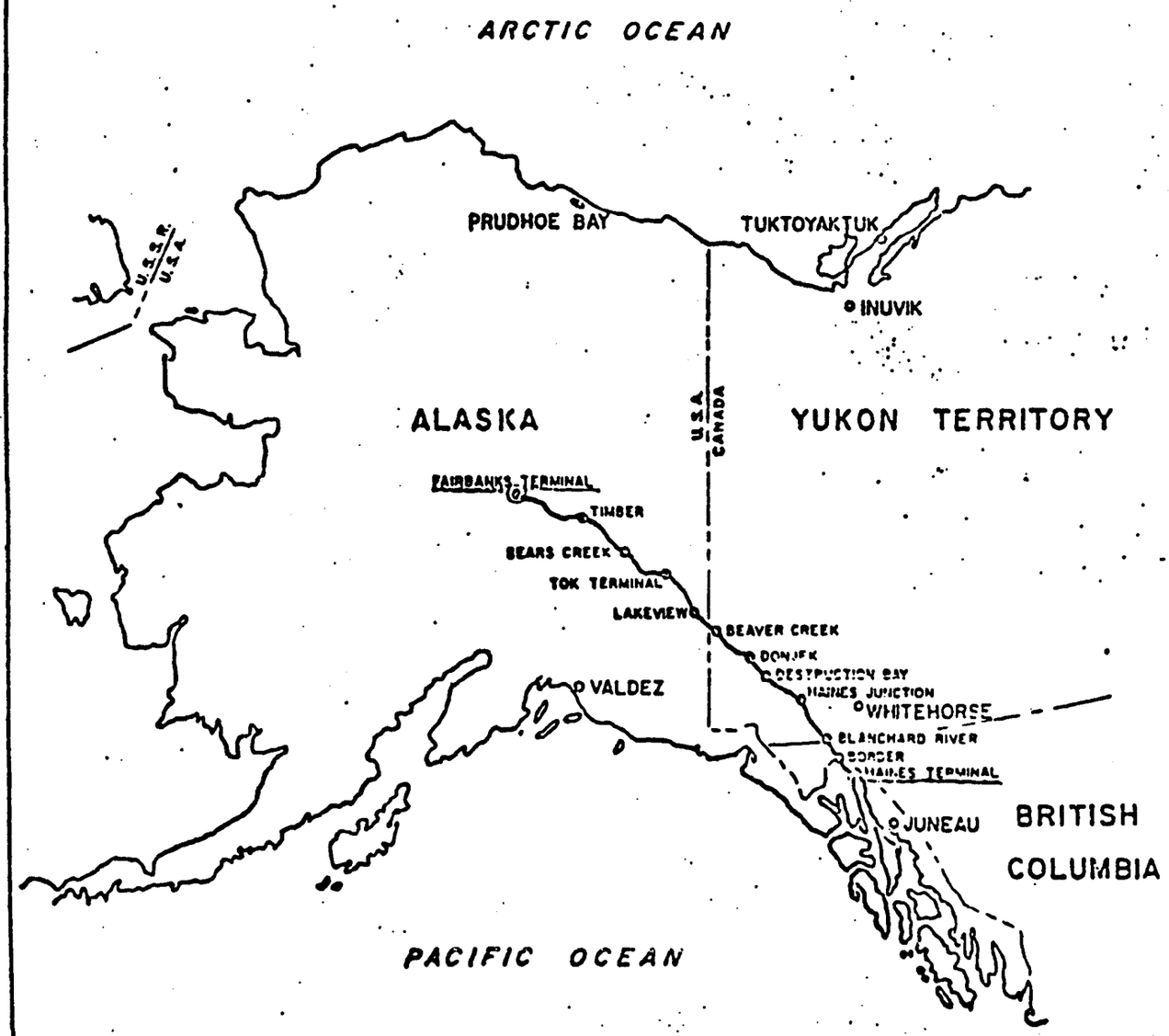
Received from K. Dissett

BACKGROUND PAPER ON

HAINES-FAIRBANKS (YUKON) FUEL-OIL PIPELINE

LIST OF CONTENTS:



ROUTE
OF
HAINES–FAIRBANKS PIPE LINE

1. INTRODUCTION

The Haines-Fairbanks Pipeline runs from Haines, Alaska, across a strip of British Columbia, crossing the Yukon Territory, including the Kluane National Park, and North to Fairbanks, Alaska. (Appendix A)

The section of pipeline within the boundaries of the Yukon Territory consists of approximately 300 miles of 8 5/8" O.D. Pipe of .277" wall thickness.

The line construction was completed in Fall 1955 and became fully operational in April 1956.

The line is covered by a Treaty signed June 30, 1953, between the Canadian Government and the U.S. Military through the U.S. Government, and the pipeline has been in operation since the mid-1950's transporting fuel oil to Fairbanks. The Treaty was originally to expire on June 30, 1973 but was allowed to extend itself, by mutual agreement, for an indefinite period, when neither party acted officially to terminate it. The Treaty is administered through the Canada-U.S. Permanent Joint Board of Defence Commission.

The part-surface, part-buried line has had several fuel oil spills, the most recent and serious, in May 1968, near Dezadeash Lake (Yukon). This spill was subsequently cleaned up to the satisfaction of the National Energy Board and the Northern Natural Resources and Environment Branch of DIAND.

Line inspection surveys conducted in 1969 and 1970 indicate considerable corrosion pitting of the metal, both external and internal.

Considerable repair work has been carried out from time to time on the more severely corroded sections but in recent years the pipeline was restricted to a lower-than-design operating pressure due to severe corrosion pitting in parts of the line of up to 75% of the pipe's wall thickness.

The section of line within the Canadian sector was suspended, purged of fuel oil and capped during July 1971. In July 1971 the U.S. Military estimated that line repairs in the Canadian Section of approximately $6 million would be required to meet NEB standards and operate in the 1,400 to 1,600 psig range.

The line is presently awaiting a decision by the U.S. Army as to its disposition. (Appendix B)

2. FACTORS

A - U.S. Agencies' Concerns

The U.S. Military is presently assessing the results of an Economic Appraisal/Feasibility Report including market prospects for utilization of the line prior to making a decision on the furter disposition of the pipeline. To date, progress from negotiations have yielded a Yukon Fuel Oil Economics Study, a Pipeline Corrosion Study, and the current U.S. Military Economic Feasibility and Market Study.

The Energy Company of Alaska has submitted a proposal to the U.S. Military, to operate and maintain the line under a lease agreement for movement of military and commercial petroleum products to Alaska. End uses would include military requirements, Alyeska pipeline construction fuel, and consideration would be given to providing for marketing needs of the Yukon Territory. Further plans call for later construction of a $45 million - 15,000 barrel per day refinery at Fairbanks, Alaska with surplus refined products to be piped back to Haines, Alaska for sale in that area and in the Yukon area through which it passes.

Besides the Energy Company of Alaska, six other energy companies have expressed interest in acquiring operation of the pipeline. These are: Trimac Ltd., Calgary, Alberta; Rock Island Oil Co., Witchita, Kansas; Tesoro-Alaskan Petroleum Co., San Antonio, Texas; Alaska-Yukon Pipelines, Vancouver, B.C.; Standard Oil California, B.C.; Imperial Oil, Calgary, Alberta.

Following appraisal of the Economic Feasibility Report on the Haines-Fairbanks Pipeline, the U.S. Military has an option of three decisions for disposition of the line:

1) resumption of operations under the treaty; or

2) lease or sale to third party commercial interests, probably requiring amendment of the treaty; or

3) allow the treaty to be terminated and:

a) U.S. Army salvage pipeline and restore right-of-way

b) leave line in place for disposition by [illegible]

Under terms of the treaty, the rights granted are non-transferrable without the express consent of Canada.

At termination, the pipeline and installations "shall" remain with the U.S. Government, and the U.S. "may" remove the pipeline from the right-of-way, restoring the surface to its original condition as far as practicable and reasonable so to do in the opinion of Canadian authorities.

B - Canadian Agencies' Concerns

The Yukon Commissioner's interest in probable Yukon economic benefits, (Appendix 5E) if southern or nothern segments of the pipeline are restored to operation, is of concern and requires further investigation.

An economic feasibility study by the DIAND Economic Staff Group economists in July 1970 indicated no price advantage for Yukon residents by this line compared to the existing White Pass and Yukon Fuel Pipeline and trucking System. (Appendix 5F)

A new study is required in keeping with this 1970 report to update and account for the recent fuel and transportation price increases, general operating cost escalations, and other relevant factors. Should the pipeline be re-activated, consideration should be given to the various possibilities of supplying fuel to the Yukon from Haines in the South enroute to Alaskan markets, as well as the reverse situation where Alaskan fuel from the proposed Fairbanks Refinery could move south to Haines and serve the Yukon, either by the U.S. Military, by a U.S. third party, or by a Canadian third party.

There is an urgency for a decision by Canada, to decide whether the line should serve Canadian commercial interests, whether operated by the U.S. Military or a U.S. third party; whether the line should be retained by Canada and up-graded for operation by a Canadian public or private agency; or whether to elect abandonment, salvage, and surface restoration measures. (Appendix C)

3. CONCLUSIONS

i) If the U.S. Military should decide to resume operation of the Yukon section of the line, now suspended and empty, they will operate under the existing treaty provisions with monitoring and guidelines under NEB-DIAND jurisdiction.

ii) If the U.S. should decide to lease or sell the line to a third party for commercial interests, the pipeline would require new certification, retesting and general up-grading to comply with NEB regulations and operating and environmental protection standards. The Energy Company of Alaska envisions a lesser expenditure to up-grade the line for a 500 psig operation than the U.S. Military estimate of $6 million for a 1,400 to 1,600 psi operation. Specific repair and operating guidelines for operational and environmental protection will heavily influence this cost.

iii) If the U.S. Military allows the treaty to be terminated, it could be persuaded to salvage appropriate installations and satisfactorily restore the right-of-way, or to pass the assets in part or whole to Canada for disposal as Canada sees fit.

4. RECOMMENDATIONS

To provide for the several eventualities noted in the conclusions, it is recommended that action be given as follows:

a) NEB continue direct contact with the U.S. Disposal Agency (General Services Administration) to keep appraised of that Agencies' studies, considerations, and possible proposed action, and in that respect continue co-ordination with DINA, formerly through the Oil and Minerals Division, now with the ACND Arctic Transportation Committee;

b) The NEB-DIAND Environmental Regulatory Guidelines (Appendix D-1, 2, 3) submitted earlier for the continued operation of the pipeline, up-grading, partial replacement, or abandonment, disposal and restoration operations, requires a critical review, up-dating, and detailed specifics to incorporate more current requirements in technology, legislation and operation. Based on this second up-dating of pipeline guidelines, and if the situation remains unchanged, or the U.S. Military retains operation, it would appear that Canadian interest can be protected under the Treaty with continued surveillance of pipeline operations by the regulatory agencies of NEB and DIAND.

c) [illegible]

d) Assess against item (c) (above), and possible independent studies, the feasibility of utilizing the pipeline to transport fuel oil and possibly other oil products to Yukon centres either from southern refinery centres by way of the sea route and Haines-Yukon pipeline system, or from a refinery centre possibly at Fairbanks, by way of the Fairbanks-Yukon system, or both, with these under the operational alternatives of the U.S. Agency, or U.S. third party, or the Canadian Agency or Canadian third party.

APPENDIX - D-1

Requirements for Rehabilitation of the Haines-Fairbanks Pipe Line (Canadian Portion)

1. Corroded pipe shall be replaced with new pipe. By definition, the term "Corroded Pipe" means pipe with wall thickness less than 87.5% of the nominal wall thickness.

2. All pipe with patches shall be replaced with new pipe in accordance with the Canadian Standard C.S.A. Z-183/1967.

3. Pipe with dents and pipe with gauges shall be replaced with new pipe.

4. The pipe line shall be lifted, externally cleaned and suitably protected with a pipe line coating. A variation of this by use of cathodic protection may be approved subject to prior consideration of the National Energy Board.

5. The pipe line shall be buried and the depth of cover shall not be less than 2 feet outside of fenced areas (such as pump stations and block valve locations, etc.).

6. The pipe line shall be hydrostatically tested in accordance with the National Energy Board requirements for testing of pipe lines. The test pressure shall be not less than the pressure required to produce a stress equal to 100% of the minimum yield of the pipe assuming a wall thickness of 87.5% of nominal wall thickness.

7. A complete review and approval of all Pumping Stations instrumentation and safety devices is required by the National Energy Board. The approved facilities shall be installed completely before the pipe line can be re-opened for transmission of oil.

8. All storage tanks shall be enclosed inside earth dykes. The volume of space inside the dyke shall be not less than 100% of the tank capacity.

APPENDIX D-2

Requirements subject to the continued operation of the Haines-Fairbanks Pipe Line

ne pipe line shall be subject to the National Energy Board Act.

The date at which this pipe line can be handed over from the United States Department of Defence to a new Owner is subject to the approval of the National Energy Board.

3. The Owner of the pipe line shall obtain easements for the pipe line rights-of-way from the province of British Columbia and the Department of Indian Affairs and Northern Development, Ottawa.

4. The Owner of the pipe line shall obtain surface rights for those pipe line facilities which are above ground, including access roads to pumping stations.

5. Suitable survey drawings shall be prepared for approval and deposit as part of the acquisition of pipe line easements.

6. Care shall be taken to minimize adverse effects on the environment around the pipe line:

   (a) No waste materials shall be disposed of in either flowing or static waters but shall be buried.

   (b) Construction camp wastes are to be buried.

   (c) No vegetation off the rights-of-way shall be cut down unless prior permission is obtained from either:

      (a) Owner(s) of the timber
      (b) Provincial or Yukon Government.

   (d) Existing trails shall be used wherever possible for access to the pipe line R/W from roads and highways.

   (e) Special precautions shall [illegible] times to prevent fo[illegible]

   (f) By pr[illegible]

7 [illegible]

8. Canadian labour and materials shall be given prior consideration in regard to any construction work.

9. Local labour shall receive preference for jobs in the operation and maintenance of the pipe line and facilities.

10. A new Canadian National Park known as Kluane Park is under development on the south and westerly side of the Alaska highway. The surface finish of the rights-of-way and the appearance of pumping stations must be suitable to a park setting. Sound suppression will be necessary to restrict equipment noise levels in the park area so that such equipment is inaudible at 500 feet.

APPENDIX D-3

Requirements for Dismantling and Disposal of the Haines-Fairbanks Pipe Line

1. All surface pipe is to be removed. Buried pipe in the beds of rivers and larger creeks may be left in place but plates of steel must be welded securely over the ends of the pipe left in the river and creek beds. The ends of the pipe must be below-ground level.

2. All block valves and similar surface installations must be removed.

3. All pumping stations shall be removed including tanks, piping, buildings and equipment supports. Concrete floors, foundations, etc., are to be covered to a depth of two feet with soil. Any request for relief from this shall require prior approval of the Government of Canada.

4. All materials from the pipe line must be disposed of within 2 years after termination of the treaty and the materials shall be either removed from the location or removed to private property.

5. The rehabilitation of Pipe Facility locations shall include suitable regrading, removal of dykes, culverts and other facilities of a similar nature, so that the land is restored as nearly as possible to its original condition.

6. All areas where the surface soil has been disturbed are to be reseeded or revegetated to conform to the adjacent terrain.

APPENDIX- E

Department of
Indian Affairs and
Northern Development

CANADA

Ministère des
Affaires indiennes et
du Nord canadien

Whitehorse, Y. T.

10-36-3-1

The Honourable Jean Chretien
Minister
Department of Indian Affairs
and Northern Development
Centennial Tower
400 Laurier Avenue West
Ottawa, Ontario K1A 0H4

September 29, 1972

Dear Mr. Chretien:

I have recently become aware that the U.S. Army is considering the possibility of disposing of the Fairbanks Products Pipeline, which runs in part through the Yukon Territory along the Haines Road and Alaska Highway. This line has not been in use for several years but I believe that it could be refurbished and placed back into use. Consequently, I would recommend to you that the National Energy Board, who is discussing this pipeline with the U. S. Authorities, be advised that the Yukon Territory is in favour of seeing the line disposed of by sale to private enterprise for future re-activation.

Several months ago, we were visited by a U.S. firm interested in such an undertaking and it is possible that other firms are also interested. My main purpose in supporting such disposal action is of course to see some benefit to the Yukon from employment which would be created in the reconstruction and operating phases, taxation and an alternate route for petroleum products into this Territory.

Yours sincerely,

J. Smith
Commissioner

HAINES-FAIRBANKS PIPELINE - YUKON TERRITORY

Introduction

The background information and terms of reference for this report are contained in a letter dated June 20, 197[illegible] from the Director of the Northern Economic Development Branch to the Regional Director of Resources, Yukon Territory. Whether or not the pipeline will be sold as an operating entity is dependent on the viability of such an operation given the necessary political and environmental constraints and is beyond the scope of this report.

The pipeline route within the Yukon Territory was inspected to provide information on the existing facilities, condition of the right-of-way and in particular to report details on:

1. Vegetation and possibilities of revegetation on the right-of-way;
2. Access to the right-of-way and conditions under which heavy salvage equipment could operate to dismantle and remove the facilities;
3. Condition of existing facilities which might be of use for Departmental purposes such as warden stations within the Park;
4. Schedule of work to minimize terrain damages.

The pipeline route was inspected on August 21, 1972 with the use of a helicopter and with the following personnel:

- Mr. A.P. Hollingsw[illegible]d, [illegible]
- [illegible]
- W. Bilawich, Director of Local Government, Yukon T[illegible] Government;
- P. Savoie, Fisheries Service, Environment Canada

...2

Recommendations

These recommendations provide guidelines to be followed if it is decided to salvage the pipeline. If the pipeline or portions of the line are to operate, a new set of guidelines for the operation of the line and protection of the environment should be developed.

The principle legislation covering a salvage operation of the pipeline, is the Territorial Lands Act and Territorial Land Use Regulations. It is therefore within the jurisdiction of the Department of Indian Affairs and should be coordinated through the Land Use Advisory Committee. Guidelines from Environment of Canada should be presented to this Committee for inclusion in the conditions for a permit.

A land use permit should therefore be required for any removal or restoration operations and this permit should contain all of the necessary stipulations for protection of the environment. All inspections of the operation should be carried out by an inspector designated by the Department of Indian Affairs and Northern Development.

1. Certification of inspection of the pipeline contents, immediately prior to any salvage operation, should be required to ensure that there are no harmful materials contained in the pipe.

2. All facilities connected with the pumping stations which are not purchased or obtained for use by private or government agencies should be salvaged and removed. The compound fence, fuel storage tanks, power houses, maintenance facilities, garages and living accommodations could be used for camps and the Yukon Territorial Government has expressed

some interest in particular stations. The Yukon Forest Service has also expressed interest in obtaining some of the facilities.

3. Sufficient cleared access to the pipeline right-of-way from the highway exists for a salvage operation and new clearing for access is not required. The right-of-way should not be used for access where the line is to be abandoned in place.

4. The removal of all stock piles of pipe along the route is recommended.

5. All pipeline mile posts and signs indicating the location of the right-of-way should be removed.

6. All portions of the pipeline lying on the surface where additional clearing or damage to the environment is not required, should be removed. Approximately 127 miles or 50% of the total length would fall into this category. This includes all lengths where the pipe is suspended over streams. The majority of this length lies in the southern portion of the route. Details are provided in the body of the report on specific locations and areas for special attention.

7. Buried portions of the pipeline should be abandoned in place to minimize damage to the right-of-way. Approximately 42 miles or 17% of the total length is buried. In particular, all of the major stream crossings and the revegetated areas along Dezadeash and Kluane Lakes should be left undisturbed. Selected portions where the pipeline is buried along the highway right-of-way [illegible]

pipeline right-of-way is completely clear and well drained could be recovered. These areas would then require additional restoration. Details of specific lengths are contained in the report.

8. The remainder of the pipeline which is 82 miles or 33% of the total length requires special attention. Most of this length lies in the northern portion of the route. The pipe is unburied but has subsided into the wet right-of-way over considerable lengths. Minimum environmental damage would result if this portion was abandoned in place. Alternatively, selected portions of this length could be recovered using special equipment or during a period when the ground is frozen. This alternative would cause additional damage to the right-of-way and would require additional restoration work after recovery.

9. Selected sites along the right-of-way will require some restoration work. Five sites have been detailed in the report where erosion has occured as a result of right-of-way clearance. A few short lengths of right-of-way will require special attention to assure revegetation. Large scale seeding of grasses, planting of shrubs or the use of fertilizers should not be required.

. Bilawich has indicated that a separate report will be prepared on the Yukon Territorial Government's interest in the acquisition of selected facilities. This report was prepared by the Controller of Water Rights and incorporates the views of those who took part in the aerial inspection as well as input from Mr. W. Sanregret, Land Use Coordinator, DIAND and Dr. W. Speller of Canadian Wildlife Services, Environment Canada.

The report is restricted to that portion of the pipeline route within the Yukon Territory. The road and pipeline alignments together with details of adjacent land disposition are contained on the following Canadian Land Survey Record, Group Sheets:

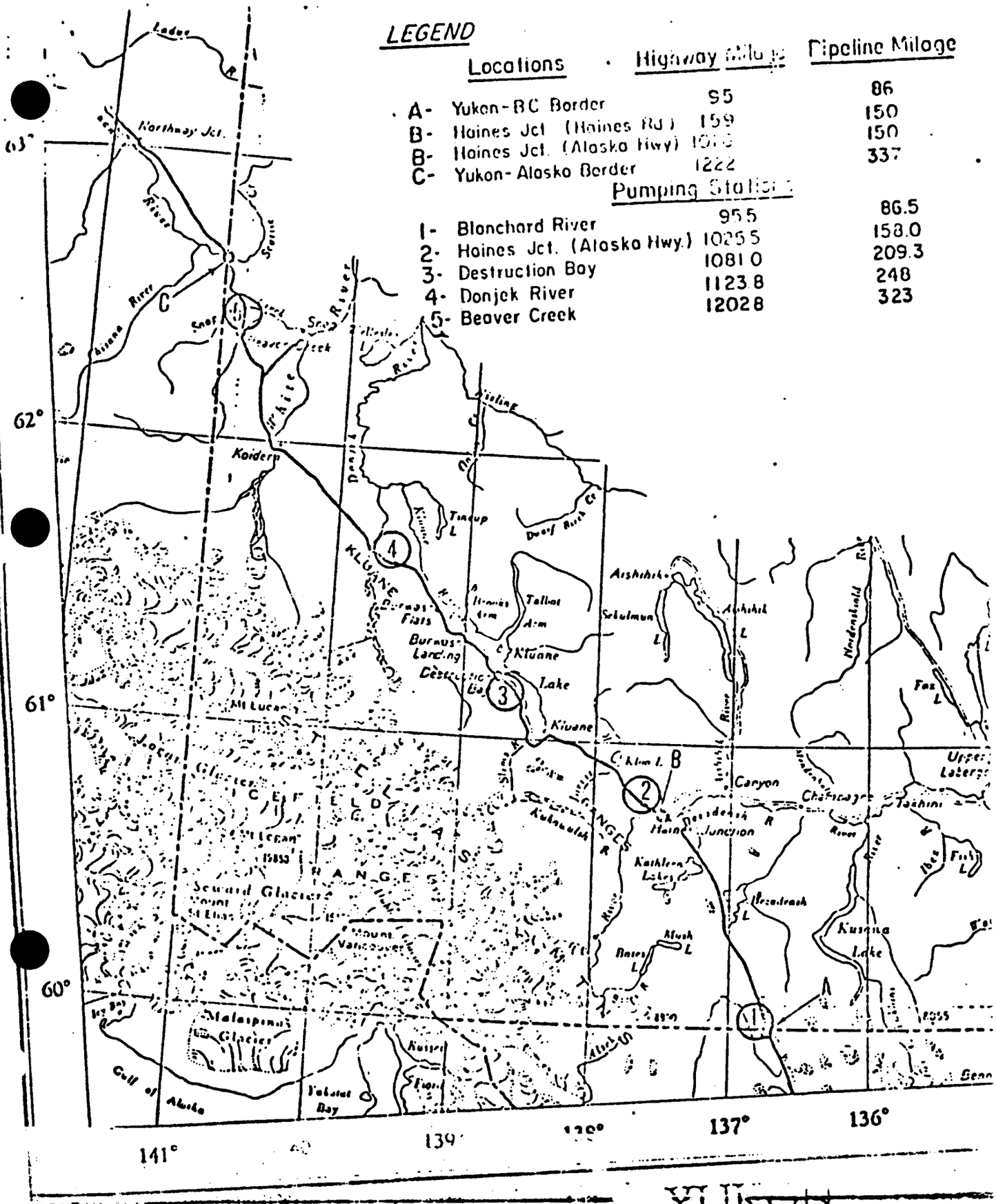
753 North
803 South, Centre, North, Northwest
853 Southwest
852. Southwest, East, Centre, North, Northwest
851 Northwest
901 Southwest, Southeast, East, Northeast, Northwest
902 Southwest
951 Southwest, West

These Group Sheets contain reference to plan numbers for the highway right-of-way, the pipeline right-of-way, and individual lots. If further detail is required, these plans should be consulted.

Mileages referred to in the report are those posted on the pipeline route for aerial identification and correspond approximately to the following:

Location	Highway Mile Post	Pipeline Mile Post
B.C.-Yukon Boundary	95 Haines Hwy.	86
Haines Junction	159 Haines Hwy. 1016 Alaska Hwy.	150
Alaska-Yukon Boundary	1222 Alaska Hwy.	337

A reference map is presented in Figure 1 indicating the pipeline route.



MCR 47 SECOND EDITION

YUKON TERRITORY

Details of Facilities

Within the Yukon Territory there are approximately 251 miles of 8-inch pipe laid with associated valves. Exposed portions of the steel pipe generally appear to be in good condition. Apparently all petroleum products were removed from the line in Canada. The pipe was then filled with water and cleared with a 'pig'. It was then blown clear with air and subsequent inspections have indicated no liquids to be present. This reconnaissance did not include an inspection of the pipe quality or its contents. The existing condition of the pipe should be verified by detailed inspection and certification.

There are small stock piles of pipe at the Duke, Donjek, and White River Crossings, and at the Donjek Pumping Station. The following table summarizes the pumping facilities.

PUMPING FACILITIES

Pipe Mile Post	Location	Description	Access at Highway Mile
86.5	Blanchard River	Lot 2 Gp. Sheet 753	95.5
158.0	Haines Junction	Lots 31 and 33 Gp. Sheet 803	1025.5
209.3	Destruction Bay	Lot 287 Gp. Sheet 852	1081.0
248.0	Donjek River	Lot 2 Gp. Sheet 902	1123.8
323.0	Beaver Creek	Lots 30 and 31 Gp. Sheet 951	1202.8

Details of the pumping stations are indicated in the photographs in Figures 2 through 6. The buildings were not inspected but all appeared to be well maintained. The compound areas and surrounding areas were generally tidy and clean. Each facility was comprised of a pumphouse, a powerhouse, maintenance garage

ace and fuel storage tanks. In addition the two large stations (Haines Junction and Donjek River) include a single family house and a large multiple unit accommodation building.

Details on Condition of the Right-of-Way

The pipeline route follows the Haines Road and the Alaska Highway (see Figure 1) along the Shakwak Valley to the east of the St. Elias Mountains. The topography along the route is generally rolling hills, valley bottom, or flood plain. The right-of-way for the pipe has been cleared of trees and shrubs to a width of about 50 feet. Some areas of the right-of-way appear to have been cleared fairly recently and there are indications that defoliants have been used in the past. Portions of the right-of-way contain a telephone line.

The following description of the right-of-way conditions are from a salvage and removal point of view and the route is split into two sections. Detail notes of the mile by mile condition together with additional photographs are contained on file.

SECTION I British Columbia-Yukon Boundary (Mile 86) to Burwash Landing (221)

Over this section of the route the right-of-way is generally well drained which would make recovery of the pipe relatively easy and cause little damage to the environment. The right-of-way generally follows along the side hills and crosses normal to most water courses.

For this section, access to the right-of-way from the highway is good. The right-of-way crosses the highway ten times and the average distance between cleared access trails is of the order of two miles. Most of the pipeline is within one-quarter mile of the highway and the maximum distance is one-half mile.

The pipe is buried for twelve miles along Dezadeash Lake (114-126) and for ten miles along Kluane Lake (182-192) in addition to the

Details on Condition of the Right-of-Way

The pipeline route follows the Haines Road and the Alaska Highway (see Figure 1) along the Shakwak Valley to the east of the St. Elias Mountains. The topography along the route is generally rolling hills, valley bottom, or flood plain. The right-of-way for the pipe has been cleared of trees and shrubs to a width of about 50 feet. Some areas of the right-of-way appear to have been cleared fairly recently and there are indications that defoliants have been used in the past. Portions of the right-of-way contain a telephone line.

The following description of the right-of-way conditions are from a salvage and removal point of view and the route is split into two sections. Detail notes of the mile by mile condition together with additional photographs are contained on file.

SECTION I British Columbia-Yukon Boundary (Mile 86) to Burwash Landing (221)

Over this section of the route the right-of-way is generally well drained which would make recovery of the pipe relatively easy and cause little damage to the environment. The right-of-way generally follows along the side hills and crosses normal to most water courses.

For this section, access to the right-of-way from the highway is good. The right-of-way crosses the highway ten times and the average distance between cleared access trails is of the order of two miles. Most of the pipeline is within one-quarter mile of the highway and the maximum distance is one-half mile.

The pipe is buried for twelve miles along Dezadeash Lake (114-126) and for ten miles along Kluane Lake (182-192) in addition to the

shorter lengths where it is buried at road and stream crossings. There are at least 18 significant stream crossings on this portion of the route. The major crossings including the Blanchard River (86), Takhanne River (94), Klukshu River (109), Kathleen River (133), Dezadeash River (148), Christmas Creek (179), Silver Creek (183), and Slims River (188) are all buried. Removal of the pipe from these areas would generally require clearing and cause considerable damage. The pipe is suspended across some of the smaller creeks. The pipe is partially buried over short lengths by alluvial fan material along the West side of Kluane Lake.

There are a few locations on this section of the right-of-way (mile 88, 100 and 114) which are poorly drained and would require special attention if the pipe were to be recovered. Some local erosion has resulted over limited lengths of the right-of-way at Mile 120, 160 and 165 and restoration of these areas should be considered.

The photographs in Figures 7, 8 and 9 are identified and show characteristic lengths of this section of the route. The following is a rough summary of the condition of lengths of right-of-way for Section I.

- length of buried pipe	34.0 miles
- length of pipe on surface with well-drained right-of-way	92.0 miles
- length of pipe on surface in poorly drained areas	9.0 miles
- total length Section I	135.0 miles

SECTION II Burwash Landing (Mile 771) to Alaska Boundary (337)

Over this section of the route the right-of-way is not as well drained. This would make recovery of considerable lengths of the line more difficult and cause more damage to the environment. The right-of-way lies in the valley bottom for most of this portion and parallels the drainage pattern over considerable lengths. Burwash Flats, areas adjacent to the Koidern River and the area near Beaver Creek are poorly drained and will require particular attention. There are however several locations north of the Donjek River (253, 265, 268, 280) and between the White River and Dry Creek (296-314) where the right-of-way lies on side hills and conditions similar to those described under Section I prevail.

Cleared access trails to this portion of the route from the Alaska Highway exist but are generally in the same condition as the right-of-way. There are about ten locations where the pipeline and road cross and numerous lengths where they are immediately adjacent to one another. The average distance between points of cleared access would be of the order of three miles. Most of the pipeline is within one-quarter mile of the highway. Between Miles 297 to 306 the distance from the highway to the pipeline right-of-way is approximately one-half mile, at Mile 326 approximately three-quarters of a mile and up to two miles near the boundary with Alaska.

In this section the pipe is buried for a total of eight miles which is comprised of road and stream crossings and a few places where the pipe is contained in the shoulder of the highway (267, 283). There are 17 significant stream crossings on this portion of the route. Major crossings at the Duke River (226), Burwash C (230.5), Quill Creek (237), Koidern River (269), Koidern River (274), Koidern River (286.5), and Beaver Creek (322) are buried.

Removal of the pipe from these crossings would cause damage to the environment. The pipeline is carried on the bridges at the Donjek River (256) and White River (291) crossings and could easily be removed. The pipeline is suspended over Longs Creek (278), Dry Creek (312) and a number of the smaller stream crossings.

Short lengths of erosion have resulted from water flowing along the right-of-way at Mile 270(Figure 13) and Mile 322. It should be noted that the pipe has subsided into the wet foundation material to varying depths where the right-of-way is wet and in many locations it is completely out of view, even from the air.

The photographs in Figures 10 to 13 indicate some characteristi lengths of this portion of the route. The following is a rough summary of the condition of lengths of the right-of-way for Section II:

- length of pipe buried 8 miles
- length of pipe on surface with well drained right-of-way 35 miles
- length of pipe near surface in poorly drained areas 73 miles
- total length Section II 116 miles

APPENDIX - B

HISTORICAL REVIEW OF EVENTS
HAINES-FAIRBANKS FUEL-OIL PIPELINE

The following is a brief summary review, highlighting the key events, outlining DIAND'S inter-departmental influence on actions proposed and taken.

25-07-50	U.S. Ambassador's note requesting permission to survey pipeline route proposed from Haines, Alaska via B.C. and Yukon to Fairbanks, Alaska.
10-08-50	Canadian note to U.S.A. Government approving route Survey request.
16-07-52	Memo to cabinet from Department of External Affairs requesting approval to construct pipeline.
02-05-53	B.C. Order-in-Council 1071 transferring land for right-of-way to Canada.
30-06-53	Treaty No. 20 - Haines-Fairbanks Pipeline signed by Canada and United States Governments.
17-05-68	Haines-Fairbanks Pipeline Personnel discovered break in line at mile 119.1, on west shore of Dezadeash Lake, Yukon.
23-05-68	Break officially reported to DIAND. Reportedly an unknown amount of diesel fuel ran approximately 2,000 feet down at 15% grade and into the lake. Frost was still in ground. Flow was stopped by a pipeline repair clamp over the corrosion pit failure. Spill contained by ditching, dyking and styrofoam booms on the lake. An estimated 240 barrels was expected to be recovered.
24-05-68	DIAND reported break details to N.E.B. Engineering Department suggesting a senior member of their Engineering Department, with U.S. Army approval, investigate and report on cause of failure.

. . . 2

3-8-74
E.N.F

STRIP MAP

HAINES-FAIRBANKS PIPELINE

EARNEST E. KELLY
General Foreman
Haines-Fairbanks Pipeline
Tok Terminal
Tok, Alaska 99780

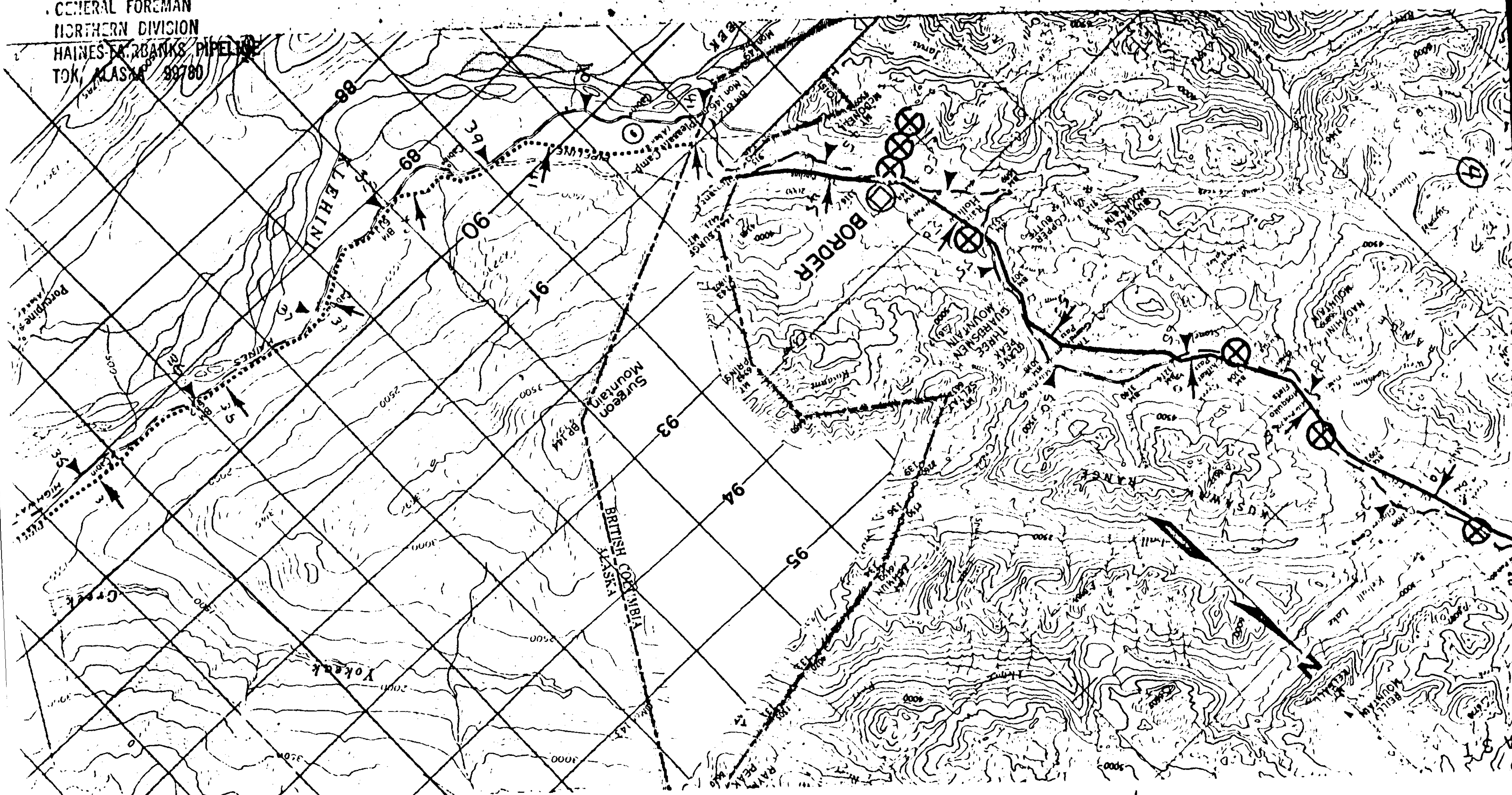
LEGEND

———	PIPE ABOVE GROUND
.....	PIPE UNDER GROUND
⊙	PIPELINE TERMINAL
⊡	PIPELINE STATION
△	PIPELINE BOOSTER STATION
←	PIPELINE MILEPOST
◂	HIGHWAY MILEPOST
⊕	VALVE

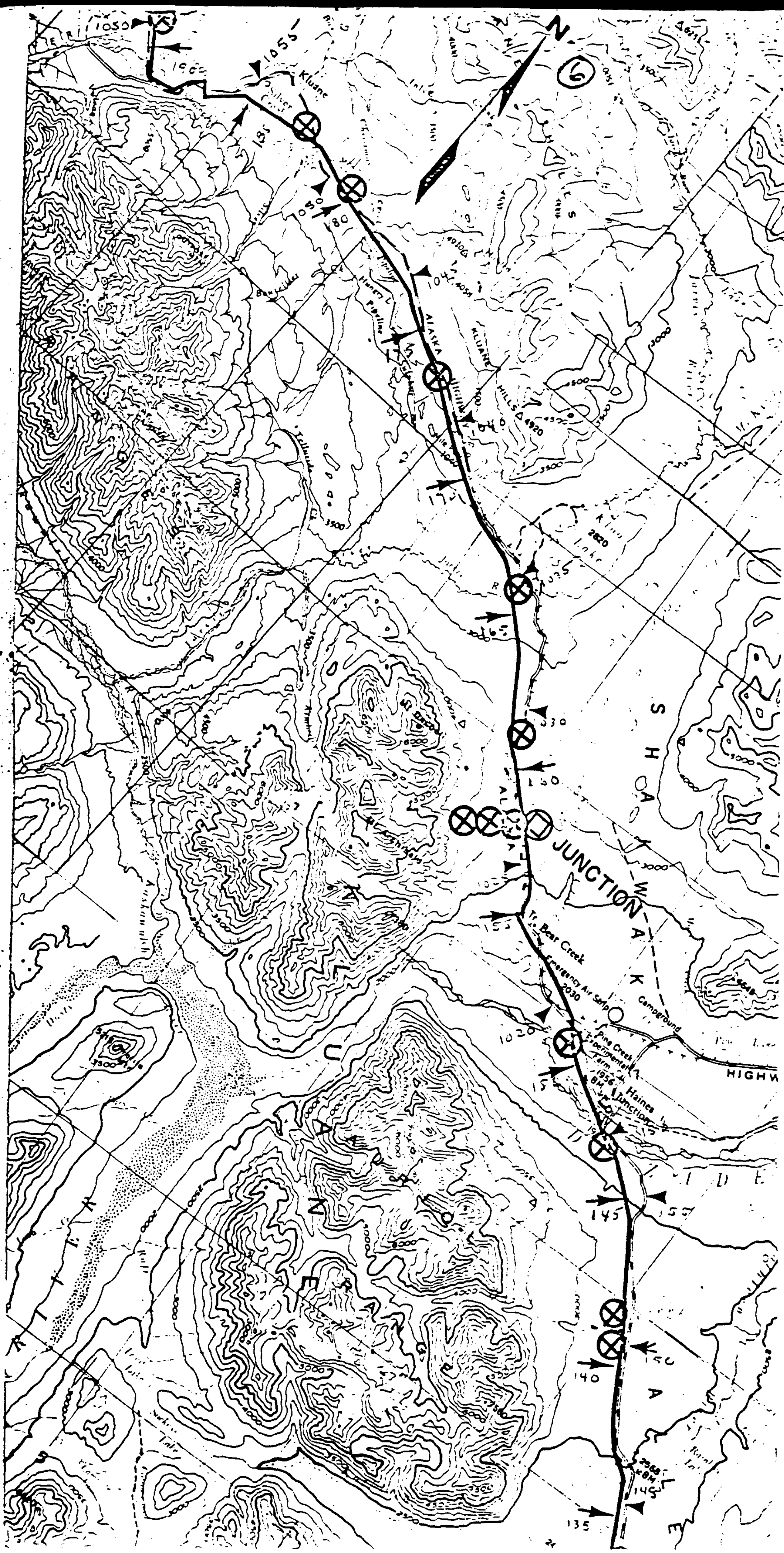
GENERAL FOREMAN
HAINES-FAIRBANKS PIPELINE
TOK ALASKA 99780

GENERAL FOREMAN
NORTHERN DIVISION
HARRIS-FAIRBANKS PIPELINE
TOK, ALASKA 99780

GENERAL FOREMAN
NORTHERN DIVISION
HAINES-FAIRBANKS PIPELINE
TOK, ALASKA 99780



GENERAL FOREMAN
NORTHERN DIVISION
HAINES-FAIRBANKS PIPELINE
TOK, ALASKA 99780


Kluane
ALASKA
KLUANE
JUNCTION
Tr. Bear Creek
Emergency Air Strip
2030
Campground
Pine Creek Experimental Farm
Haines Junction
HIGHW