOR:

Phoned Ehart 4/27 that reply would be delayed pending return of WTP & DWL from end 2 week.

Discussed with WTP and sent copy 4/28. He will discuss with DWL, and indicated June would be suitable time for him to go.

WTP

USCOMM-DC 920

Mr. Lautzenheiser -

Can this be done and if so, when?

J.R. 4/24

"Received--AERIAL SURVEYS"
MAY 4 1959

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

"Received—AERIAL SURVEYS"
MAY 4 1959

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. G. M. Williams

DATE: April 20, 1959

FROM : Paul F. Royster

23-10

SUBJECT:

We have been advised by Regional Engineer Niemi that a considerable amount of photogrammetric work is anticipated in connection with the development of plans for highway work in Alaska during the next several years. In view of this we suggested that a short course in photogrammetry under the direction of Mr. Pryor might be beneficial. Mr. Niemi has indicated in his reply that instruction of this nature is considered very desirable. He also suggested that before scheduling a regular training course, a trip to Alaska by Mr. Pryor to evaluate the program of work in the region might prove worthwhile.

It will be appreciated if you will study this situation and determine whether or not Mr. Pryor's schedule can be adjusted to permit a trip to Region 10.

RG 30, Bur. of Public Roads
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Box 1130

Alaska Design 12-1
Files

BUREAU OF PUBLIC ROADS

10-30 Mr. W. J. Niemi, Regional Engineer
Juneau, Alaska

April 10, 1959

D. W. L.

22-25 G. M. Williams, Assistant Commissioner
By: D. W. Lentzenheiser, Chief, Highway Design Division

Stikine River Aerial Survey--REF: BDS 12-1

Receipt is acknowledged of your memorandum requesting the Aerial Surveys staff here to make an aerial reconnaissance survey of the proposed Stikine River route between Petersburg and Kakwan Point in southeastern Alaska. Reports of the reconnaissance surveys made on the ground and the aerial photographs you transmitted with your memorandum were also received.

Your survey requirements have been discussed with soils engineers of the Division of Physical Research in nearby Langley, Virginia. With the photographs available soils engineers of that office will be able to assist in making the reconnaissance survey and materials analyses you desire.

The aerial photographs you forwarded, however, do not provide sufficient coverage for satisfactory accomplishment of the work. For many places only single photographs, not stereoscopic pairs, were received. It will be necessary for you to provide us with the project charge symbol, and ask that we be given authority to purchase sufficient stereoscopic photographic coverage of a wide area for making the survey.

The photography negatives are on file at the Regional Office of the U. S. Geological Survey in Denver, Colorado. Arrangements are being made through the U. S. Geological Survey office here to have its office in Denver print the photographs and mail them to this office. It will be possible for us to complete the aerial reconnaissance survey and materials analyses by your mid-July deadline if we are successful in obtaining the needed photographic prints in sufficient time.

It will not be necessary for you to contract, at this time, for large scale mapping photography. In fact, the small scale photography is better for our immediate use in determining route alternatives and in making the materials analyses.

We suggest that you reappraise your intention of mapping the area photogrammetrically at a scale of 500 feet to one inch with a contour interval of five feet. Such a scale and contour interval are not commensurate with the practical working limits of most of the commonly used photogrammetric map compilation instruments.

(more)

The map scale of 500 feet to one inch is practical for the rugged topography through which the route alternatives are to be located, but the contour interval should be governed by the photogrammetric instrument available for the project mapping. Should a Kelsh stereo-instrument which utilizes 6-inch focal length photography be available, the photography scale should be five times the mapping scale, or 2,500 feet to one inch for mapping at a scale of 500 feet to one inch. This photography scale and focal length would require an average flight height above the topography of 15,000 feet. Considering a c-factor of 1200 might be practicable, which is large for the character of this rugged area and its cover of dense tall timber, the optimum contour interval would be 12.5 feet. This could be rounded to 15 feet, but 20 feet is generally used. Should engineering work, regardless of the preceding consideration, require a contour interval of five feet, a practicable scale for the mapping would be 200 feet to one inch. If this scale is too large for your reconnaissance survey purposes, then the contour interval must be larger than five feet. As an alternative to obtaining new photography for the reconnaissance survey mapping, topographic maps can be compiled by use of the existing photography at a scale of 600 feet to one inch with a contour interval of 20 feet.

FWTurner/hmd

cc Files (2)

cc Mr. R. L. Quick

Mr. G. M. Williams
Mr. D. W. Loutzenheiser
Mr. W. T. Pryor

4113

Alaska design 12-1 Equipment - Files Subj. file
x Aerial Photo
x Alaska HES Projs.

BUREAU OF PUBLIC ROADS

Mr. E. H. Swick, Regional Engineer
10-00.3 Juneau, Alaska

March 12, 1959

Paul F. Royster, Assistant Commissioner
23-10 Washington 25, D. C. Paul F. Royster

Stereoscopes for use of Highway Engineers

Upon receipt of your memorandum of February 26 concerning your intention to purchase a stereoscope for use in the Fairbanks Division and seeking our advice as to type of instrument, we asked Mr. Pryor for his recommendations. A copy of his reply to Mr. Erhart is attached. It is believed that the information furnished will be of material assistance in making the selection of the type of instrument to be purchased for your use.

We understand that the Q.M.S. stereoscopes for sale by Semler Industries, Inc., North Hollywood, are war surplus instruments which have been reconditioned. These may be found to be entirely satisfactory with a considerable saving in cost.

Attachment (1)

EEErhart:nk
cc - Files (2)
Federal Hwy.Projs.Div.
Mr. Pryor
Mr. Royster - Room 814

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

Office Memorandum • UNITED STATES GOVERNMENT

THROUGH: Mr. D. W. Loutzenheiser

TO : Mr. Eric E. Erhart

DATE: March 6, 1959

23-10

FROM : W. T. Pryor WTP.

22-25

SUBJECT: Stereoscopes for use of Highway Engineers

In response to your request for my suggestions on the purchase of stereoscopes for use in Alaska, as proposed by Mr. Swick in his memorandum to Mr. Royster on February 26, the following is furnished:

I have had the privilege of using an Old Delft Scanning Stereoscope. For the uses we make of aerial photographs in reconnaissance surveys to determine feasible highway routes and to examine them stereoscopically in the processes of photographic interpretation, this is an effective instrument, particularly if two engineers decide to examine one pair of photographs at the same time. Its principal disadvantage is the fact that the central leg of the 3 is directly across the zone through which a parallax bar or an engineer's scale, as desired, has to be placed in order to measure parallax for the determination of differences in elevation.

For that reason, its high cost, and the fact that the scanning stereoscopes do not provide a better stereoscopic view than some mirror stereoscopes, we have not purchased one for use in the Aerial Survey Branch. Instead, we purchased, prefer, and recommend, for highway engineering use, the Wild Stereoscope, Model ST-3 with binoculars, when only one stereoscope is purchased for use in one office. If more than one is purchased, the others need not be equipped with binoculars because the greatest use of these stereoscopes is without the binoculars. One pair with binoculars is desirable. Similarly, one parallax bar will suffice for one or a number of stereoscopes in one office.

We do not use the parallax bar for making routine parallax measurements to determine highway routes; instead, we use an engineer's scale graduated in fiftieths of an inch, and immediate values of parallax are interpolated between the distance markings on the scale as the photographs are examined stereoscopically. Accuracy obtained approaches approximately .004 inch, which is sufficient for reconnaissance purposes.

An alternative to the Wild Stereoscope, is the cheaper, less satisfactory, but usable Q.O.S. Stereoscope.

Approximate price quotations, and addresses for purchase of mirror stereoscopes are:

1 - WILD ST-3 Folding Mirror Stereoscope, in carrying case	$205.00
1 - Binocular Attachment, magnification 3X	165.00
1 - Parallax Bar	100.00
Complete equipment	$470.00

Supplier: Henry Wild Surveying Instruments
Supply Company of America, Inc.
26 Court Street
Brooklyn 2, New York

1 - Q.O.S. Stereoscope	$145.00
1 - Parallax Bar	125.00
	$370.00

Supplier: Gordon Enterprises
5362 Cahuenga Blvd.
North Hollywood, California

1 - Q.O.S. Stereoscope $47.50

Supplier: Semler Industries, Inc.
6919 Lankershim Blvd.
North Hollywood, California

(At present I do not have price quotations on binoculars or parallax bar from the supplier of this stereoscope. The parallax bar obtainable from either of the other suppliers, however, will be suitable.)

There are other stereoscopes which are available, but I do not recommend them.

BUREAU OF PUBLIC ROADS

K

Mr. William T. Pryor March 4, 1959

Eric E. Erhart ERIC E. ERHART

23-10

Attached is a copy of a memorandum from Regional Engineer Swick which is self-explanatory.

Will you please let me have your suggestions in order that we may in turn advise Mr. Swick?

Attachment

EEErhart:bja
cc: Files (2)
Federal Highway Projects Division
Mr. Royster - Room 814

RG 30, Bur. of Public Roads
E. 6D, Gen Corr. + Related Recs, 1955-59
Box 1130

STANDARD FORM NO. 64

BUREAU OF PUBLIC ROADS

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Paul F. Royster, Assistant Commissioner for Operations, Washington, D. C.
23-10
ATTENTION: Mr. E. E. Erhart

DATE: February 26, 1959

Ref: Plan 7-3

FROM : E. H. Swick, Regional Engineer
10-00.3 Juneau, Alaska

WHS

SUBJECT: Stereoscope Purchase - proposed Fairbanks-Nome Highway, HPS 1(5)

We have a request from our Fairbanks Division asking that a scanning stereoscope be purchased for their use. We know that a stereoscope study of aerial photographs is of great advantage both preceding and during a location survey. Our Fairbanks Division also finds that a study of aerial photos for projects under design is helpful and they believe that it is desirable to have stereoscope equipment available at all times for use in their division office.

We would appreciate advice relative to this purchase. The division recommends that an order be placed for the Old Delft Scanning Model ODSS-II Stereoscope. This type instrument, costing $900, is now in use at the University of Alaska and the division believes that it is a quality instrument suitable to their needs. We must keep in mind that our other two divisions may also request similar equipment and it may be necessary also to upgrade or replace the equipment now being used in our regional Survey and Road Design Unit. Possibly other makes or models are available which would be satisfactory at a lesser price or more satisfactory at the same price, or possible stereoscope equipment such as this may be available from surplus.

Any advice which we may receive in regard to the purchase of this type of equipment would be welcome.