NORTHWEST ALASKAN PIPELINE PROJECT

EXPLORATION PLANS

FOR

MATERIAL SITE EXPLORATION PROGRAM

YUKON RIVER TO DELTA JUNCTION

VOLUME III

SUBMITTED TO

FLUOR NORTHWEST, INC.

FAIRBANKS, ALASKA

BY

MICHAEL BAKER, JR., INC.

ENGINEERS AND SURVEYORS

JACKSON, MS - FAIRBANKS, AK

NOVEMBER, 1979

REVISED DECEMBER, 1979

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FAIRBANKS, ALASKA

CONTENTS

MICHAEL BAKER, JR., INC.
NORTHWEST ALASKAN PIPELINE PROJECT
MATERIAL SITE EXPLORATION PROGRAM
YUKON RIVER TO DELTA JUNCTION

PREFACE

I. SCOPE OF MATERIAL SITE PROGRAM

Michael Baker, Jr., Inc. is providing an engineering service to select, plan and execute a material site exploration program from Prudhoe Bay to the Canadian Border on behalf of Northwest Alaskan Pipeline Company as a part of preconstruction engineering for the Alaskan Natural Gas Transmission System (ANGTS).

The scope of the material site program from Prudhoe Bay to the Canadian Border includes:

A. Collect, collate and evaluate the basic data available for use in preliminary engineering and program planning. Develop program criteria from that information to provide an efficient cost effective program.

B. Identify preliminary mineral material prospects and develop field reconnaissance plans to document the applications for access to the prospect areas. Preliminary layout of evaluation and planning documents to identify sensitive areas which would require special consideration.

C. Conduct field reconnaissance to provide and verify the existing conditions as shown on the aerial photographs and geologic maps. Determine the type and depth of overburden, requirements for clearing, access evaluation and environmental considerations. Confirm prospect by shallow geologic subsurface and surface reconnaissance.

D. Develop exploration plans for subsurface investigations for right of entry applications. Provide technical information to implement a subsurface exploration program.

E. Conduct field exploration to obtain and confirm detailed information for each specific material site. Data collected will include formation logging, material sampling, laboratory testing and specific data pertinent to evaluation of a mineral material prospect.

F. Evaluation reports to provide a detailed reference for construction planning which will include an estimated quantity available for construction, site photomosaic with estimated working limits, field boring logs, laboratory analysis and a narrative. The narrative will describe the method of exploration, site geology, geomorphology, ground water conditions, and the site development and environmental considerations.

G. Mining plans for those mineral material sites that will provide for sufficient usable material for project requirements that will environmentally be acceptable and within the criteria for a cost effective program.

This submittal of exploration plans is provided for in the material site program as listed above. We direct your attention to Section I of this submittal for detailed site map and information sheet for each preliminary site selection. Section II contains three (3) index maps that show the locations of each site selection along the pipeline corridor and the relationship to other sites and natural geographic boundaries. Proposed sites, to the extent possible, were located near or at existing proven mineral material sources. Proposed Northwest Alaskan Pipeline alignment shown is that which was current in May 1979 and is subject to change.

II. PRELIMINARY SITE SELECTIONS

The fourth phase of the material site program consists of one hundred twenty-nine (129) proposed locations between the Yukon River and Delta Junction. Surface geologic reconnaissance was conducted at ninety-two (92) proposed locations of which twenty-one (21) were deleted from the field exploration program for the following reasons:

1. Unsuitable material

RMS-68-2	RMS-76-2	RMS-88-1
RMS-70-1	RMS-82-1	RMS-88-3
RMS-70-2	RMS-83-2	RMS-89-1
RMS-71-2	RMS-86-4	RMS-90-1
RMS-74-1	RMS-87-1	

2. Insufficient material

RMS-81-2	RMS-95-3
RMS-81-3	

3. Difficult access

RMS-69-2	RMS-95-4

4. Material Site not required

RMS-78-3

5. Material Site replaced

RMS-77-2

During the reconnaissance seventeen (17) mineral material site locations were added to the program for the following reasons:

1. Provides economic haul distance

EMS-67-1.1	EMS-96-3	EMS-97-1.2
EMS-67-2.1	EMS-96-4	EMS-97-3
EMS-71-0	EMS-97-1.1	EMS-97-4
EMS-96-2		

2. Provides select material

EMS-64-1	EMS-97-1.1
EMS-86-3.1	EMS-97-1.2
EMS-87-2	EMS-97-3
EMS-96-0	
EMS-96-4	

3. Replacement for deleted Material Sites

EMS 81-2.1	(Replaces RMS-81-3)
EMS 82-0	(Replaces RMS-82-1)
EMS 95-5	(Replaces RMS-95-3, RMS 95-4)

The purpose of this reconnaissance was to evaluate and record the physical nature of each site and its potential access corridor, and to establish the need for and plan a subsurface exploration program.

A basic and immediate output of the reconnaissance phase of the work was the data needed for the applications that must be filed with appropriate jurisdictional agencies to gain entry and exploration permits. As these applications must be submitted and approved prior to entry on the sites with exploration equipment, it is essential that the work be expedited and that all exploration needs are presented as soon as they are established.

Other Physical data accumulated during this phase of the work will eventually become a part of the final material site reports which will be prepared as the subsurface exploration and laboratory work are completed.

Forty-one (41) sites were added to the exploration material program to provide mineral materials for the proposed Haines re-route. These additional sites, Exploration Re-route Material Sites (ERMS), are listed separately in the table of contents and are included after the Exploration Material Sites (EMS) in Section I.

The material site locations were selected on the basis of type of material, development potential, haul distance (average 2.5 miles), access to the proposed work, and environmental considerations. All of the locations of the sites proposed for drilling and test pitting have been reviewed on the ground with the exception of those where access was blocked or permits were not available. These locations were reviewed using available geologic maps and aerial photographs.

III. DEVELOPMENT OF EXPLORATION PLANS

The purpose of the placement on the exploration site maps of test pits and bore hole locations is to assure adequate definition of the landform involved and to confirm availability of material.

In recognition of the benefits of test pits over drill test holes in granular material, we propose test pits wherever possible to obtain the best available data at the least possible cost. As a general criteria, test pits are recommended when the apparent material is:

- Unfrozen
- Granular
- Not intended to be mined greater than fifteen feet in depth

Drill test holes are recommended when the apparent material is one or more of the following:

- Frozen
- Covered with excessive overburden
- Planned mining depth exceeded fifteen feet
- Rock

Shallow subsurface hand sampling is recommended on sites where the depth of excavation will not exceed five feet and there is negligible overburden.

IV. FIELD EXPLORATION PROGRAM

The exploration phase shall include furnishing, operating and maintaining the necessary qualified personnel, tools, machinery and equipment to drill test holes or dig test pits on proposed material sites for the Yukon River to Delta Junction section of the proposed Northwest Alaskan Pipeline.

The work shall be in accordance with the general direction of BAKER and its Engineer/Geologist assigned to each exploration operation. The responsibilities of BAKER will include route designation, site location determination of adequacy of hole or pit depth, addition or deletion of holes or pits, inspection, sampling, logging and testing for all exploration work.

As presently planned, the work will include exploration drilling, test pit excavations or hand samples at one hundred twenty-nine (129) material sites, more or less, which are located between the Yukon River and Delta Junction.

The material sites to be drilled, test pitted or hand sampled are in close proximity to the proposed Northwest Alaskan Pipeline. Locations of the material sites are depicted on the Exploration Area Site Maps included herein.

The work shall require the use of one (1) overland backhoe to complete approximately four hundred and four (404) test pits, more or less, on approximately thirty-seven (37) material sites and one or more track mounted drill rigs to complete approximately six hundred fifty-two (652) test borings, more or less, on approximately eighty-six (86) material sites. Mobilization of the exploration equipment shall be from the contractor's yard to a location in the vicinity of Fairbanks or Delta Junction.

It should be understood that the engineer/geologist will be the final arbiter in regard to the number and location of test holes and test pits. The location and number of test holes and pits are not confined to the number and location shown on the Site Map.

Some locations assigned to the backhoe may require the use of a drill rig. This will be determined by the engineer/geologist in the field. Backhoe use will be confined to summer operations in thawed ground.

V. EXPLORATION PLAN

The Exploration Area Site Map (Page 1) and Exploration Plan (Page 2) for each of the one hundred twenty-nine (129) potential mineral material sites, included with this submittal depicts the location and desired depth of each test pit or drill test hole and describes the exploration required at each site, including type of exploration equipment, access routes and special notes. Information contained herein provides details necessary for submittal to the appropriate regulatory agencies for review and permit award, and implementation of the exploration program objective to designate sufficient mineral materials required for the Alaskan Gas Pipeline project between the Yukon River and Delta Junction.

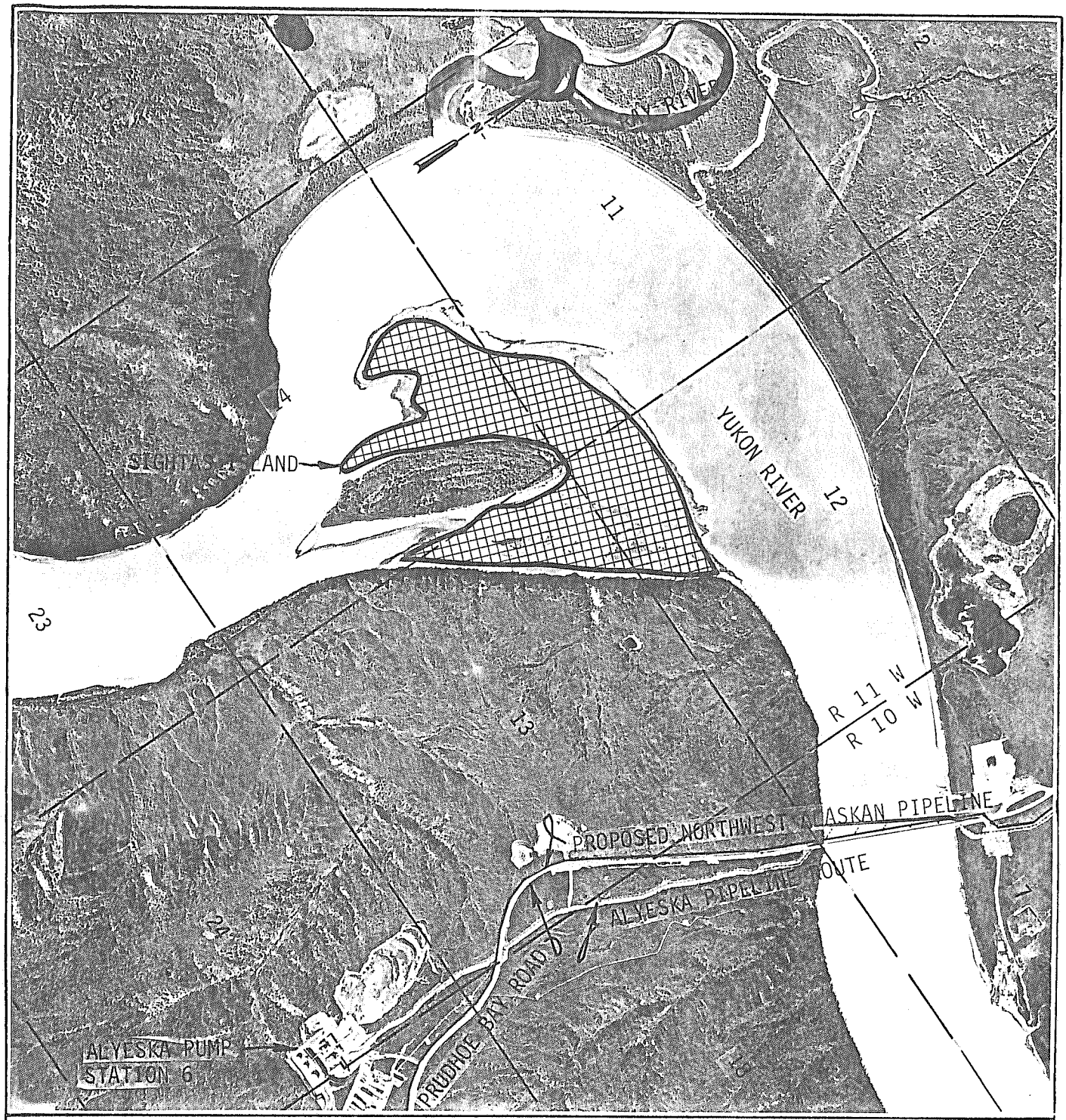
SECTION I

EXPLORATION PLANS

FOR

MATERIAL SITE EXPLORATION PROGRAM

YUKON RIVER TO DELTA JUNCTION



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

0 2000 4000

SCALE IN FEET

S½ Section 11
S½ Section 12
W½ Section 13
Section 14
T12N, R11W, Fairbanks Meridian

EMS-64-1

October 1979 Area: 201 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS- 64-1

Location

- The proposed site is located on the south side of the Yukon River approximately one mile west of the bridge. It lies within the S½ Section 11, S½ Section 12, W½ Section 13, Section 14, T12N, R11W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a point bar of the Yukon River.

  Exploration will have no visual impact upon highway travel.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered grass. ?

Apparent Overburden

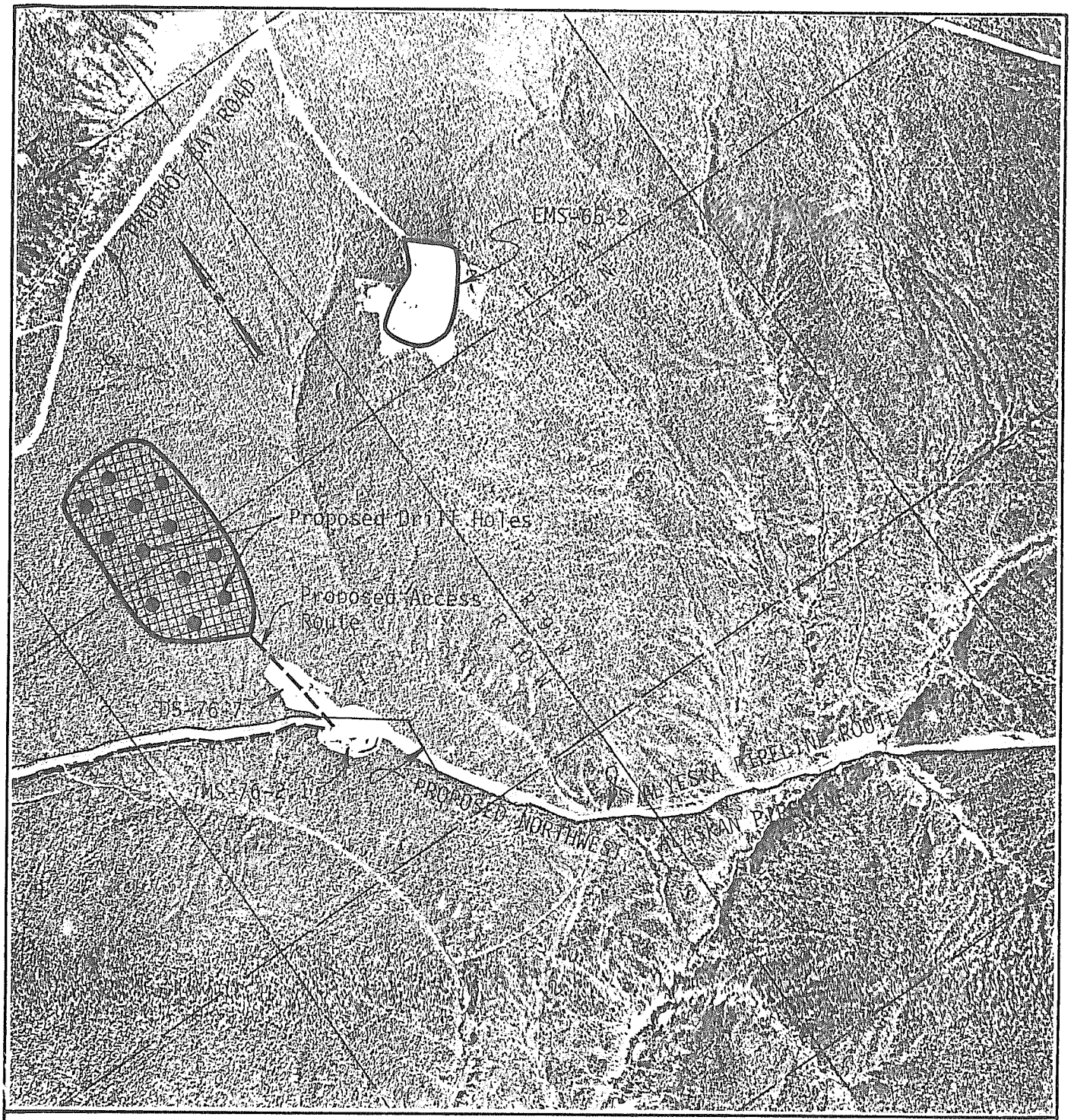
- There is no overburden.

Exploration Proposed

- Representative hand samples will be taken from selected locations.

Proposed Access

- Helicopter assistance will be required.



12 Drill Holes to 40' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ Section 1
T11N, R10W, Fairbanks Meridian
S½ Section 36
T12N, R10W, Fairbanks Meridian

EMS-65-1

October 1979 Area: 100 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-65-1

Location

- The proposed site is located approximately two and one half miles south of the Yukon River, along the Prudhoe Bay Road and 1000 feet to the south. It lies in the N½ Section 1, T11N, R10W, S½ Section 36, T12N, R10W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a high bedrock ridge which slopes gently to the west and steeply to the east.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a very hard basalt.

  Material for workpad construction and select backfill can be produced from this site. Potential riprap source.

Vegetation Cover

- The vegetation is composed of dense spruce and occasional birch to 24 inches in diameter, alder, moss, lichen, and considerable deadfall.

Apparent Overburden

- The overburden consists of 24 to 48 inches of organics and silt.

Exploration Proposed

- A drill rig will make 12 test borings to 40 feet in depth or refusal. If necessary selected borings will be cored to depth.

Proposed Access

- The drill rig will utilize the Alyeska Workpad and DS 76-7 for access as shown on the Site Map. Access to the workpad will be via 77-APL-1.

Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

0 2000 4000

SCALE IN FEET

SW¼ Section 31
T12N, R9W, Fairbanks Meridian

EMS-65-2

October 1979 Area: 27 acres+

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-65-2

Location

- The proposed site is an existing pit located three miles south of the Yukon River on the Prudhoe Bay Road and 3,500 feet to the west. It lies within the SW¼ Section 31, T12N, R9W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the nose of a high, steep bedrock ridge overlooking Isom Creek to the south.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a very hard basalt.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of thick grasses.

Apparent Overburden

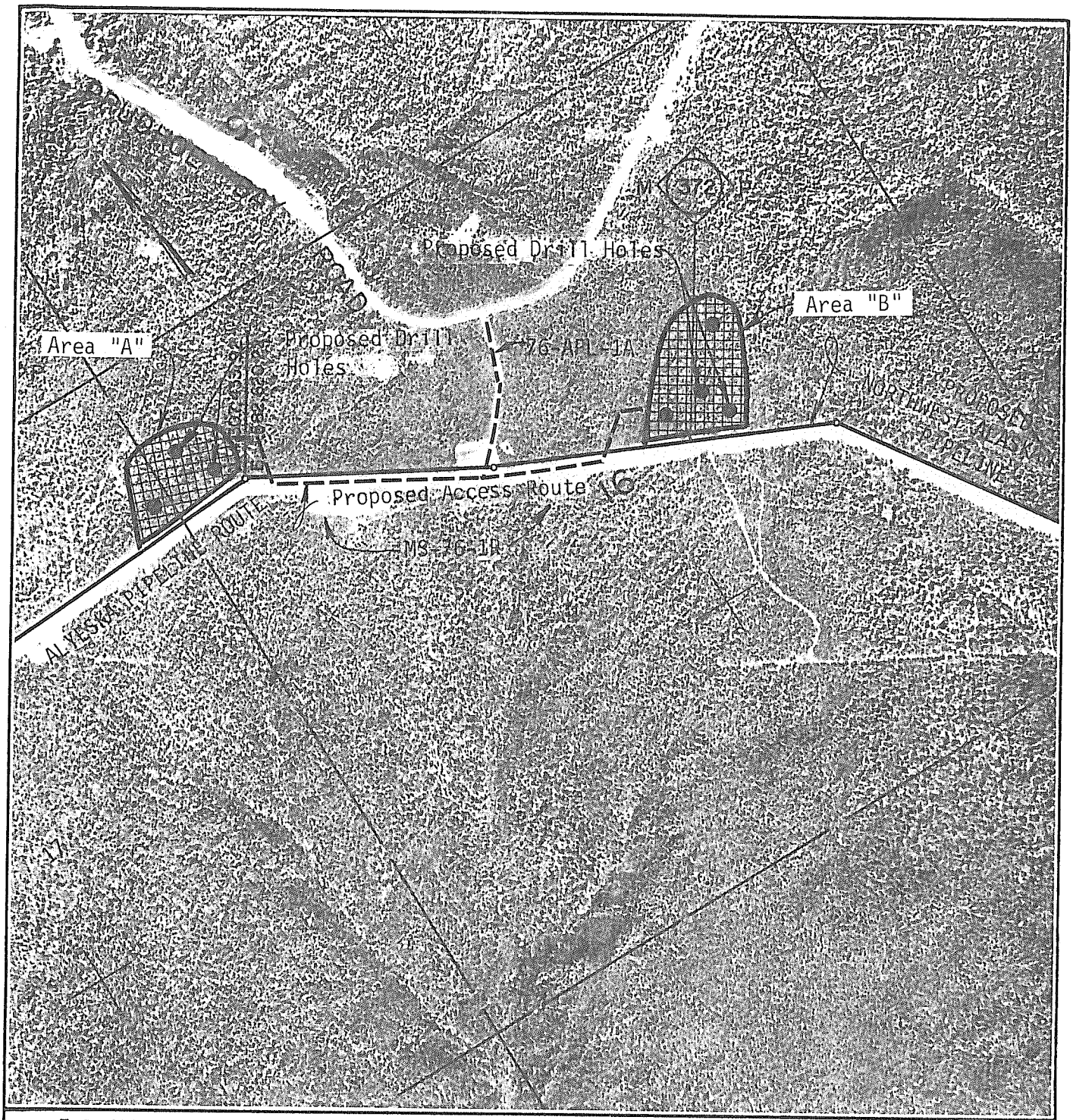
- There is no overburden

Exploration Proposed

- A representative hand sample will be taken.

Proposed Access

- Helicopter assistance will be utilized due to the existing road being non-accessable.



7 Drill Holes to 25' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

Section 16
NE¼ Section 17
T11N, R9W, Fairbanks Meridian

EMS-66-1

Area: "A": 9 acres±
"B": 12 acres±

October 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS- 66-1

Location

- The proposed site is composed of two areas located adjacent to an existing pit, approximately 14 miles south of the Yukon River, on the Prudhoe Bay Road. It lies within Section 16, NE¼ Section 17, T11N, R9W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon two smaller bedrock ridges at the crest of a larger ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and birch to 12 inches in diameter, alder, moss, and grass.

Apparent Overburden

- The overburden consists of 24 to 48 inches of organics and silt.

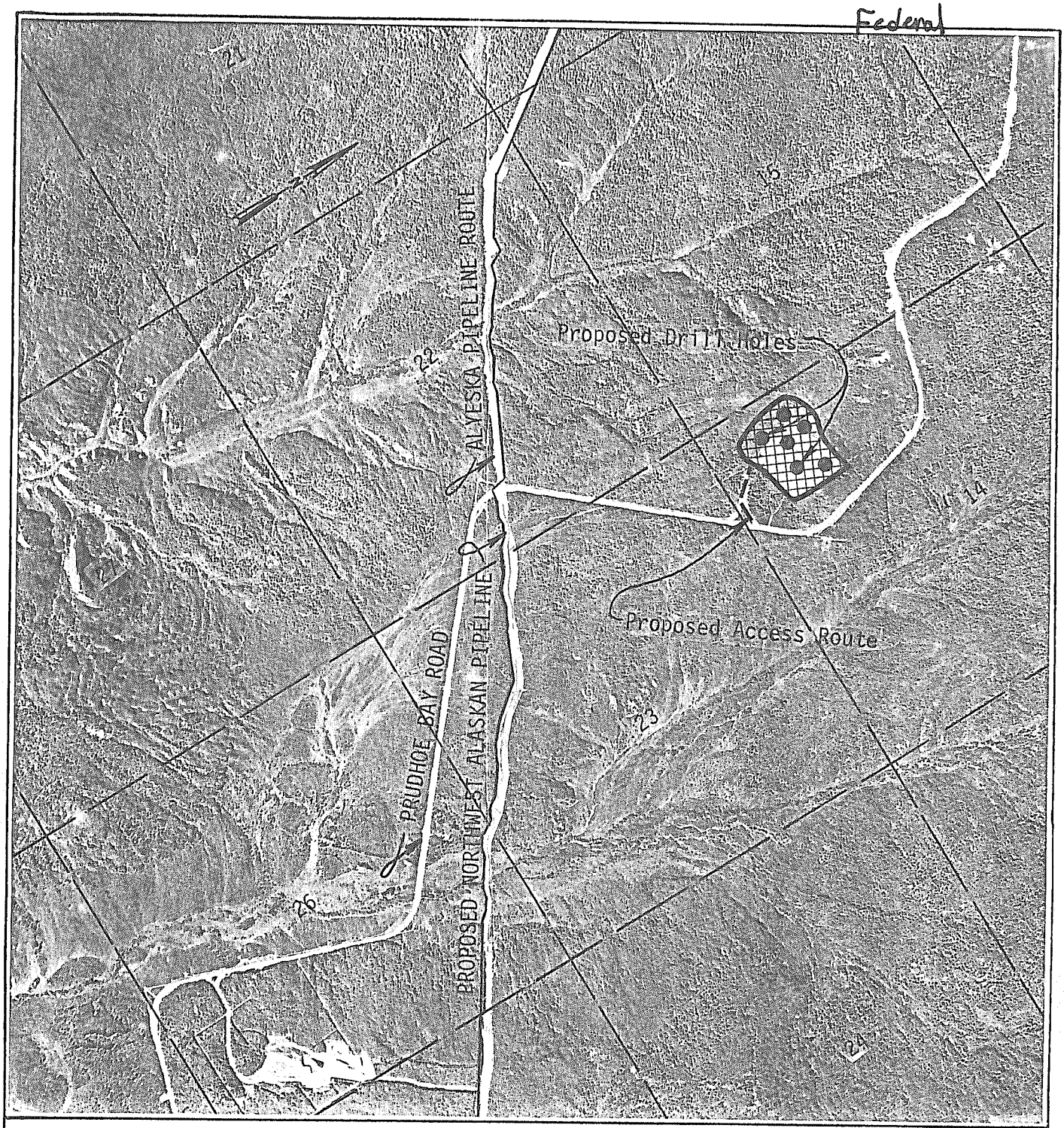
Exploration Proposed

- A drill rig will make seven test borings to 25 feet in depth or refusal. If necessary selected borings will be cored to depth.

Proposed Access

- The drill rig will utilize existing roads and Alyeska Pipeline workpad for access as shown on the Site Map.

Federal



6 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 2000 4000

SCALE IN FEET

SW¼ Section 14
T11N, R9W, Fairbanks Meridian

EMS-66-2

October 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS- 66-2

Location

- The proposed site is an existing pit, located approximately 17 miles south of the Yukon River along the Prudhoe Bay Road and 3500 feet northeast of Alyeska Pipeline crossing. It lies within the SW¼ Section 14, T11N, R9W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a broad steeply sloping bedrock ridge.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation in the existing pit is composed of grasses. The undisturbed area has poplar and spruce to 12 inches in diameter, alder, grasses and moss.

Apparent Overburden

- The overburden in the undisturbed area consists of 12 to 24 inches of organics and silty gravel.

Exploration Proposed

- A drill rig will make six test borings to 15 feet in depth or refusal. If necessary selected borings will be cored to depth.

Proposed Access

- The drill rig will use the existing road as shown on the Site Map.

Federal

3 Drill Holes to approximately 20' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

W½ Section 25
SE¼ Section 26
T11N, R9W, Fairbanks Meridian

EMS-67-1

Area: "A": 15 acres±
"B": 7 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 67-1

Location

- The proposed areas of the site are in and adjacent to an existing pit, located approximately fourteen miles northwest of Hess Creek on the north side of the Prudhoe Bay Road. It is in the W½ Section 25, SE¼ Section 26, T11N, R9W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a steep sided, bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock. Most of the rippable material has been excavated from area "A".

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grasses in area "A" and moderately dense birch and occasional spruce to 6" in diameter, moss plus grass in area "B".

Apparent Overburden

- The overburden consists of 3 to 18 inches of organics and silty gravel on area "B". There is no overburden in area "A".

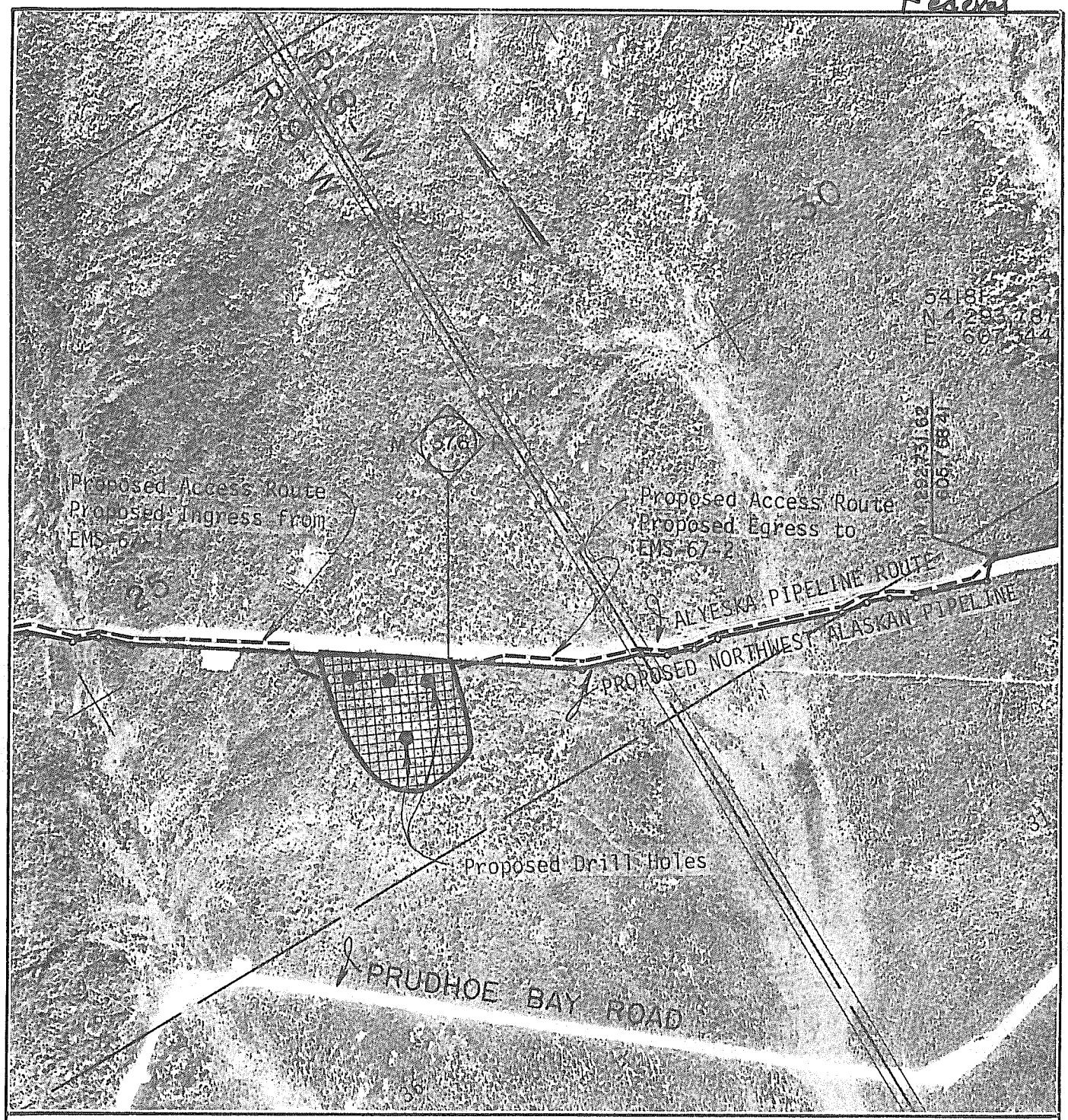
Exploration Proposed

- A drill rig will make three test borings to a depth equivalent to the bottom of the adjacent pipeline cut, approximately 20 feet deep.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.

Federal



4 Drill Holes to 20' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SE¼ Section 25
T11N, R9W, Fairbanks Meridian

EMS-67-1.1

October 1979 Area: 11 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 67-1.1

Location

- The proposed site is 1500 feet east of the Prudhoe Bay Road, approximately 13 miles northwest of Hess Creek. It lies within the SE¼ Section 25, T11N, R9W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a broad steeply sloping bedrock ridge, adjacent to an Alyeska Pipeline cut.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered metamorphic rock with nearly vertical beds, one to six inches thick.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to six inches in diameter, willow, alder, moss and grass.

Apparent Overburden

- The overburden is 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to a depth of 20 feet or refusal. If necessary selected borings will be cored.

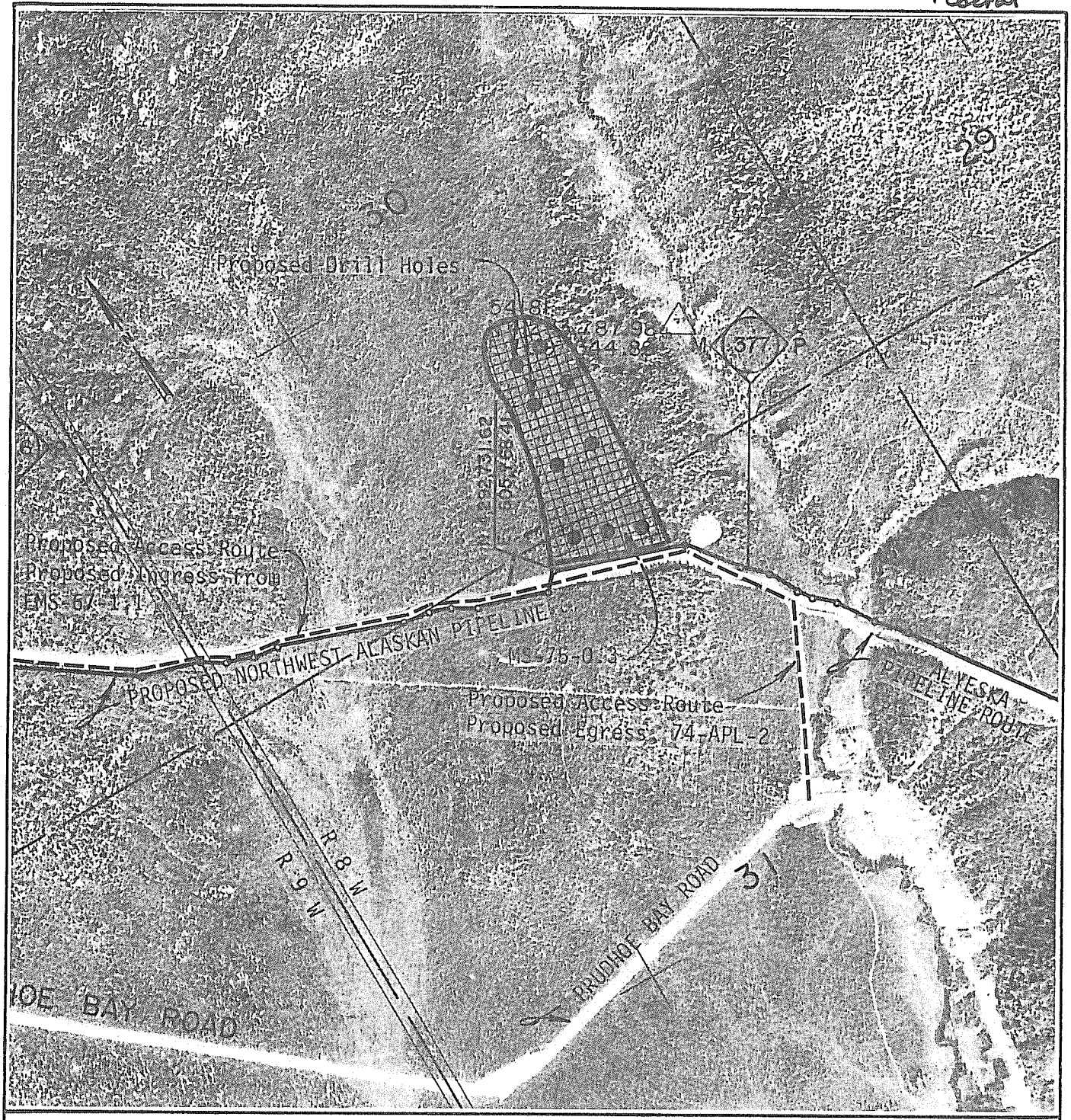
Proposed Access

- The drill rig will utilize the Alyeska Pipeline workpad for access as shown on the Site Map.

Special Note:

The exploration plan was prepared using aerial photo interpretation, and U.S.G.S. quadrangle maps.

Federal



9 Drill Holes to 25' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 30
N½ Section 31
T11N, R8W, Fairbanks Meridian

EMS-67-2

October 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 67-2

Location

- The proposed site is located 2000 feet east of the Prudhoe Bay Road, approximately 12 miles northwest of Hess Creek. It lies within the S½ Section 30, N½ Section 31, T11N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a steep bedrock ridge, adjacent to an existing Alyeska material site.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a poorly consolidated conglomerate. It is alluvial in origin and decomposes to a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, with occasional birch to four inches in diameter, moss and lichens.

Apparent Overburden

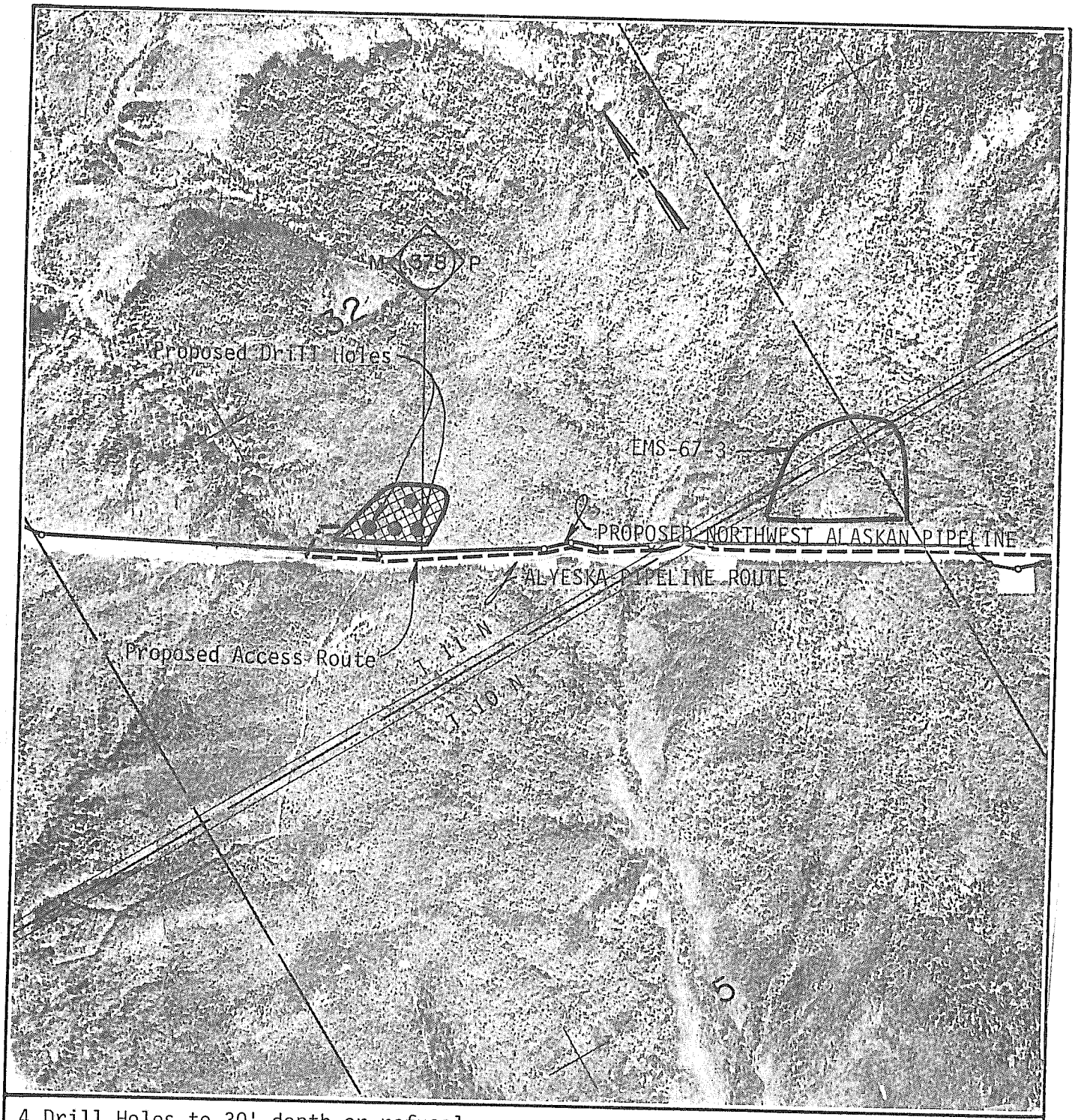
- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

- A drill rig will make nine test borings to 25 feet in depth or refusal.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline workpad for ingress from EMS-67-1.1 and existing access road for egress, as shown on the Site Map.



4 Drill Holes to 30' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 32
T11N, R8W, Fairbanks Meridian

EMS-67-2.1

October 1979 Area: 6 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 67-2.1

Location

- The proposed site is adjacent to an Alyeska Pipeline cut, located 3000 feet east of the Prudhoe Bay Road, 11 miles northwest of Hess Creek. It lies within the S½ Section 32, T11N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a narrow steep bedrock ridge.

  Exploration will have no visual impact on highway travel.

Apparent Material

- The material is a weathered argillite.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, poplar, and birch to four inches in diameter, moss and lichen.

Apparent Overburden

- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

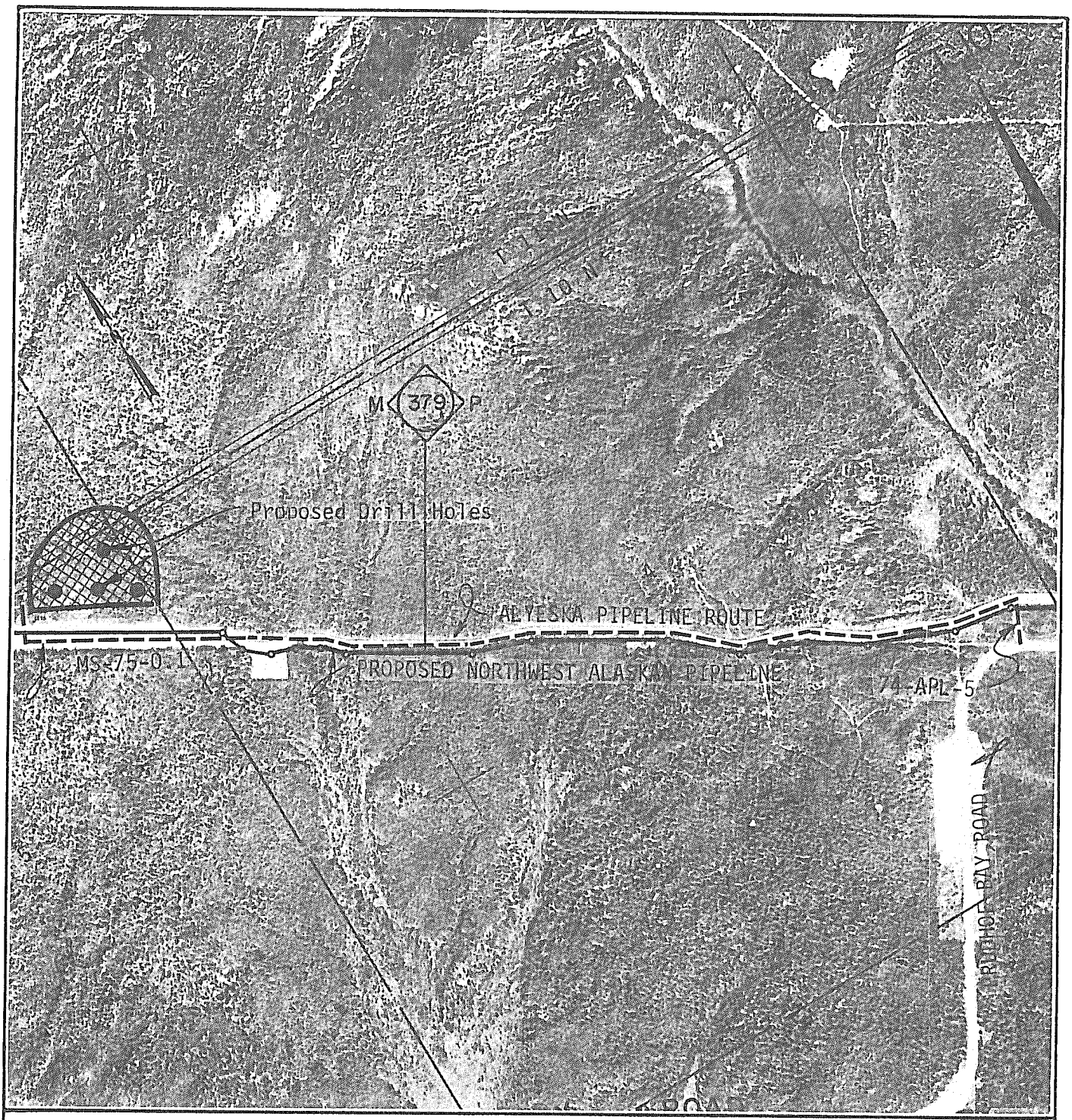
- A drill rig will make four test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Work-pad via 74-APL-5, as shown on the Site Map.

Special Note:

The exploration plan was prepared using aerial and photo interpretation, and U.S.G.S. quadrangle maps.



4 Drill Holes to 25' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SE¼ Section 32
SW¼ Section 33
T11N, R8W, Fairbanks Meridian
NW¼ Section 4
NE¼ Section 5
T10N, R8W, Fairbanks Meridian

EMS-67-3

October 1979 Area: 9 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 67-3

Location

- The proposed site is an expansion of an Alyeska material site adjacent to a workpad through cut and is located approximately one mile north of the Prudhoe Bay Road and 10 miles northwest of Hess Creek. It lies within the SE¼ Section 32, SW¼ Section 33, T11N, R8W, NW¼ Section 4, NE¼ Section 5, T10N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated on a high steep bedrock ridge.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, poplar and birch to four inches in diameter, plus moss and lichens.

Apparent Overburden

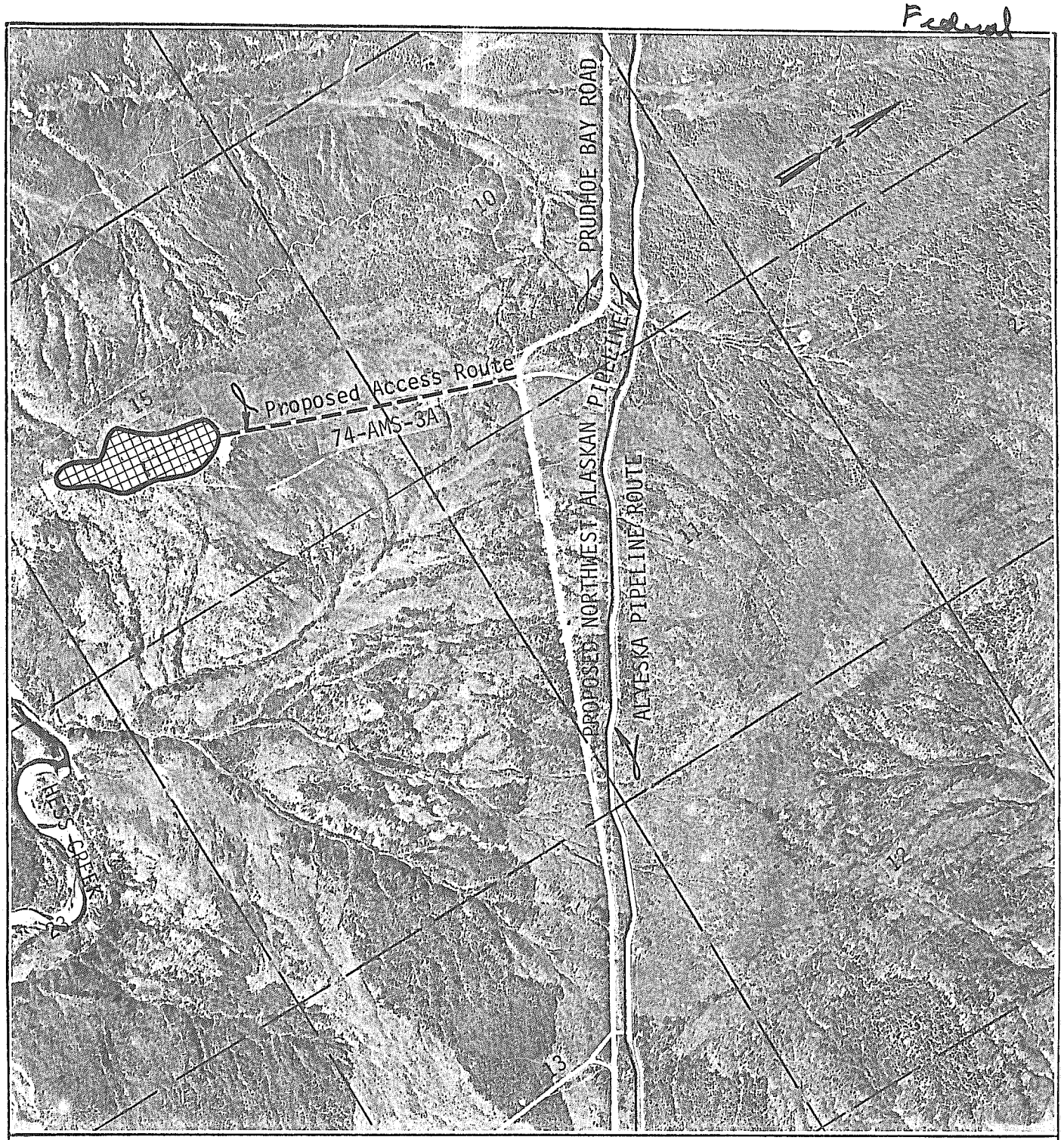
- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill will utilize the existing access roads and the Alyeska Pipeline Workpad for access, as shown on the Site Map.



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

0 2000 4000

SCALE IN FEET

Section 15
T10N, R8W, Fairbanks Meridian

EMS-68-1

October 1979 Area: 41 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-68-1

Location

- The proposed site is an existing pit located approximately three miles north of Hess Creek on the Prudhoe Bay Road and 4000 feet west. It lies within Section 15, T10N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a high, gently sloping bedrock knob overlooking Hess Creek to the south.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered patches of willow and grass.

Apparent Overburden

- There is no overburden.

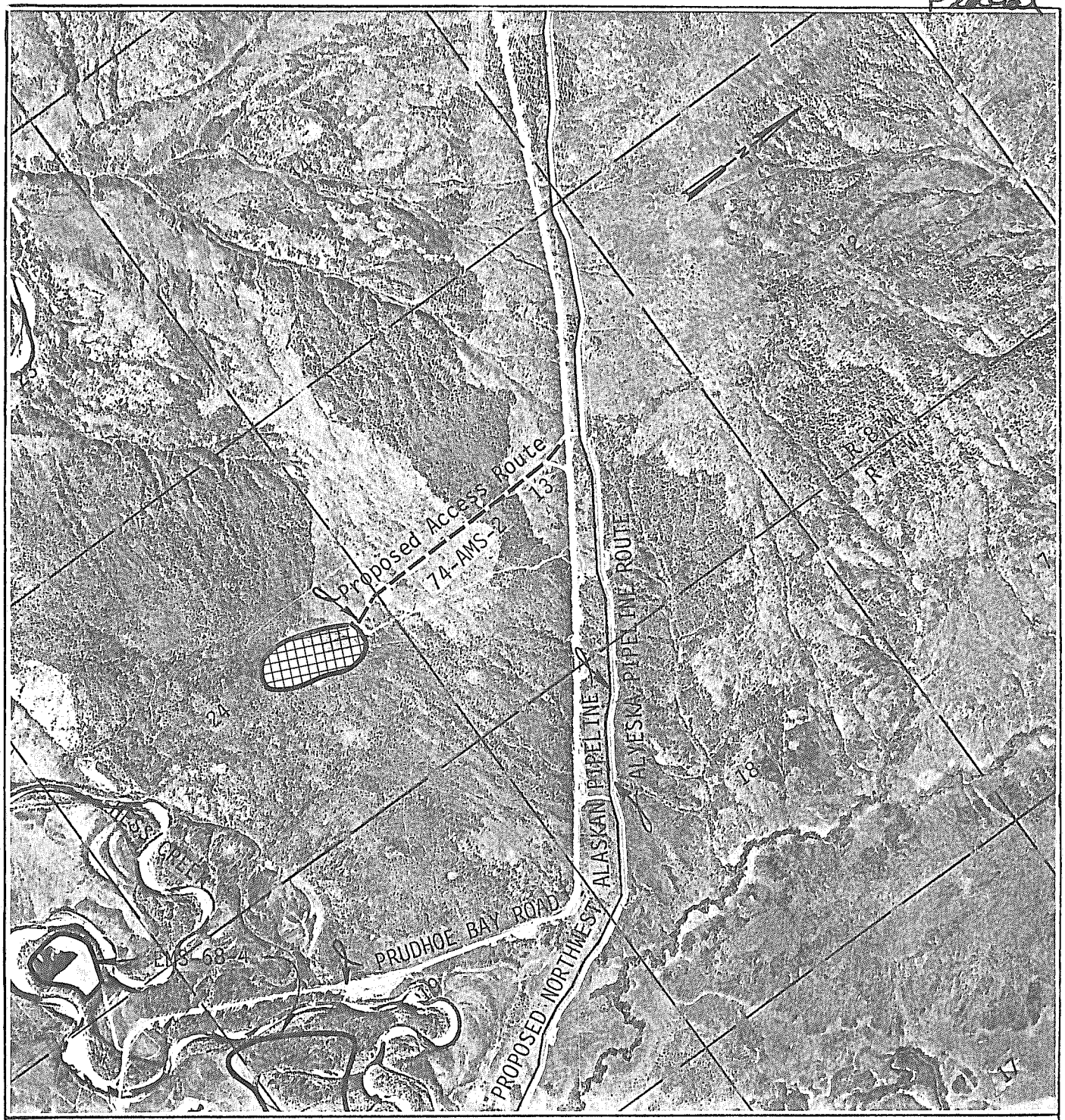
Exploration Proposed

- A representative hand sample will be taken.

Proposed Access

- A vehicle will use the existing access road as shown on the Site Map.

Federal



Obtain Hand Samples
EXPLORATION AREA LIES WITHIN:

0 2000 4000
SCALE IN FEET

N½ Section 24
T10N, R8W, Fairbanks Meridian

EMS-68-3

October 1979 Area: 23 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS -68-3

Location

- The proposed site is an existing pit, located approximately one mile north of Hess Creek and 3000 feet west of the Prudhoe Bay Road. It lies in the N½ Section 24, T10N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a high gently sloping bedrock knob, overlooking Hess Creek to the south.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered patches of willow and grass.

Apparent Overburden

- There is no overburden.

Exploration Proposed

- A representative hand sample will be taken.

Proposed Access

- A vehicle will use the existing access road as shown on the Site Map.

Federal

12 Drill Holes to 50' depth; Areas "A","B","C";
4 Backhoe Pits to 15' depth in Area "D"

0 1000 2000 4000

SCALE IN FEET

EXPLORATION AREA LIES WITHIN:

S½ Section 19
S½ Section 20
N½ Section 29
N½ Section 30
T10N, R7W, Fairbanks Meridian
E½ Section 25
T10N, R8W, Fairbanks Meridian

EMS-68-4

Area: "A": 18 acres±
"B": 14 acres±
"C": 32 acres±
"D": 12 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS - 68-4

Location

- The proposed site consits of four areas, including an existing pit, adjacent to Alyeska Pipeline and Prudhoe Bay Road crossings of Hess Creek. It is in the S½ Section 19, S½ Section 20, N½ Section 29, N½ Section 30, T10N, R7W, E½ Section 25, T10N, R8W, Fairbanks Meridian.

Geology & Topography

- The site is situated in four low relief areas lying on meander cores of cut-off and active channels of Hess Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel with cobbles to six inches in diameter.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and poplar to 24 inches in diameter, moss and grass in areas "A" through "C". Area "D" is covered with thick grasses.

Apparent Overburden

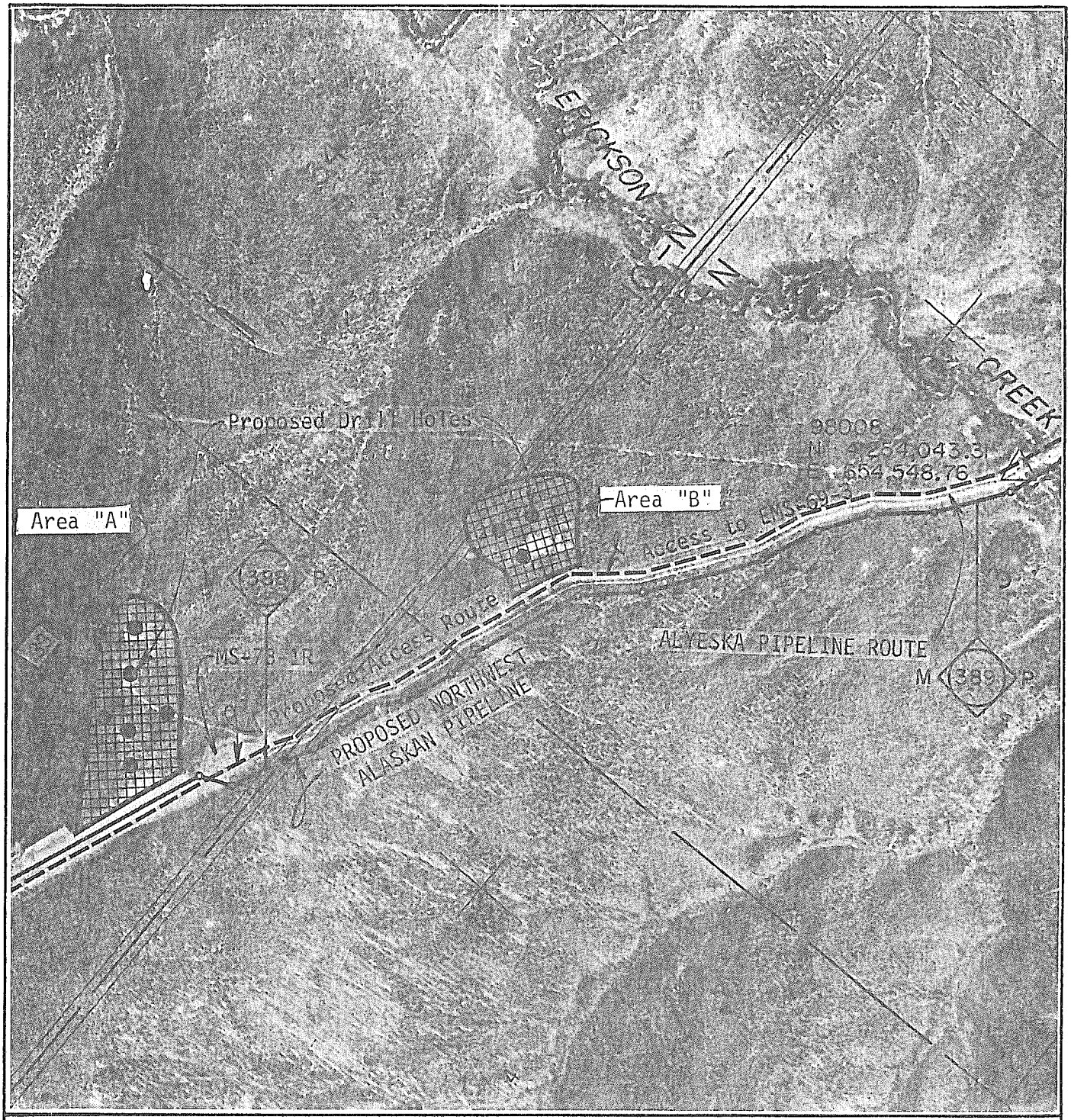
- The overburden consists of 36 to 54 inches of silt in area "A" through "C", and consists of restored waste berms in area "D".

Exploration Proposed

- A drill rig will make 12 test borings to 50 feet in depth in areas "A", "B", and "C". A backhoe will dig four test pits in area "D" to determine the extent of restored waste berm.

Proposed Access

- The backhoe and drill rig will utilize the access routes shown on the Site Map.



9 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

S½ Section 33
S½ S½ Section 34
T10N, R7W, Fairbanks Meridian
N½ N½ Section 3
T9N, R7W, Fairbanks Meridian

EMS-69-1

Area: "A": 18 acres±
"B": 13 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 69-1

Location

- The proposed site is composed of two areas including an existing pit adjacent to the Alyeska Pipeline. It is located approximately two and one-half miles south of Hess Creek. It lies within the S½ Section 33, S½S½ Section 34, T10N, R7W, N½N½ Section 3, T9N, R7W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon two small bedrock knobs located on a hillside.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and birch to eight inches in diameter plus alder, willow, moss and lichens.

Apparent Overburden

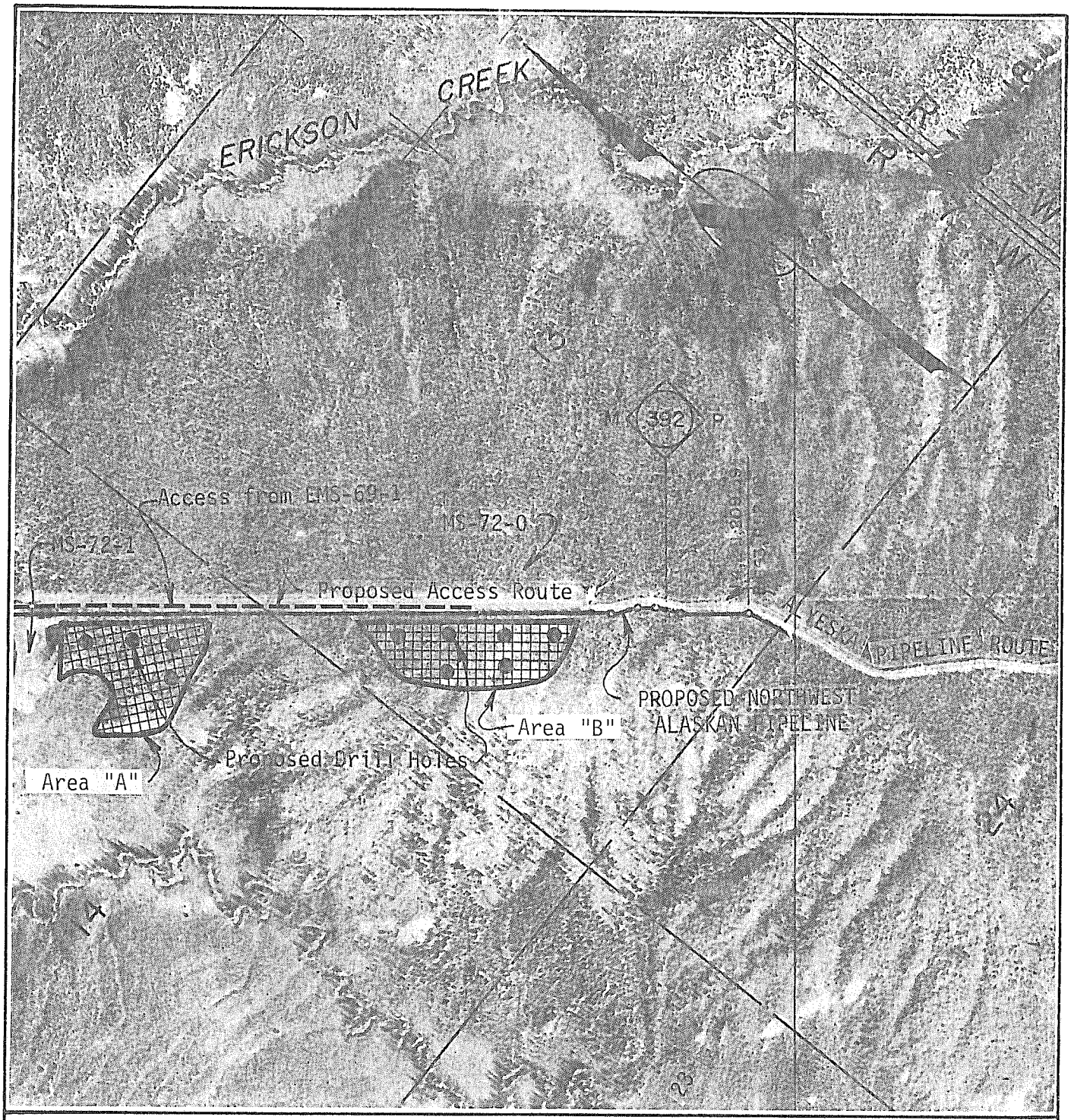
- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make nine test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access, as shown on the Site Map. Access to the workpad will be via 73-APL-1 from the Prudhoe Bay Road near Hess Creek.



10 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

W½ Section 13
E½ Section 14
T9N, R7W, Fairbanks Meridian

EMS-69-3

Area: "A": 14 acres±
"B": 15 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 69-3

Location

- The proposed site is composed of two areas located adjacent to the Alyeska Pipeline approximately one half mile south of Erickson Creek. It lies within W½ Section 13, E½ Section 14, T9N, R7W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the toe and crest of a broad, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, poplar and birch to six inches in diameter plus alder, willow, moss and lichens.

Apparent Overburden

- The overburden consists of 24" of organics and silt.

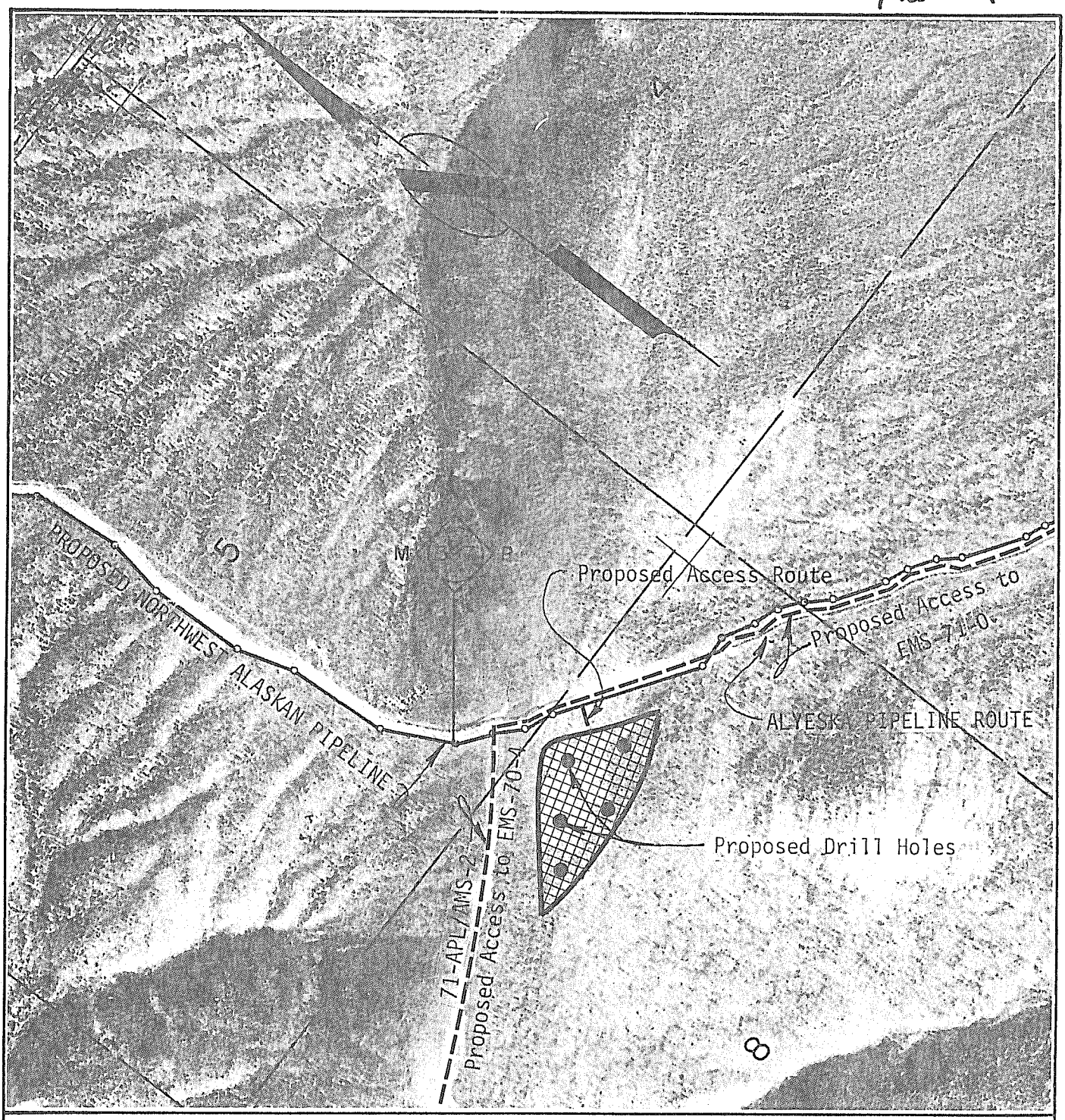
Exploration Proposed

- A drill rig will make 10 borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Work-pad from EMS 69-1 for access, as shown on the Site Map.

Federal



5 Drill Holes to 30' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ Section 8
T8N, R6W, Fairbanks Meridian

EMS-70-3

November 1979 Area: 17 acres+

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 70-3

Location

- The proposed site is located at the intersection of access road 71-APL/AMS-2 and the Alyeska Pipeline approximately one and one half miles north of Lost Creek. It lies within the N½ Section 8, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a large, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic bedrock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered spruce and birch to four inches in diameter, willow, moss and lichens.

Apparent Overburden

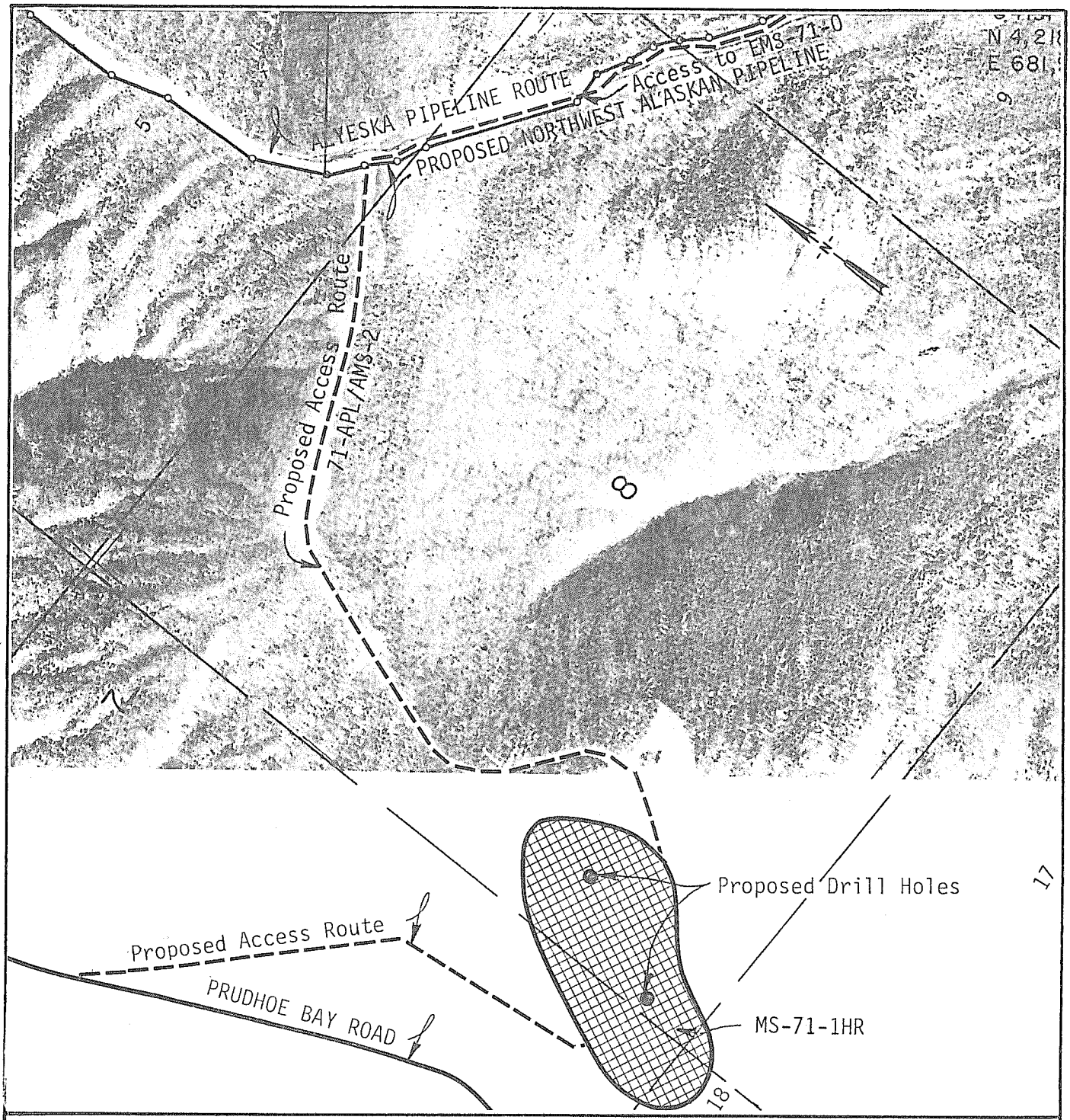
- The overburden consists of 12 inches of organics and silty gravel.

Exploration Proposed

- A drill rig will make five test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline work-pad and existing roads for access as shown on Site Map.



2 Drill Holes to 25' depth or refusal

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SE¼ Section 7
SW¼ Section 8
NW¼ Section 17
NE¼ Section 18
T8N, R6W, Fairbanks Meridian

EMS-70-4

November 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 70-4

Location

- The proposed site is an existing pit located approximately one and one-half miles north of Lost Creek, between the Prudhoe Bay Road and the Alyeska Pipeline. It lies within the SE¼ Section 7, SW¼ Section 8, NW¼ Section 17, NE¼ Section 18, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a large steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grass.

Apparent Overburden

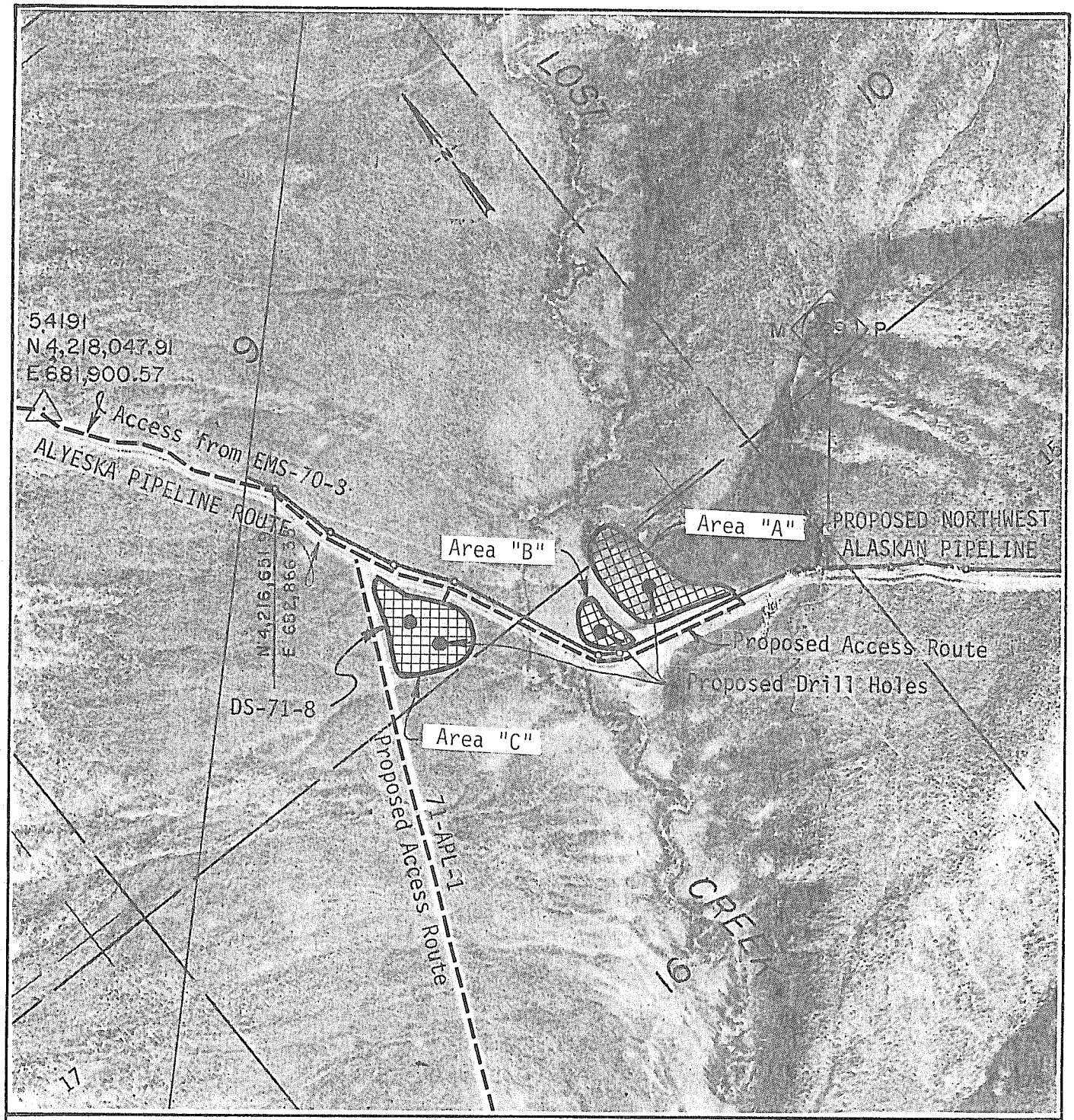
- There is no overburden.

Exploration Proposed

- A drill rig will make two test borings to 25 feet in depth or refusal.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.



1 Drill Hole to 50' depth
3 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

S½ S½ Section 9
N½ N½ Section 16
T8N, R6W, Fairbanks Meridian

EMS-71-0

Area: "A": 9 acres±
"B": 3 acres±
"C": 6 acres±

November 1979

0 500 1000 2000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 71-0

Location

- The proposed site is composed of three areas on the north and south sides of Lost Creek adjacent to the Alyeska Pipeline. It lies within the S½S½ Section 9 N½N½ Section 16, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- Area "A" is situated upon a small bedrock ridge. Areas "B" and "C" are disposal sites containing material that was removed from a cut on the south side of Lost Creek. Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation in area "A" is composed of scattered spruce and birch to four inches in diameter, plus occasional willow, moss and lichens. In areas "B" and "C" it consists of grass.

Apparent Overburden

- There is no overburden.

Exploration Proposed

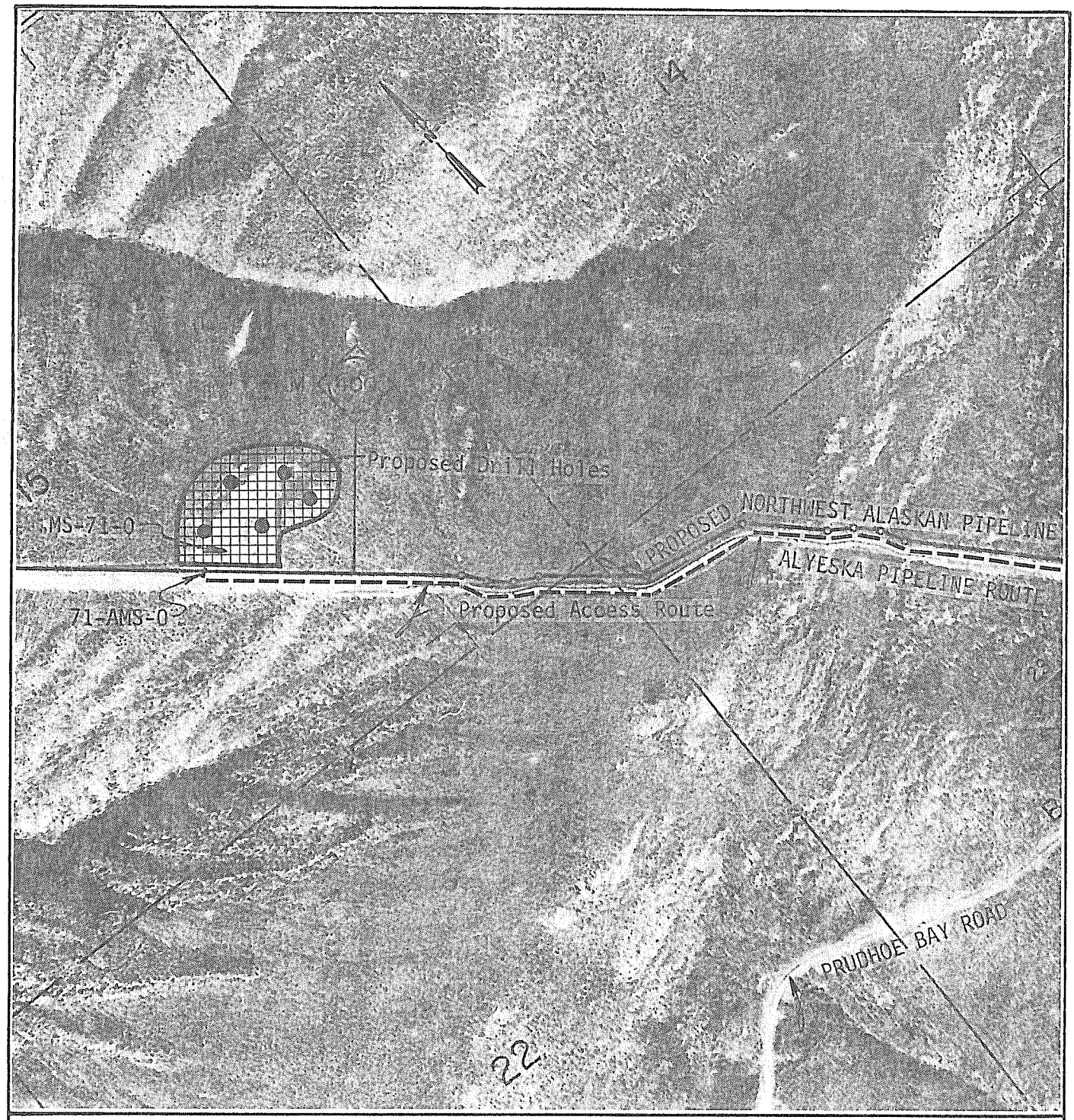
- A drill rig will make one test boring in area "A" to 50 feet in depth or refusal and three borings to 15 feet in depth in areas "B" and "C".

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad from EMS 70-3 or 71-APL-1, as shown on the Site Map.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and visual inspection from the Alyeska Pipeline Workpad.



5 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SE¼ Section 15
T8N, R6W, Fairbanks Meridian

EMS-71-1

November 1979 Area: 15 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 71-1

Location

- The proposed site includes an existing pit and is adjacent to the Alyeska Pipeline at approximately one mile south of Lost Creek. It lies within the SE¼ Section 15, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a small, low relief, bedrock knob positioned on a large, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation in the undisturbed areas is composed of scattered spruce and birch to four inches in diameter plus willow, moss and lichens.

Apparent Overburden

- The overburden consists of 12 inches of organics and silty gravel.

Exploration Proposed

- A drill rig will make five test borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be from the Prudhoe Bay Road.

Special Note:

The downslope area of RMS 71-1 was deleted due to an overly steep haul.

Federal

10 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

E½ Section 25
T8N, R6W, Fairbanks Meridian

EMS-71-3

Area: "A": 23 acres±
"B": 17 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 71-3

Location

- The proposed site is composed of two areas located approximately 3000 feet northwest of the Manley Hot Springs Road. It lies within the E½ Section 25, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a broad, steeply sloping bedrock ridge, adjacent to an Alyeska Pipeline Cut.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is composed of weathered metamorphic rocks.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, poplar, and birch to eight inches in diameter, plus alder, willow, moss and lichens.

Apparent Overburden

- The overburden consists of 12 inches of organics, silt and silty gravel.

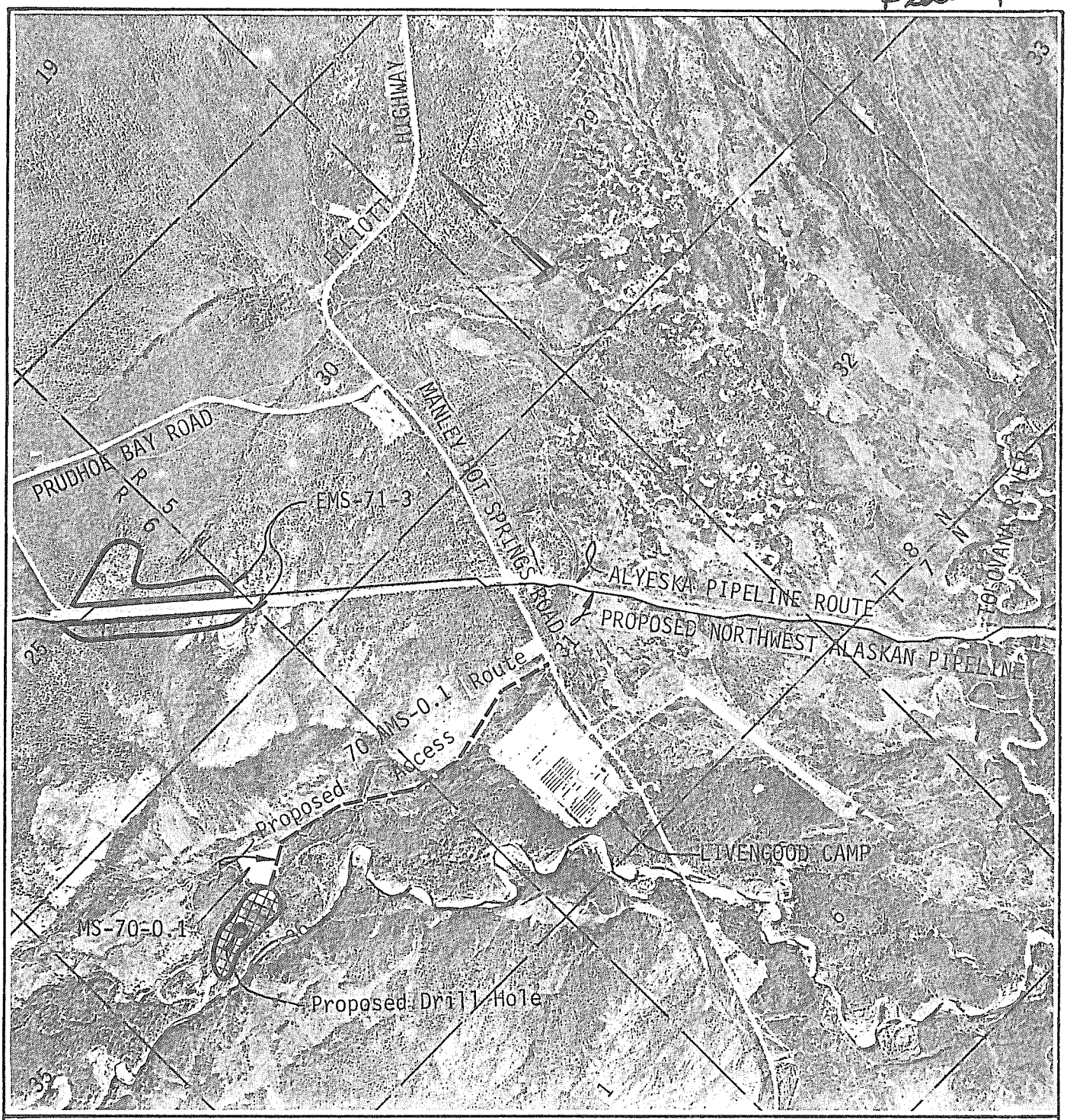
Exploration Proposed

- A drill rig will make 10 test borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Work-pad and 70 APL/AMS-1M for access as shown on the Site Map.

Federal



1 Cased Drill Hole to 25' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

Section 36
T8N, R6W, Fairbanks Meridian

EMS-71-4

November 1979 Area: 14 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 71-4

Location

- The proposed site is an existing pit located 3000 feet west of Livengood Camp on the West Fork Tolovana River. It lies within Section 36, T8N, R6W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon an overflow channel and gravel bars of the river. The existing pit has been mined below the water level.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is composed of interlayered sands, gravels, and silt and is very poorly graded.

  Material for select backfill can be produced from this site.

Vegetation Cover

- There is no vegetation.

Apparent Overburden

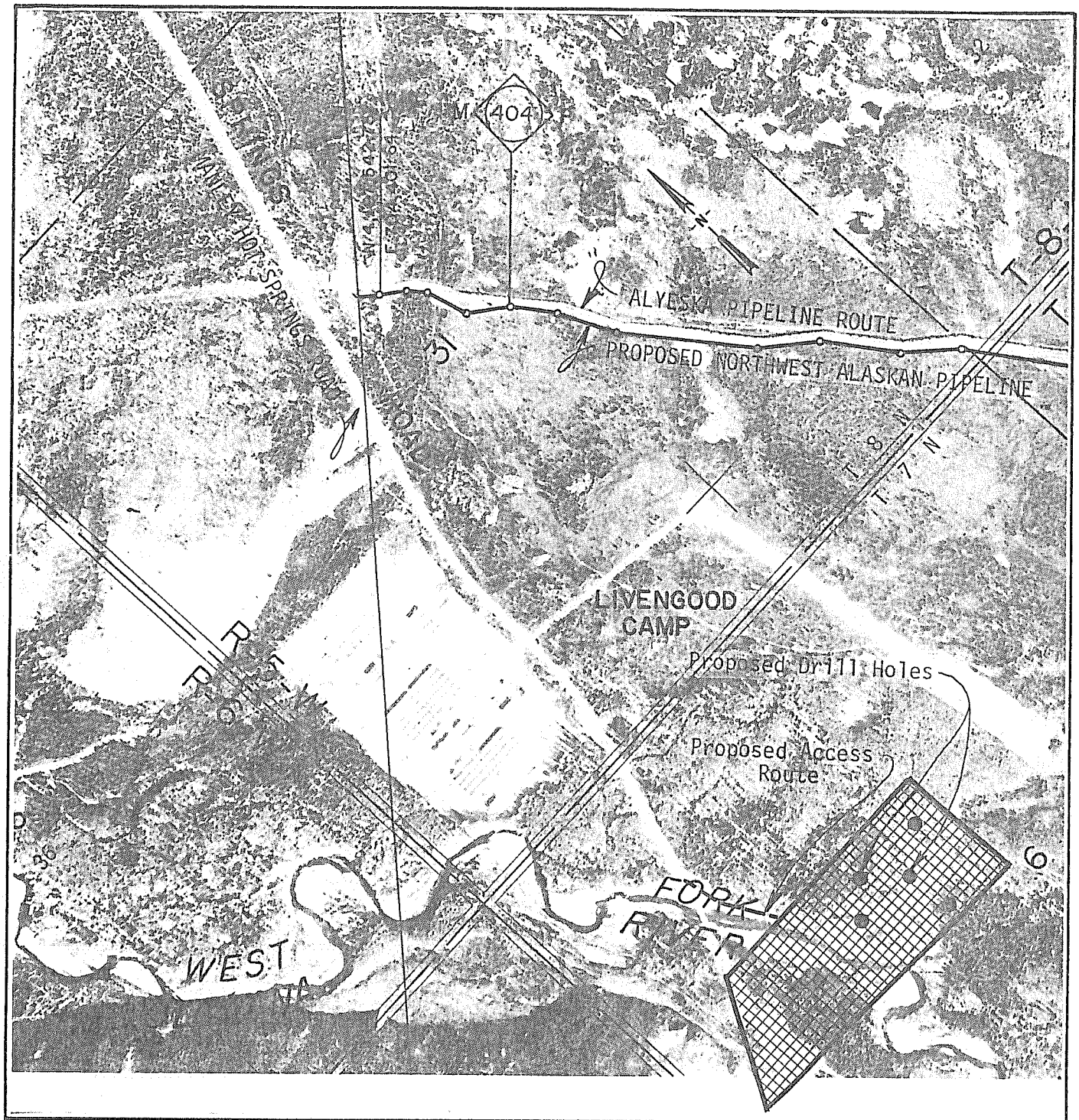
- There is no overburden.

Exploration Proposed

- A drill rig will place a cased boring to 25 feet in depth or bedrock. Samples will be taken with a 2.5 inch drive sampler.

Proposed Access

- The drill rig will utilize the existing road for access, as shown on the Site Map.



5 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

Lot 2
U.S. Survey No. 4441
Section 6
T7N, R5W, Fairbanks Meridian

EMS-72-1

November 1979 Area: 42 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 72-1

Location

- The proposed site is located adjacent to the east side of the West Fork Tolovana River and lies 700 feet south of the Manley Hot Springs Road. It is in Lot No.2, U.S. Survey No. 4441, Section 6, T7N, R5W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the floodplain of the West Fork Tolovana and Tolovana Rivers.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material consists of interbedded sands and sandy gravels.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to 12 inches in diameter surrounded by a cleared area with brush and grass.

Apparent Overburden

- The overburden consists of organics and silt overlying gravel.

Exploration Proposed

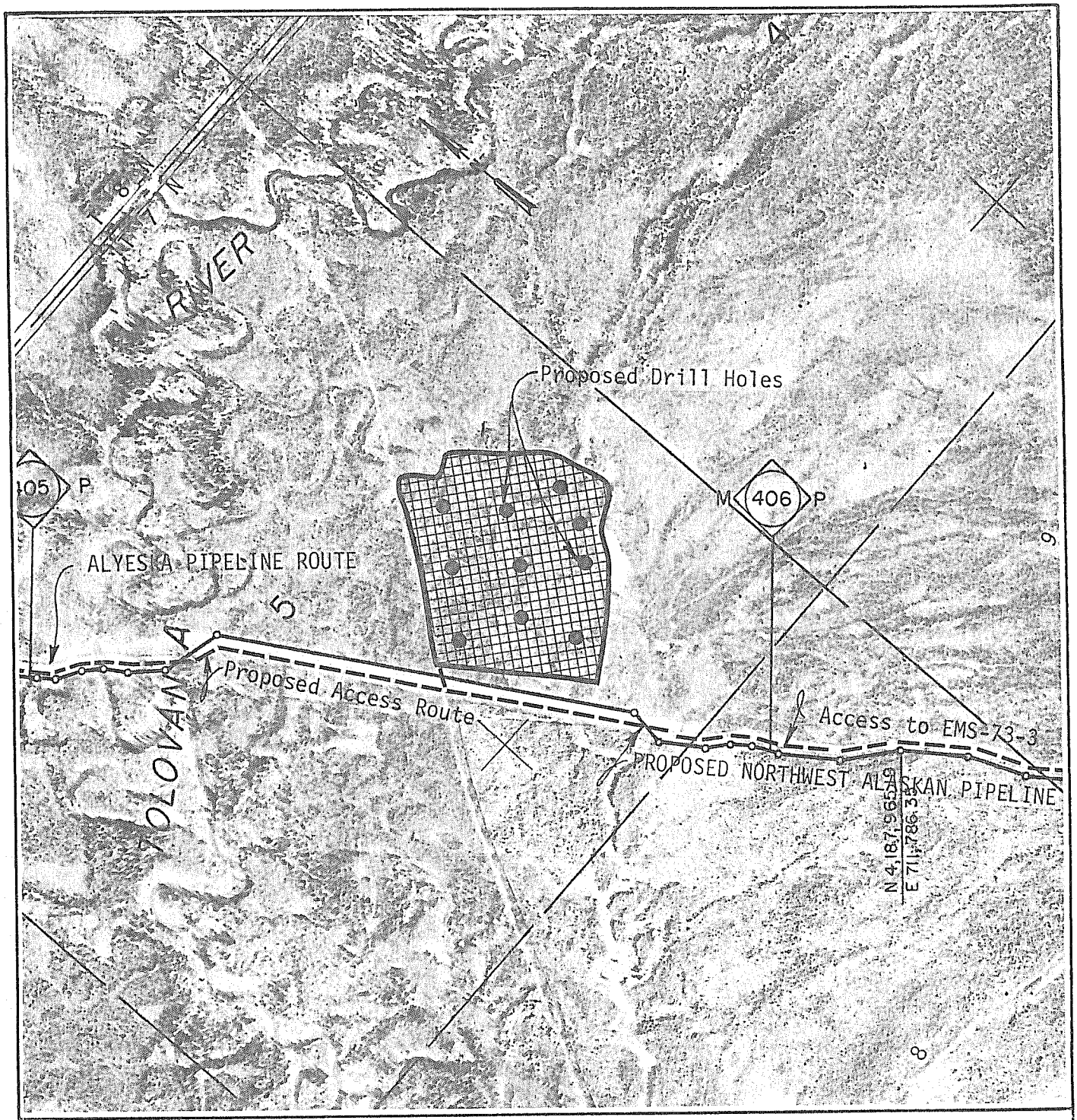
- A drill rig will make five test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the existing trail along the river bank for access, as shown on the Site Map.

Special Note:

Access permits were not acquired so an on-site investigation was not possible. This exploration plan was prepared by using aerial photo interpretation, and U.S.G.S. quadrangle maps.



10 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SE¼, S½ NE¼ Section 5
T7N, R5W, Fairbanks Meridian

EMS-72-2

November 1979 Area: 41 acres+

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 72-2

Location

- The proposed site is located 100 feet east of the Alyeska Pipeline approximately 2000 feet south of the Tolovana River. It lies within the SE¼, S½NE¼ Section 5, T7N, R5W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a terrace of the Tolovana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material consists of interbedded sandy gravels and sands. The water table is at approximately 10 feet depth.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and aspen to three inches in diameter.

Apparent Overburden

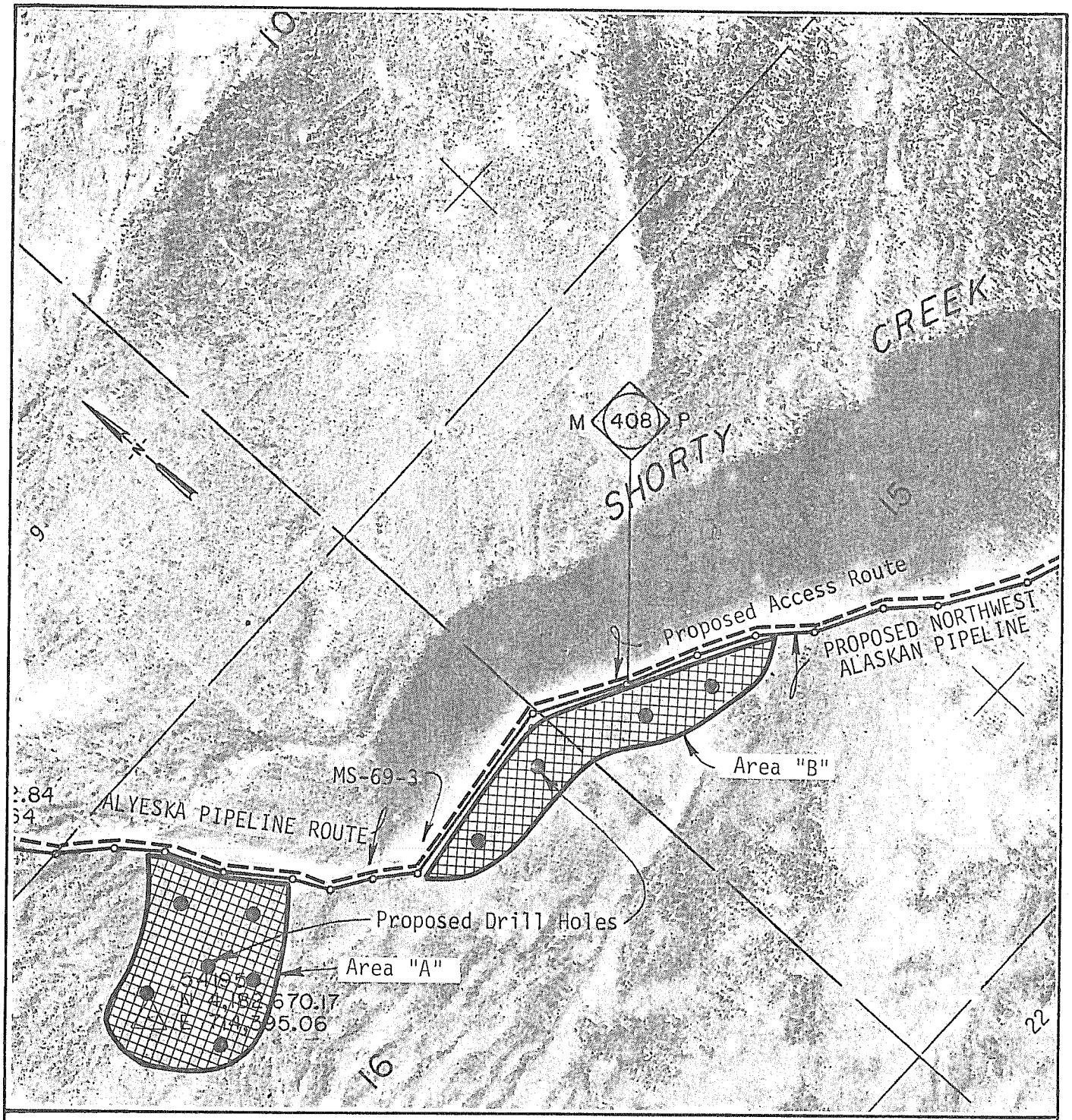
- The overburden consists of five feet of organics and silt.

Exploration Proposed

- A drill rig will make 10 test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Workpad for access. Access to the workpad will be from the Manley Hot Springs Road near the Livengood Camp.



10 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

W½ Section 15
Section 16
T7N, R5W, Fairbanks Meridian

EMS-72-3

Area: "A": 19 acres±
"B": 33 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 72-3

Location

- The proposed site is composed of two areas adjacent to the Alyeska Pipeline, located approximately two miles south of the Tolovana River. It lies within the W½ Section 15, Section 16, T7N, R5W, Fairbanks Meridian.

Geology & Topography

- Area "A" of the site is located on the toe of a bedrock ridge and area "B" is on a ridge about 1000 feet to the south.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to six inches in diameter, plus moss and lichens.

Apparent Overburden

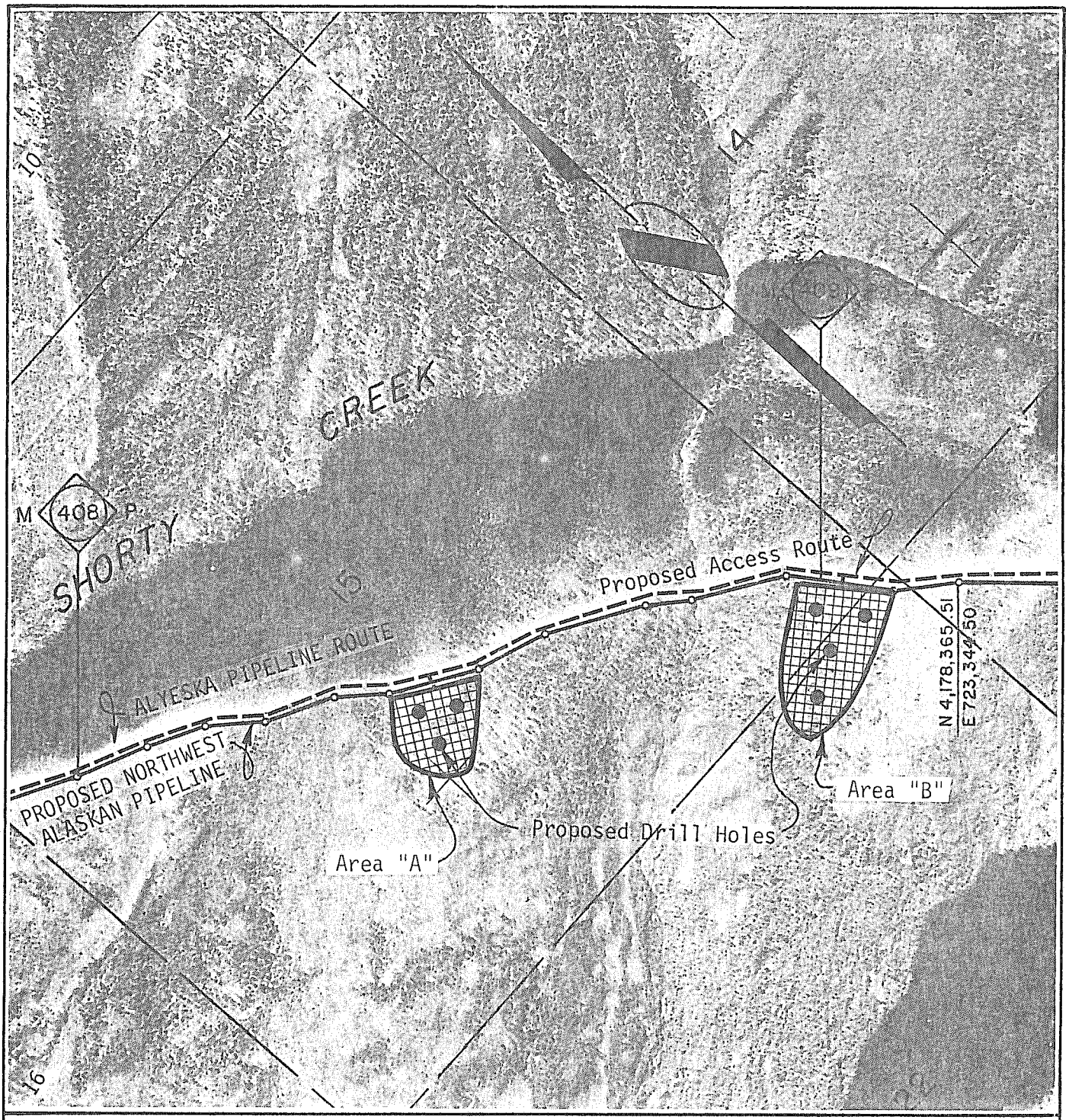
- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make 10 borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be from the Manley Hot Springs Road near Livengood Camp.



7 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 15
NE¼ Section 22
T7N, R5W, Fairbanks Meridian

EMS-72-4

Area: "A": 9 acres±
"B": 11 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 72-4

Location

- The proposed site is composed of two areas adjacent to the Alyeska Pipeline, located approximately three and one-half miles south of the Tolovana River. It lies within the S½ Section 15, NE¼ Section 22, T7N, R5W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon small bedrock knobs located upon a ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and aspen to six inches in diameter.

Apparent Overburden

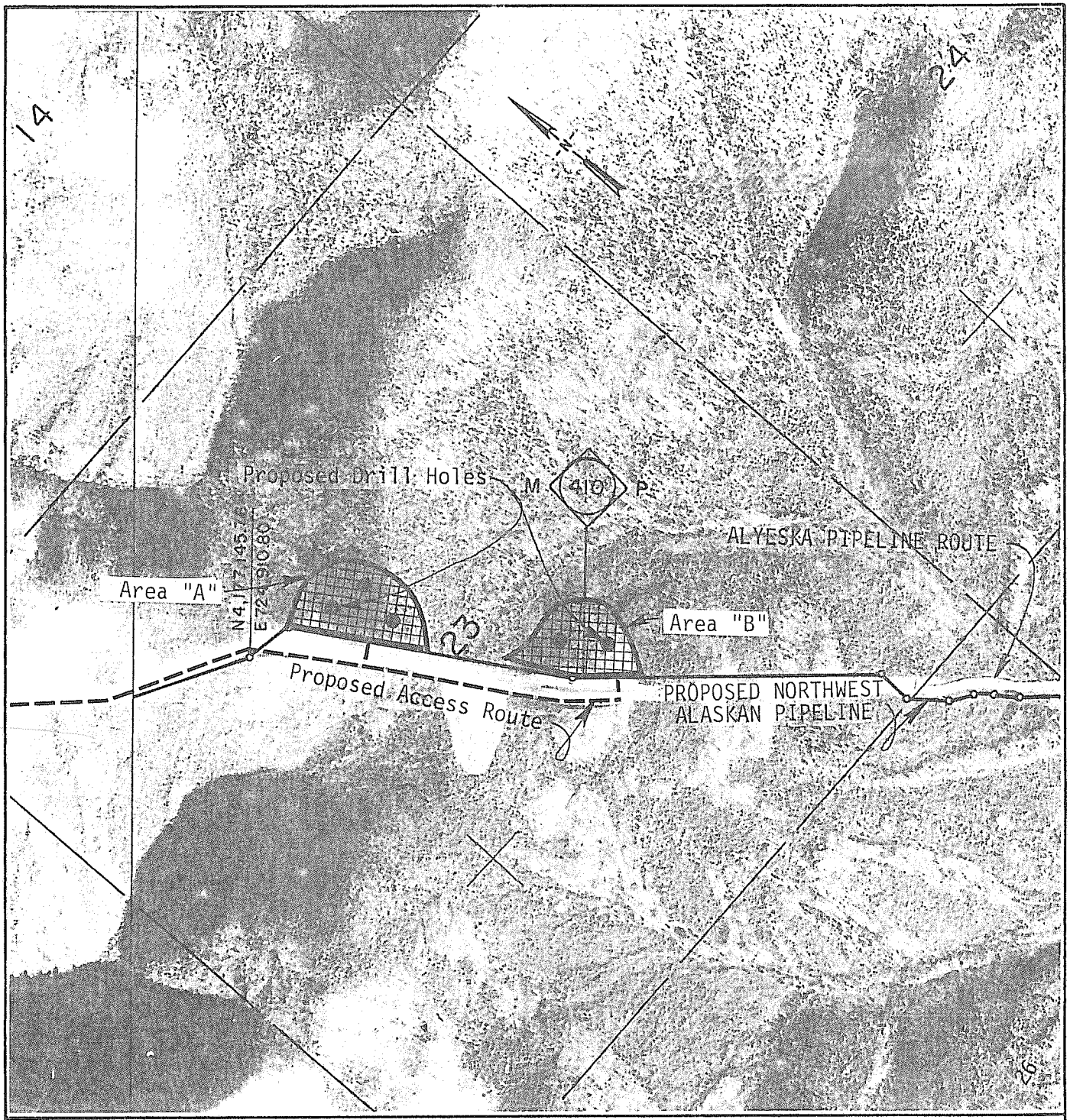
- The overburden consists of 6 to 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make seven test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access, as shown on the Site Map. Access to the workpad will be from the Manley Hot Springs Road near Livengood Camp.



5 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

Section 23
T7N, R5W, Fairbanks Meridian

EMS-73-1

Area: "A": 9 acres±
"B": 8 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 73-1

Location

- The proposed site is composed of two areas adjacent to the Alyeska Pipeline, and located approximately five and one-half miles south of the Tolovana River. It lies within Section 23, T7N, R5W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon two small bedrock knobs located on a bedrock ridge.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select back-fill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered aspen and spruce to four inches in diameter plus moss, grass and lichens.

Apparent Overburden

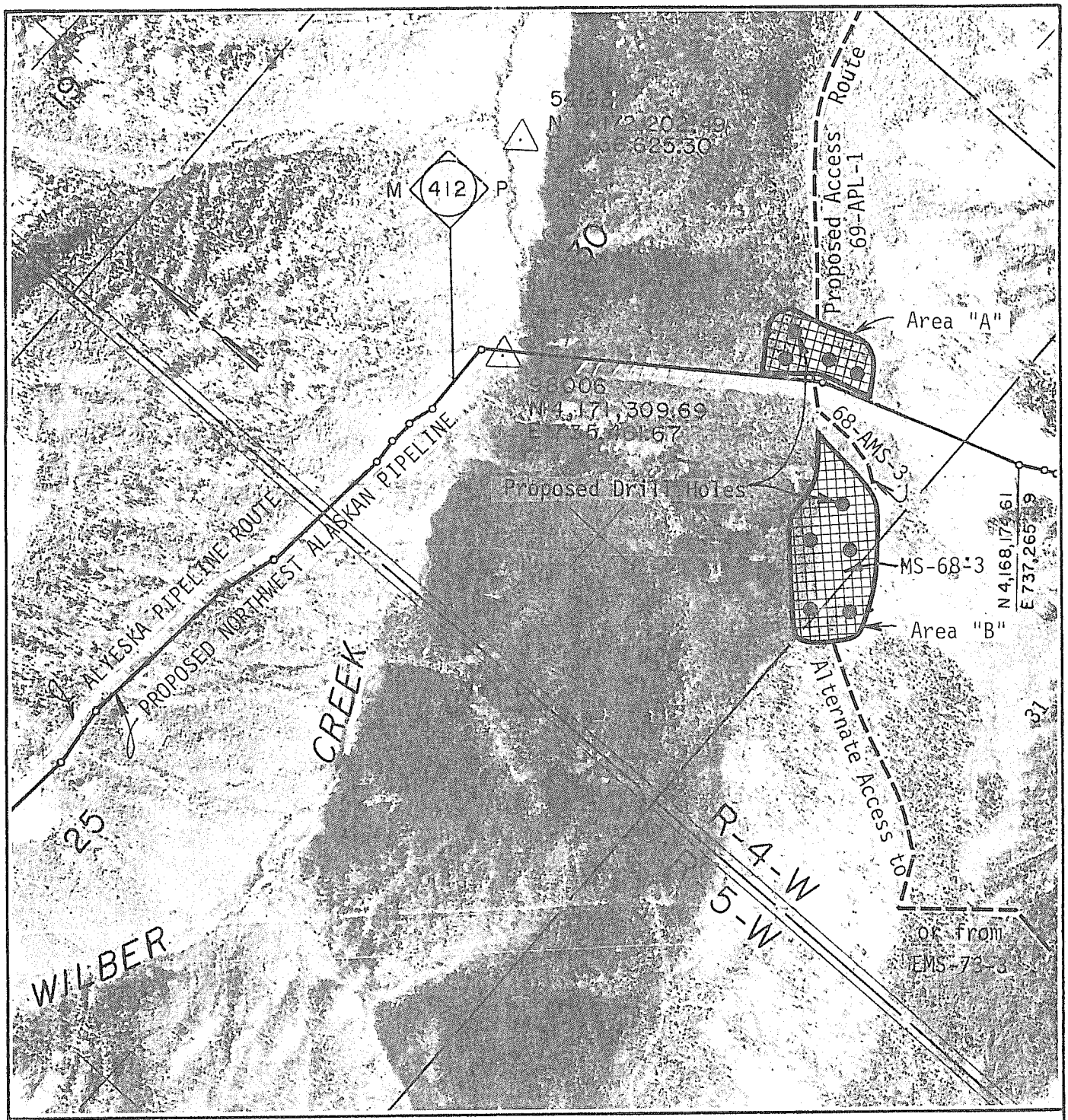
- The overburden consists of 6 to 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make five test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map.



9 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 30
N½ Section 31
T7N, R4W, Fairbanks Meridian

EMS-73-2

Area: "A": 9 acres±
"B": 17 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 73-2

Location

- The proposed site is composed of two areas separated by the Alyeska Pipeline, and located 2000 feet south of Wilber Creek. It lies within the S½ Section 30, N½ Section 31, T7N, R4W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a narrow, steep sided bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to four inches in diameter, plus moss and grass.

Apparent Overburden

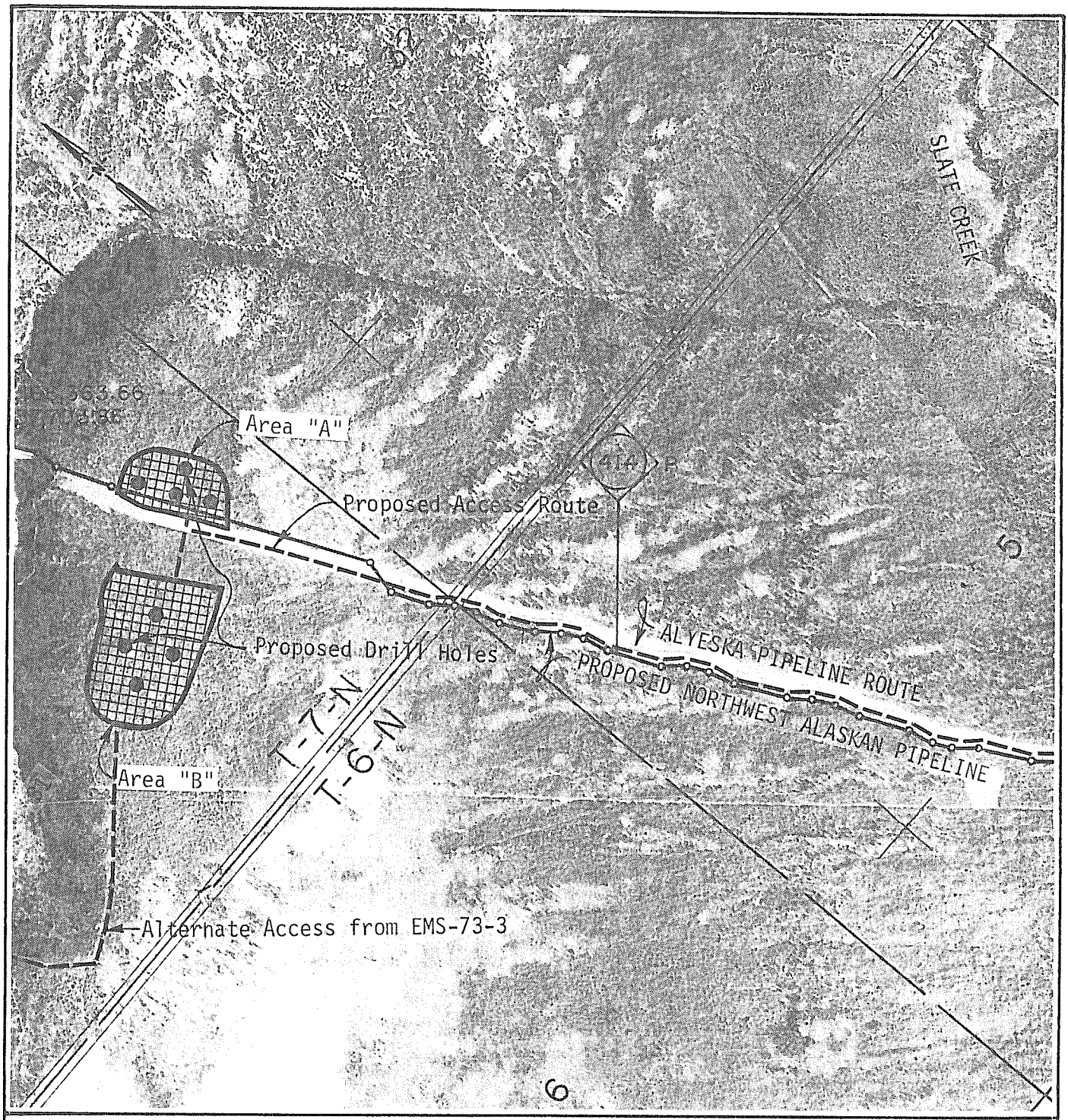
- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

- A drill rig will drill nine test borings to 20 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the existing access road as shown on the Site Map. The existing trail may also be utilized for access to EMS 73-3.



8 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

SE¼ Section 31
T7N, R4W, Fairbanks Meridian

EMS-73-3

Area: "A": 8 acres±
"B": 16 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORHTWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 73-3

Location

- The proposed site is composed of two areas located approximately one and one-half mile north of Slate Creek and one mile south of Wilber Creek. It lies within the SE¼ Section 31, T7N, R4W, Fairbanks Meridian.

Geology & Topography

- The areas of the site are situated upon the crest of a narrow steeply sloping bedrock ridge, separated by an Alyeska Pipeline cut.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is an argillite.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense aspen and spruce to six inches in diameter, plus alder, and moss.

Apparent Overburden

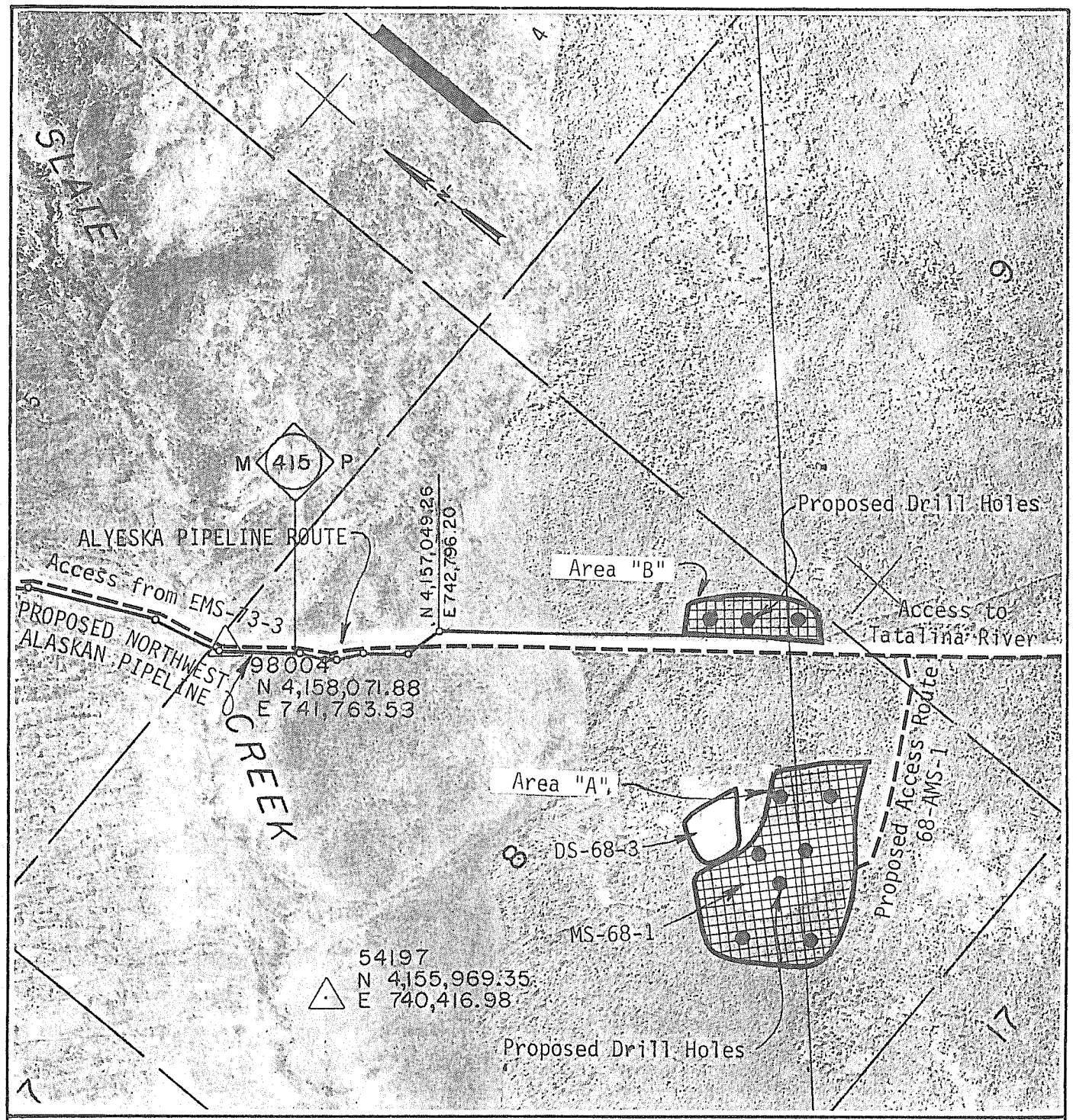
- The overburden consists of six inches of organics and silt.

Exploration Proposed

- A drill rig will make eight test borings to 20 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access, as shown on the Site Map. Original workpad access will be via 67-APL-5 at M.P. 45.1 on the Elliott Highway.



10 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

E½ Section 8
T6N, R4W, Fairbanks Meridian

EMS-73-4

Area: "A": 26 acres±
"B": 8 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-73-4

Location

- The proposed site is composed of two areas separated by the Alyeska Pipeline and includes an existing pit. The site is located approximately three miles north of the Tatalina River. It lies within the E½ Section 8, T6N, R4W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a broad, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to six inches in diameter plus, moss and grasses.

Apparent Overburden

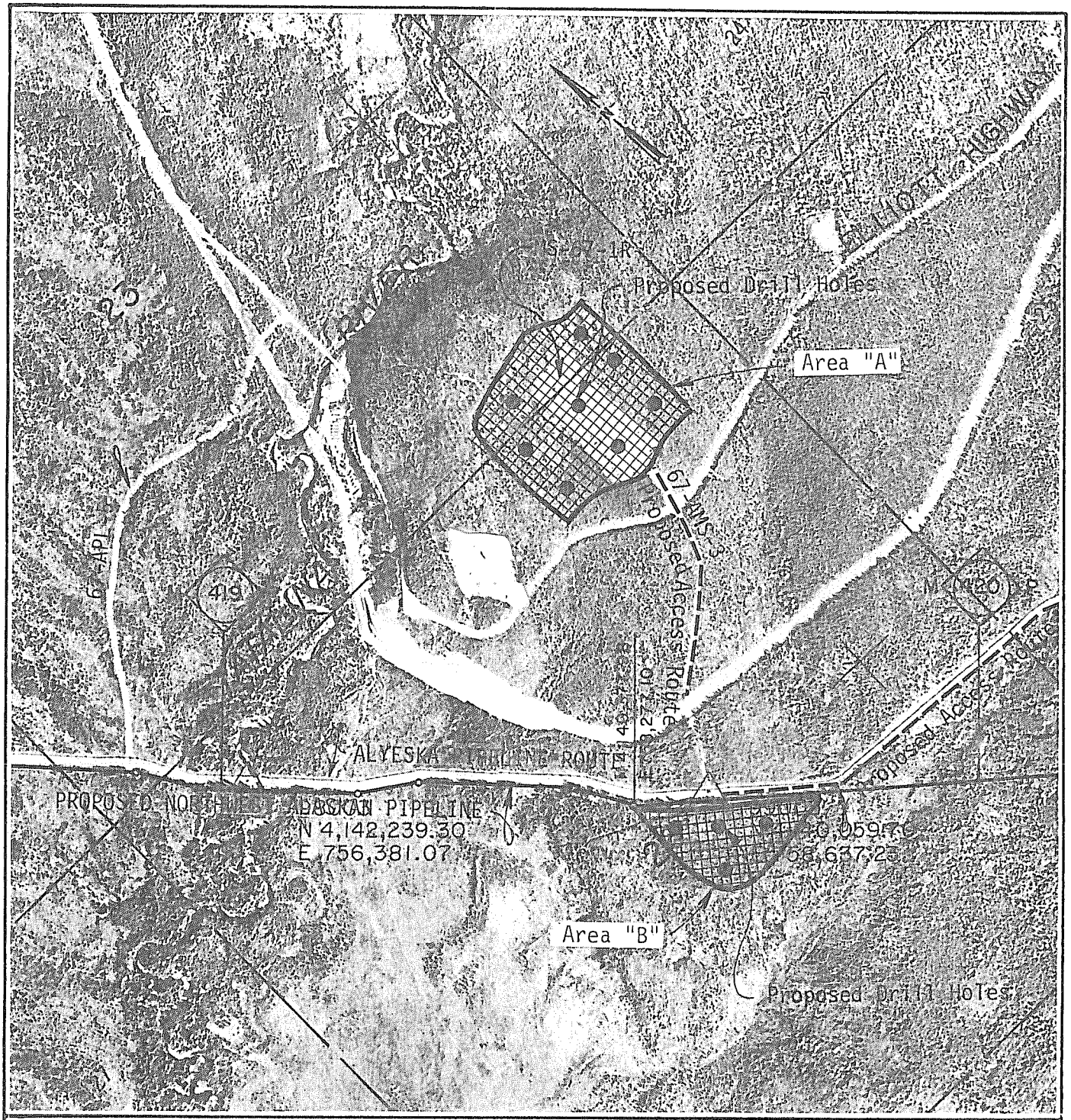
- The overburden consists of six inches of organics and silt.

Exploration Proposed

- The drill rig will make 10 borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will leave the Elliott Highway at M.P. 45.1. Workpad access will be via 67-APL-5.



12 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

SE¼ Section 23
Section 26
T6N, R4W, Fairbanks Meridian

EMS-74-2

Area: "A": 29 acres±
"B": 10 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Sec. 26 Federal.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 74-2

Location

- The proposed site includes two areas, one of which is an existing pit. Area "A" is located 300 feet north of the old Elliot Highway and 1000 feet south of the Tatalina River. Area "B" is approximately 2000 feet west of area "A" and lies adjacent to the Alyeska Pipeline. It lies within the SE¼ Section 23, and Section 26, T6N, R4W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a broad, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to 10 inches in diameter, plus brush, moss and lichens.

Apparent Overburden

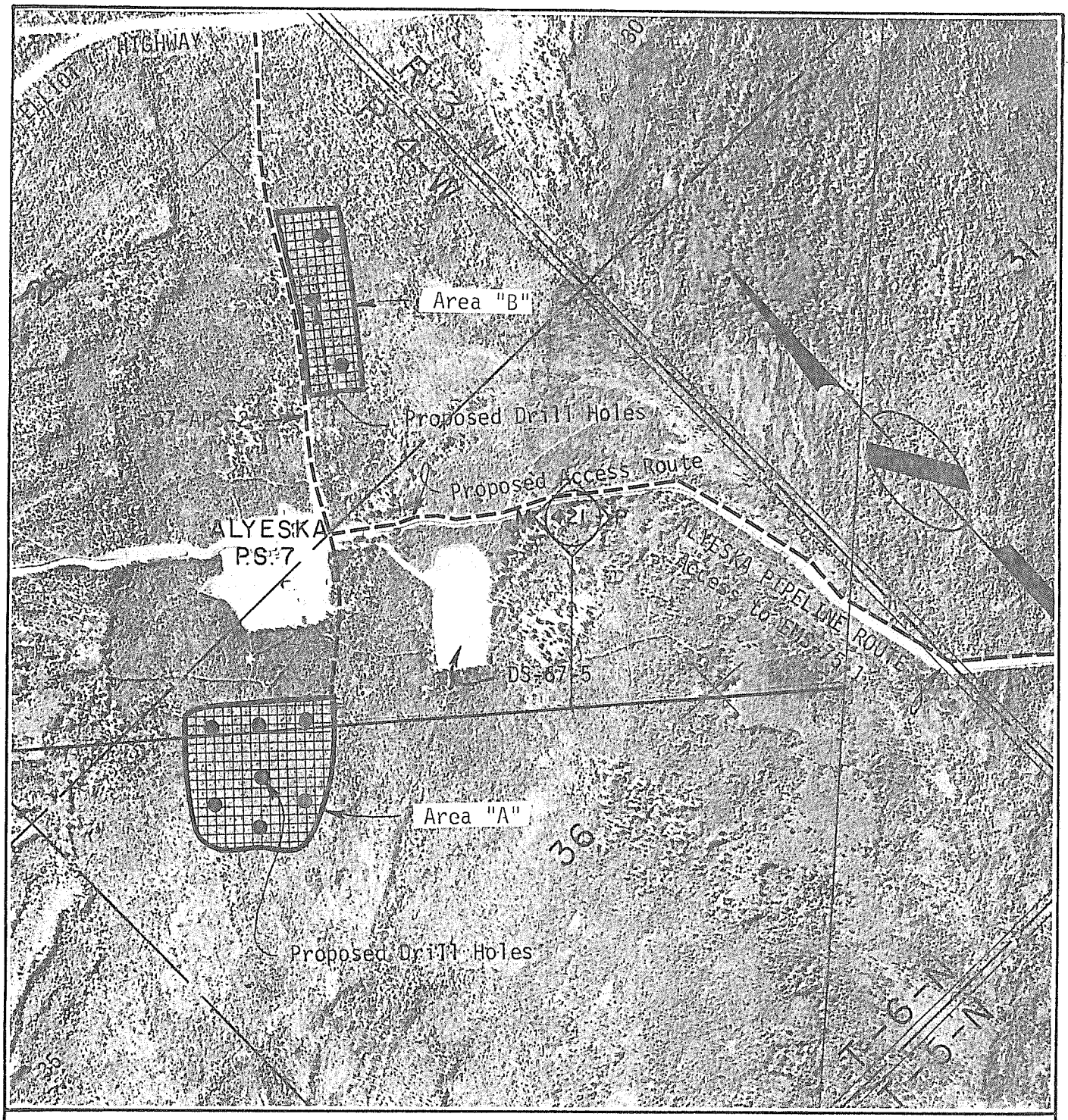
- The overburden consists of 12 inches of organics. and silt.

Exploration Proposed

- A drill rig will make 12 test borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize access road 67-AMS-3 to area "A" as shown on the Site Map, and the Alyeska Pipeline workpad to area "B".



10 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

S½ Section 25
N½ Section 36
T6N, R4W, Fairbanks Meridian

EMS-74-3

Area: "A": 19 acres±
"B": 14 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 74-3

Location

- The proposed site is composed of two areas, area "A" lies 500 feet southwest of Alyeska Pump Station 7 and area "B" lies 800 feet northeast, adjacent to the access road. It lies within the S½ Section 25, N½ Section 36, T6N, R4W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a broad gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and aspen to six inches in diameter, plus moss and lichens.

Apparent Overburden

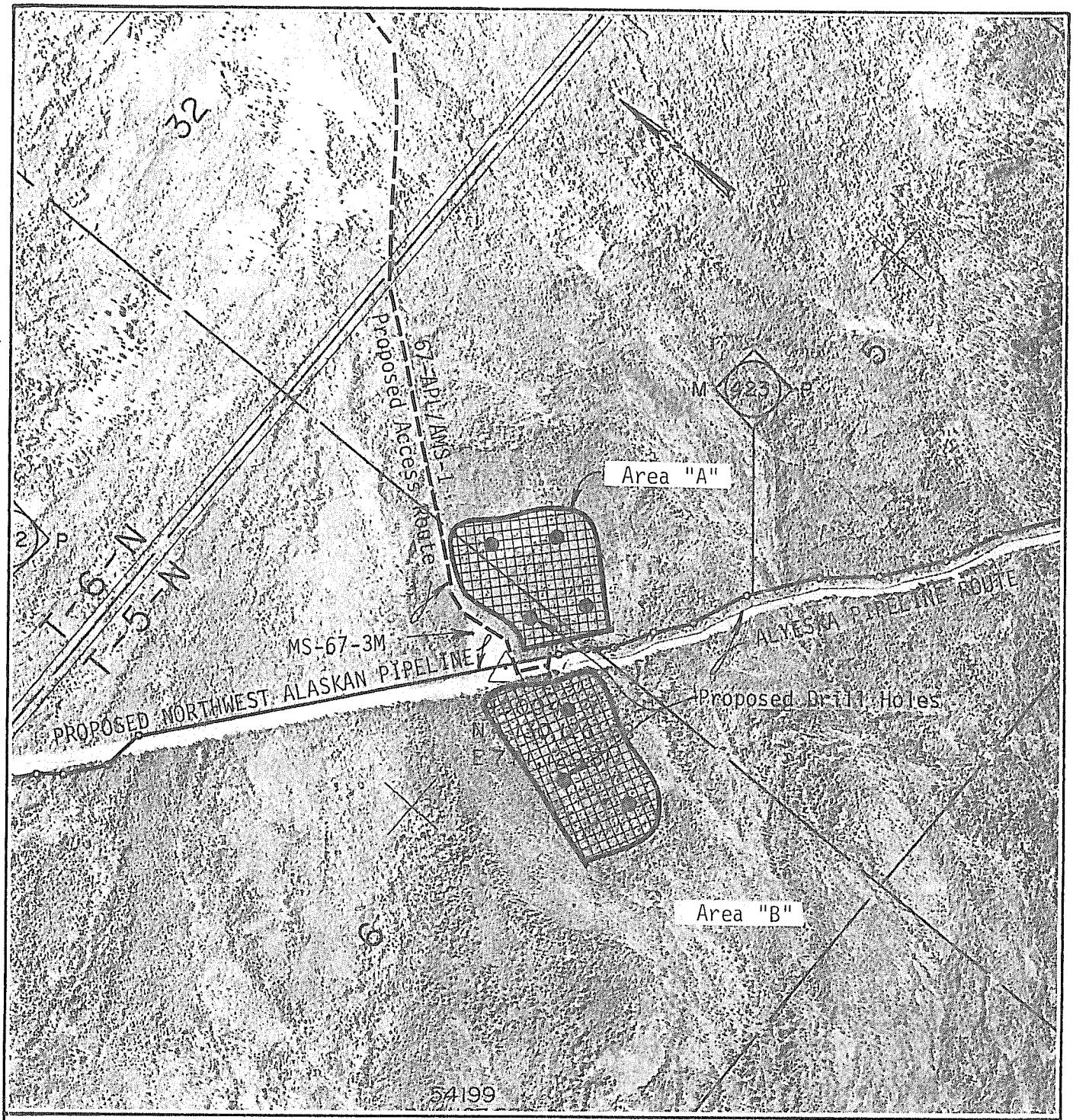
- The overburden consists of 6 to 18 inches of organics and silt.

Exploration Proposed

- A drill rig will make 10 test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the access road to Alyeska Pump Station 7 and the Alyeska Pipeline Workpad for access, as shown on the Site Map.



7 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

W½ Section 5
E½ Section 6
T5N, R3W, Fairbanks Meridian

EMS-75-1

Area: "A": 18 acres±
"B": 21 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 75-1

Location

- The proposed site is composed of two areas, separated by the Alyeska Pipeline, approximately two miles south of Pump Station 7. It lies within the W½ Section 5, E½ Section 6, T5N, R3W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a broad gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen, and spruce to eight inches in diameter, plus alder, moss, and lichens.

Apparent Overburden

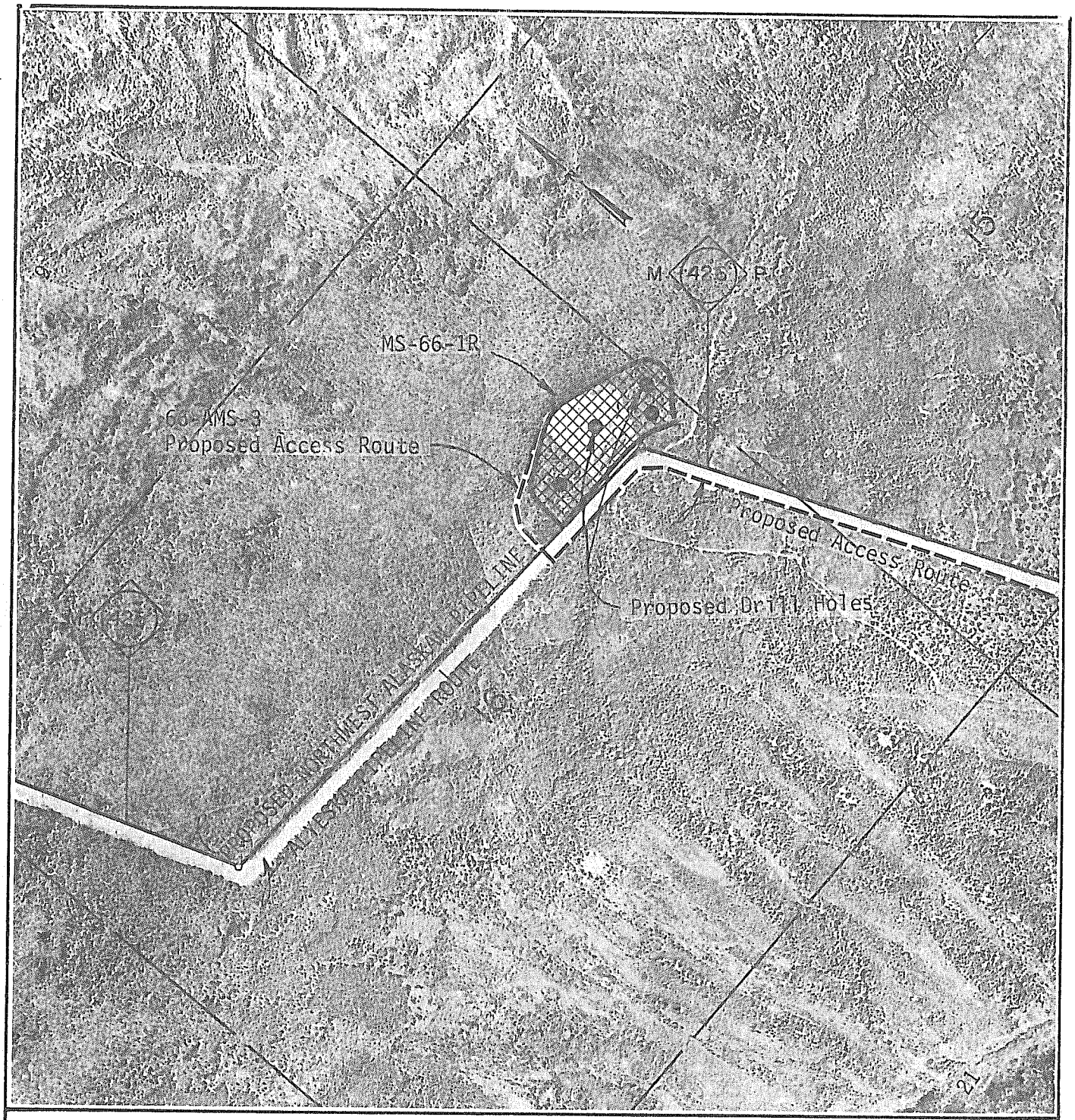
- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make seven borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the existing Alyeska access road 67-APL/AMS-1 and workpad for access as shown on the Site Map.



4 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

W½ W½ Section 15
E½ Section 16
T5N, R3W, Fairbanks Meridian

EMS-75-2

November 1979 Area: 13 acres+

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 75-2

Location

- The proposed site is an existing pit located adjacent to the Alyeska Pipeline Workpad approximately two miles south of Globe Creek. It lies within the W½W½ Section 15, E½ Section 16, T5N, R3W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a high steep sided bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to four inches in diameter, plus moss and lichens.

Apparent Overburden

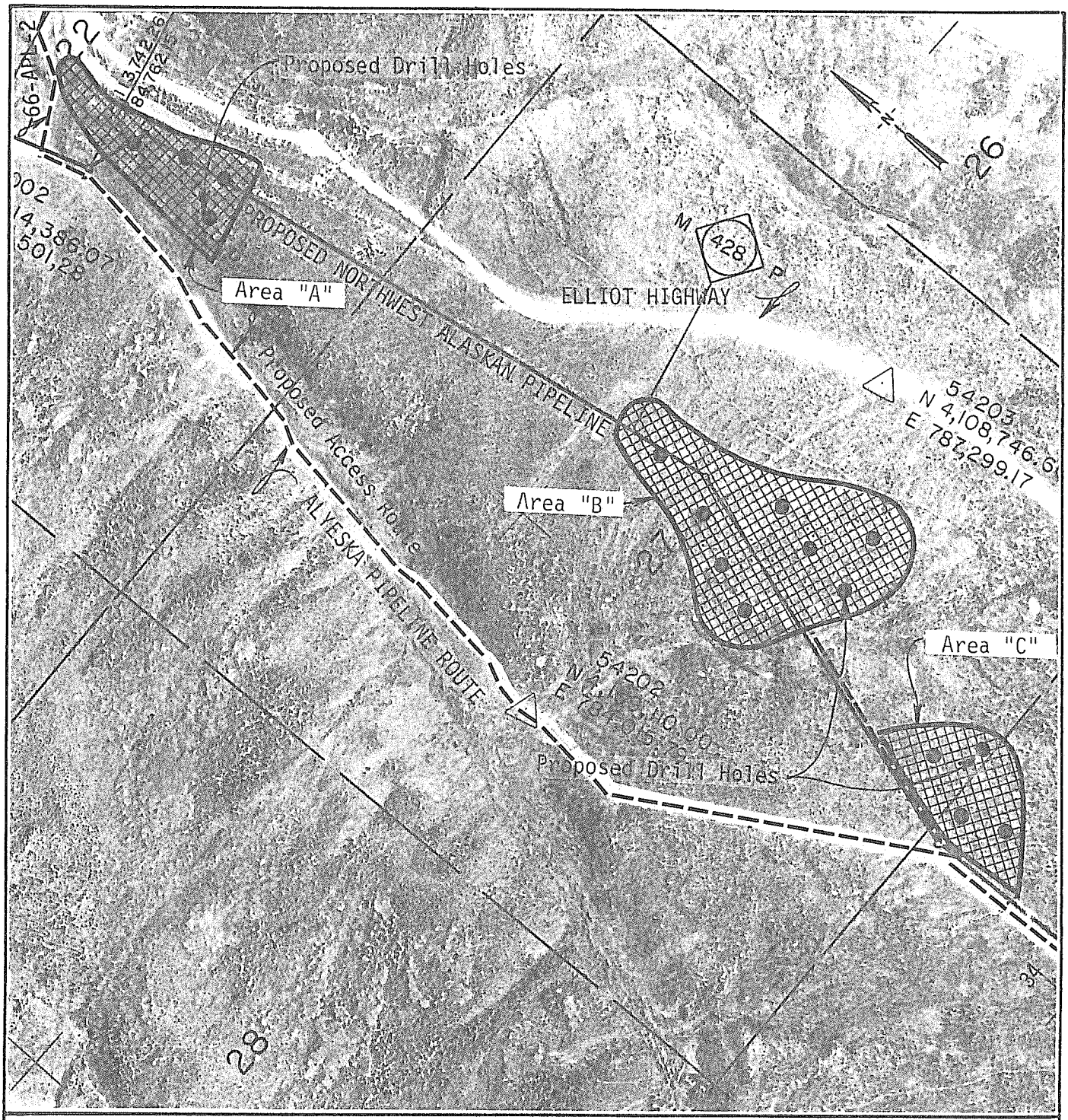
- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad and access road as shown on the Site Map.



16 Drill Holes to 40' depth

EXPLORATION AREA LIES WITHIN:

Section 22
Section 27
N½ Section 34
T5N, R3W, Fairbanks Meridian

EMS-76-1

Area: "A": 16 acres±
"B": 42 acres±
"C": 16 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 76-1

Location

- The proposed site is composed of three areas on the west side of the Elliot Highway alignment near Milepost 33. It lies within Section 22, Section 27, and the N½ Section 34, T5N, R3W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to three inches in diameter, plus moss and lichens.

Apparent Overburden

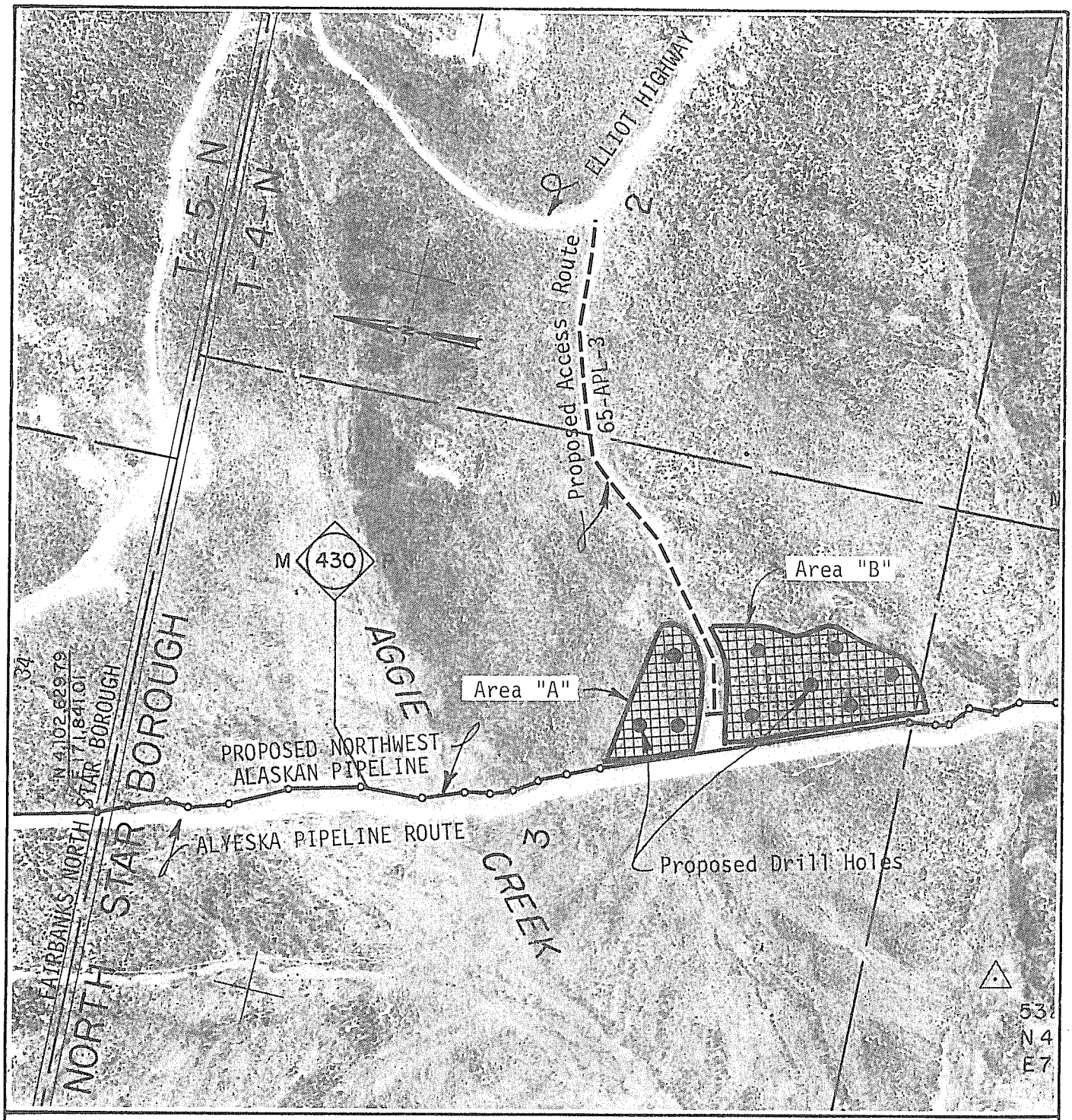
- The overburden consists of 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make 16 test borings to 40 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be via 65-APL-3, or 66-APL-2.



6 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 3
N½ NE¼ Section 10
T4N, R3W, Fairbanks Meridian

EMS-76-3

Area: "A": 10 acres±
"B": 19 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 76-3

Location

- The proposed site is composed of two areas on either side of Alyeska Access Road 65-APL-3, located approximately one-half mile west of the Elliot Highway. It lies within the S½ Section 3, N½NE¼ Section 10, T4N, R3W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a small bedrock ridge.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered gneiss.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of spruce and aspens to six inches in diameter, plus moss and lichens.

Apparent Overburden

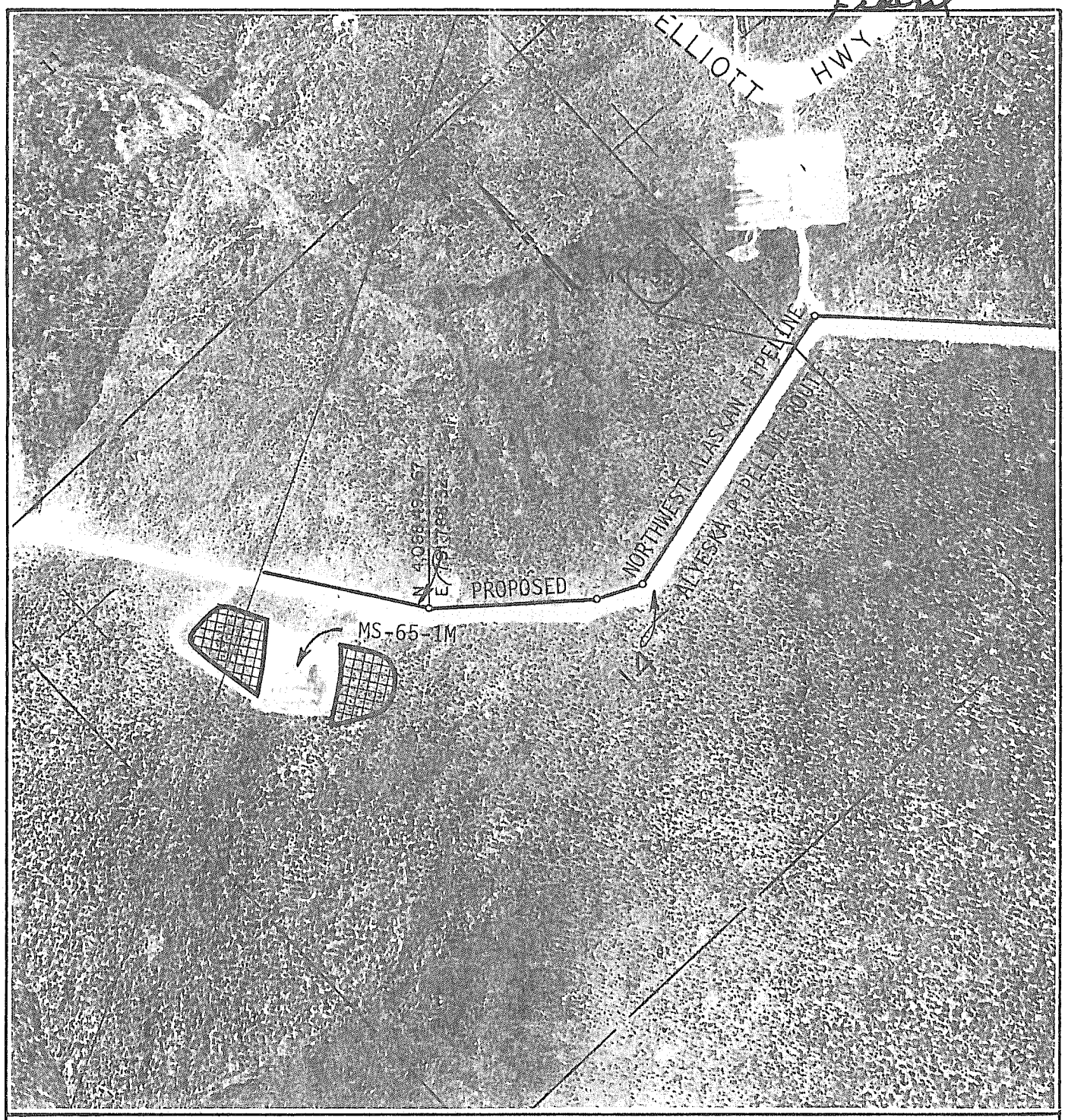
- The overburden consists of six inches of organics and silt.

Exploration Proposed

- A drill rig will make six test borings to 30 feet or refusal. If necessary selected borings will be cored.

Proposed Access

- Access will be via 65-APL-3, as shown on the Site Map.



EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

W½ Section 14
T4N, R3W, Fairbanks Meridian

EMS-77-1

November 1979 Area: 8 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 77-1

Location

- The proposed site is an expansion of an existing pit located west of the Alyeska Pipeline on top of Wickersham Dome. It lies within the W½ Section 14, T4N, R3W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a high steep sided bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to four inches in diameter, brush, moss and lichens.

Apparent Overburden

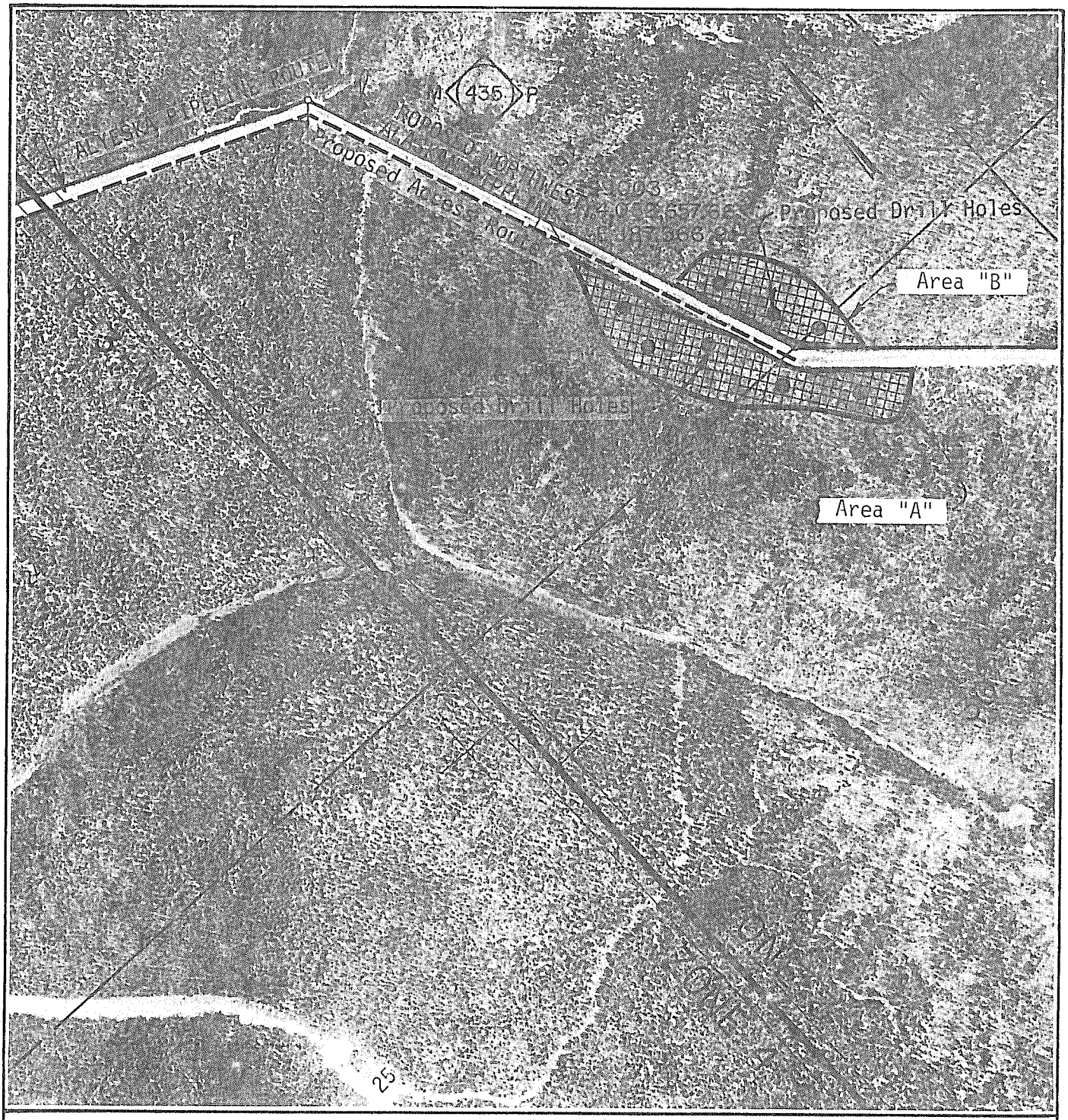
- The overburden consists of 24 inches of organics and silt.

Exploration Proposed

- No exploration is necessary.

Proposed Access

- None. The site will not require exploration.



8 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 19
N½ Section 30
T4N, R2W, Fairbanks Meridian

EMS-77-3

Area: "A": 22 acres±
"B": 9 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 77-3

Location

- The proposed site is composed of two areas on either side of the Alyeska Pipeline approximately three miles north of Washington Creek. It lies within the S½ Section 19, N½ Section 30, T4N, R2W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a small steep sided bedrock knob located on a large bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moss, grass, and spruce that have been burned.

Apparent Overburden

- The overburden consists of six inches of organics and silt.

Exploration Proposed

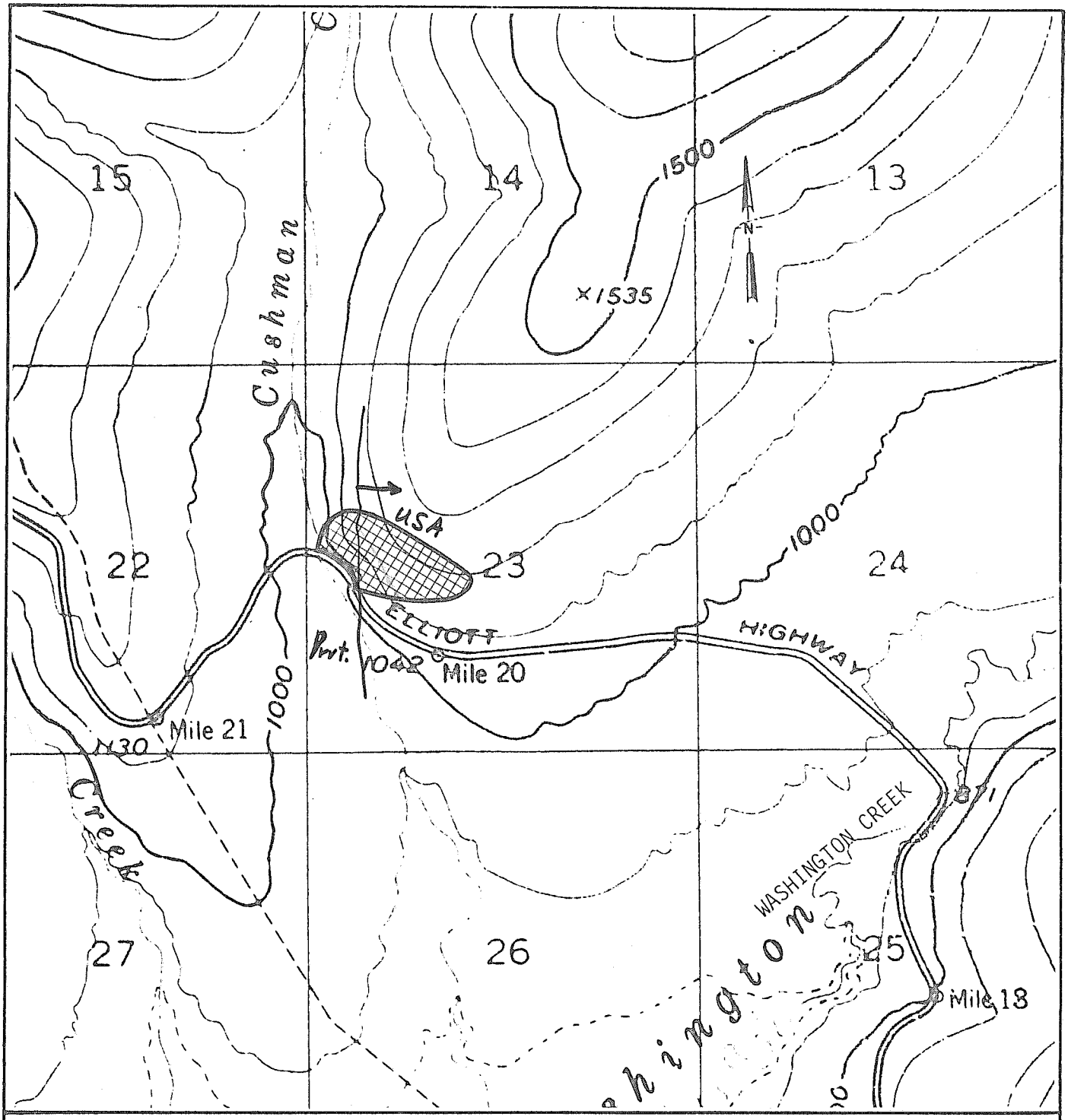
- A drill rig will make eight test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access, as shown on the Site Map. Access to the workpad will be at M.P. 23.5 on the Elliott Highway.

Special Note:

EMS 77-3 is located approximately one mile uphill from RMS 77-3. This exploration plan was developed using aerial photo interpretation and visual inspection.



0 1000 2000 4000

SCALE IN FEET

EXPLORATION AREA LIES WITHIN:

W½ Section 23
T4N, R2W, Fairbanks Meridian

EMS-78-1

November 1979 Area: 37 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal East of Homestead

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 78-1

Location

- The proposed site is an existing pit located adjacent to the Elliot Highway at Milepost 20.3. It lies within the W½ Section 23, T4N, R2W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the nose of a steeply sloping bedrock ridge.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation in the existing pit is composed of grass.

Apparent Overburden

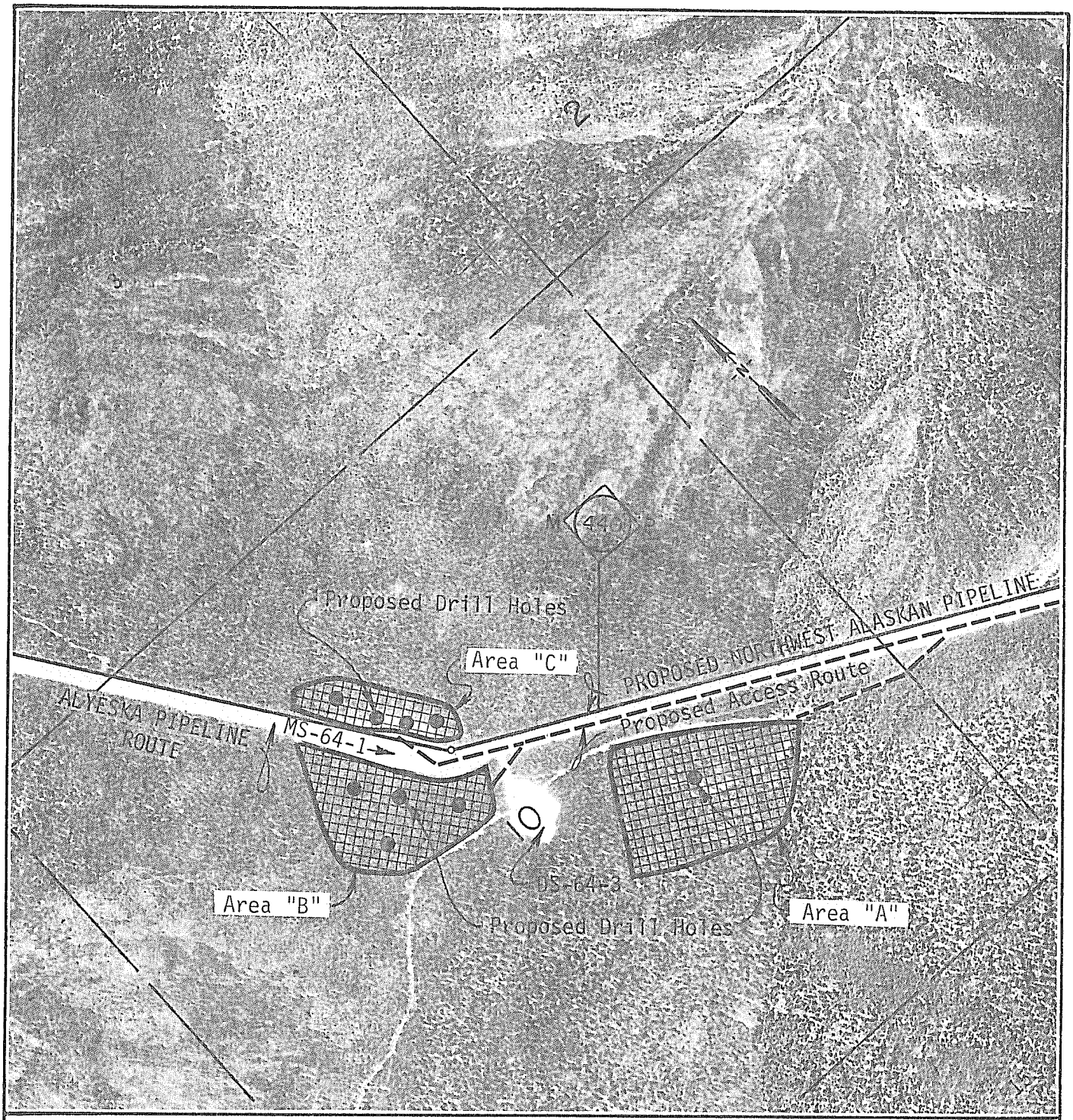
- There is no overburden.

Exploration Proposed

- No exploration will be required.

Proposed Access

- None. The site will not require exploration.



9 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

Section 10
T3N, R2W, Fairbanks Meridian

EMS-78-2

Area: "A": 18 acres±
"B": 16 acres±
"C": 6 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 78-2

Location

- The proposed site is composed of three areas located approximately one and one half miles south of Washington Creek, on the Alyeska Pipeline Workpad. It lies within Section 10, T3N, R2W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a broad gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce to six inches in diameter, plus alder, willow and moss.

Apparent Overburden

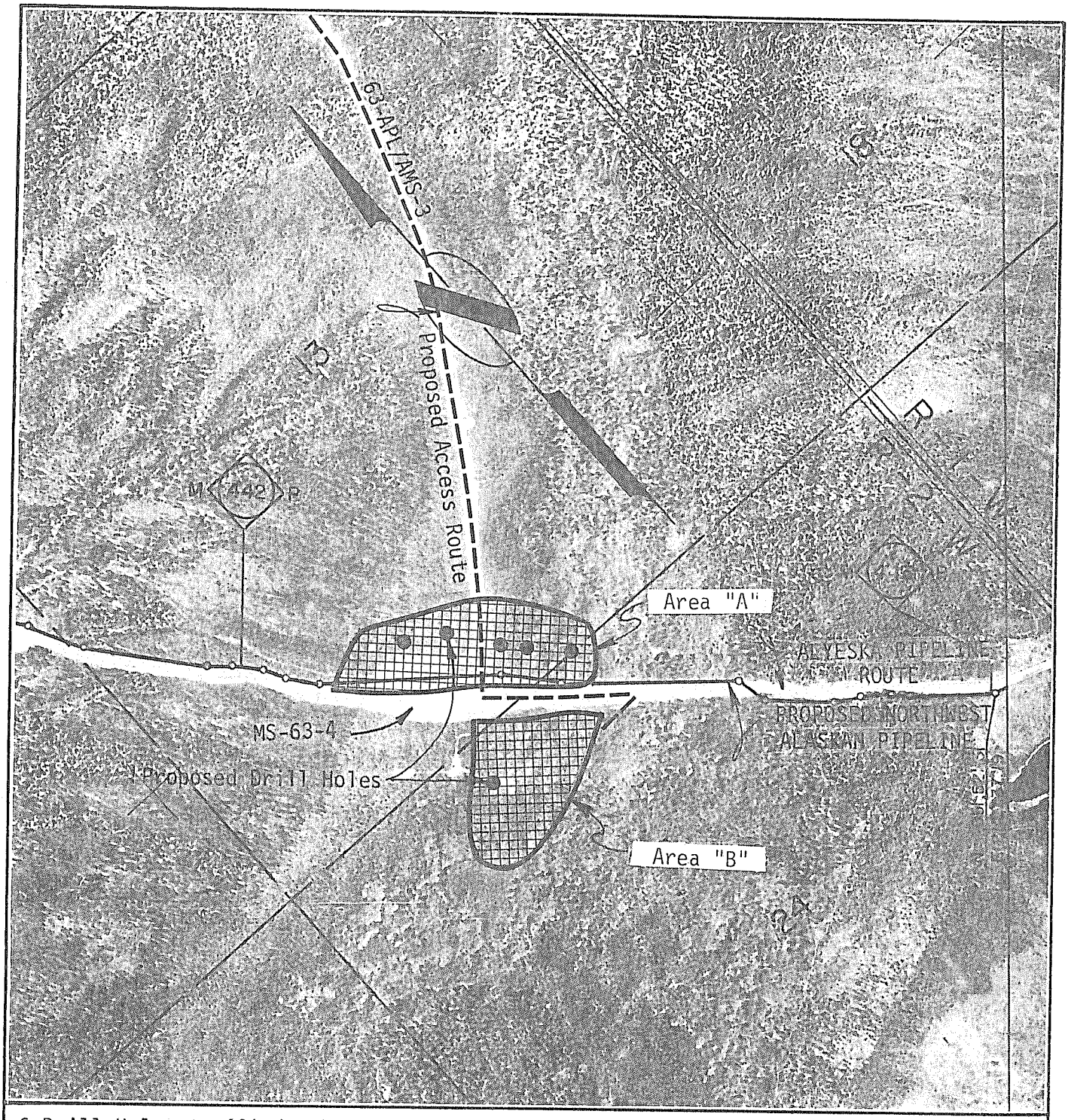
- The overburden consists of 24 inches of organics, silt, and silty gravel.

Exploration Proposed

- A drill rig will make nine test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map.



6 Drill Holes to 40' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 13
N½ Section 24
T3N, R2W, Fairbanks Meridian

EMS-78-4

Area: "A": 18 acres±
"B": 15 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 78-4

Location

- The proposed site is composed of two areas adjacent to the Alyeska Pipeline, located approximately two miles north of the Chatanika River. It lies within the S½ Section 13, N½ Section 24, T3N, R2W, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a high, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce, birch and poplar to six inches in diameter, plus moss and grass.

Apparent Overburden

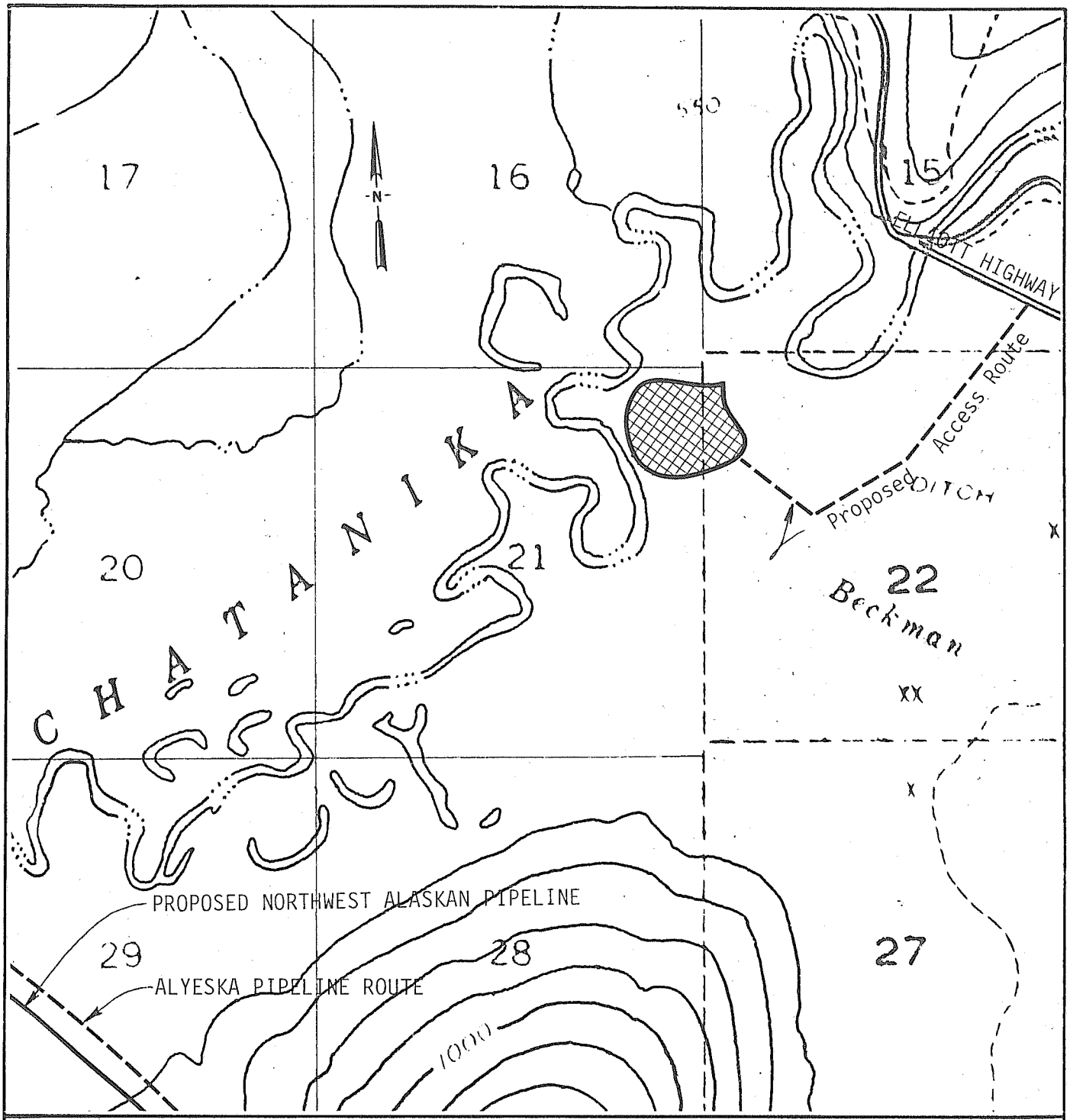
- The overburden consists of 24 to 36 inches of organics, silt, and silty gravel.

Exploration Proposed

- The drill rig will make six test borings to 40 feet in depth.

Proposed Access

- The drill rig will utilize the existing access road and the Alyeska Pipeline Workpad for access, as shown on the Site Map.



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

NE¼ Section 21
NW¼ Section 22
T3N, R1W, Fairbanks Meridian

EMS-79-1

November 1979 Area: 41 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 79-1

Location

- The proposed site is an existing pit located on the south side of the Chatanika River, approximately one half mile southwest of the Elliot Highway. It lies within the NE¼ Section 21, NW¼ Section 22, T3N, R1W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a meander core of the Chatanika River. There is an existing dragline pond within the existing pit.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grass.

Apparent Overburden

- There is no overburden.

Exporation Proposed

- Representative hand samples will be taken from selected locations at the site.

Proposed Access

- Access will be shown on the Site Map.

4 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

W½ Section 33
T3N, R1W, Fairbanks Meridian

EMS-79-2

November 1979 Area: 17 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Slate

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 79-2

Location

- The proposed site is approximately 9000 feet south of the Chatanika River. It lies within the W½ Section 33, T3N, R1W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a high, steeply sloping bedrock ridge, adjacent to an Alyeska Pipeline material site.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered sandstone.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to eight inches in diameter, plus alder, moss and lichens.

Apparent Overburden

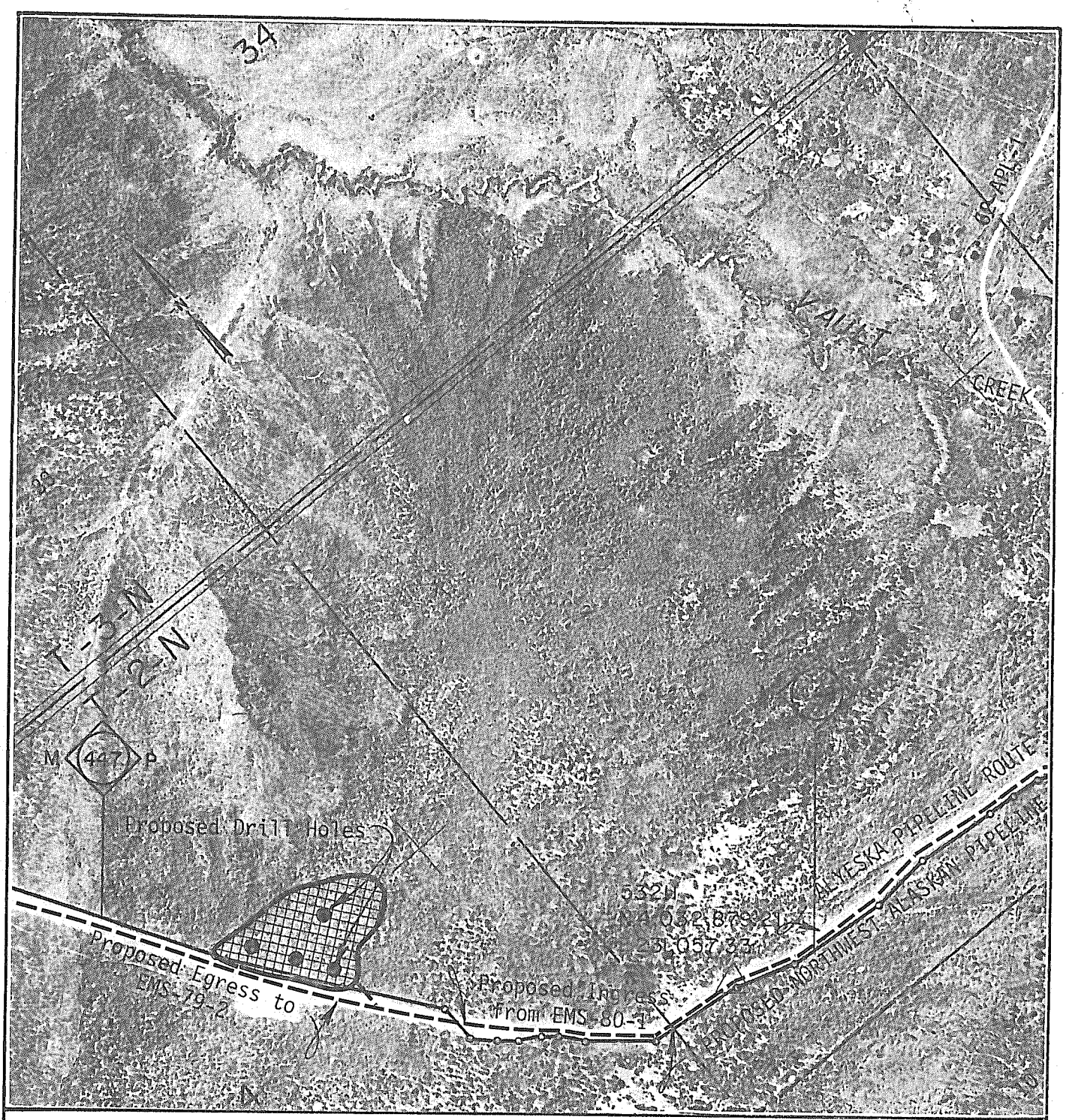
- The overburden consists of 30 inches of organics, silt and silty gravel.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad for access from EMS-79-3. Egress will be via EMS-79-3 and 62-APL-1.



4 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

Section 4
T2N, R1W, Fairbanks Meridian

EMS-79-3

November 1979 Area: 14 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 79-3

Location

- The proposed site is approximately one mile north of Treasure Creek, and lies within Section 4, T2N, R1W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a high, steeply sloping ridge, adjacent to an Alyeska Pipeline cut.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction fill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to six inches in diameter plus willow, moss and lichens.

Apparent Overburden

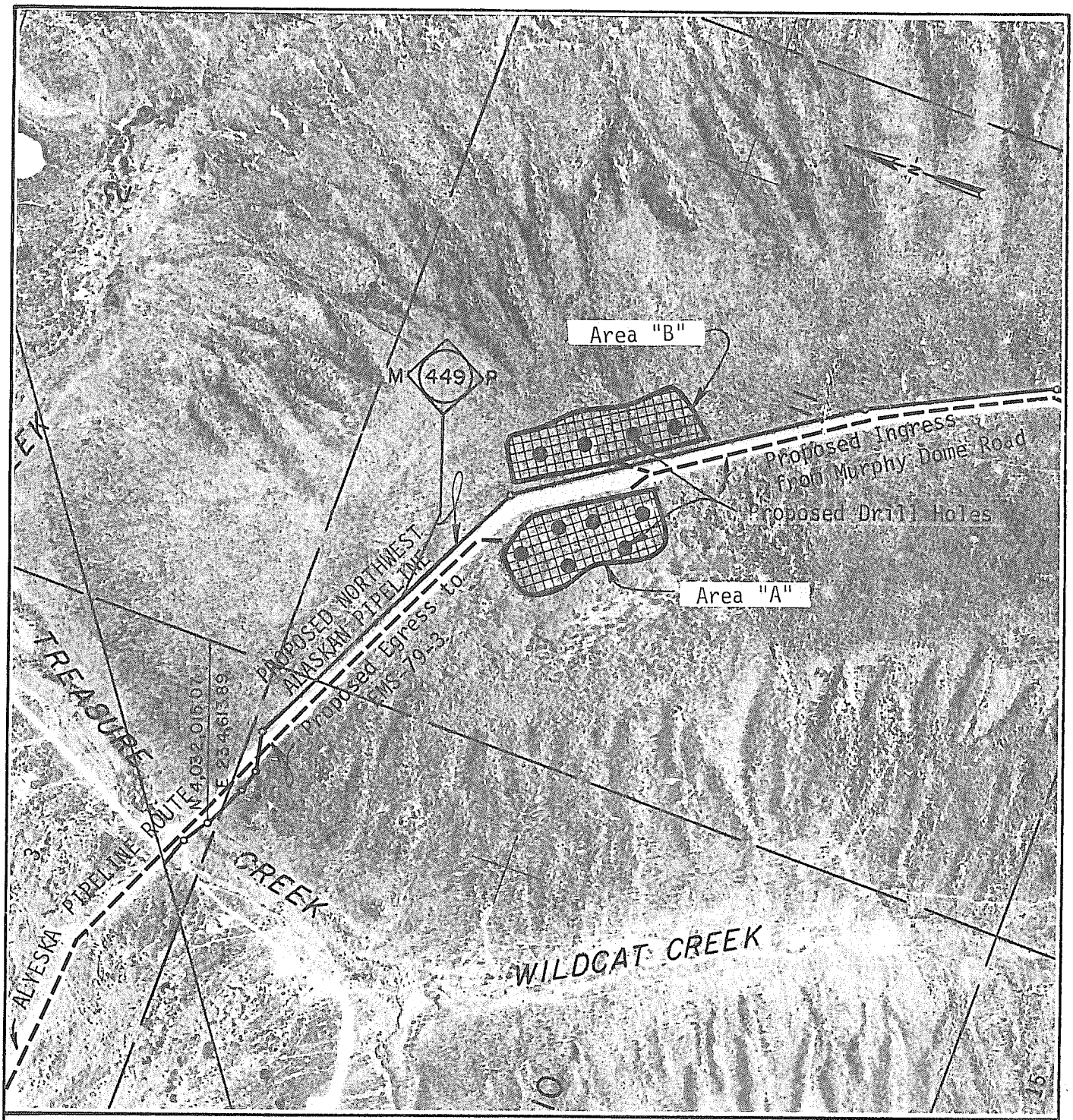
- The overburden consists of 24 inches of organics, silt, and silty gravel.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad from EMS-80-1 for access as shown on the Site Map.



10 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ Section 11
T2N, R1W, Fairbanks Meridian

EMS-80-1

Area: "A": 13 acres±
"B": 16 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Stati

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 80-1

Location

- The proposed site is composed of two areas located approximately two miles north of Murphy Dome Road and adjacent to either side of the Alyeska Pipeline Workpad. It lies within the N½ Section 11, T2N, R1W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a broad, steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense poplar and spruce to eight inches in diameter, plus moss.

Apparent Overburden

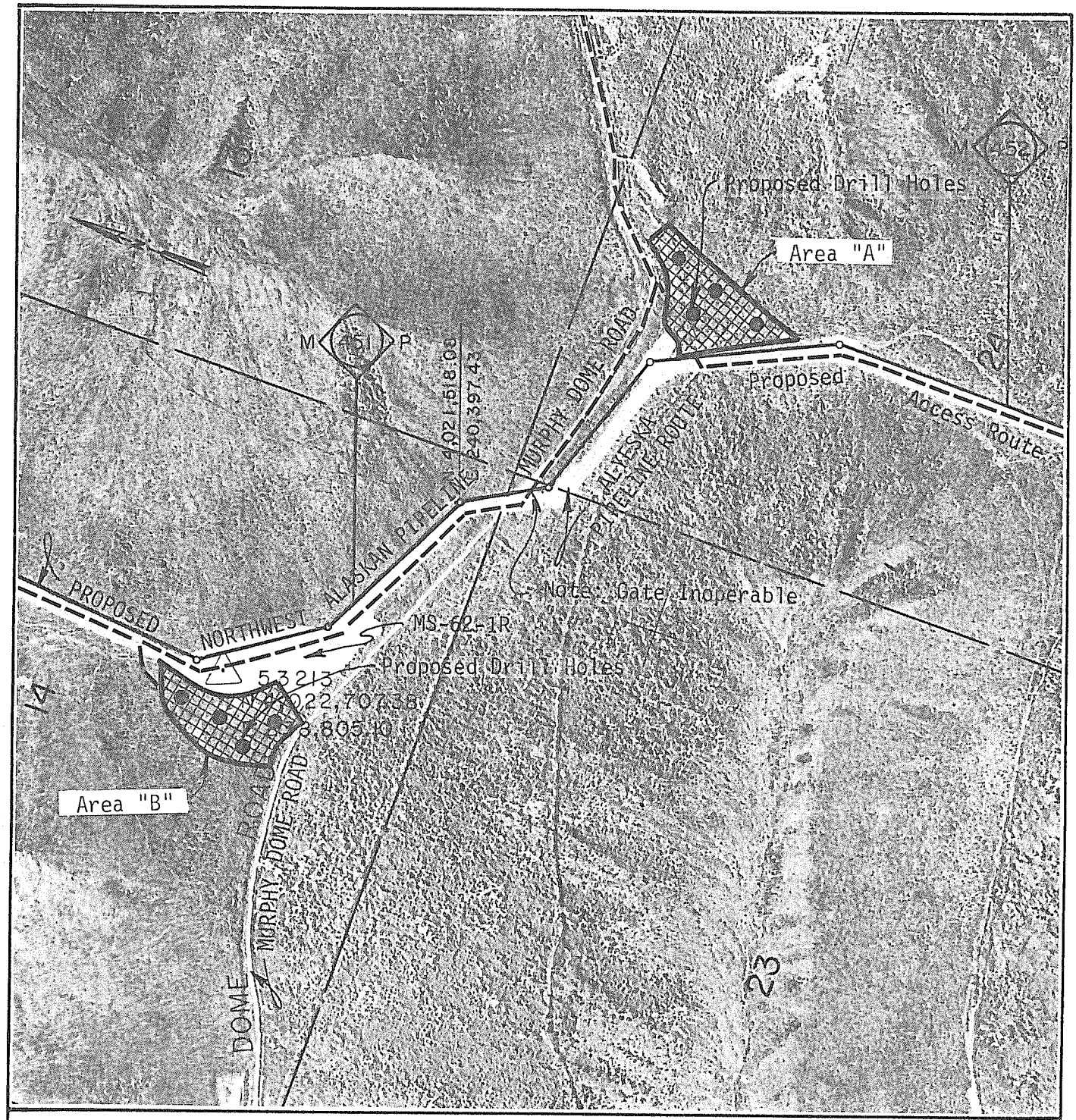
- The overburden consists of 12 inches of organics and silty gravel.

Exploration Proposed

- A drill rig will make 10 test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize Murphy Dome Road and the Alyeska Pipeline Workpad for access as shown on the Site Map.



8 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 14
NW¼ Section 24
T2N, R1W, Fairbanks Meridian

EMS-80-2

Area: "A": 10 acres±
"B": 9 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 80-2

Location

- The proposed site is composed of two areas located adjacent to Murphy Dome Road in the vicinity of Alyeska Pipeline Crossing. It lies within the S½ Section 14, NW¼ Section 24, T2N, R1W, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the broad crest of a high steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and birch to eight inches in diameter, plus willow, alder, moss and lichens.

Apparent Overburden

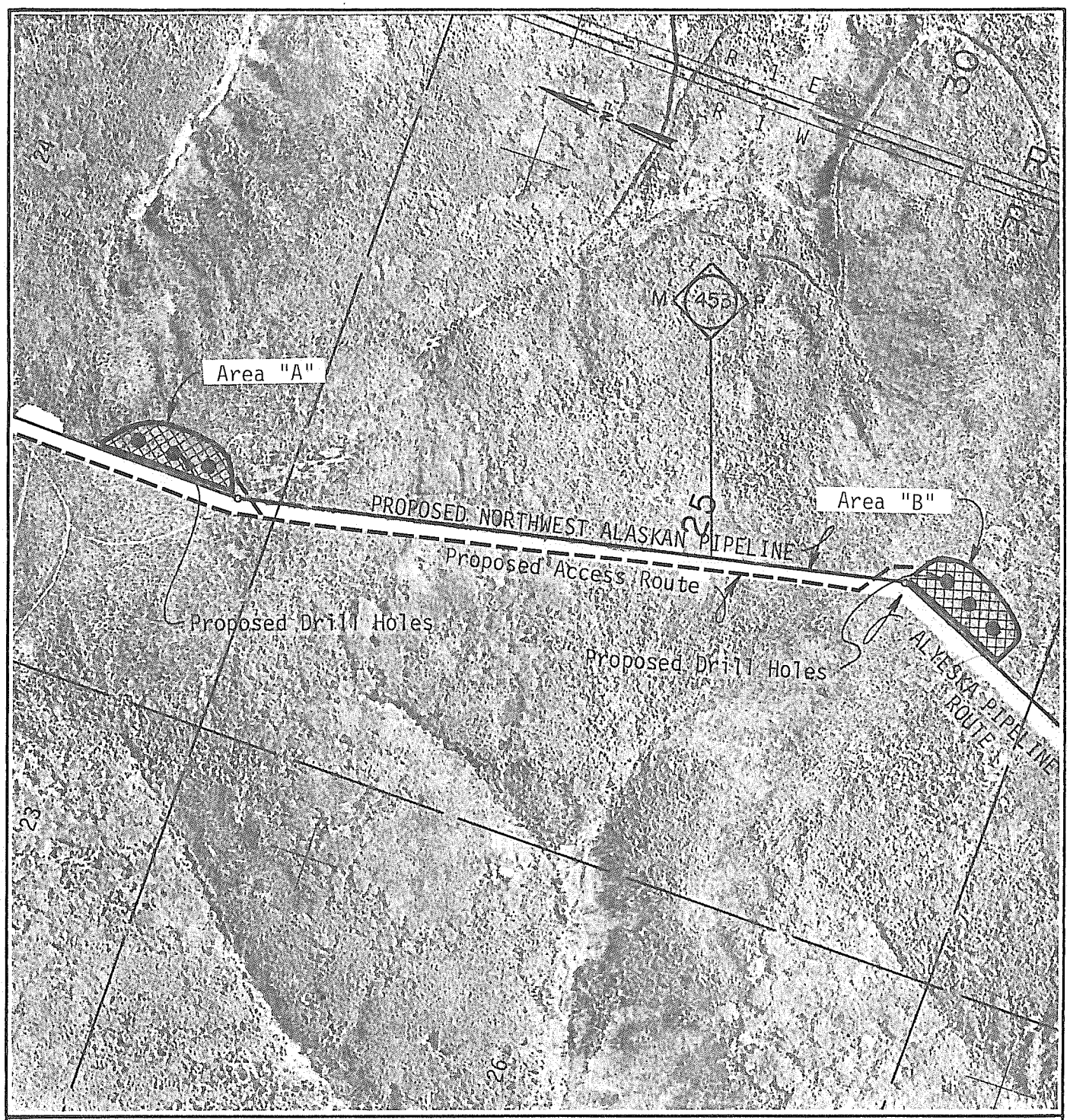
- The overburden consists of more than 30 inches of silt overlying bedrock.

Exploration Proposed

- A drill rig will make eight test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize Murphy Dome Road and the Alyeska Pipeline Workpad, as shown on the Site Map.



6 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

S½ Section 24
S½ Section 25
T2N, R1W, Fairbanks Meridian

EMS-80-3

Area: "A": 7 acres±
"B": 6 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 80-3

Location

- The proposed site is composed of two areas between Murphy Dome Road and Goldstream Creek. It lies within S½ Section 24 and S½ Section 25, T2N, R1W, Fairbanks Meridian.

Geology & Topography

- The areas are situated on the crests of small gently sloping bedrock knobs, located upon the crest of a large ridge, and adjacent to Alyeska Pipeline Cuts.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense birch, spruce and poplar to 24 inches in diameter, plus alder, willow, moss and lichen.

Apparent Overburden

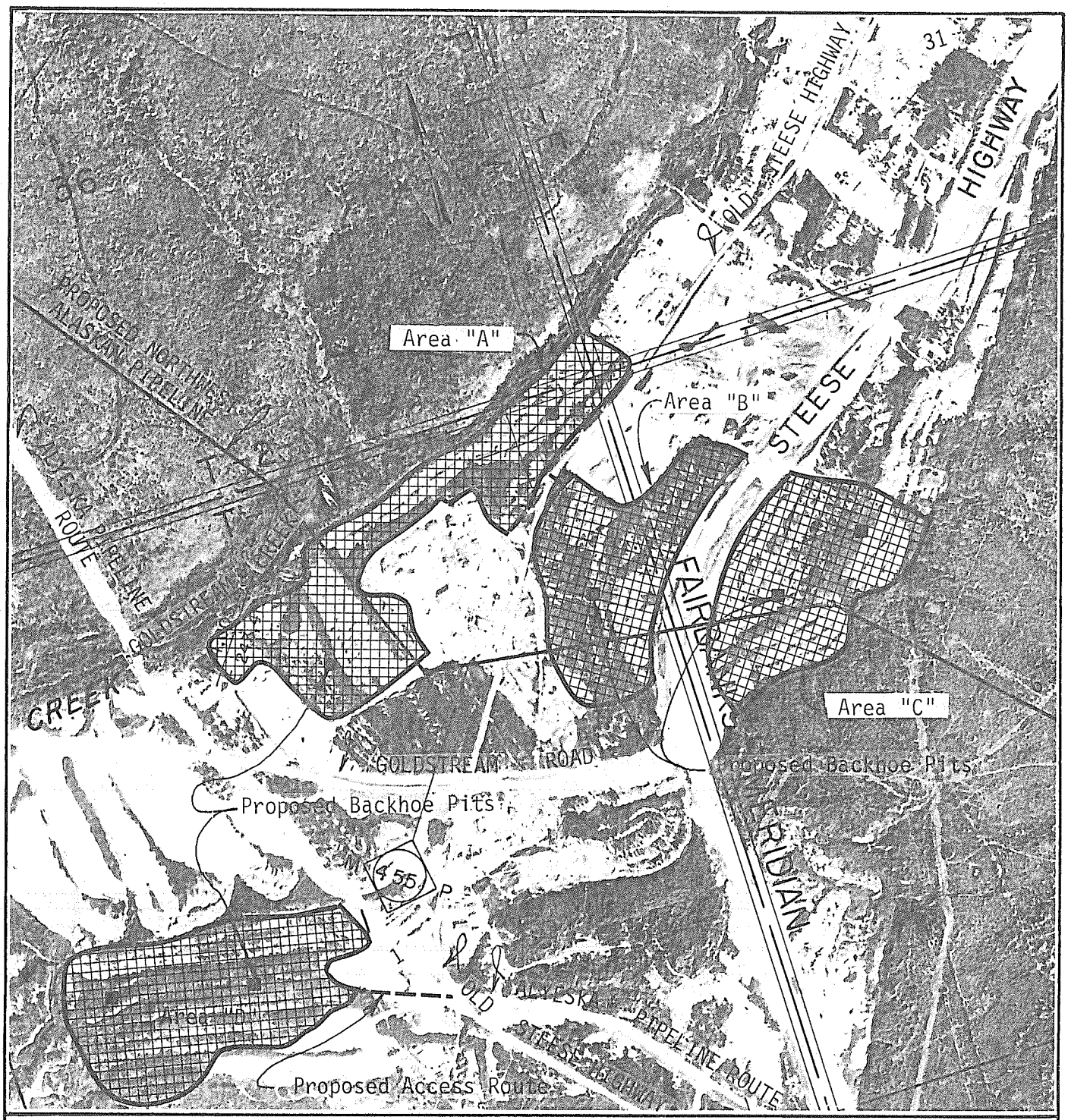
- The overburden consists of 18 to 30 inches of organics, silt, and silty gravel.

Exploration Proposed

- A drill rig will make six test borings, to 20 feet in depth.

Proposed Access

- The drill rig will depart the Elliott Highway at the Murphy Dome Road intersection, then proceed southwest 1.5 miles on the Murphy Dome Road to the Alyeska Pipeline Workpad thence south along the workpad to the exploration areas.



7 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

Section 1
T1N, R1W, Fairbanks Meridian
W½ Section 6
T1N, R1E, Fairbanks Meridian
SE¼ SE¼ Section 36
T2N, R1W, Fairbanks Meridian
SW¼ SW¼ Section 31
T2N, R1E, Fairbanks Meridian

EMS-81-1

Area: "A": 41 acres±
"B": 31 acres±
"C": 31 acres±
"D": 39 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State/Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-81-1

Location

- The proposed site is composed of four areas located in the vicinity of Fox at the confluence of Engineer Creek and Goldstream Creek. It lies within Section 1, T1N, R1W, W½ Section 6, T1N, R1E, SE¼SE¼ Section 36, T2N, R1W, SW¼SW¼ Section 31, T2N, R1E, Fairbanks Meridian.

Geology & Topography

- The areas of the site are situated upon dredge trailings in the Goldstream Valley.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a coarse gravel with cobbles to 12 inches in diameter.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered to dense birch, spruce, and poplar to six inches in diameter, plus willows, alder, and thin layers of moss.

Apparent Overburden

- The overburden consists of thin layers of organics.

Exploration Proposed

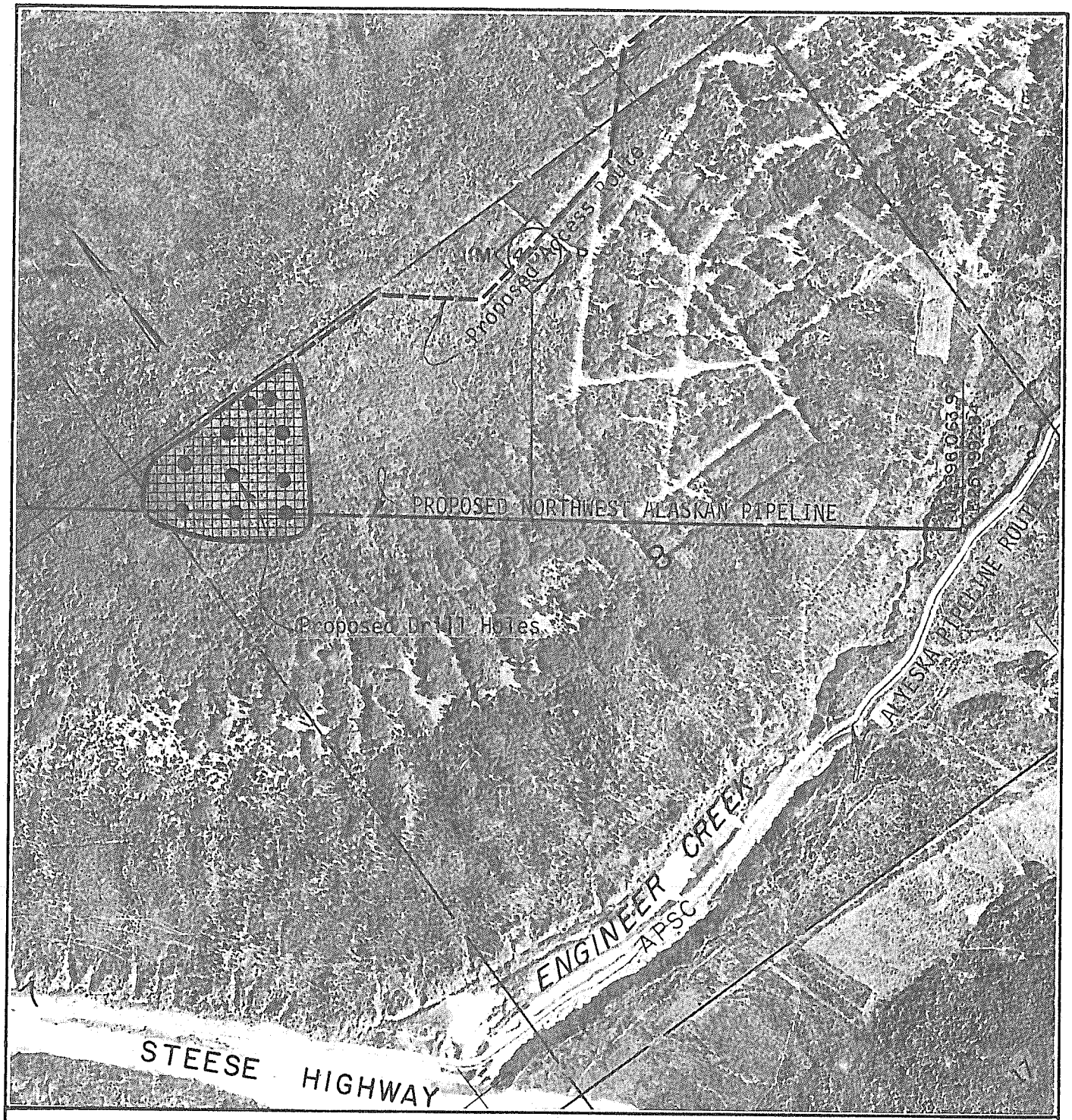
- A backhoe will excavate seven test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will use existing roads for access.

Special Note:

Access permits were not acquired for these areas so on-site investigations were not possible. This exploration plan was prepared by using aerial photo interpretation and visual inspections from public roads.



10 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ NE¼ Section 7
W½ NW¼ Section 8
T1N, R1E, Fairbanks Meridian

EMS-81-2.1

November 1979 Area: 22 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

S tote/Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 81-2.1

Location

- The proposed site is located one and one-half miles northwest of the Gilmore Trail, on the proposed gas route. It lies within the N½NE¼ Section 7, W½NW¼ Section 8, T1N, R1E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the nose of a large steep sided bedrock ridge between Goldstream Creek and Engineer Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar, birch and spruce to eight inches in diameter plus alder, willow and grass.

Apparent Overburden

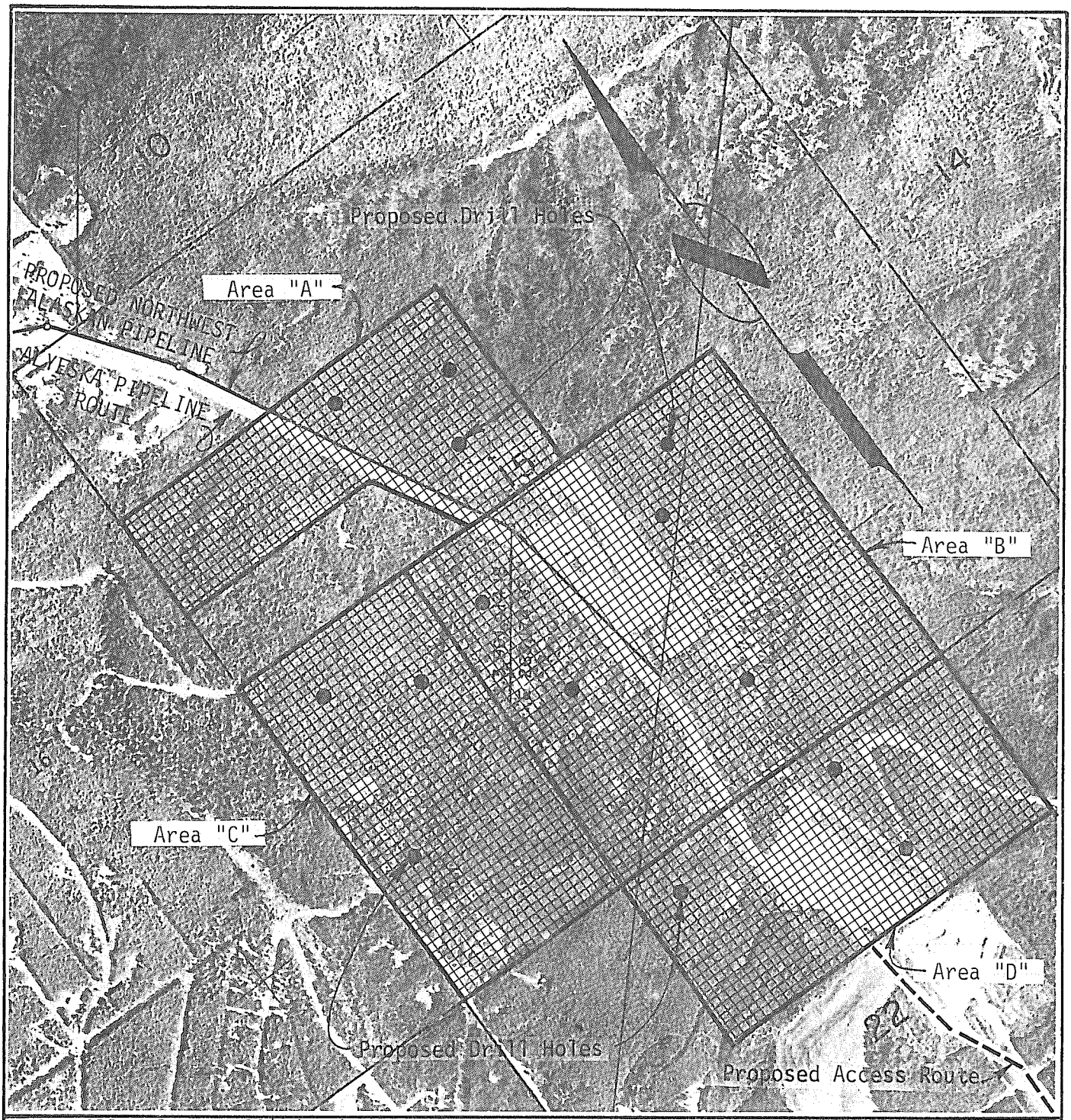
- The overburden consists of 12 inches of organics, and silty gravel.

Exploration Proposed

- A drill rig will make 10 test borings to 50 feet in depth.

Proposed Access

- The drill rig will utilize the existing roads in the nearby subdivision for access. The drill rig will move approximately 1500 feet overland to the site, as shown on the Site Map.



14 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

W½ SE¼, SW¼, NW¼, Section 15
NW¼ NE¼, NE¼ NW¼, Section 22
T1N, R1E, Fairbanks Meridian

EMS-82-0

Area: "A": 64 acres±
"B": 158 acres±
"C": 82 acres±
"D": 81 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS EXPLORATION AREA SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 82-0

Location

- The proposed site is composed of four areas adjacent to the Alyeska Pipeline R.O.W., approximately 1500 feet south of Gilmore Trail. It lies within W½SE¼, SW¼, NW¼ Section 15, NW¼NE¼, NE¼NW¼ Section 22, T1N, R1E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the south facing slope of a large bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to six inches in diameter, willow, alder, grass, and moss.

Apparent Overburden

- The overburden consists of organics and silt overlying bedrock.

Exploration Proposed

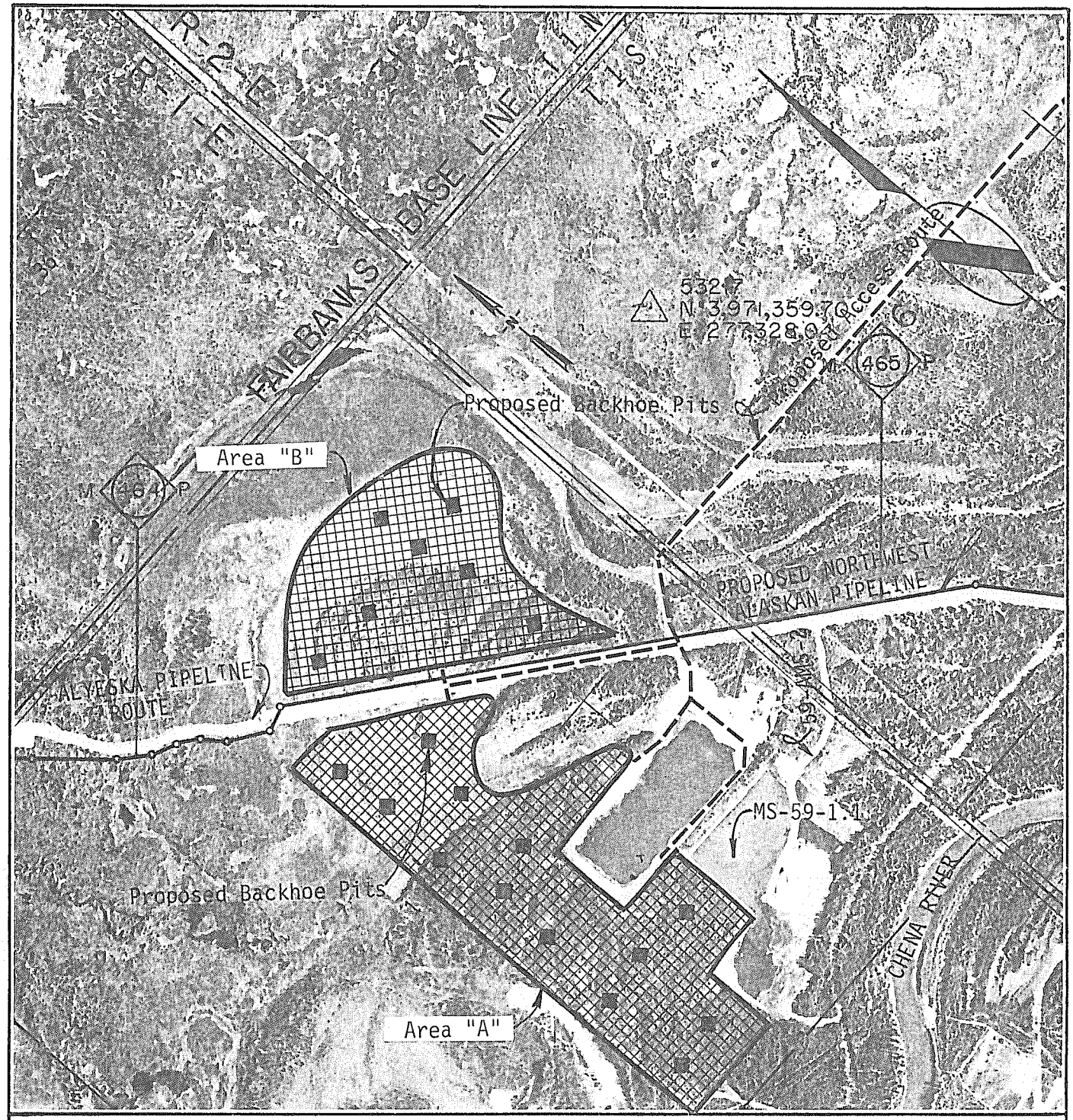
- A drill rig will make 14 test borings to 30 feet in depth.

Proposed Access

- The surface vehicles will utilize the Alyeska Pipeline Workpad via the Chena Hot Springs Road and private driveways to the various private properties for access.

Special Note:

Access permits were not acquired so an on-site investigation was not possible. This exploration plan was prepared by using aerial photo interpretation and U.S.G.S. quadrangle maps.



20 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

E½ Section 1
T1S, R1E, Fairbanks Meridian

EMS-82-2

Area: "A": 77 acres+
"B": 51 acres+

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 82-2

Location

- The proposed site is composed of two areas, near three existing pits and adjacent to the Alyeska Pipeline Workpad on the north side of the Chena River. It lies within the E½ Section 1, T1S, R1E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of the Chena River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense poplar, spruce and occasional birch to eight inches in diameter, plus moss and grass.

Apparent Overburden

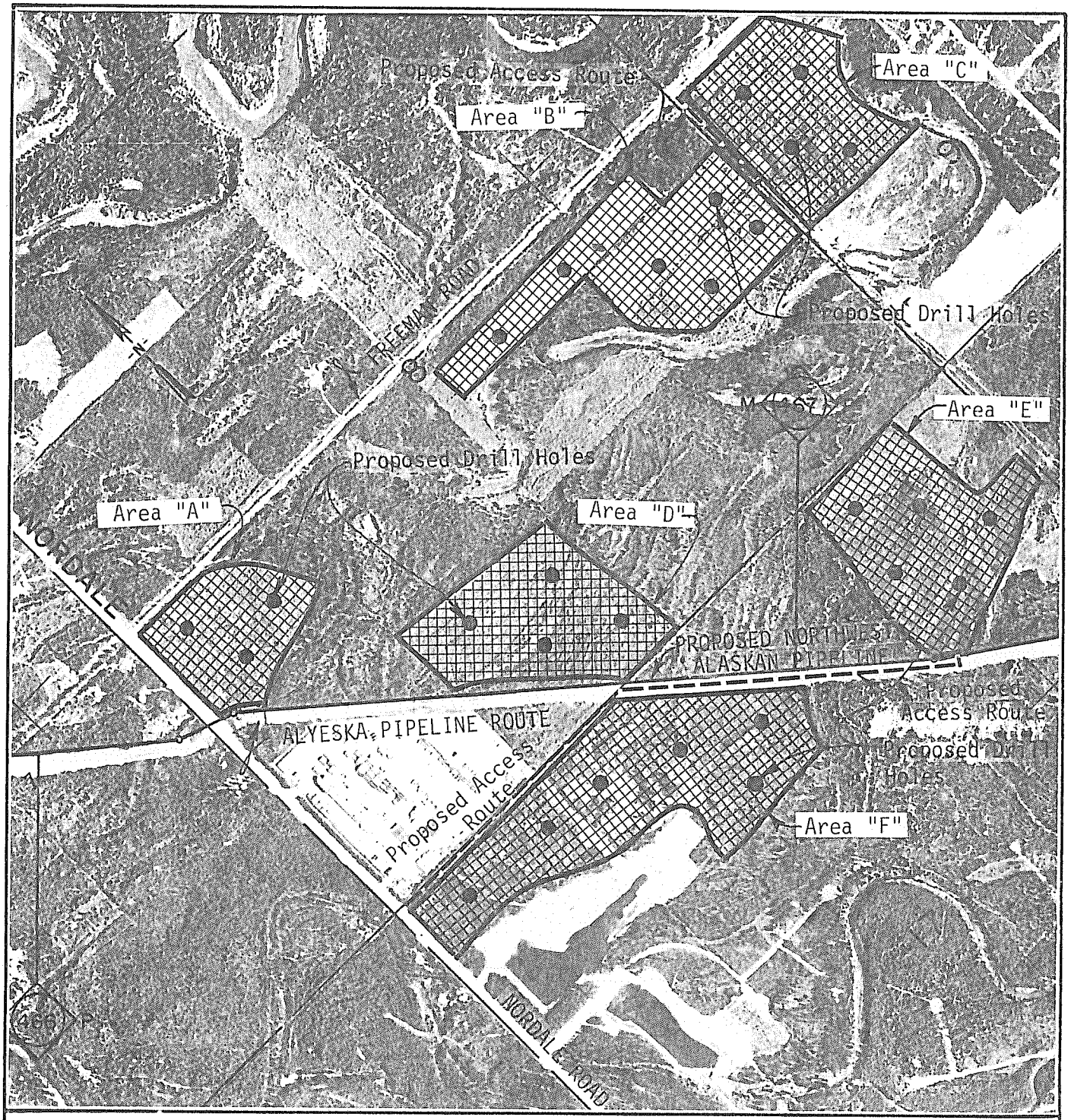
- The overburden consists of 12 to more than 36 inches of organics and silt.

Exploration Proposed

- A backhoe will make 20 test pits to 15 feet in depth.

Proposed Access

- The drill rig will use the existing access from Nordale Road, and the Alyeska Pipeline Workpad as shown on the Site Map.



28 Drill Holes to 20' depth

0 500 1000 2000

SCALE IN FEET

EXPLORATION AREA LIES WITHIN:

S½ Section 8
W½ SW¼ Section 9
N½ N½ Section 17
T1S, R2E, Fairbanks Meridian

EMS-83-1

Area: "A": 18 acres±
"B": 36 acres±
"C": 27 acres±
"D": 31 acres±
"E": 30 acres±
"F": 51 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-83-1

Location

- The proposed site is composed of six areas located at the intersection of Nordale and Freeman Road, on the south bank of the Chena River. It lies within the S½ Section 8, W½SW¼ Section 9, N½N½ Section 17, T1S, R2E, Fairbanks Meridian.

Geology & Topography

- The site is located on the floodplain of the Chena River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation in areas "A" through "E" is composed of grass and small poplar. In area "F" it consists of spruce, poplar and birch to six inches in diameter plus willow and moss.

Apparent Overburden

- The overburden consists of more than 36 inches of organics and silt.

Exploration Proposed

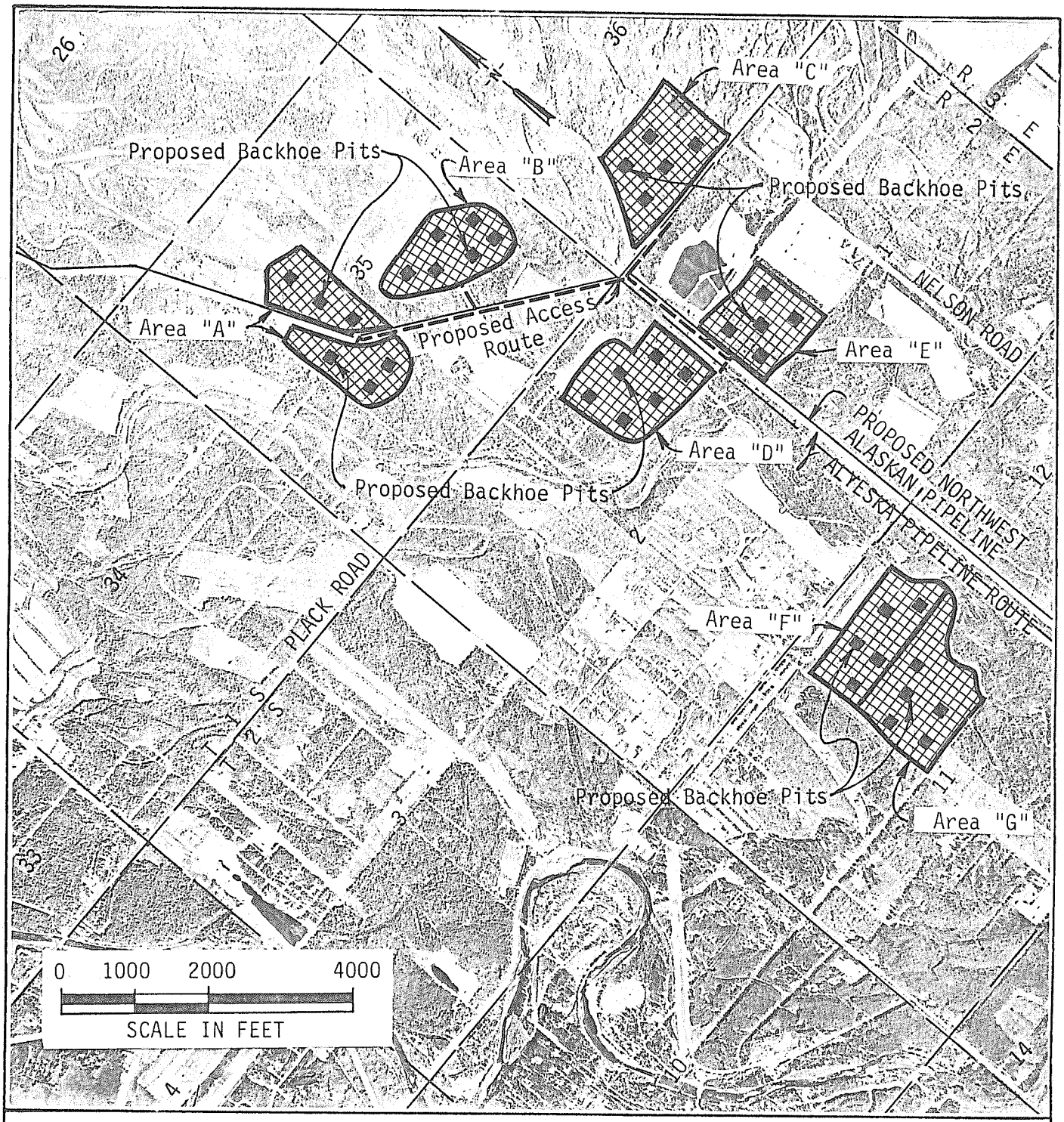
- A drill rig will make 28 test borings to 20 feet in depth.

Proposed Access

- The drill rig will use existing public roads and the Alyeska Pipeline Workpad for access, as shown on the Site Map.

Special Note:

Access permits were not acquired so on-site investigations were not possible. This exploration plan was prepared using aerial photo interpretation.



38 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

E½ W½, SE¼ Section 35
S½ SW¼ Section 36
T1S, R2E, Fairbanks Meridian
S½ NW¼ Section 1
NE¼ Section 2
NE¼ Section 11
T2S, R2E, Fairbanks Meridian

Area: "A": 46 acres±
"B": 42 acres±
"C": 53 acres±
"D": 54 acres±
"E": 40 acres±
"F": 41 acres±
"G": 46 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

EMS-84-1

November 1979

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 84-1

Location

- The proposed site is composed of seven areas located near the intersection of Plack Road and the Alyeska Pipeline. It lies within the E½W½, SE¼ Section 35, S½SW¼ Section 36, T1S, R2E, S½NW¼ Section 1,NE¼ Section 2, NE¼ Section 11, T2S, R2E, Fairbanks Meridian.

Geology & Topography

- The site is situated on the floodplain of the Chena River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grasses and small poplar in the cleared fields and dense spruce and poplar in the undistrubed areas.

Apparent Overburden

- The overburden consists of organics and silt overlying gravel.

Exploration Proposed

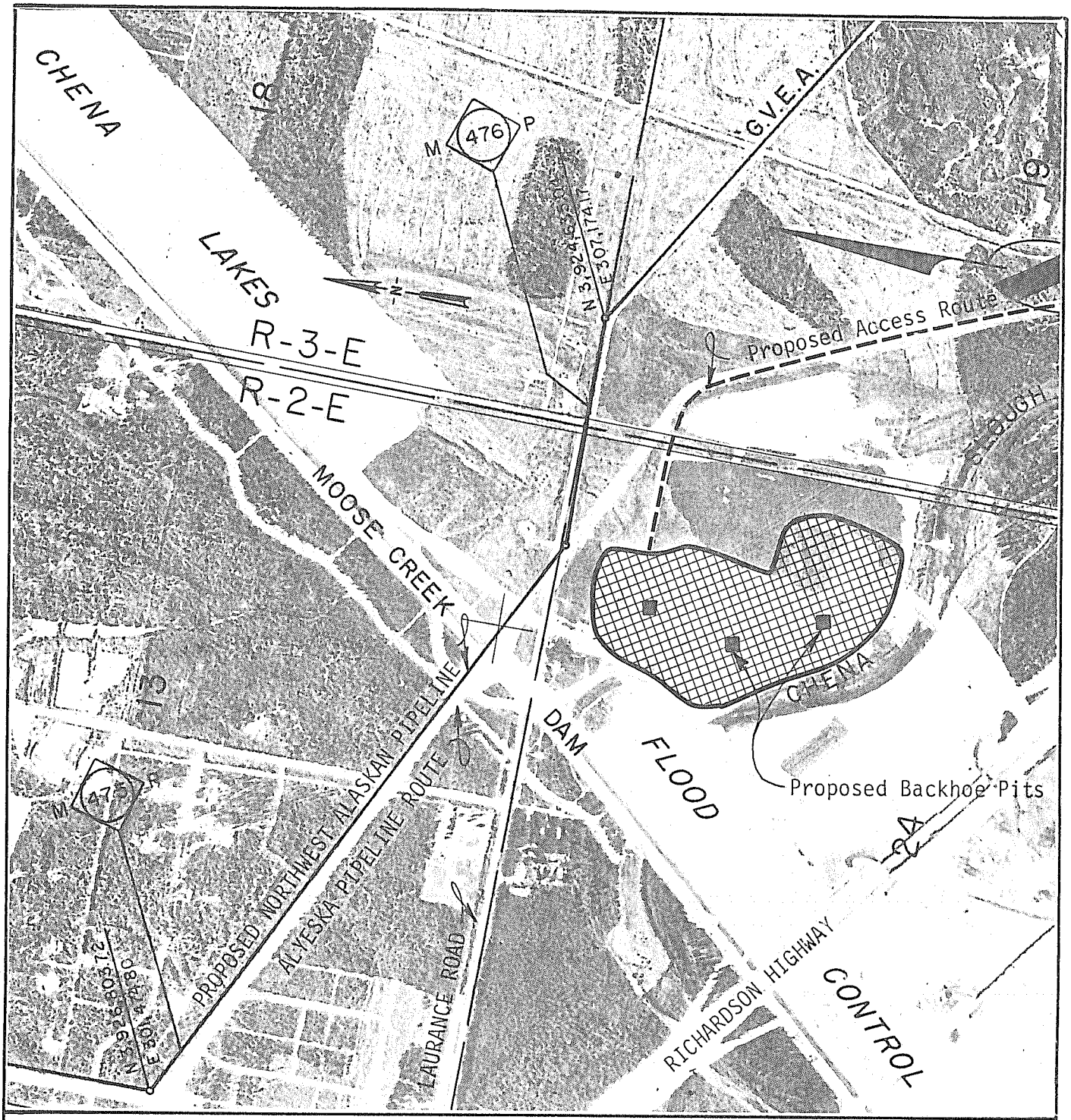
- A backhoe will excavate 38 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize existing public roads and the Alyeska Pipeline Workpad for access.

Special Note:

Access permits were not acquired so on-site investigations were not possible. This exploration plan was prepared by using aerial photo interpretation.



3 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

NE¼ Section 24
T2S, R2E, Fairbanks Meridian

EMS-84-2

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

November 1979 Area: 41 acres±

Prot. Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 84-2

Location

- The proposed site is an existing pit located 2000 feet east of the intersection of the Richardson Highway and the Moose Creek Dam. It lies in the NE¼ Section 24, T2S, R2E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of the Chena River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grass.

Apparent Overburden

- The overburden consists of restored spoil berms of unknown extent.

Exploration Proposed

- A backhoe will excavate three test pits, 12 to 15 feet in depth.

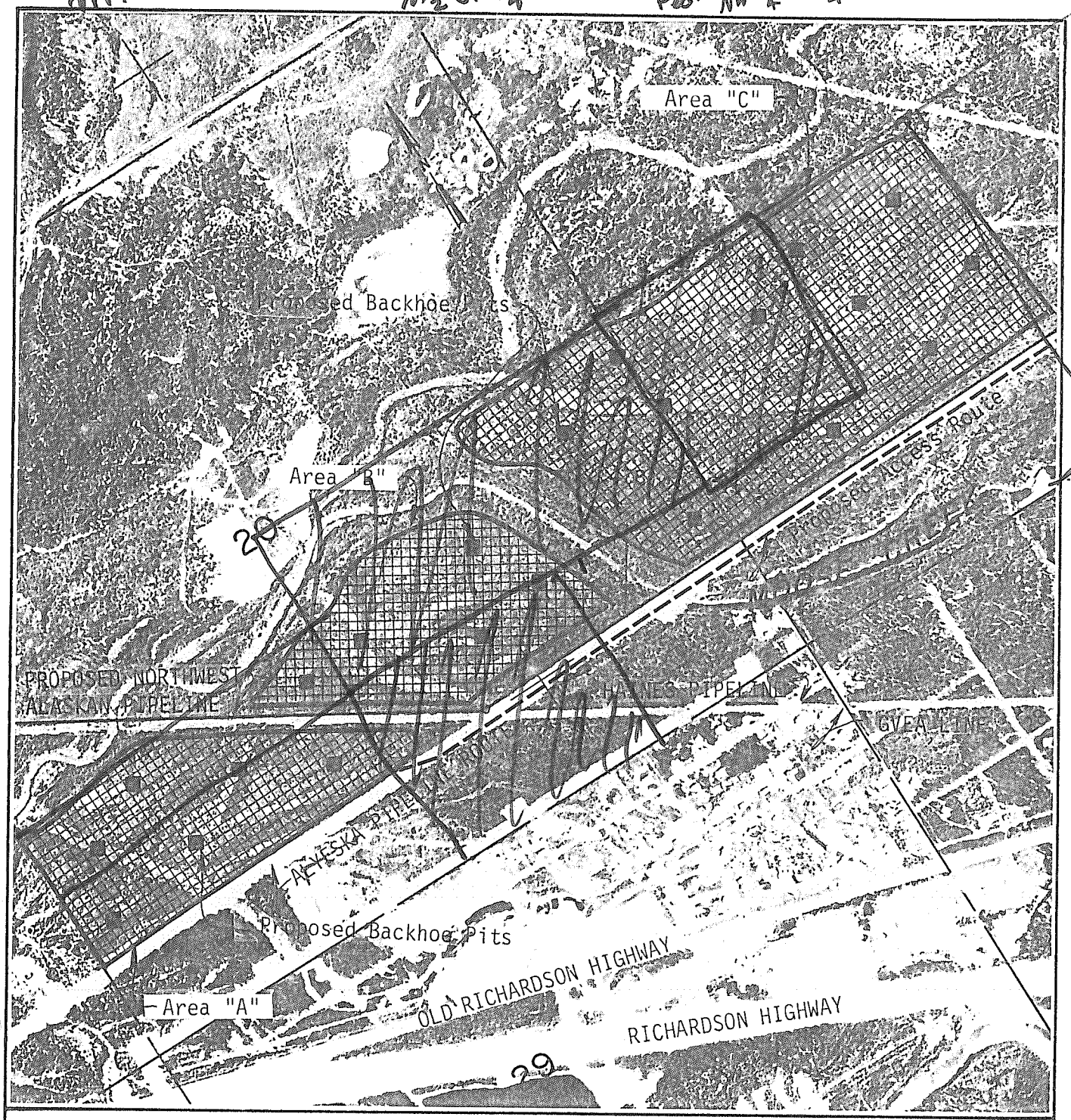
Proposed Access

- The backhoe will use the Alyeska Pipeline Workpad via the Richardson Highway for access shown on the Site Map.

Special Note:

Access permits were not acquired so an on-site investigation was not possible. This exploration plan was developed using aerial photo interpretation.

Prvt. SW¼ SE¼ N½ SE¼ Fed. NW¼ SW¼



22 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

S½ Section 20
SW¼ Section 21
T2S, R3E, Fairbanks Meridian

EMS-85-1

Area: "A": 42 acres±
"B": 42 acres±
"C": 128 acres±

November 1979

0 500 1000 2000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS EXPLORATION AREA SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 85-1

Location

- The proposed site is composed of three areas located approximately three miles north of Eielson Air Force Base. It lies within the S½ Section 20, SW¼ Section 21, T2S, R3E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of the Tanana River at the foot of the southern side of Moose Creek Bluff and is divided by the Haines Pipeline and Moose Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to five inches in diameter plus brush, moss and grass.

Apparent Overburden

- The overburden consists of four to five feet of organics and silt.

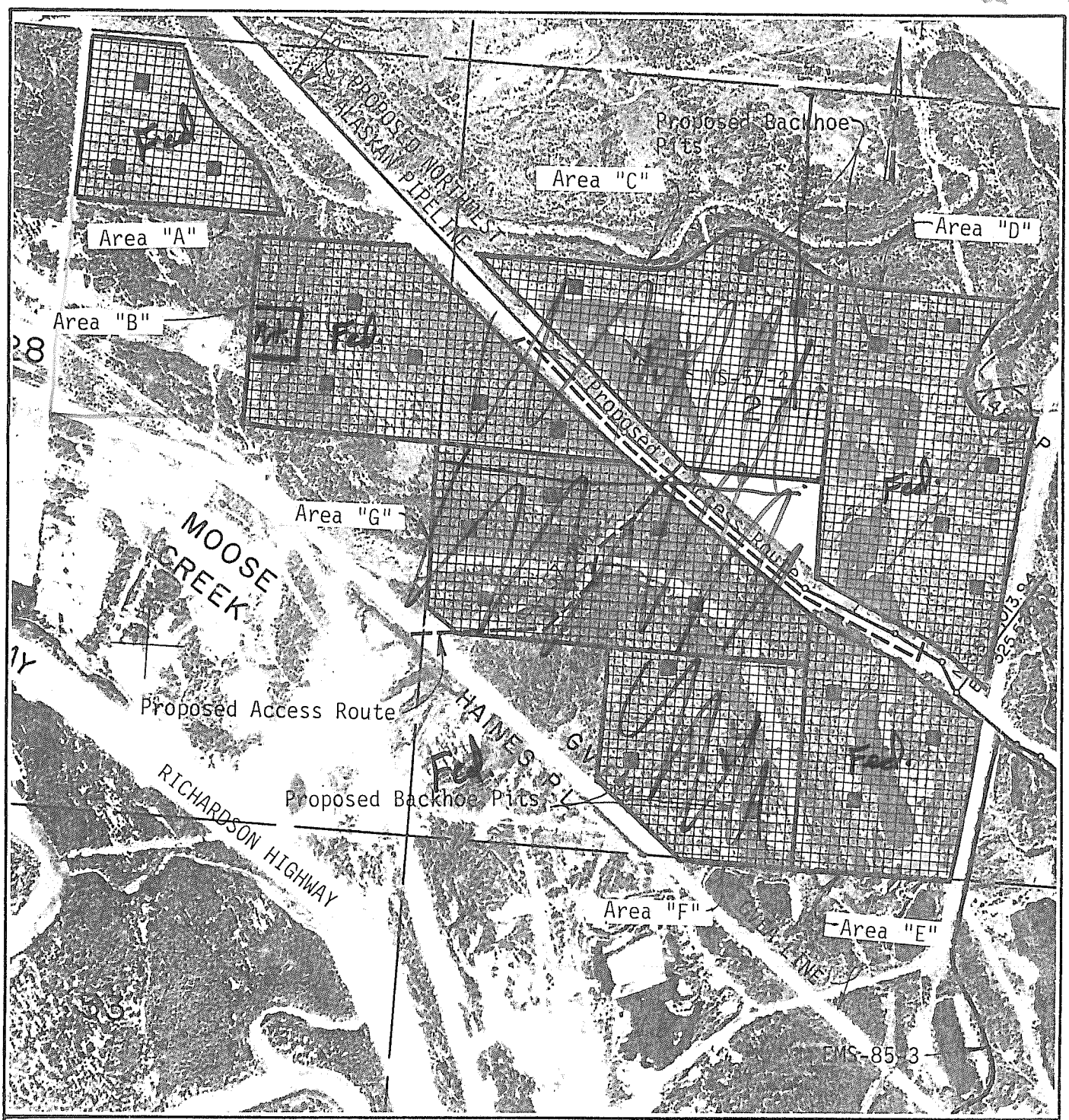
Exploration Proposed

- A backhoe will excavate 22 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be via 57 APL-2.

Fed. Ex 27



27 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

Section 27
N½ NE¼, SE¼ NE¼ Section 28
T2S, R3E, Fairbanks Meridian

EMS-85-2

November 1979

Area: "A": 29 acres±
"B": 43 acres±
"C": 50 acres±
"D": 62 acres±
"E": 33 acres±
"F": 37 acres±
"G": 59 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal A, D, E

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 85-2

Location

- The proposed site is composed of six areas lying on both sides of the Alyeska Pipeline, approximately one and one-half miles north of Eielson Air Force Base. It lies within Section 27, N½NE¼ and the SE¼NE¼ Section 28, T2S, R3E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of Moose Creek. It includes a number of small ponds created by gravel operations. Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter, plus moss and grass.

Apparent Overburden

- The overburden consists of organics and silt overlying gravel.

Exploration Proposed

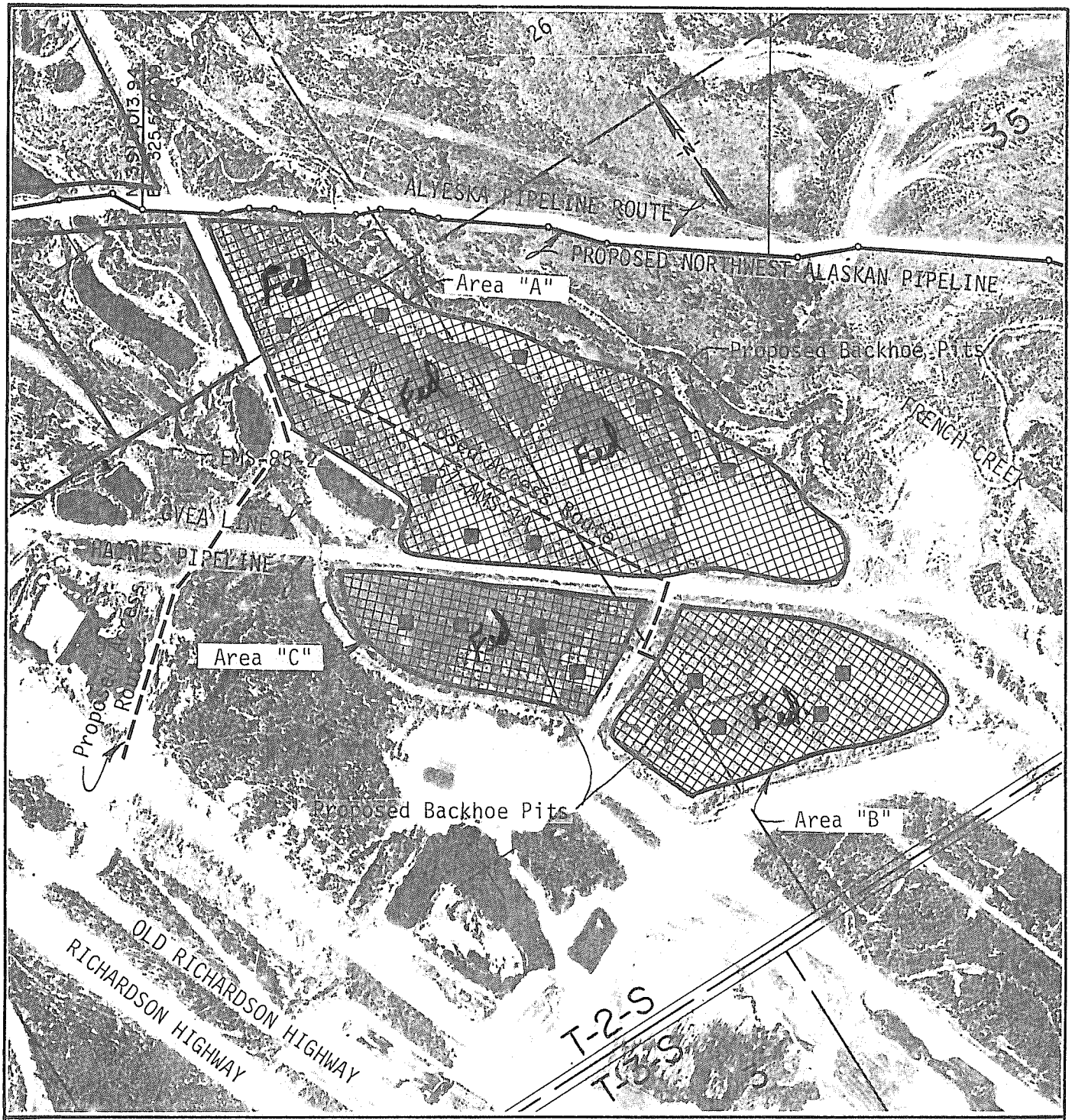
- A backhoe will excavate 27 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the private road and Alyeska Pipeline Workpad for access as shown on the Site Map. Public roads will be used where possible.

Special Note:

Access permits were not acquired so an on-site examination was not possible. This exploration plan was prepared by using aerial photo interpretation.



18 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

S½ SE¼ Section 27
E½ Section 34
W½ Section 35
T2S, R3E, Fairbanks Meridian

EMS-85-3

Area: "A": 119 acres±
"B": 38 acres±
"C": 29 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 85-3

Location

- The proposed site is composed of three areas located on the northern edge of Eielson Air Force Base. It lies within the S½SE¼ Section 27, E½ Section 34, W½ Section 35, T2S, R3E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of French Creek and the Tanana River. There is a large pond in area "A" created by previous gravel operations.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to three inches in diameter plus moss, willow and grass.

Apparent Overburden

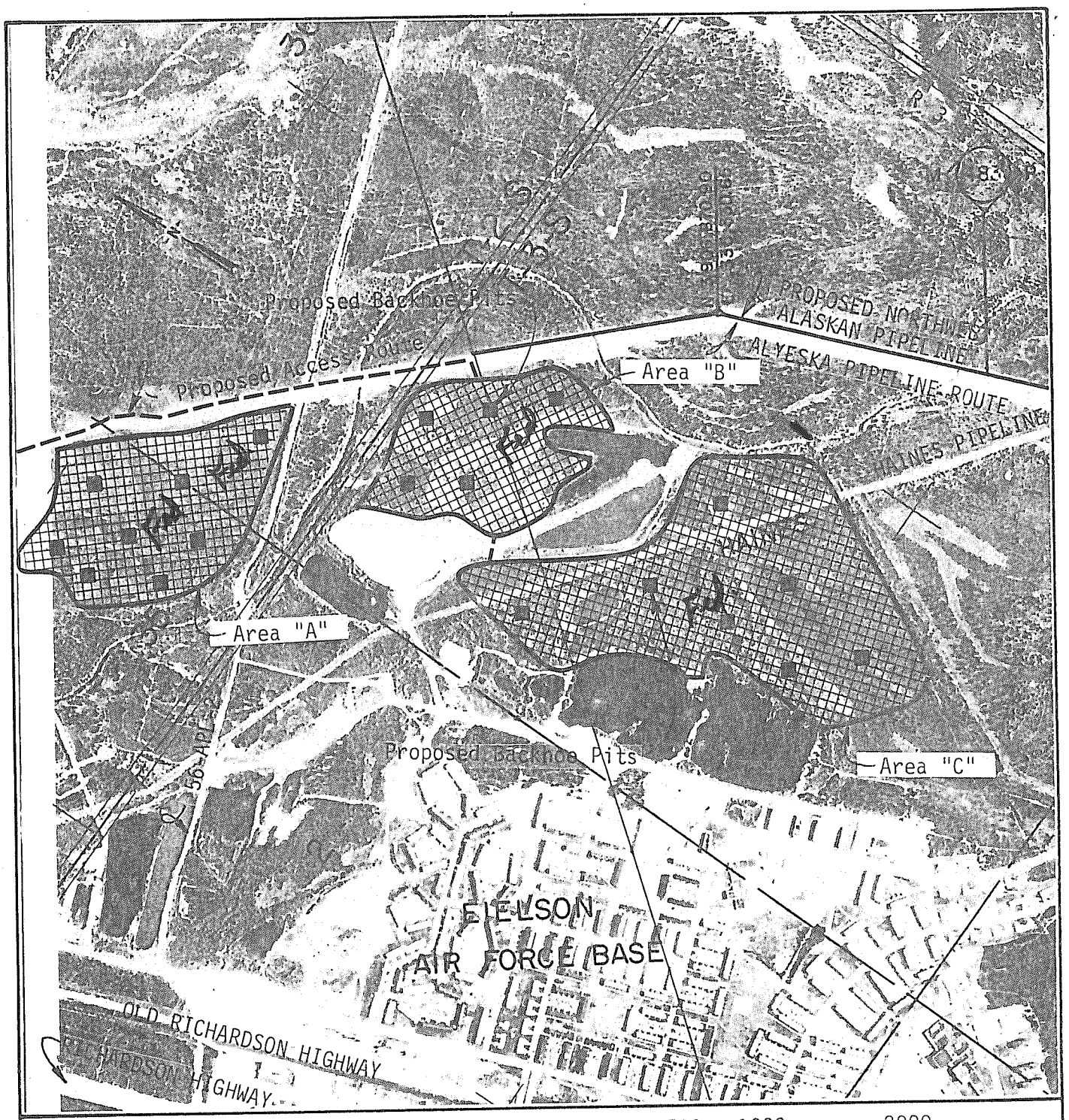
- The overburden consists of organics and silt plus restored spoil berms.

Exploration Proposed

- A backhoe will excavate 18 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize an existing road for access as shown on the Site Map.



20 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

W½ Section 1
T3S, R3E, Fairbanks Meridian
SW¼ SW¼ Section 36
SE¼ Section 35
T2S, R3E, Fairbanks Meridian

EMS-86-1

Area: "A": 42 acres±
"B": 32 acres±
"C": 71 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 86-1

Location

- The proposed site is composed of two areas located immediately to the east of Eielson Air Force Base. It lies within the W½ Section 1, T3S, R3E, SW¼SW¼ Section 36, SE¼ Section 35, T2S, R3E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the flooplain of French Creek and the Tanana River. There are numerous ponds adjacent to the site created by previous gravel operations.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to four inches in diameter, plus moss and grass.

Apparent Overburden

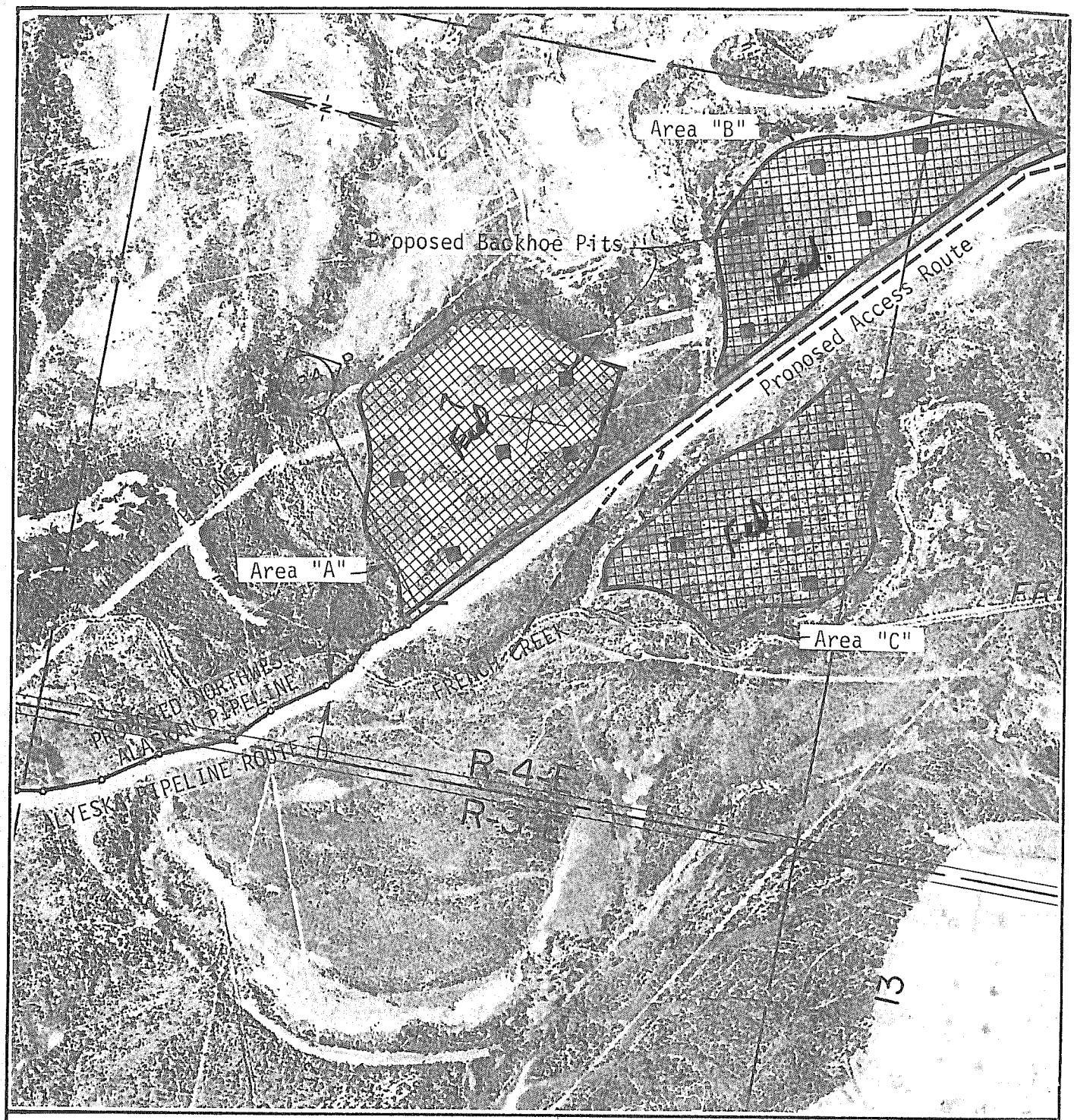
- The overburden consists of organics and silt overlying gravel.

Exploration Proposed

- A backhoe will excavate 20 test pits 12 to 15 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad plus existing roads for access as shown on the Site Map.



15 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

Section 7
N½ N½ Section 18
T3S, R4E, Fairbanks Meridian

EMS-86-2

Area: "A": 58 acres±
"B": 39 acres±
"C": 43 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORHTWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-86-2

Location

- The proposed site is composed of three areas lying on either side of the Alyeska Pipeline approximately 2000 feet north of Quarry Road. It lies within Section 7, N½N½ Section 18, T3S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of French Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense to scattered spruce plus grass and moss.

Apparent Overburden

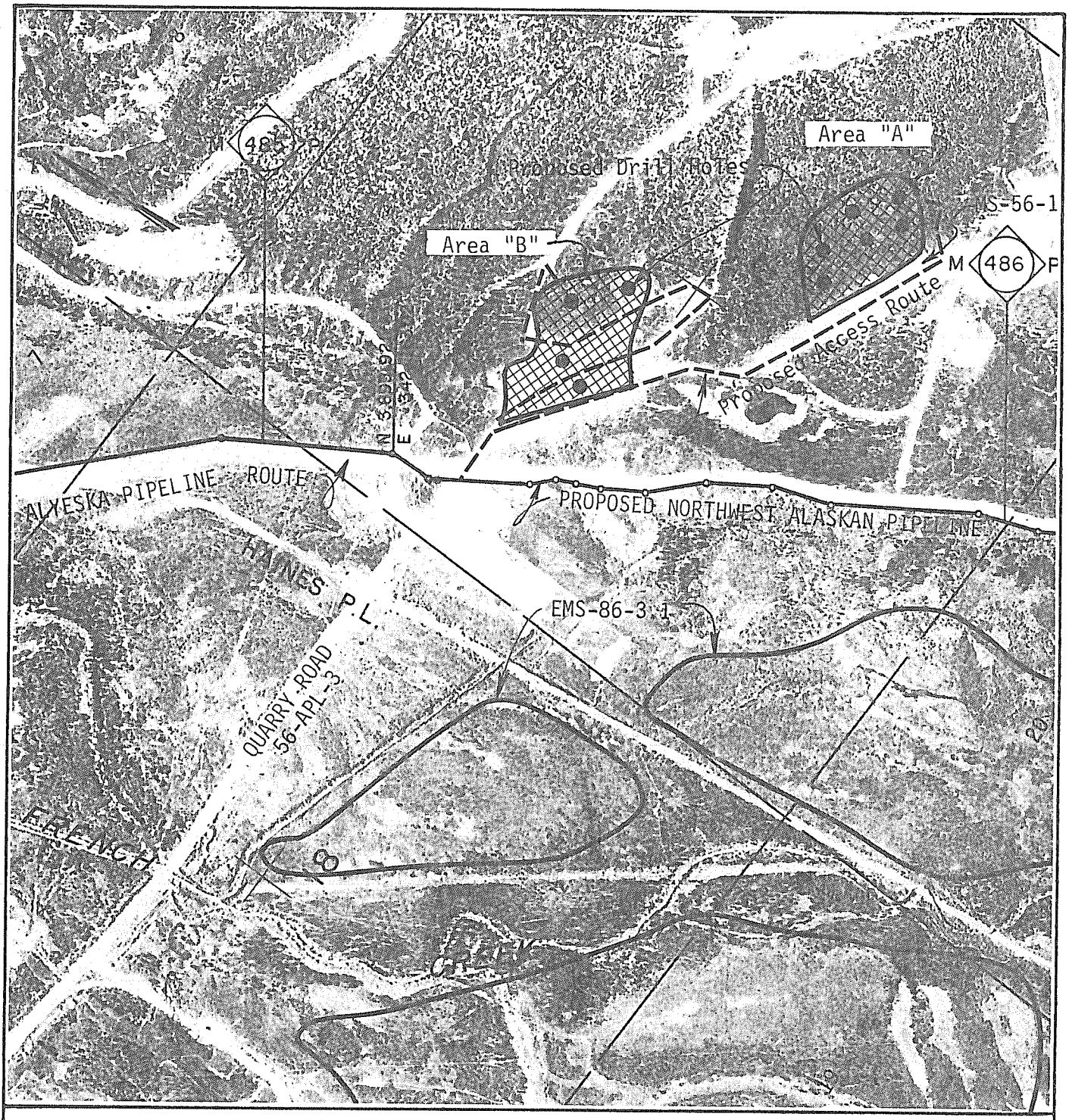
- The overburden consists of organics and silt.

Exploration Proposed

- A backhoe will excavate 15 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will use the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be via Quarry Road.



10 Drill Holes to 45' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

Section 17
T3S, R4E, Fairbanks Meridian

EMS-86-3

Area: "A": 14 acres±
"B": 18 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 86-3

Location

- The proposed site is an existing pit, composed of two areas, located to the east of Eielson Air Force Base at the end of the Quarry Road. It lies within Section 17, T3S, R4E, Fairbanks Meridian.

Geology & Topography

- Area "A" is located on the crest of a bedrock ridge adjacent to an existing road cut. Area "B" is located on the steep slope of a ridge that has been benched in a quarry operation. An existing road switchbacks through the site.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation in the undisturbed areas is composed of moderately dense aspen and spruce to six inches in diameter, plus alder, moss, and grass. The vegetation in the existing pit consists of grass and small poplar.

Apparent Overburden

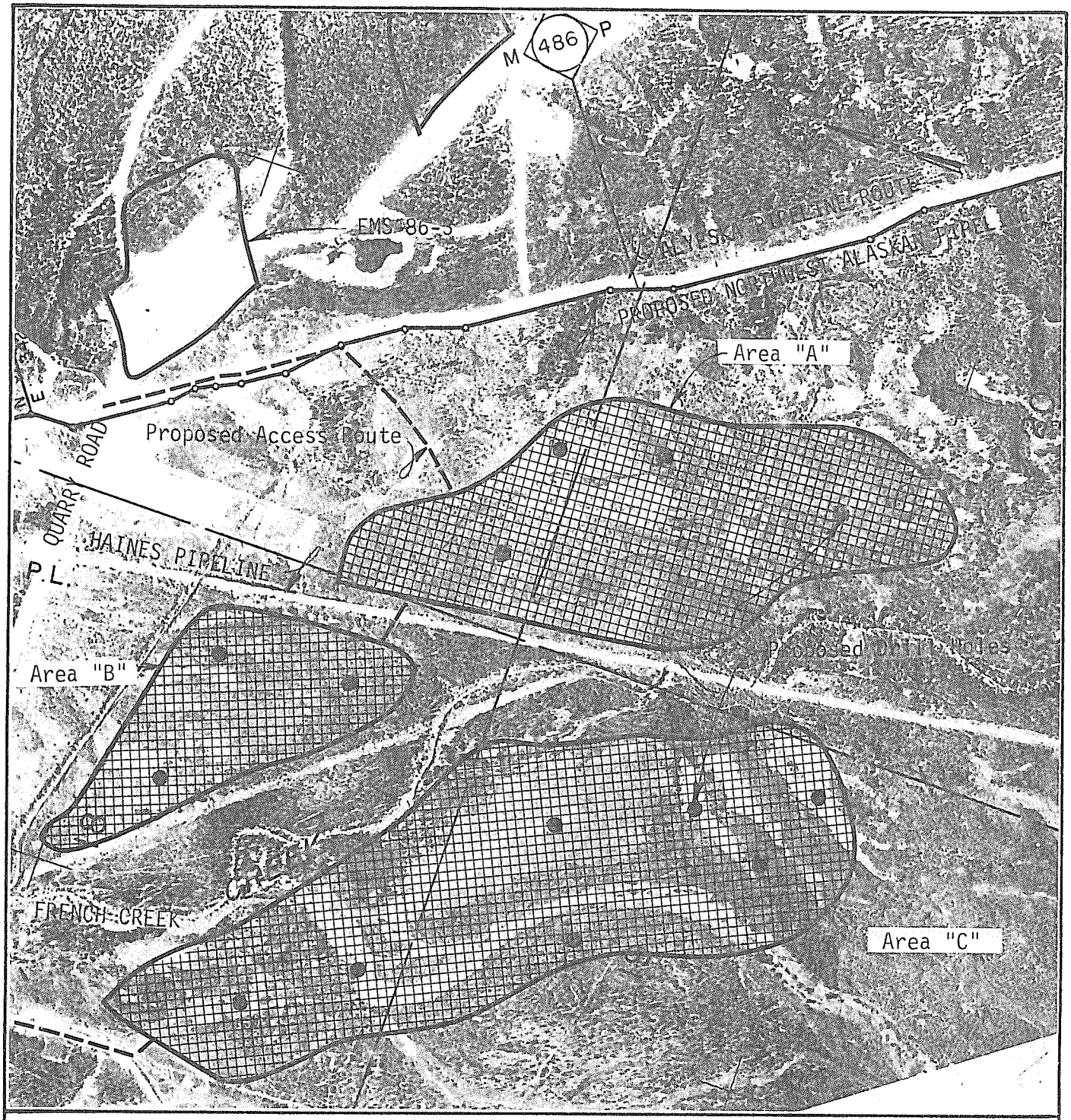
- The overburden consists of 12 to 72 inches of organics and silt.

Exploration Proposed

- A drill rig will make 10 borings to an equivalent depth of the adjacent road surfaces, approximately 45' in depth.

Proposed Access

- The drill rig will use existing roads and trails as shown on the Site Map.



14 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

SW¼ Section 17
S½ Section 18
Section 19
NW¼ Section 20
T3S, R4E, Fairbanks Meridian

EMS-86-3.1

Area: "A": 106 acres±
"B": 47 acres±
"C": 144 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Federal

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 86-3.1

Location

- The proposed site is composed of three areas between Eielson Air Force Base and the Alyeska Pipeline which lie south of Quarry Road. It lies within the SW¼ Section 17, S½ Section 18, Section 19, NW¼ Section 20, T3S, R4E Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of French Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to three inches in diameter plus grasses and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make 14 test holes to 20 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Work-pad and existing roads for access. Existing trails will be utilized where possible within the site.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.

10 Backhoe Pits
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

S½ S½ Section 18
Section 19
T4S, R4E, Fairbanks Meridian

EMS-87-2

November 1979 Area: 165 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Rvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 87-2

Location

- The proposed site includes and is adjacent to existing pits located approximately one half mile north of Johnson Road and 600 feet east of the Richardson Highway. The proposed gas line lies approximately six miles to the east. It lies within the S½S½ Section 18, Section 19, T4S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the floodplain of the Tanana River and is adjacent to ponds created by previous gravel operations.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to eight inches in diameter, plus willow, alder, moss and grass.

Apparent Overburden

- The overburden consists of more then 36 inches of organics and silt.

Exploration Proposed

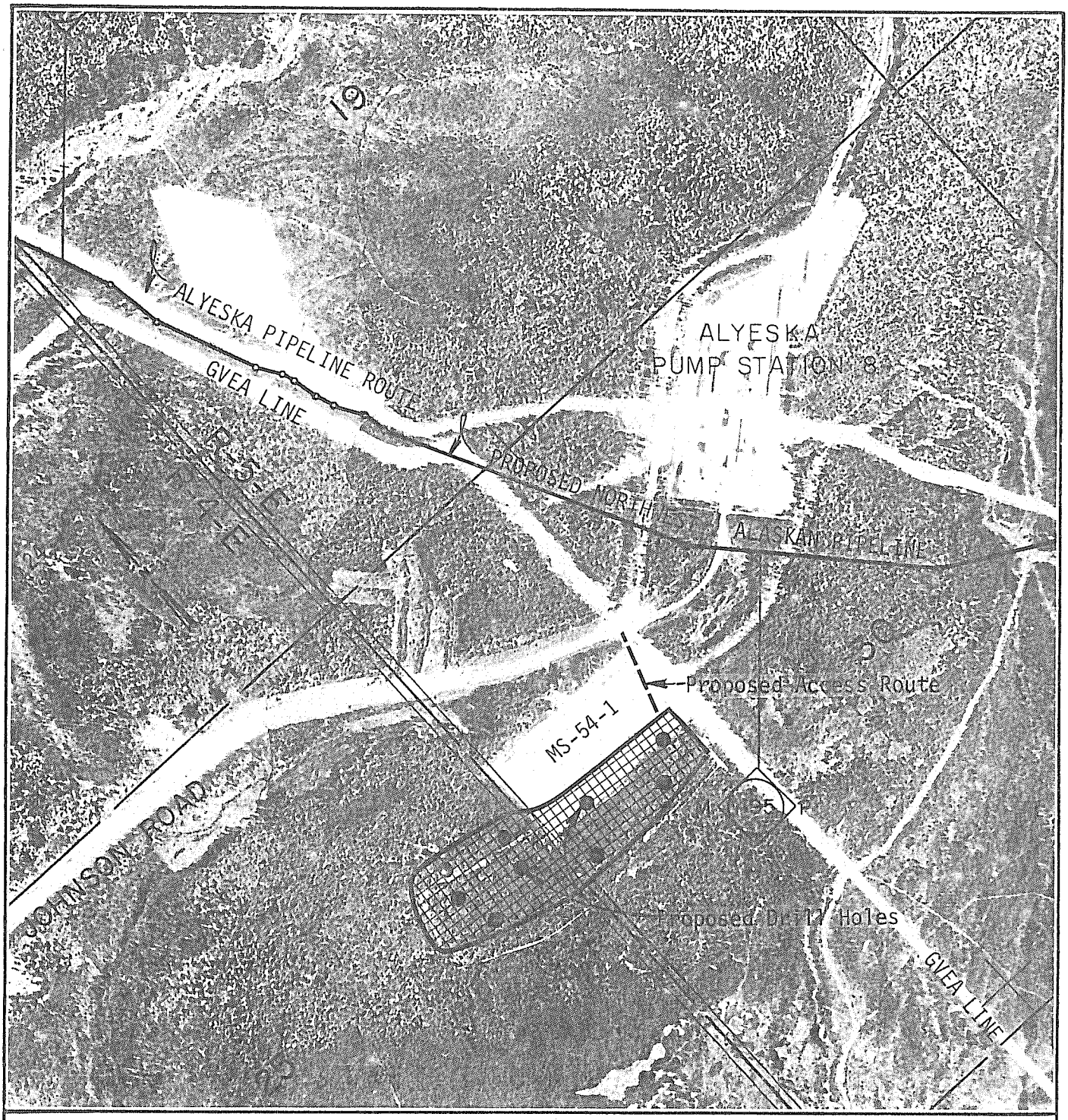
- A backhoe will excavate 10 test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize existing roads for access to the site from Johnson Road, as shown on the Site Map.

Special Note:

This exploration plan was prepared by using aerial photo interpretation.



9 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

E½ E½ Section 25
T4S, R4E, Fairbanks Meridian
W½ W½ Section 30
T4S, R5E, Fairbanks Meridian

EMS-88-2

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

November 1979 Area: 31 acres±

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 88-2

Location

- The proposed site is an existing pit located approximately 1500 feet west of Alyeska Pump Station 8. It lies within the E½E½ Section 25, T4S, R4E, W½W½ Section 30, T4S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a high steep sided bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to six inches in diameter plus alder, moss and grass.

Apparent Overburden

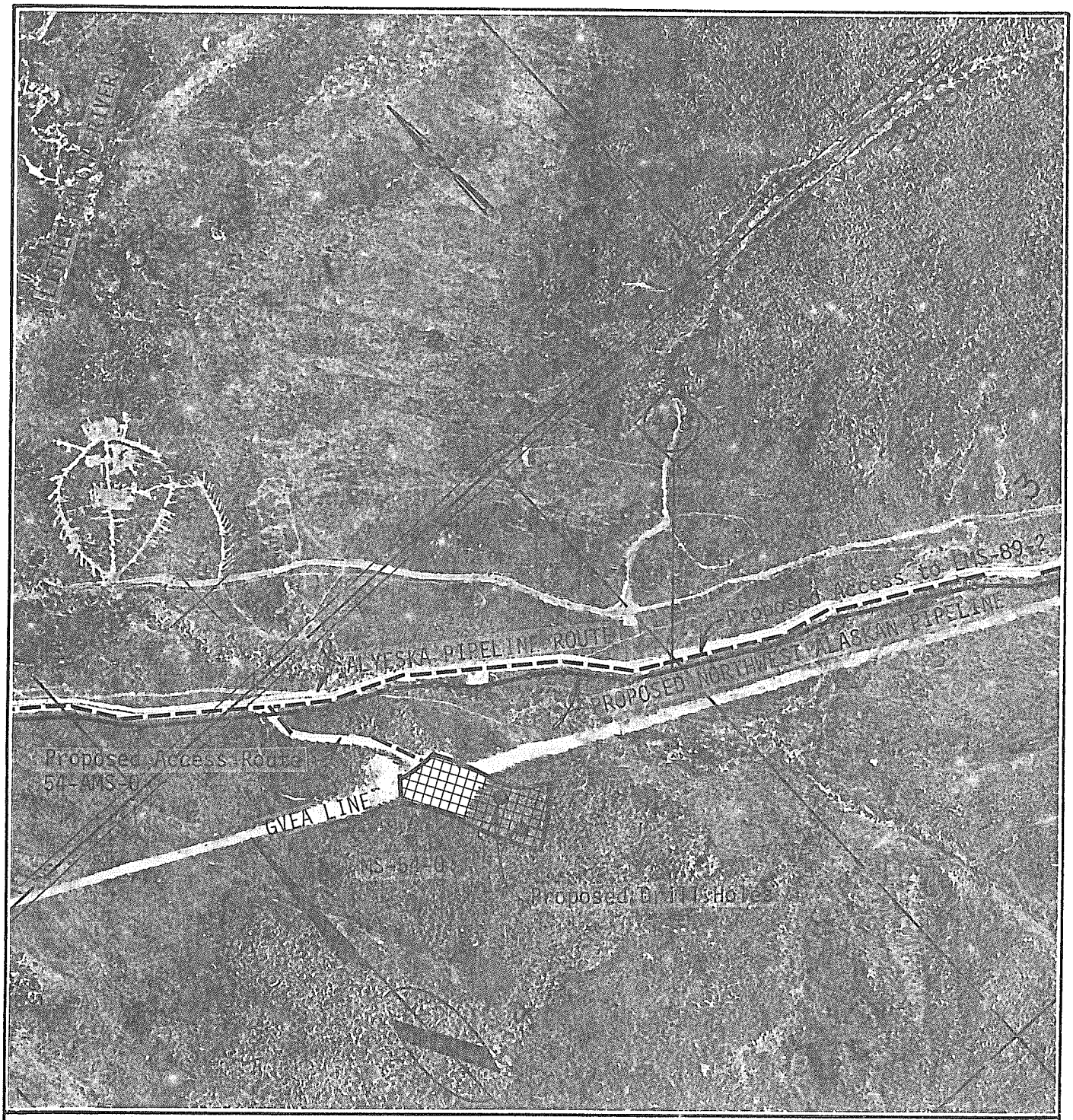
- The overburden consists of 18 to 36 inches of organics and silt.

Exploration Proposed

- A drill rig will make nine test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize Johnson Road and the existing access road as shown on the Site Map.



2 Drill Holes to 40' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

NE¼ Seciton 4
T5S, R5E, Fairbanks Meridian

EMS-88-4

November 1979 Area: 9 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 88-4

Location

- The proposed site is an existing pit located adjacent to the GVEA R.O.W., at a point approximately two miles south of the Little Salcha River. It lies within the NE¼ Section 4, T5S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the toe of a steeply sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is very highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense aspen and spruce to five inches in diameter, plus grass, moss, and lichens.

Apparent Overburden

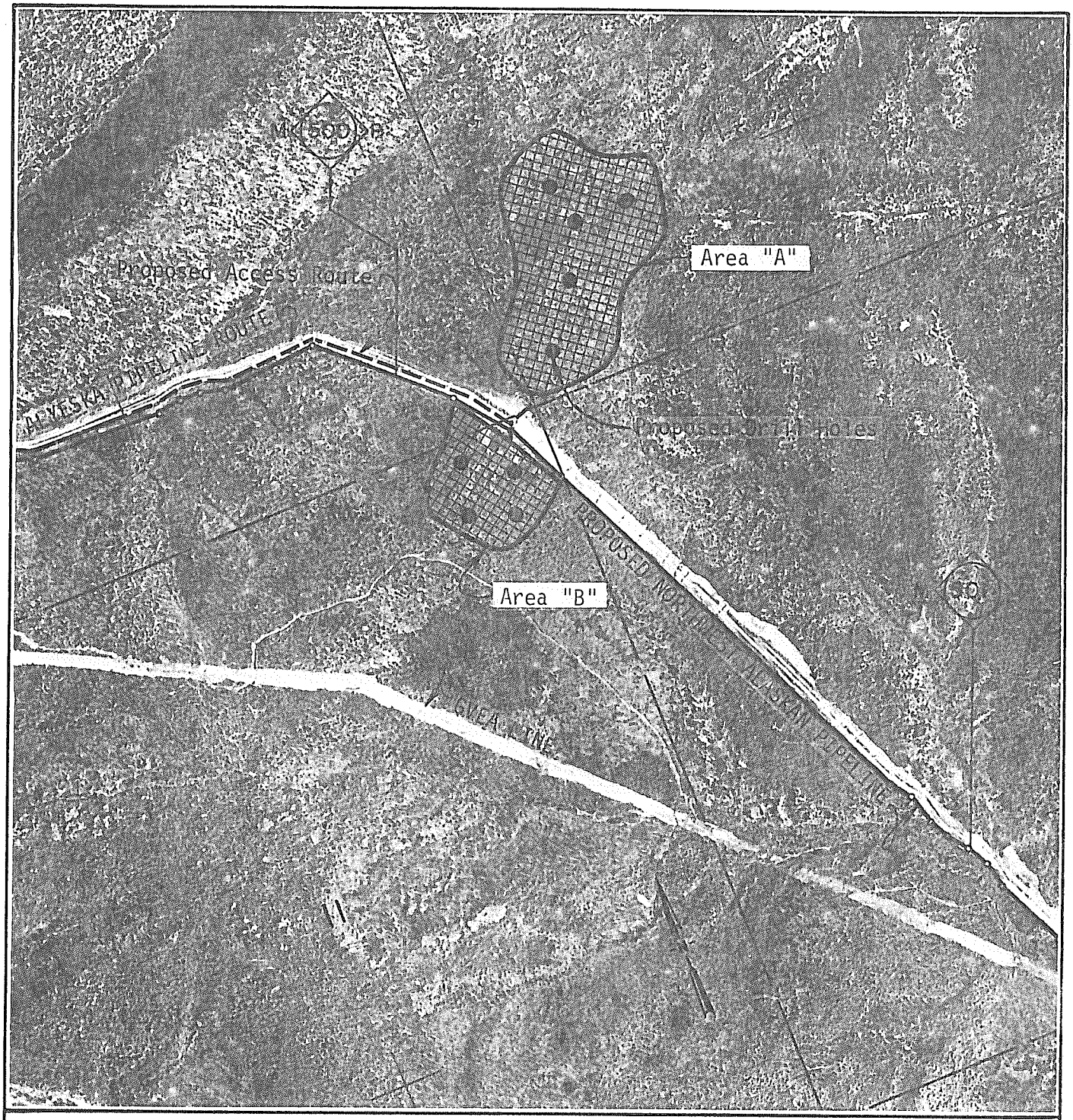
- The overburden consists of 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make two test borings to 40 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad and the existing access road as shown on the Site Map. Access to the workpad will be via Johnson Road.



9 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

SW¼ Section 1
S½ SE¼ Section 2
N½ NE¼ Section 11
T5S, R5E, Fairbanks Meridian

EMS-89-2

Area: "A": 35 acres±
"B": 13 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 89-2

Location

- The proposed site is composed of two areas bisected by the Alyeska Pipeline Workpad at a point approximately one and one-quarter mile north of the Salcha River. It lies within SW¼ Section 1, S½SE¼ Section 2, N½NE¼ Section 11, T5S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is located on the crest of a high steeply sloped bedrock ridge, running parallel to the Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered metamorphic bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen, and spruce to four inches in diameter, plus moss, grass, and lichens.

Apparent Overburden

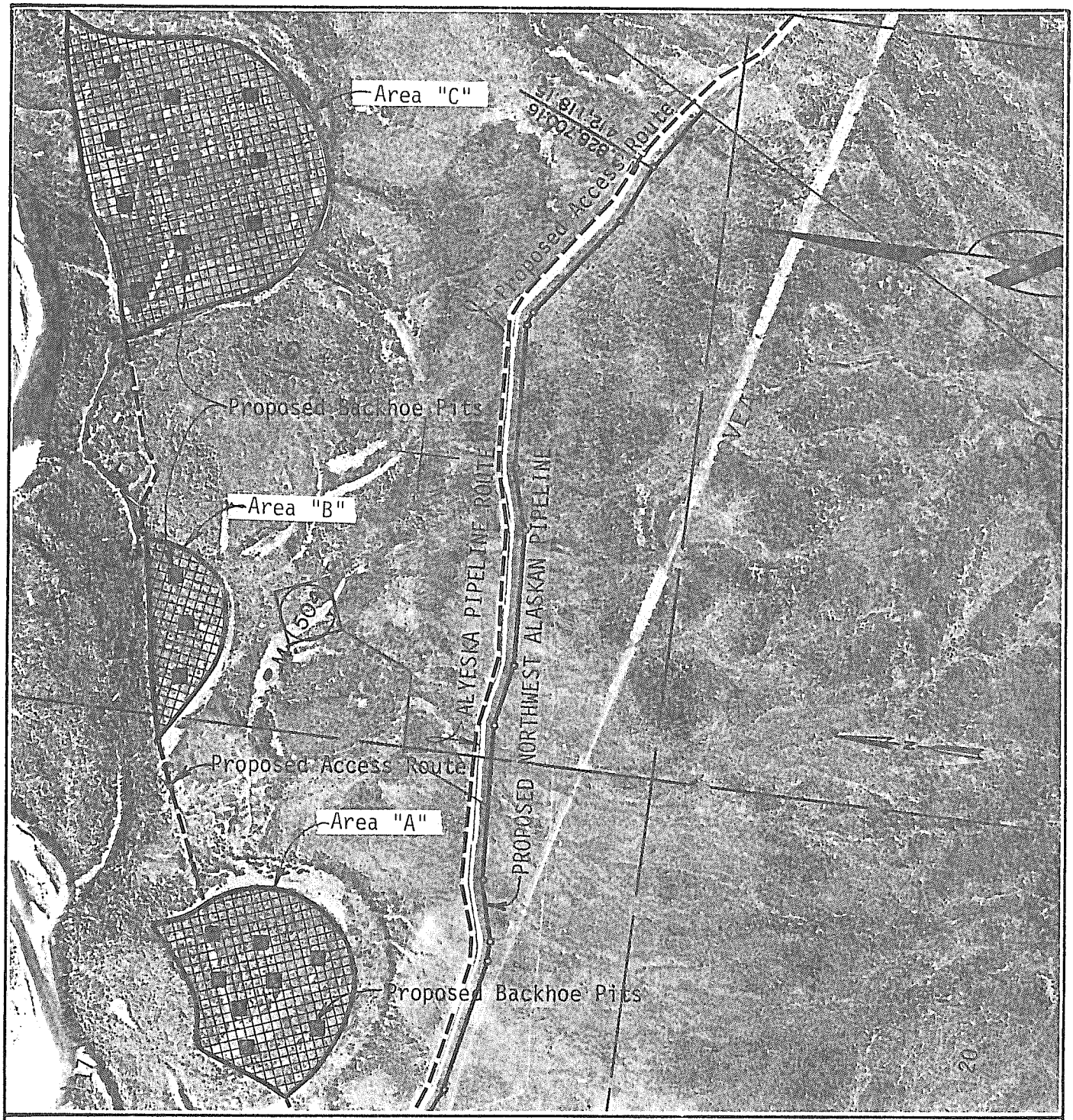
- The overburden consists of 12 to 18 inches of organics and silt.

Exploration Proposed

- A drill rig will make nine test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Alyeska Pipeline Workpad and existing trails for access as shown on the Site Map. Access to the workpad will be via Johnson Road.



21 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

Section 16
Section 17
T5S, R6E, Fairbanks Meridian

EMS-89-3

Area: "A": 29 acres±
"B": 10 acres±
"C": 50 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-89-3

Location

- The proposed site is composed of three areas located 500 feet south of the Salcha River on the north side of the Alyeska Pipeline. It lies within Section 16, Section 17, T5S, R6E, Fairbanks Meridian.

Geology & Topography

- The site is situated within old meander cores of the Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel and sand.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to eight inches in diameter plus willow, alder, moss and grass.

Apparent Overburden

- The overburden consists of 12 to 30 inches of organics and silt.

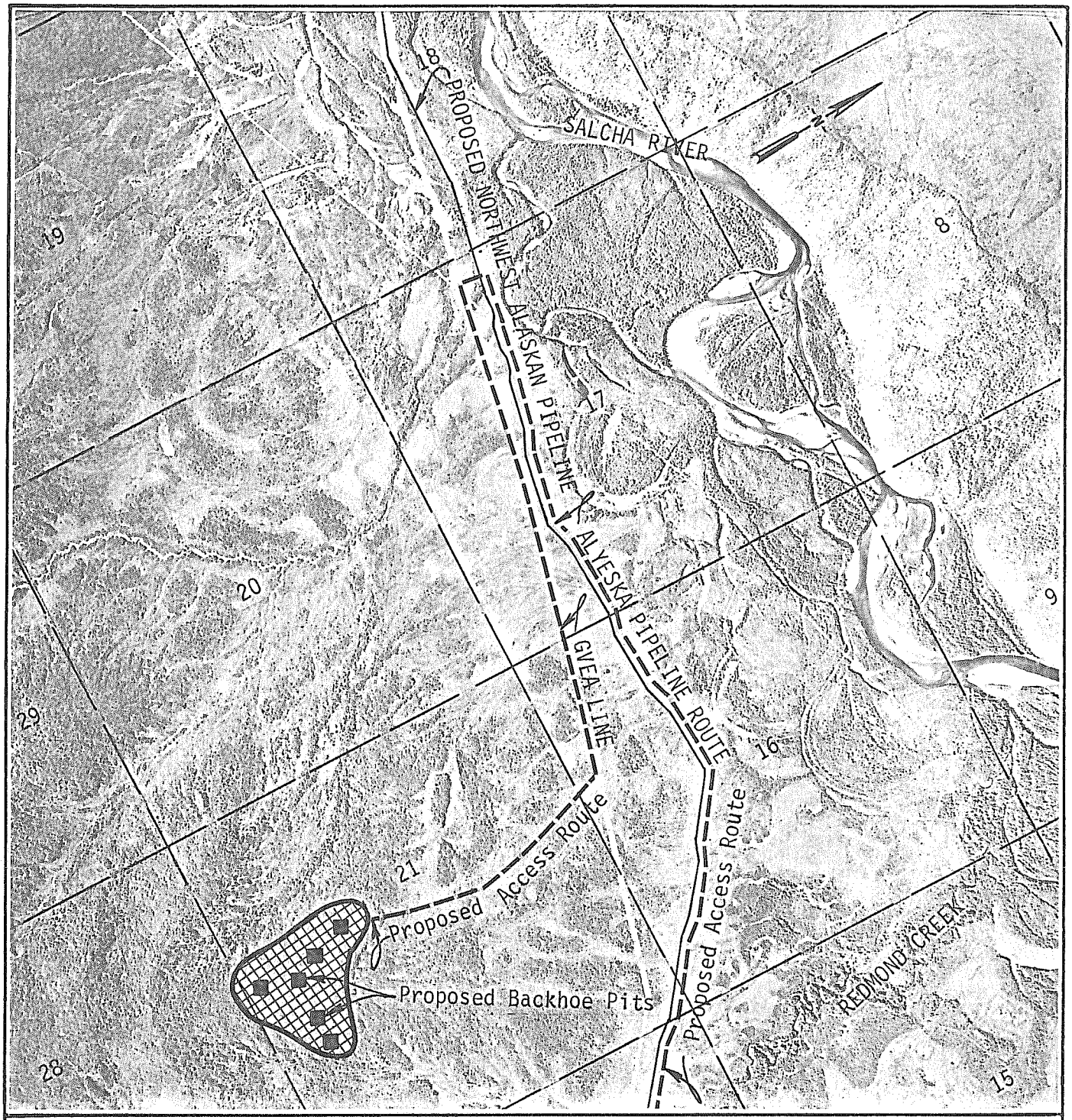
Exploration Proposed

- A backhoe will excavate 21 test pits, 12 to 15 feet in depth. If necessary a drill rig will make selected test borings to 50 feet to confirm depth for dragline operations.

Proposed Access

- The equipment will utilize the Alyeska Pipeline Workpad and the Salcha River Trail for access as shown on the Site Map. Access to the workpad will be via 49 APL-2 at Shaw Creek.

Special Note:
This exploration plan was developed using aerial interpretation and U.S.G.S. quadrangle maps.



6 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ Section 21
N½ N½ Section 28
T5S, R6E, Fairbanks Meridian

EMS-89-4

November 1979 Area: 41 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 89-4

Location

- The proposed site is located 4000 feet south of the GVEA R.O.W., from a point approximately one-half mile west of Redmond Creek. It lies within the S½ Section 21, N½N½ Section 28, T5S, R6E, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a high steep sided bedrock ridge overlooking the Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce, birch, and poplar to eight inches in diameter plus willow, alder and moss.

Apparent Overburden

- The overburden consists of organics and silt overlying bedrock.

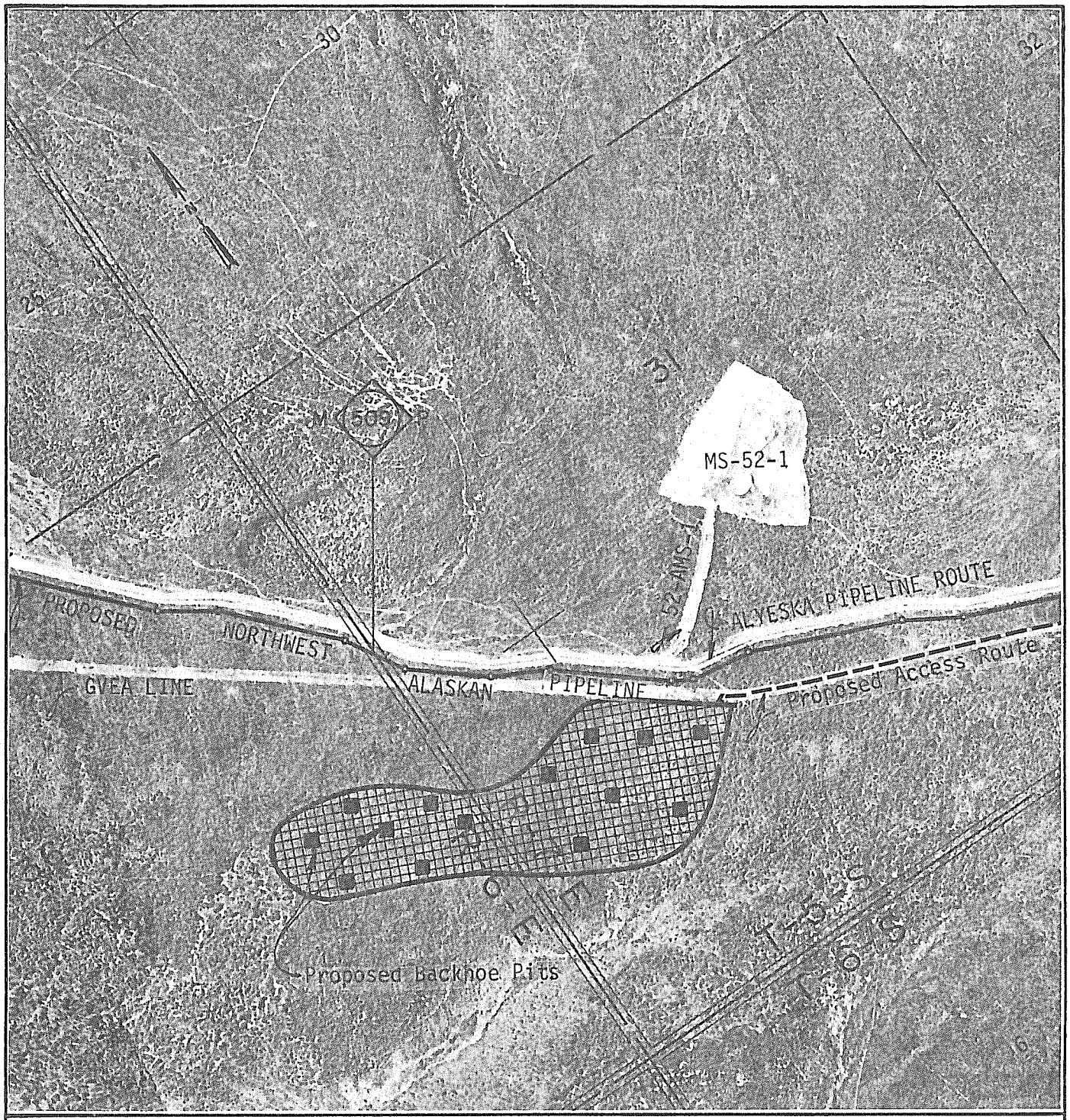
Exploration Proposed

- A backhoe will excavate six test pits, 12 to 15 feet in depth. If necessary a drill rig will make select test borings.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Work-pad and the GVEA R.O.W. for access as shown on the Site Map. Access for the workpad will be via 49 APL-2 at Shaw Creek.

Special Note:
This exploration plan was prepared by using aerial photo interpretation and U.S.G.S. quadrangle maps.



14 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

E½ Section 36
T5S, R6E, Fairbanks Meridian
W½ Section 31
T5S, R7E, Fairbanks Meridian

EMS-90-2

November 1979 Area: 55 acres±

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 90-2

Location

- The proposed site is located 300 feet southwest of the Alyeska Pipeline Workpad and approximately three and one-half miles south of Redmond Creek. It lies within the E½ Section 36, T5S, R6E, W½ Section 31, T5S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the crest of a braod gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a very highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce with occasional birch to eight inches in diameter plus moss and lichens.

Apparent Overburden

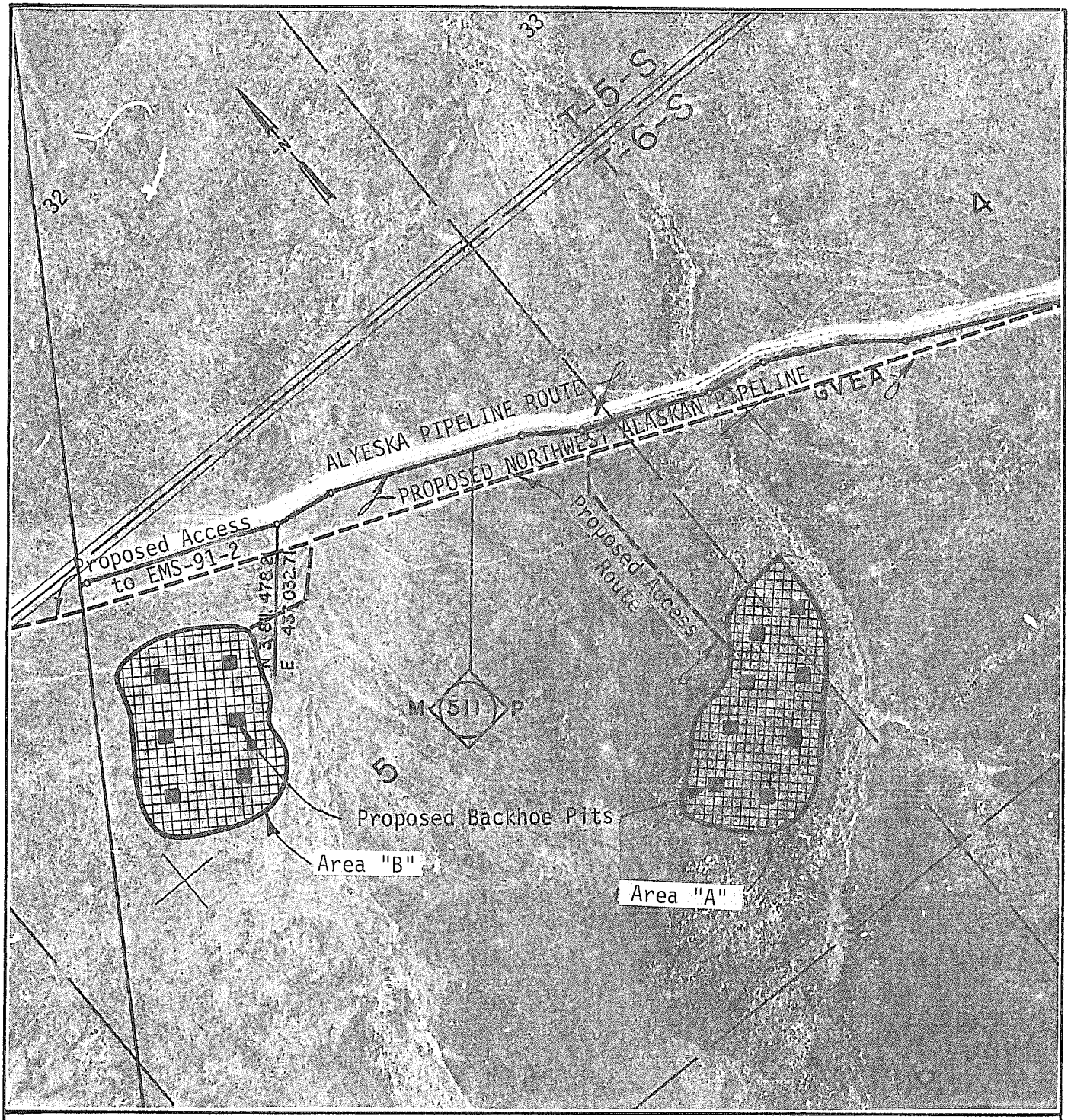
- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

- A backhoe will excavate 14 test pits 12 to 15 feet in depth. If necessary a drill rig will make selected borings to 50 feet in depth.

Proposed Access

- The equipment will utilize the Alyeska Pipeline Workpad and GVEA R.O.W. for access as shown on the Site Map. Access to the workpad will be via 49 APL-2 at Shaw Creek.



14 Backhoe Pits to 15' depth
EXPLORATION AREA LIES WITHIN:

0 500 1000 2000
SCALE IN FEET

W½ W½ Section 4
Section 5
T6S, R7E, Fairbanks Meridian

EMS-91-1

Area: "A": 34 acres±
"B": 32 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS- 91-1

Location

- The proposed site is composed of two areas located south of the GVEA R.O.W. and approximately one and one-half miles west of Gold Run Creek. It lies within the W½W½ Section 4, Section 5, T6S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the northern slope of a large bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense birch and spruce to eight inches in diameter plus grass and moss.

Apparent Overburden

- The overburden consists of 12 to 30 inches of organics, silt and silty gravel.

Exploration Proposed

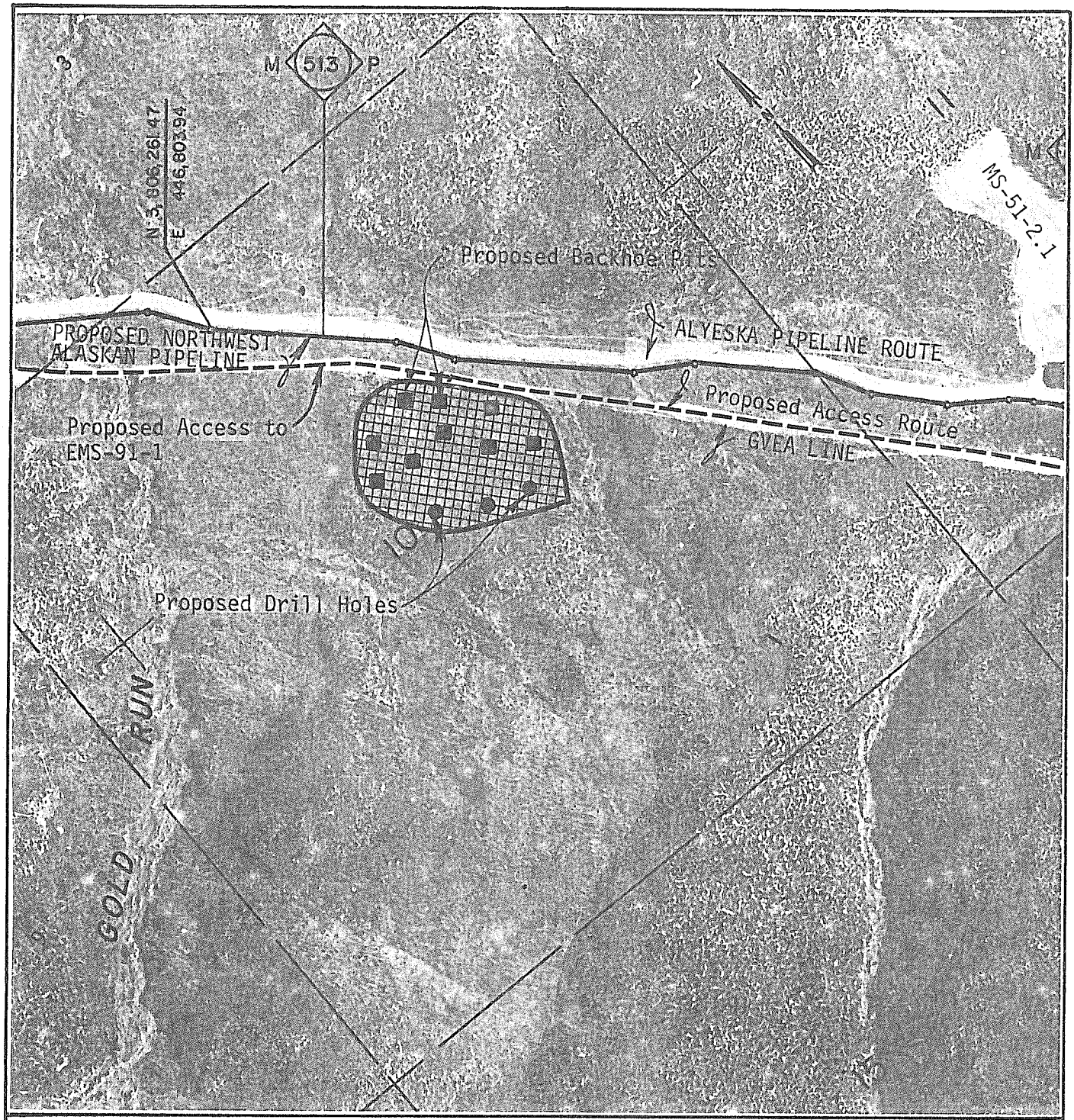
- A backhoe will excavate 14 test pits, 12 to 15 feet in depth. If necessary a drill rig will make select test borings.

Proposed Access

- The equipment will utilize the Alyeska Pipeline Work-pad and GVEA R.O.W. for access as shown on the Site Map. Access to the workpad will be vial 49 APL-2 at Shaw Creek.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and U.S.G.S. quadrangle maps.



9 Backhoe Pits to 15' depth
3 Drill Holes to 50' depth
EXPLORATION AREA LIES WITHIN:

0 500 1000 2000
SCALE IN FEET

Section 10
T6S, R7E, Fairbanks Meridian

EMS-91-2

November 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 91-2

Location

- The proposed site is located adjacent to the GVEA R.O.W., 1600 feet south of Gold Run Creek. It lies within Section 10, T6S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a steep sided broad bedrock ridge in the hills south of Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and birch to 12 inches in diameter plus willow, alder and moss.

Apparent Overburden

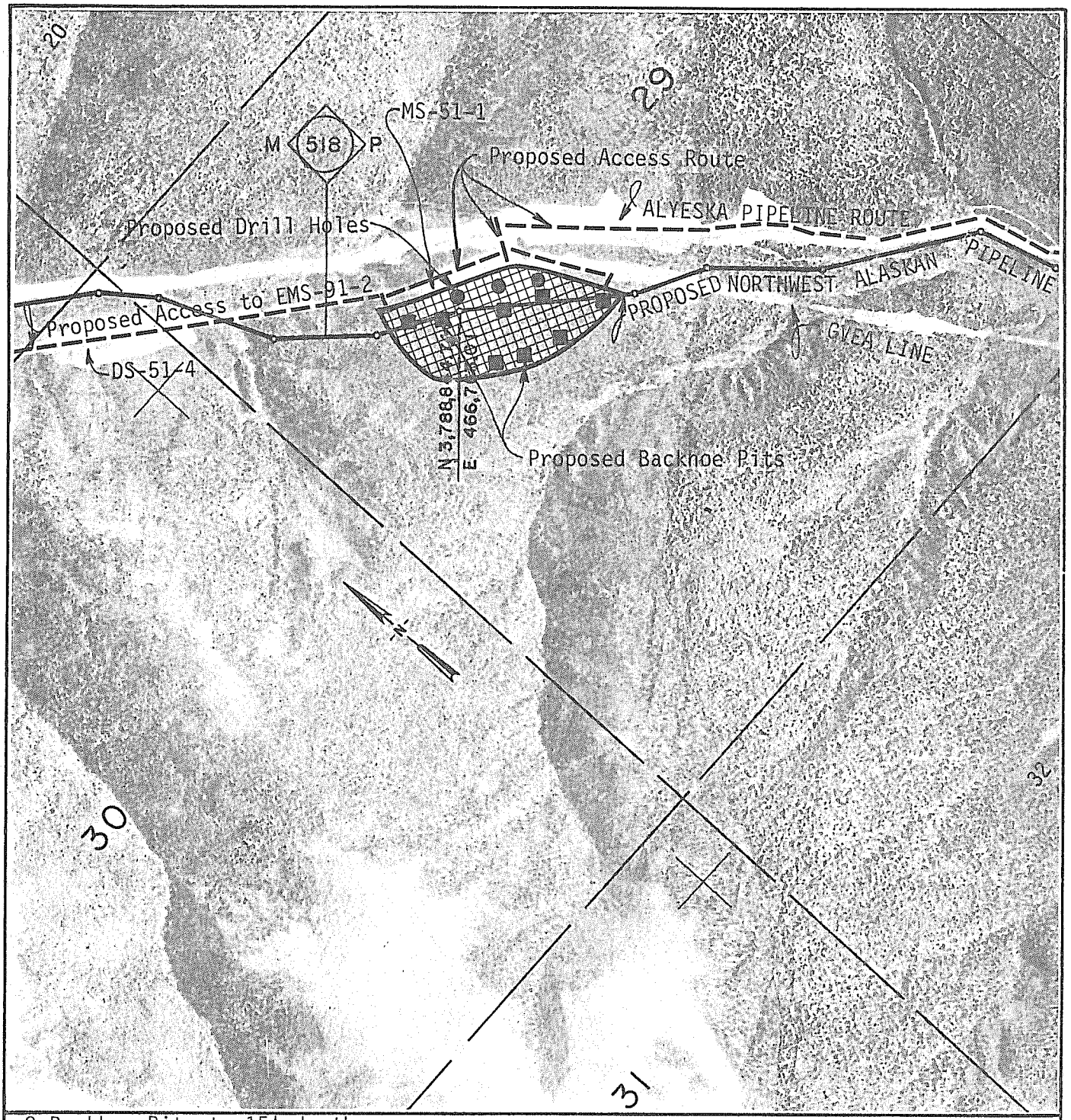
- The overburden consists of 6 to 36 inches of organics and silt.

Exploration Proposed

- A backhoe will excavate nine test pits, 12 to 15 feet in depth. A drill rig will place three borings to 50 feet in depth in selected locations.

Proposed Access

- The equipment will utilize the Alyeska Pipeline Workpad and the GVEA R.O.W. for access as shown on the Site Map. Access to the workpad will be via 49 APL-2 at Shaw Creek.



8 Backhoe Pits to 15' depth
3 Drill Holes to 60' depth
EXPLORATION AREA LIES WITHIN:

0 500 1000 2000
SCALE IN FEET

Section 29
T6S, R8E, Fairbanks Meridian

EMS-92-1

November 1979 Area: 18 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 92-1

Location

- The proposed site is an existing pit located adjacent to the west side of the GVEA R.O.W. at a point approximately eight miles north of Shaw Creek. The area is commonly known as Rosa Ridge. It lies within Section 29, T6S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a knob positioned on the crest of a saddle between the Rosa Creek and Minton Creek valleys.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a highly weathered schist.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to eight inches in diameter plus willow, alder, moss and grass.

Apparent Overburden

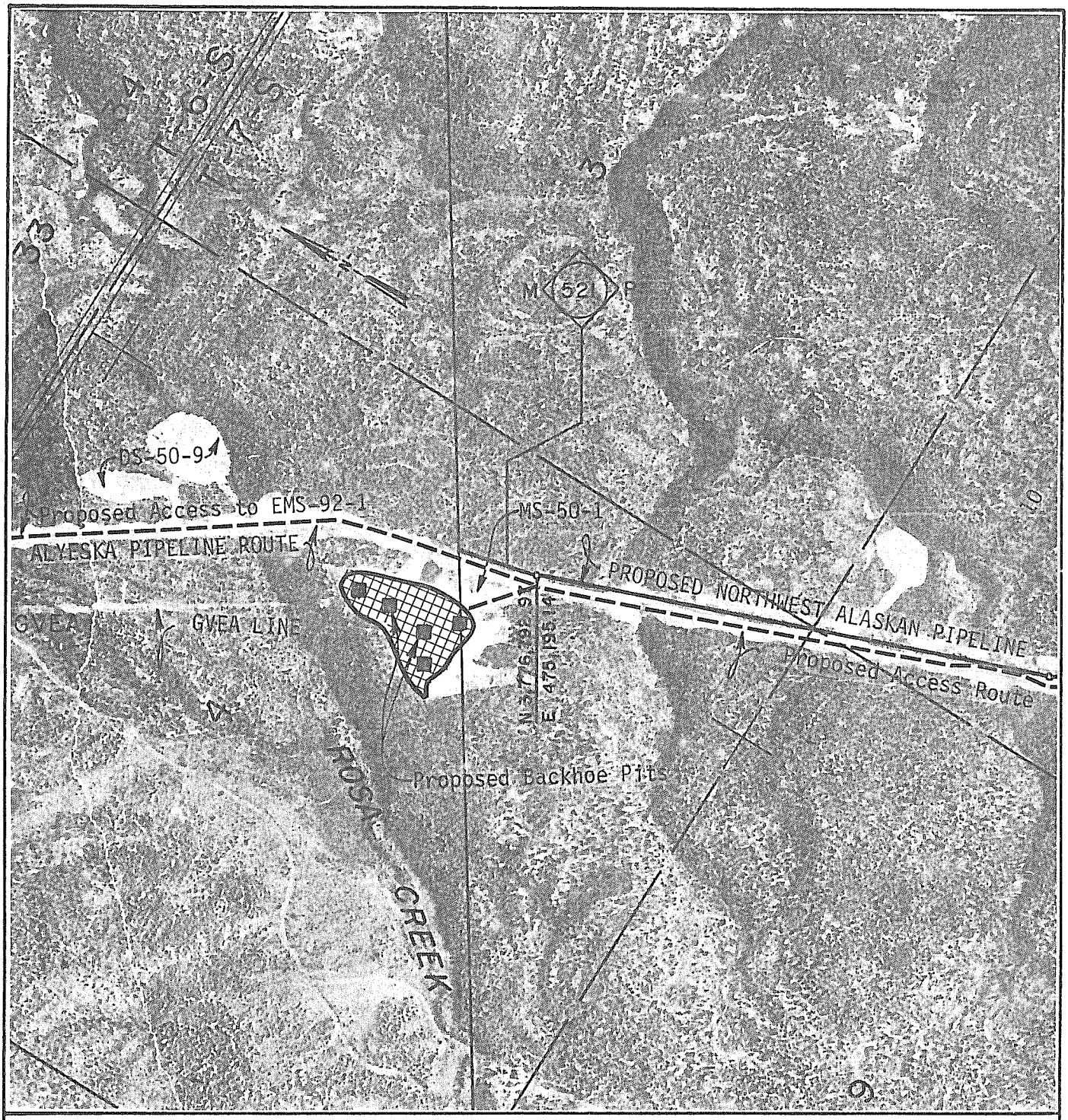
- The overburden in the undisturbed areas consists of 18 inches of organics and silt. There are restored waste berms in the existing pit.

Exploration Proposed

- A backhoe will excavate eight test pits, 12 to 15 feet in depth. Three borings to 60 feet in depth will be made at selected locations within the existing pit.

Proposed Access

- The equipment will use the Alyeska Pipeline Workpad and GVEA R.O.W. for access, as shown on the Site Map. Access to the workpad will be via 49 APL-2 at Shaw Creek.



5 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

E½ Section 4
T7S, R8E, Fairbanks Meridian

EMS-93-1

November 1979 Area: 11 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 93-1

Location

- The proposed site is an existing pit and storage yard located approximately five miles north of Shaw Creek and 200 feet west of the Alyeska Pipeline Workpad. It lies within the E½ Section 4, T7S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is situated on the crest of a high transverse sand dune.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a medium grained sand.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grass.

Apparent Overburden

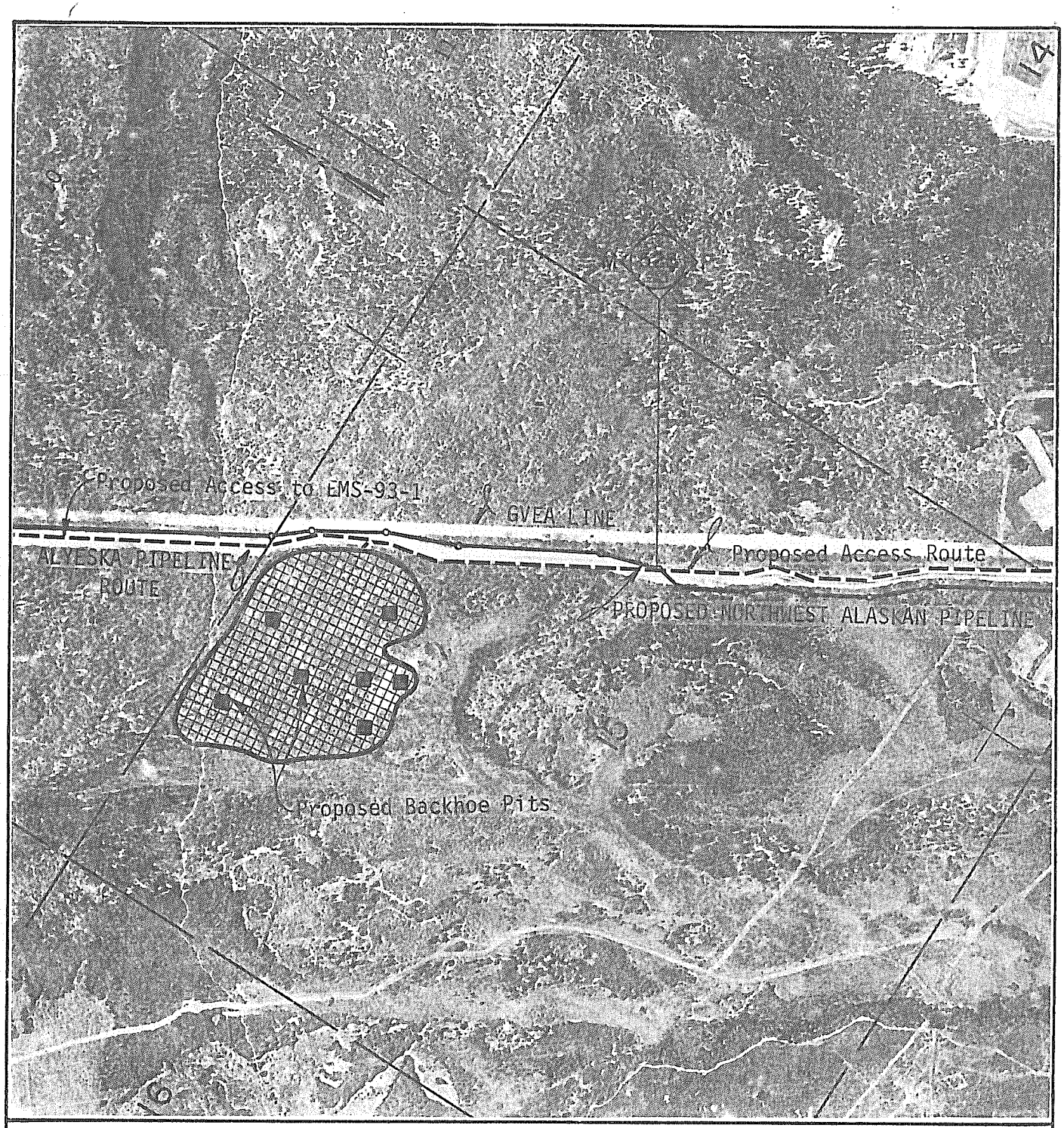
- The overburden may consist of waste disposal areas.

Exploration Proposed

- A backhoe will excavate five test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Workpad as shown on the Site Map. Access to the workpad will be at 49 APL-2 at Shaw Creek.



7 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ Section 15
T7S, R8E, Fairbanks Meridian

EMS-93-2

November 1979 Area: 43 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-93-2

Location

- The proposed site is located adjacent to the west side of the Alyeska Pipeline Workpad, approximately three and one-half miles north of Shaw Creek. It lies within the N½ Section 15, T7S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low lying transverse sand dune.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a medium grained sand.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and occasional spruce to six inches in diameter, plus willow, moss and grass.

Apparent Overburden

- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

- A backhoe will excavate seven test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Workpad for access as shown on the Site Map. Access to the workpad will be via 49 APL-2 at Shaw Creek.

9 Backhoe Pits to 15' depth
4 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

S½ S½ Section 35
T7S, R8E, Fairbanks Meridian
Section 2
NE¼ NE¼ Section 3
T8S, R8E, Fairbanks Meridian

EMS-94-1

November 1979 Area: 173 acres±

0 1000 2000 4000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 94-1

Location

- The proposed site is an existing pit located 200 feet south of the confluence of Shaw Creek and the Tanana River. It lies within the S½S½ Section 35, T7S, R8E, Section 2, NE¼NE¼ Section 3, T8S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the active floodplain of the Tanana River and incorporates a number of vegetated gravel bars.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar to four inches in diameter plus alder, willow, grass and moss.

Apparent Overburden

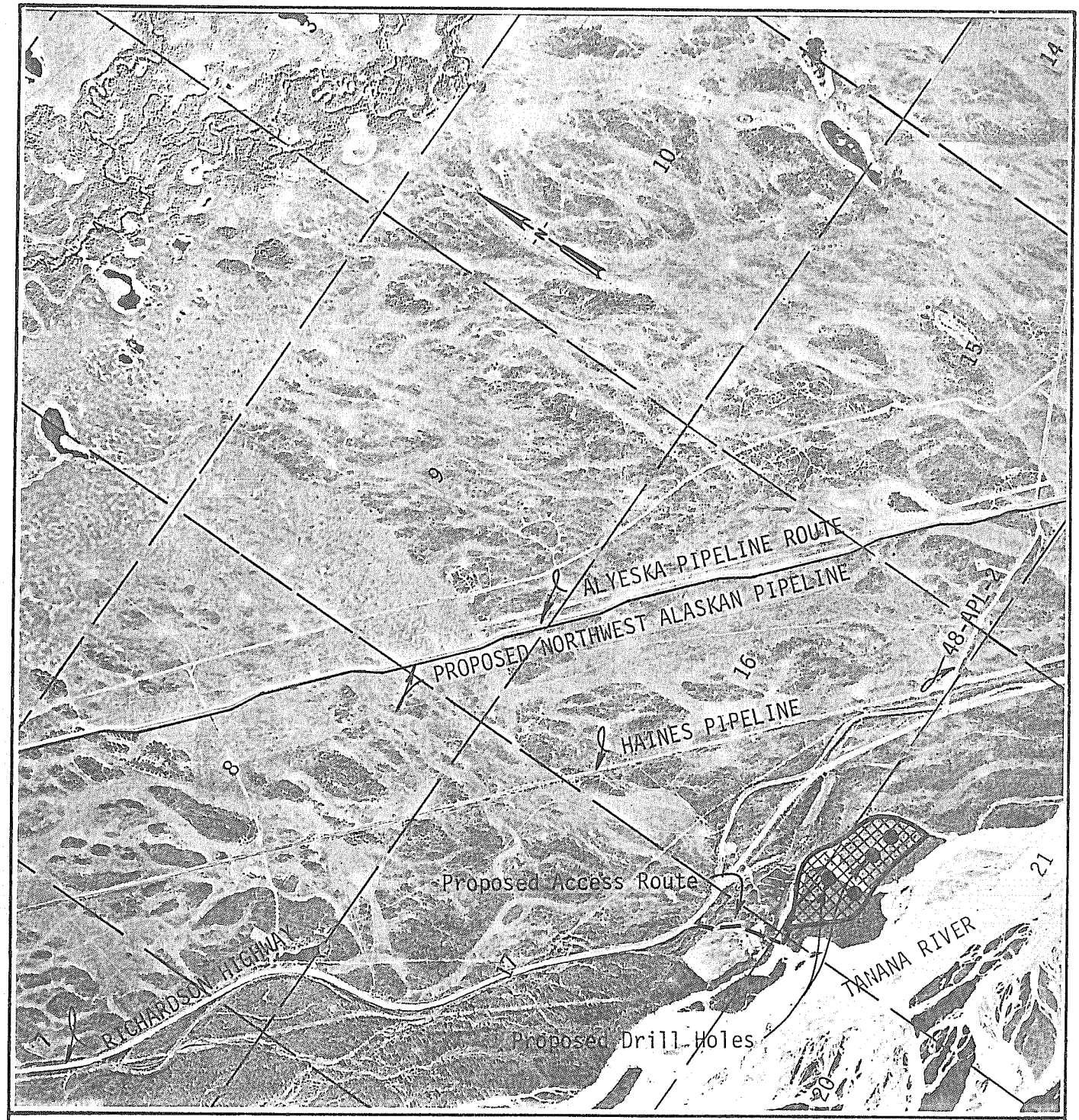
- The overburden consists of 12 to 36 inches of organics and silty sand.

Exploration Proposed

- A backhoe will excavate nine test pits, 12 to 15 feet in depth in the undisturbed areas. A drill rig will make four test borings to 50 feet in depth in the existing pit.

Proposed Access

- The equipment will use the existing road for access as shown on the Site Map.



4 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ S½ Section 16
N½ N½ Section 21
T8S, R9E, Fairbanks Meridian

EMS-94-2

November 1979 Area: 32 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 94-2

Location

- The proposed site is located on the west side of the Richardson Highway, approximately five miles south of Shaw Creek. The site lies within the S½S½ Section 16, N½N½ Section 21, T8S, R9E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low river terrace and gravel bars of the Tanana River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to eight inches in diameter, plus moss and grasses.

Apparent Overburden

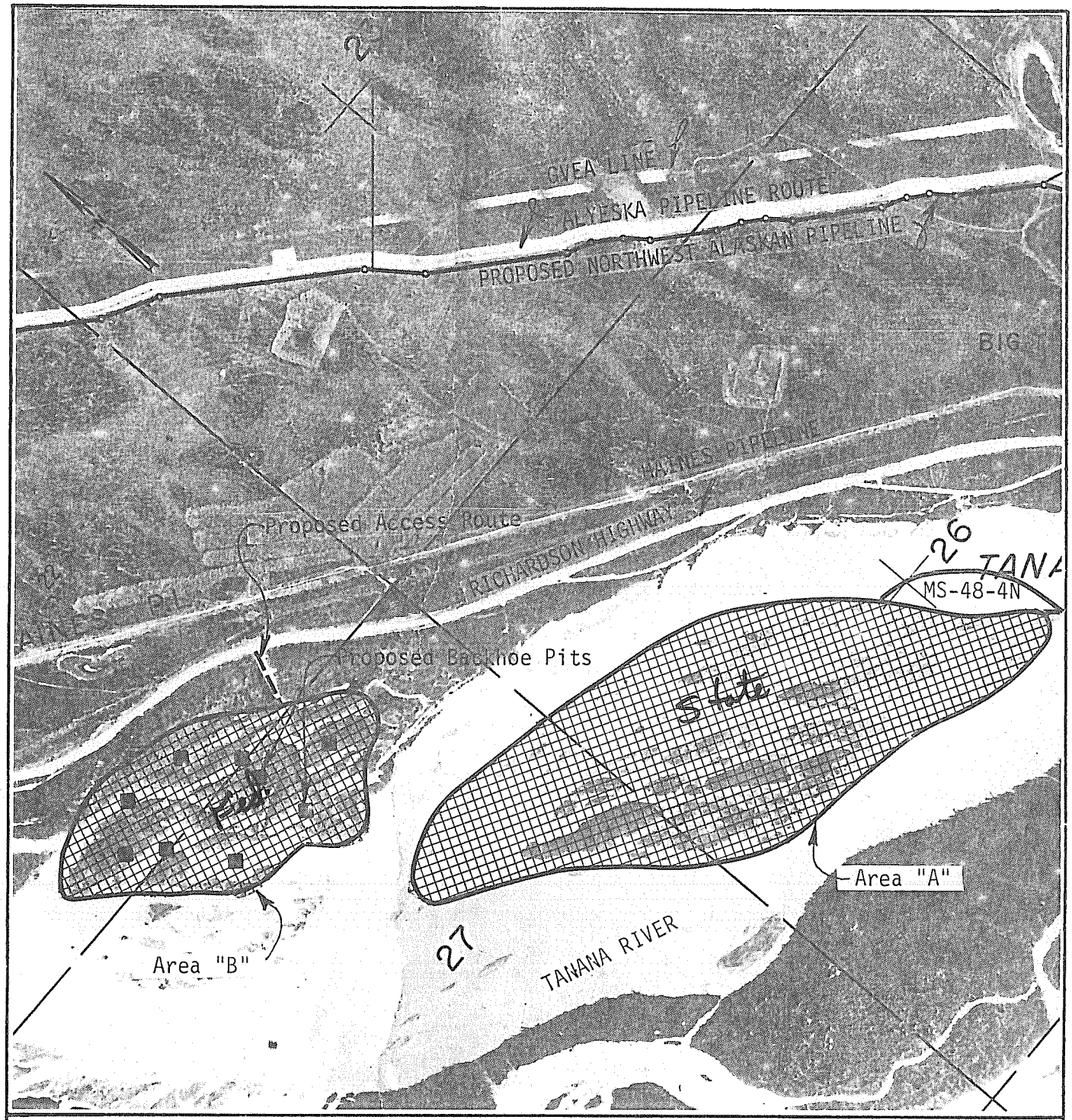
- The overburden consists of organics and silt overlying gravel.

Exploration Proposed

- A drill rig will make four test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize the existing road into the pit for access, as shown on the Site Map.



9 Backhoe Pits to 15' depth, plus Hand Samples

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ S½ Section 22
Section 26
Section 27
T8S, R9E, Fairbanks Meridian

EMS-95-1

Area; "A": 107 acres±
"B": 49 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 95-1

Location

- The proposed site is composed of two areas located 300 feet west of the Richardson Highway and approximately one mile north of the Quartz Lake Road. It lies west of the Richardson Highway within the S½S½ Section 22, Section 26, Section 27, T8S, R9E, Fairbanks Meridian.

Geology & Topography

- Area "A" of the site is situated upon the active floodplain of the Tanana River and area "B" is on a very low river terrace.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel with cobbles to six inches in diameter.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetated bars in area "A" have dense alder, willow, and poplar plus grass. In area "B" the vegetation is composed of dense alder, willow, and grass.

Apparent Overburden

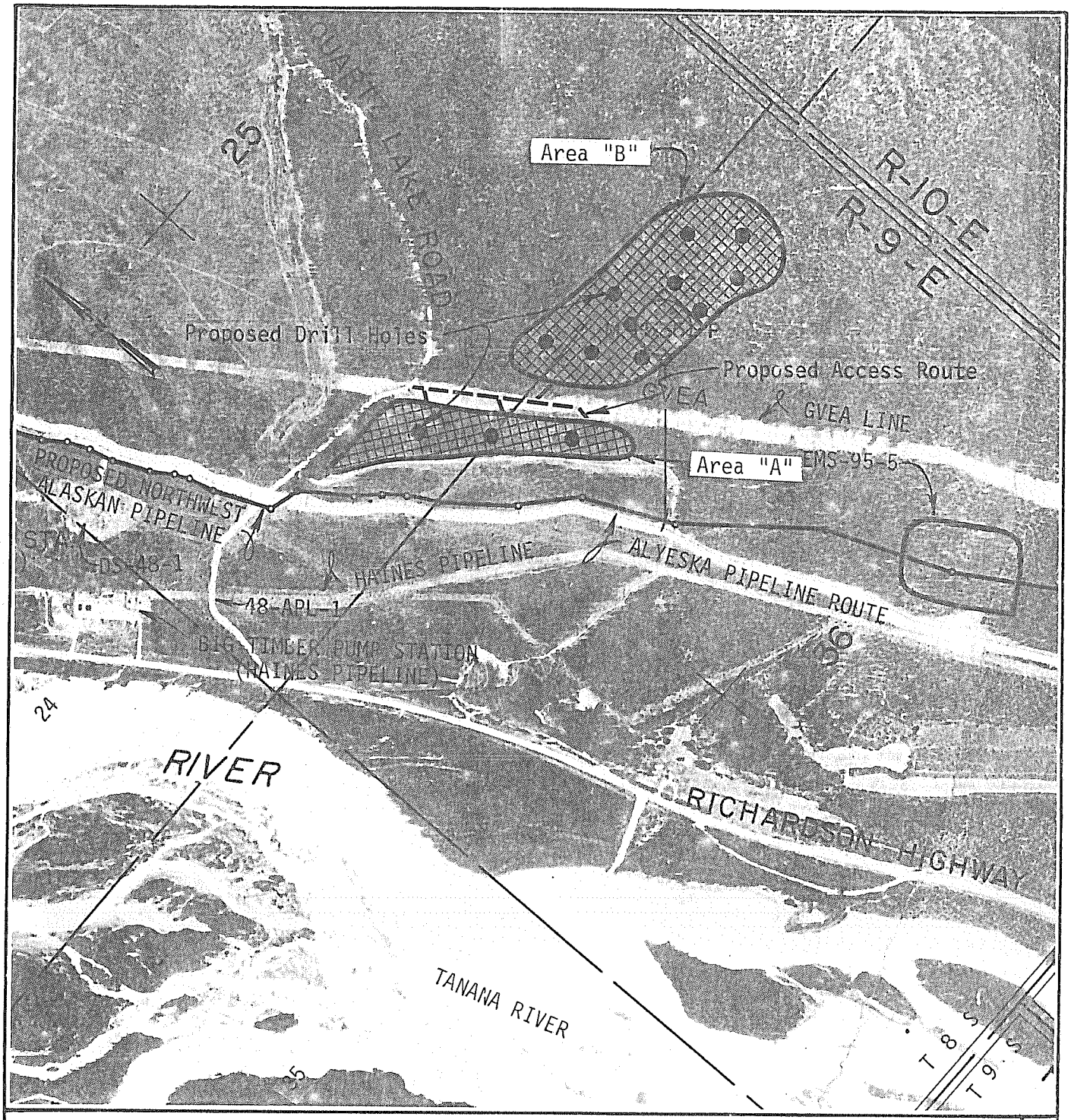
- There is no overburden in area "A". It is composed of 1 to 12 inches of organics and silt in area "B".

Exploration Proposed

- Representative hand samples will be taken from selected locations in area "A". A backhoe will excavate nine test pits in area "B", 12 to 15 feet in depth. If necessary a drill rig will make test borings to 50 feet in depth.

Proposed Access

- Access to area "A" will require helicopter assistance. The backhoe will utilize the existing road for access to area "B" as shown on the Site Map.



13 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

S½ S½ Section 25
N½ N½ Section 36
T8S, R9E, Fairbanks Meridian

EMS-95-2

Area: "A": 10 acres±
"B": 32 acres±

November 1979

0 500 1000 2000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 95-2

Location

- The proposed site is located one hundred feet south of Quartz Lake Road and is composed of two areas separated by the GVEA R.O.W. It lies east of the Alyeska Pipeline R.O.W. within the S½S½ Section 25, N½N½ Section 36, T8S, R9E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the toe and crest of a gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of dense spruce and birch, to 24 inches in diameter, plus alder, willow, grass and moss.

Apparent Overburden

- The overburden consists of 12 inches or more of organics, loess and gravelly silt.

Exploration Proposed

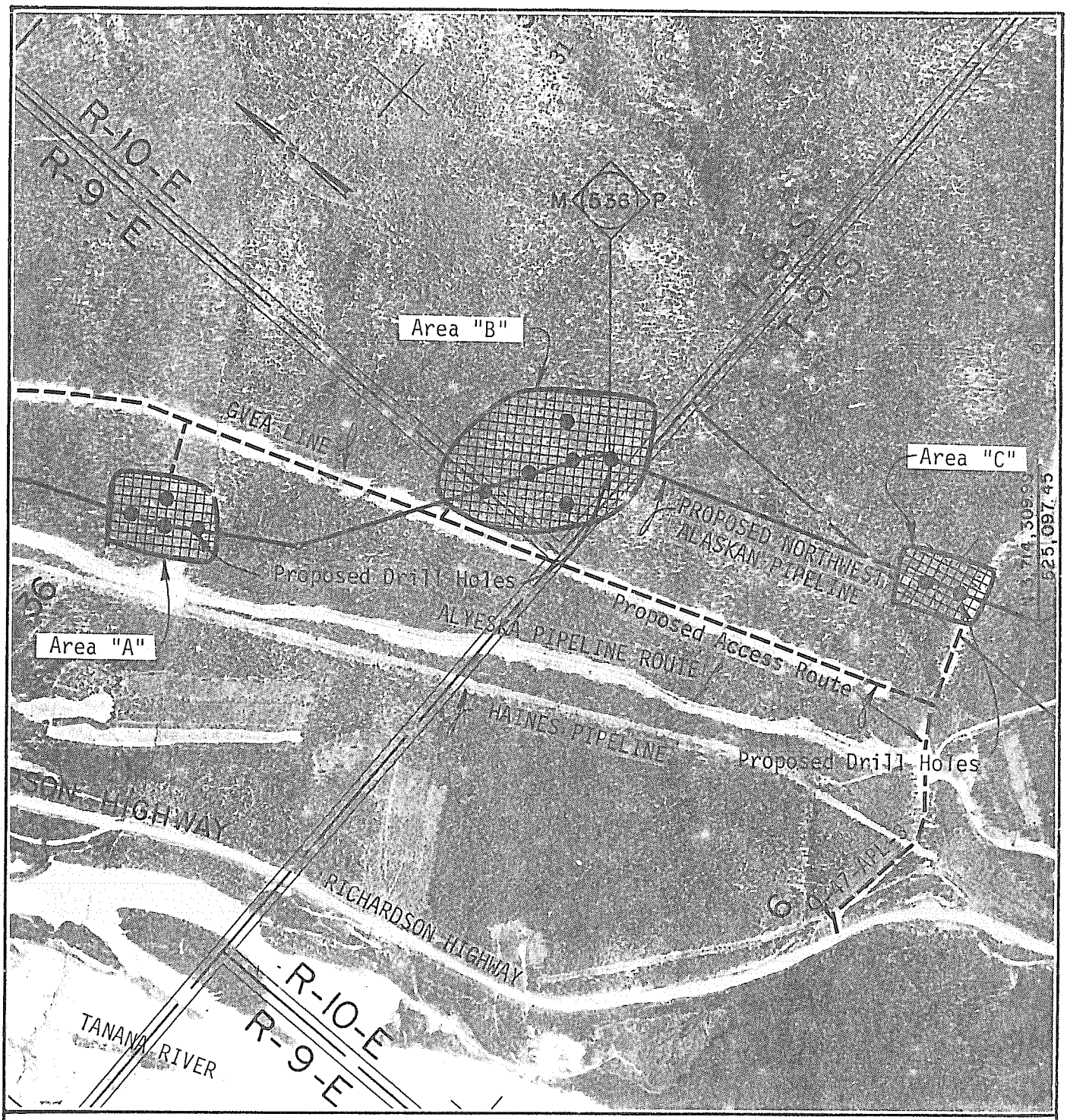
- A drill rig will make 13 test borings to 25 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the existing roads and the GVEA R.O.W for access as shown on the Site Map.

Special Note:

EMS 95-2 was selected as an alternate area to RMS 95-2. This exploration plan was prepared by using aerial photo interpretation and U.S.G.S. quadrangle maps.



12 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

E½ Section 36
T8S, R9E, Fairbanks Meridian
SW¼ Section 31
T8S, R10E, Fairbanks Meridian
NW¼ Section 5
NE¼ Section 6
T9S, R10E, Fairbanks Meridian

EMS-95-5

Area: "A": 11 acres±
"B": 24 acres±
"C": 10 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 95-5

Location

- The proposed site is composed of three areas located on either side of the GVEA R.O.W., southeast of the Tanana River and Quartz Lake Road. It lies within the E½ Section 36, T8S, R9E, SW¼ Section 31, T8S, R10E, NW¼ Section 5, NE¼ Section 6, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- Areas "A" and "B" of the site are situated upon two narrow steep sided bedrock ridges. Area "C" is located on a bedrock bluff overlooking the Tanana River. Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered schist. Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to 12 inches in diameter, plus moss and grass.

Apparent Overburden

- The overburden consists of organics and silt overlying bedrock.

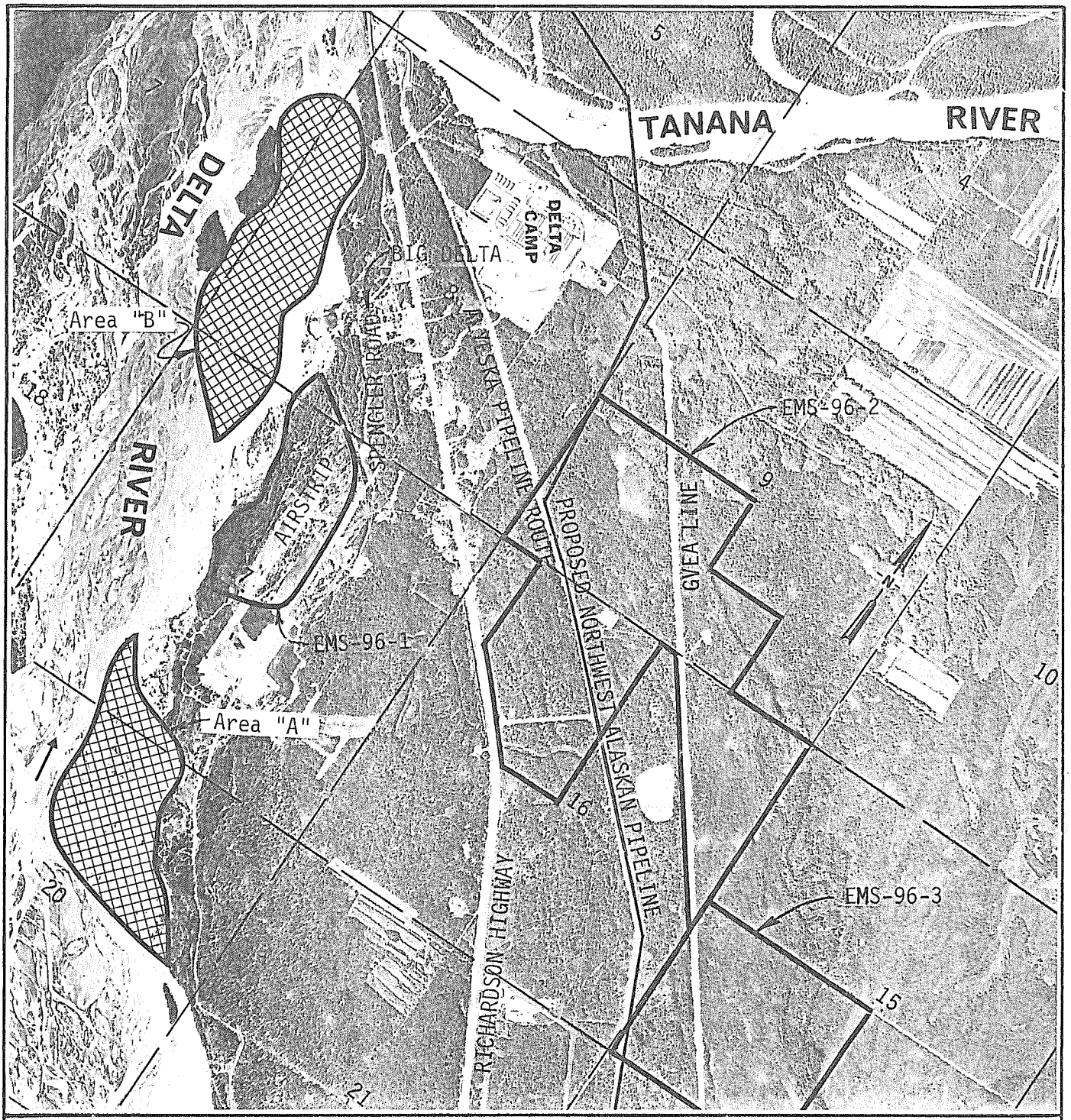
Exploration Proposed

- A drill rig will make 12 test borings up to 50 feet in depth or refusal. If necessary selected borings will be cored.

Proposed Access

- The drill rig will utilize the GVEA R.O.W. and existing access road for access as shown on the Site Map.

Special Note:
This exploration plan was prepared using aerial photo interpretation and NAPLINE centerline surveys.



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

E½ E½ Section 7
W½ Section 8
Section 17
N½ Section 20
T9S, R10E, Fairbanks Meridian

EMS-96-0

Area: "A": 107 acres+
"B": 117 acres+

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 96-0

Location

- The proposed site is composed of two areas. Area "A" is one and one-half miles south of Delta Camp and area "B" is 1500 feet west of the camp. It lies within E½E½ Section 7, W½ Section 8, Section 17, N½ Section 20, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the active braided floodplain of the Delta River and incorporates a number of gravel bars.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of small scattered patches of willow and grass, with some snags.

Apparent Overburden

- There is no overburden.

Exploration Proposed

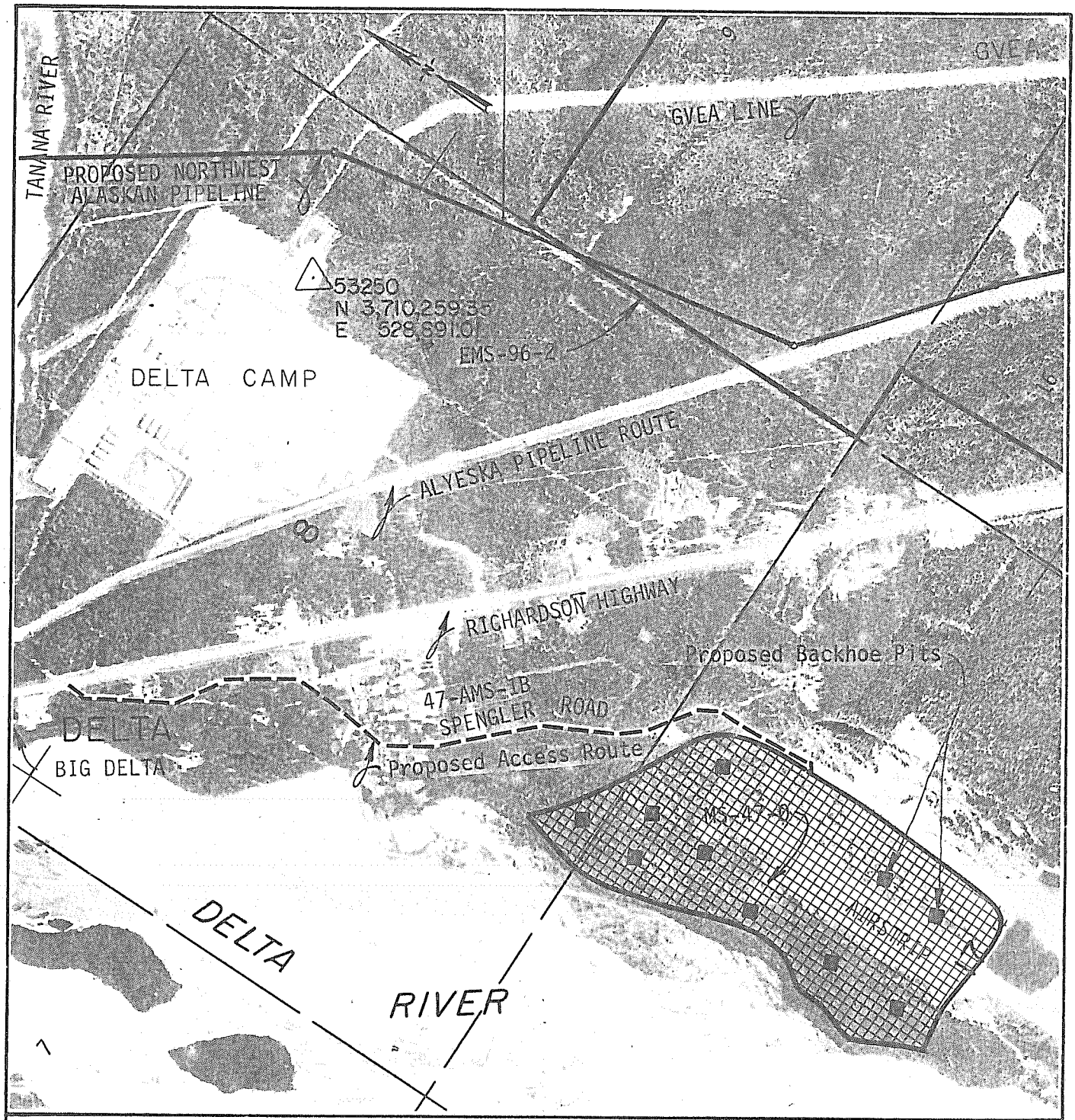
- Representative hand samples will be taken from selected locations.

Proposed Access

- Helicopter assistance will be required.

Special Note:

RMS 96-1 was divided into two sites, EMS 96-0 and EMS 96-1 for the purpose of exploration.



10 Backhoe Pits to 15' depth
EXPLORATION AREA LIES WITHIN:

0 500 1000 2000
SCALE IN FEET

S½ S½ Section 8
Section 17
T9S, R10E, Fairbanks Meridian

EMS-96-1

November 1979 Area: 75 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 96-1

Location

- The proposed site includes a small existing pit and is located approximately 3500 feet south of Delta Camp. It is on the west side of Spengler Road and is adjacent to a small air strip. It lies within the S½S½ Section 8, Section 17, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low river terrace of the Delta River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense aspen and spruce to three inches in diameter plus moss and grass.

Apparent Overburden

- The overburden is composed of 24 inches of organics and silt.

Exploration Proposed

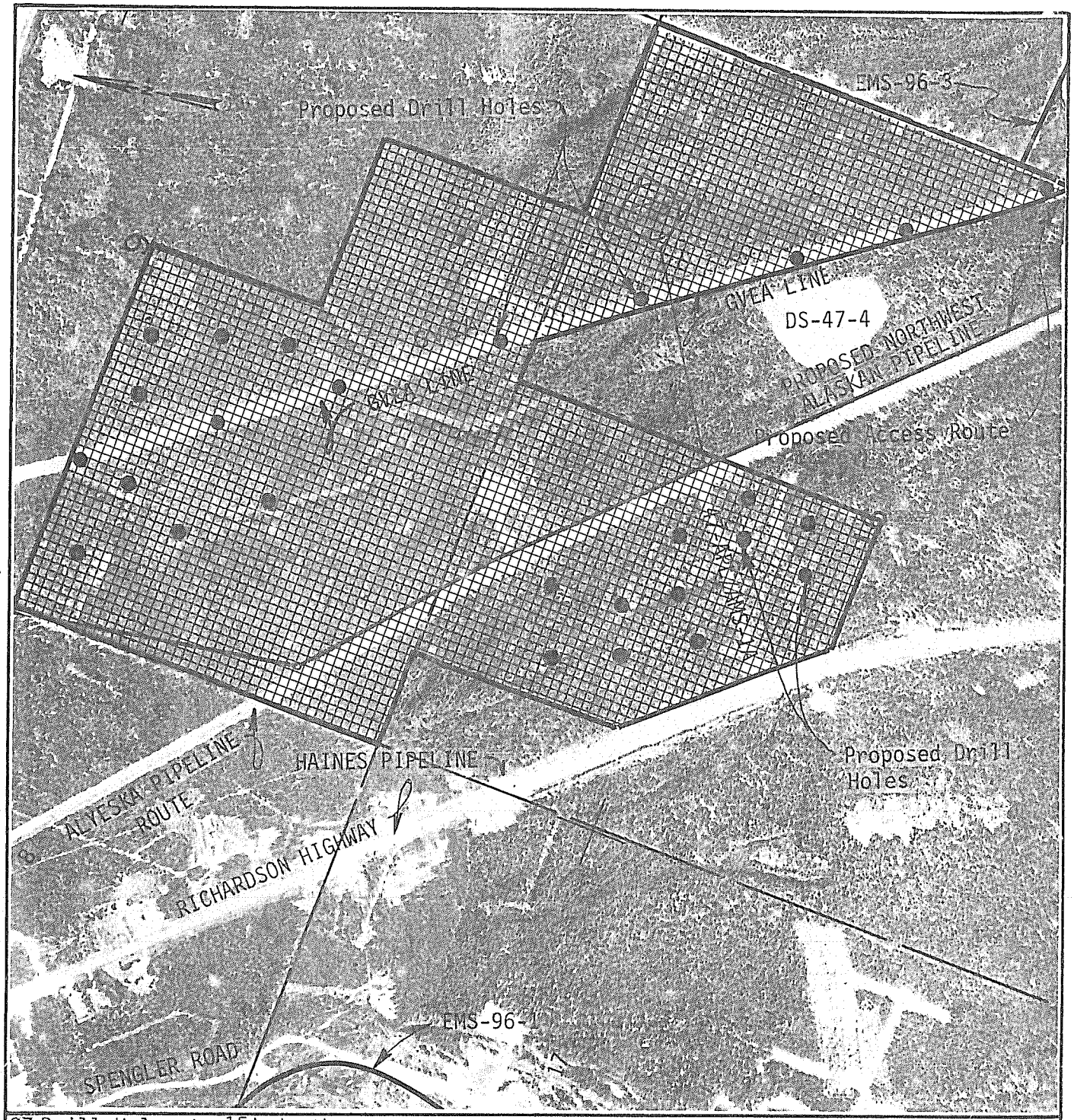
- A backhoe will excavate 10 test pits, 12 to 15 feet in depth. No test pits will be placed on the airstrip.

Proposed Access

- The backhoe will use existing roads for access as shown on the Site Map, and will utilize existing trails within the site where possible.

Special Note:

RMS 96-1 was divided into two sites, EMS 96-0 and EMS 96-1 for the purpose of exploration.



27 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 9
N½, NE¼ SE¼ Section 16
T9S, R10E, Fairbanks Meridian

EMS-96-2

November 1979 Area: 381 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 96-2

Location

- The proposed site lies adjacent to the Richardson Highway near the Delta Camp. It lies within the S½ Section 9, N½, NE¼SE¼ Section 16, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated in a fluvial eolian complex located on a fossil fan of the Delta River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sand and sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus moss and grass.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will place 8 test holes to 15 feet in depth at approximately 1000 feet intervals on the GVEA R.O.W. to determine overburden depth, plus 19 test holes as shown on the Site Map.

Proposed Access

- The equipment will utilize the Tanana Loop Road for access to the site and the Alyeska Pipeline Workpad and GVEA R.O.W. for access to the areas.

Special Note:

This exploration plan was prepared using aerial photo interpretation and existing soil boring information.

21 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

SW¼ Section 15
W½ NE¼, E½ NW¼ Section 22
T9S, R10E, Fairbanks Meridian

EMS-96-3

November 1979 Area: 287 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 96-3

Location

- The proposed site is located approximately two miles south of the lower Tanana River Crossing. It lies within the SW¼ Section 15, W½NE¼, E½NW¼ Section 22, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated in a fluvial eolian complex upon an alluvial fan of the Delta River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sand and a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

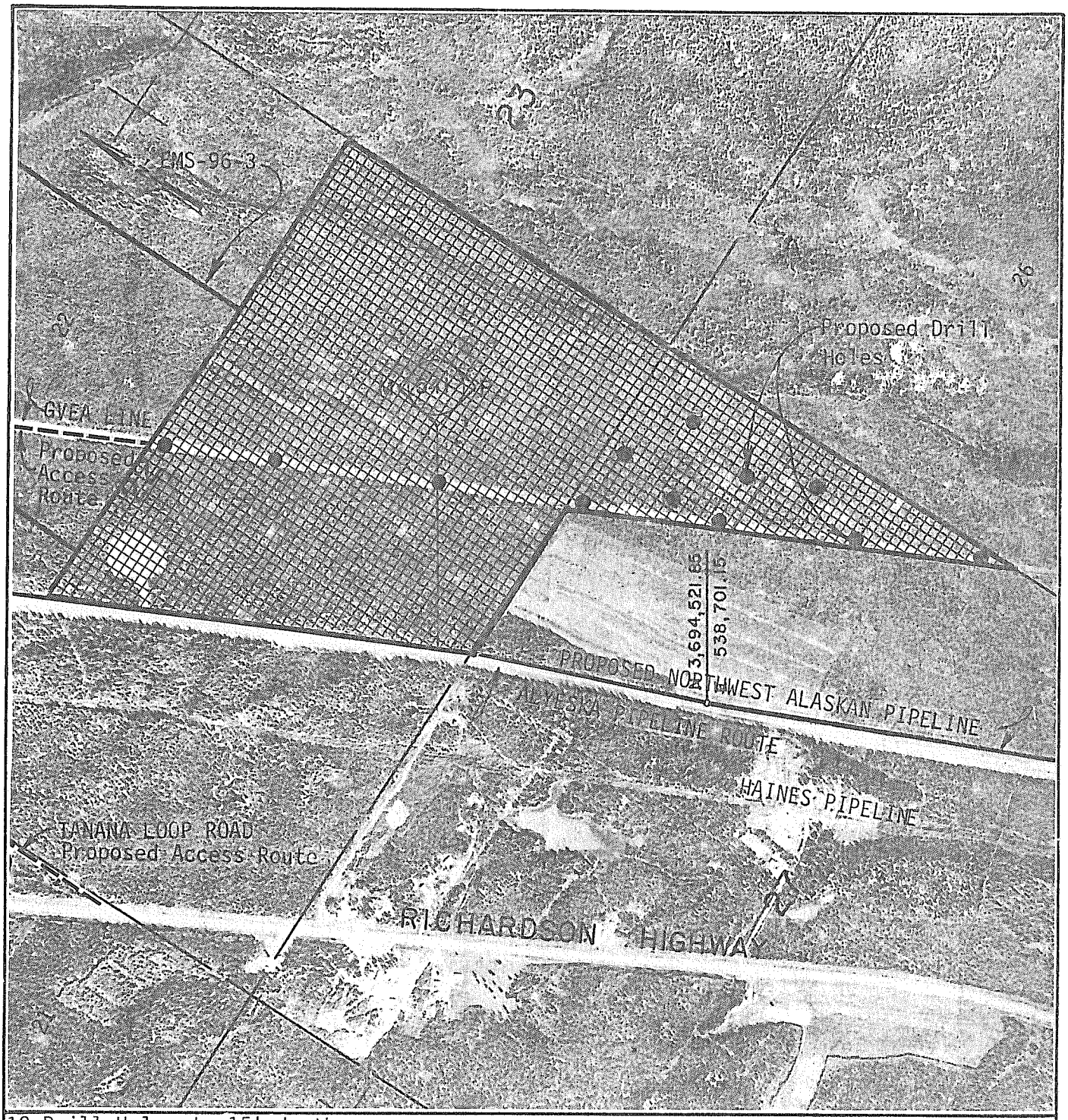
- A drill rig will make five test holes to 15 feet in depth at approximately 1000 feet intermals along the GVEA R.O.W. to determine overburden depth plus 16 test holes as shown on the Site Map.

Proposed Access

- The equipment will utilize the Tanana Loop Road and the GVEA R.O.W. for access.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.



12 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 22
E½ E½ Section 27
T9S, R10E, Fairbanks Meridian

EMS-96-4

November 1979 Area: 237 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 96-4

Location

- The proposed site is approximately three miles south of the lower Tanana River Crossing. It lies within the S½ Section 22, E½E½ Section 27, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated within a fluvial eolian complex upon a fan of the Delta River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sand and a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

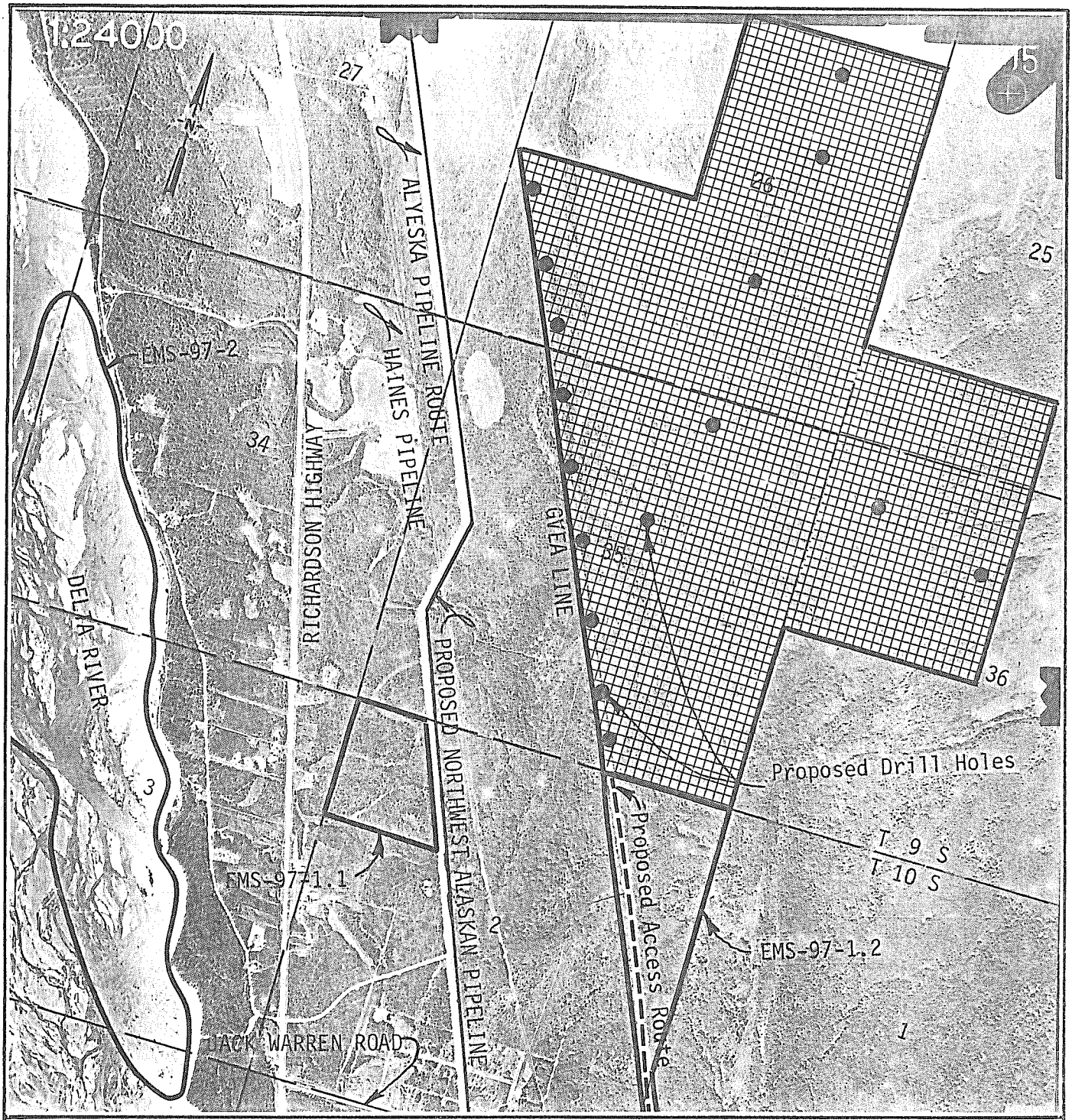
- A drill rig will make seven test holes to 15 feet in depth approximately every 1000 feet along the GVEA R.O.W. plus five test holes as shown on the Site Map.

Proposed Access

- The equipment will utilize the Tanana Loop Road and the GVEA R.O.W. for access.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.



16 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ SW¼ Section 25
E½, SW¼ Section 26
Section 35
NW¼ Section 36
T9S, R10E, Fairbanks Meridian

EMS-97-1

November 1979 Area: 1061 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 97-1

Location

- The proposed site is located on the east side of the GVEA R.O.W. approximately one mile north of Jack Warren Road. It lies within the S½SW¼ Section 25, E½,SW¼ Section 26, Section 35, NW¼ Section 36, T9S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated within a fluvial eolian complex upon a fan of the Delta River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sand and sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

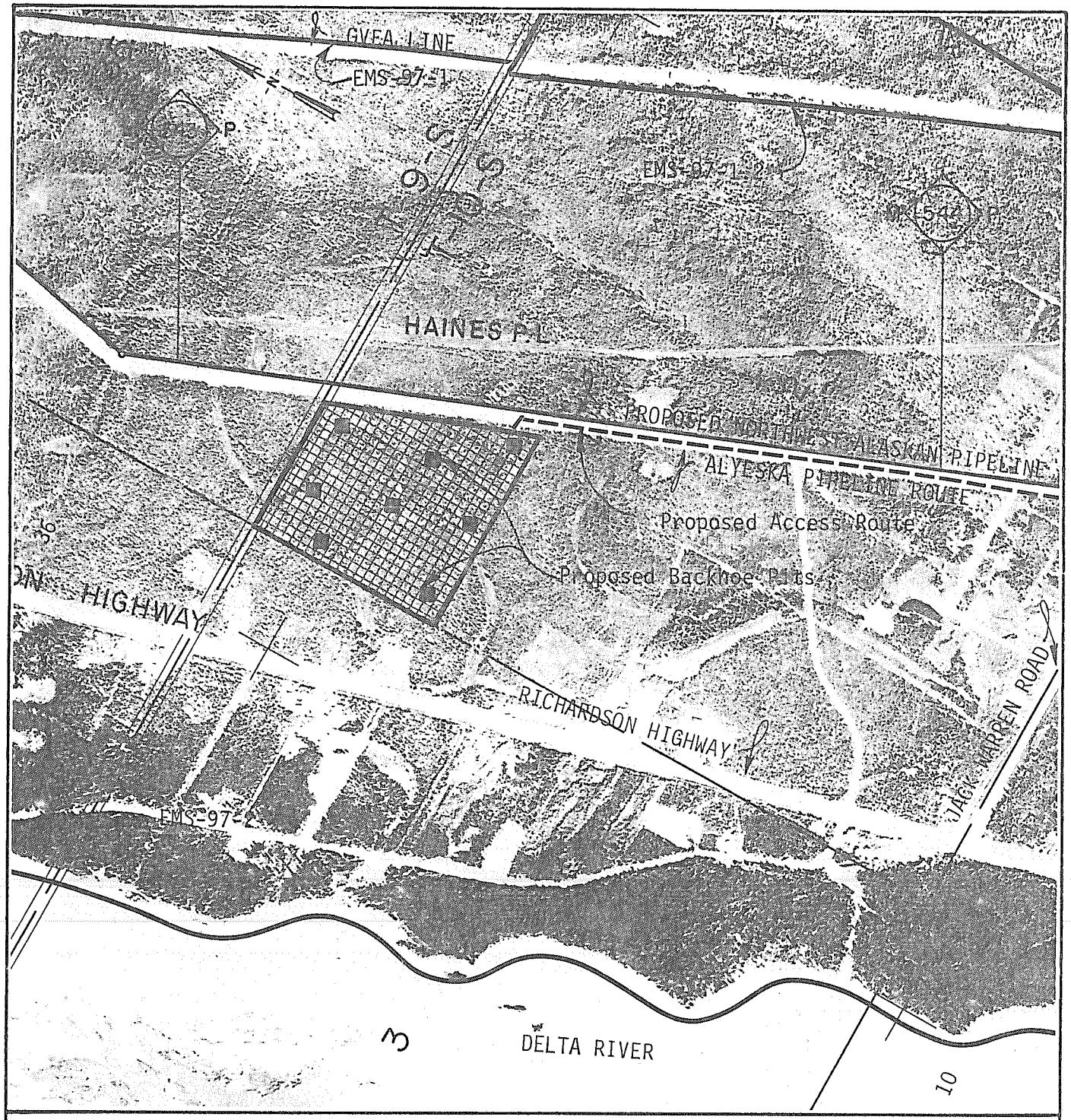
- A drill rig will place 16 test holes to 15 feet in depth, every 1000 feet along the GVEA R.O.W. and along the existing trail as shown on the Site Map.

Proposed Access

- The equipment will utilize the GVEA R.O.W. for access.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.



8 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

N½ NW¼ Section 2
T10S, R10E, Fairbanks Meridian

EMS-97-1.1

November 1979 Area: 35 acres±

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 97-1.1

Location

- The proposed site is adjacent to the Alyeska Pipeline Workpad and is located approximately one mile north of Jack Warren Road. It lies within the N½NW¼ Section 2, T10S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low river terrace of the Delta River. It lies in an area of fossil meander channels.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a fluvial coarse sandy gravel with cobbles.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce plus grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

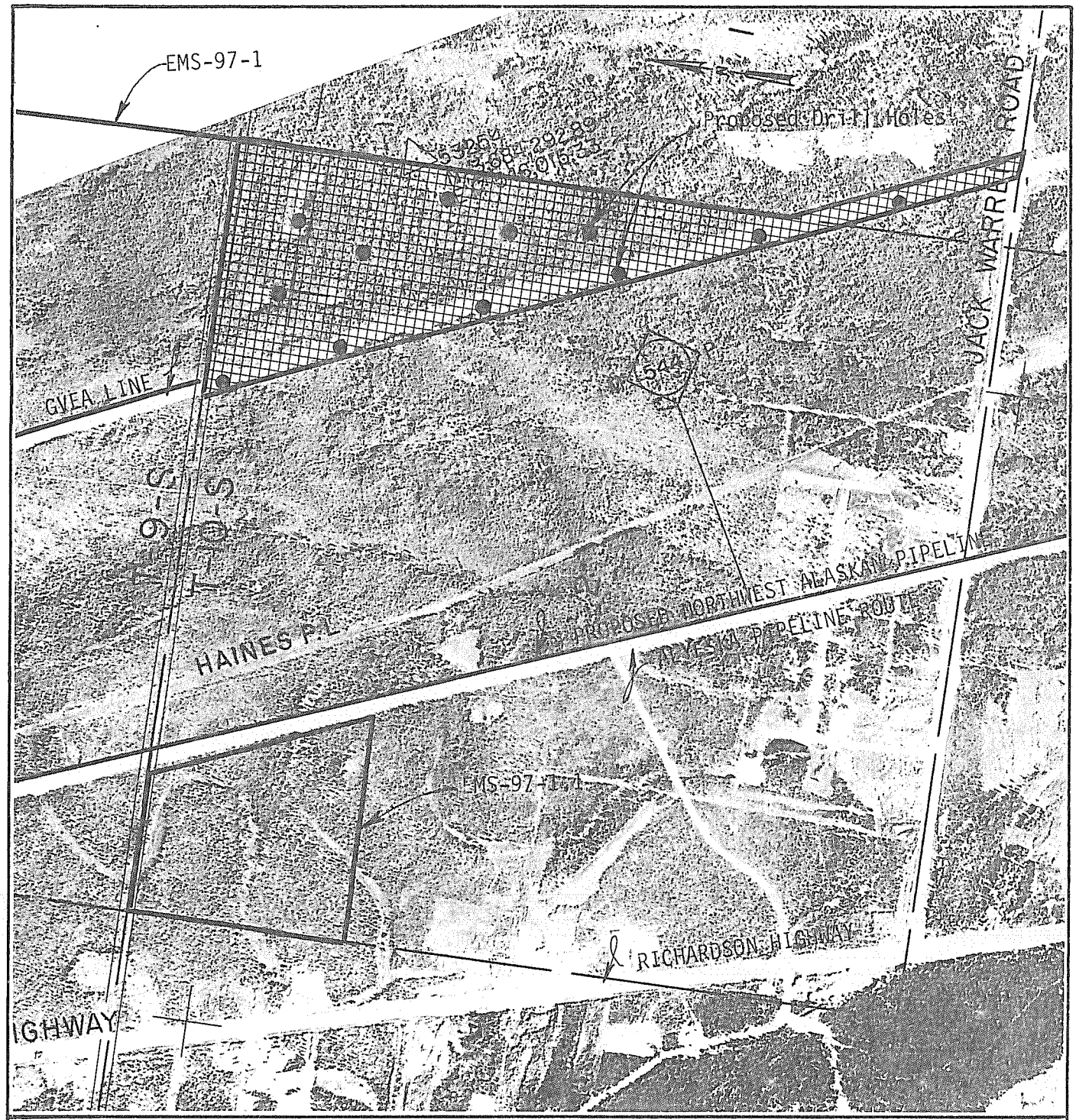
- A backhoe will excavate eight test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Workpad for access, as shown on the Site Map.

Special Note:

This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.



12 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

NE¼, E½ SE¼ Section 2
W½ SW¼ SW¼ Section 1
T10S, R10E, Fairbanks Meridian

EMS-97-1.2

November 1979 Area: 87 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS-97-1.2

Location

- The proposed site is located on and adjacent to the GVEA R.O.W. near Jack Warren Road. It lies within the NE¼ , E½SE¼ Section 2, W½SW¼SW¼ Section 1, T10S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated in a fluvial eolian complex upon a fan of the Delta River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel and sand.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus moss and grasses.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

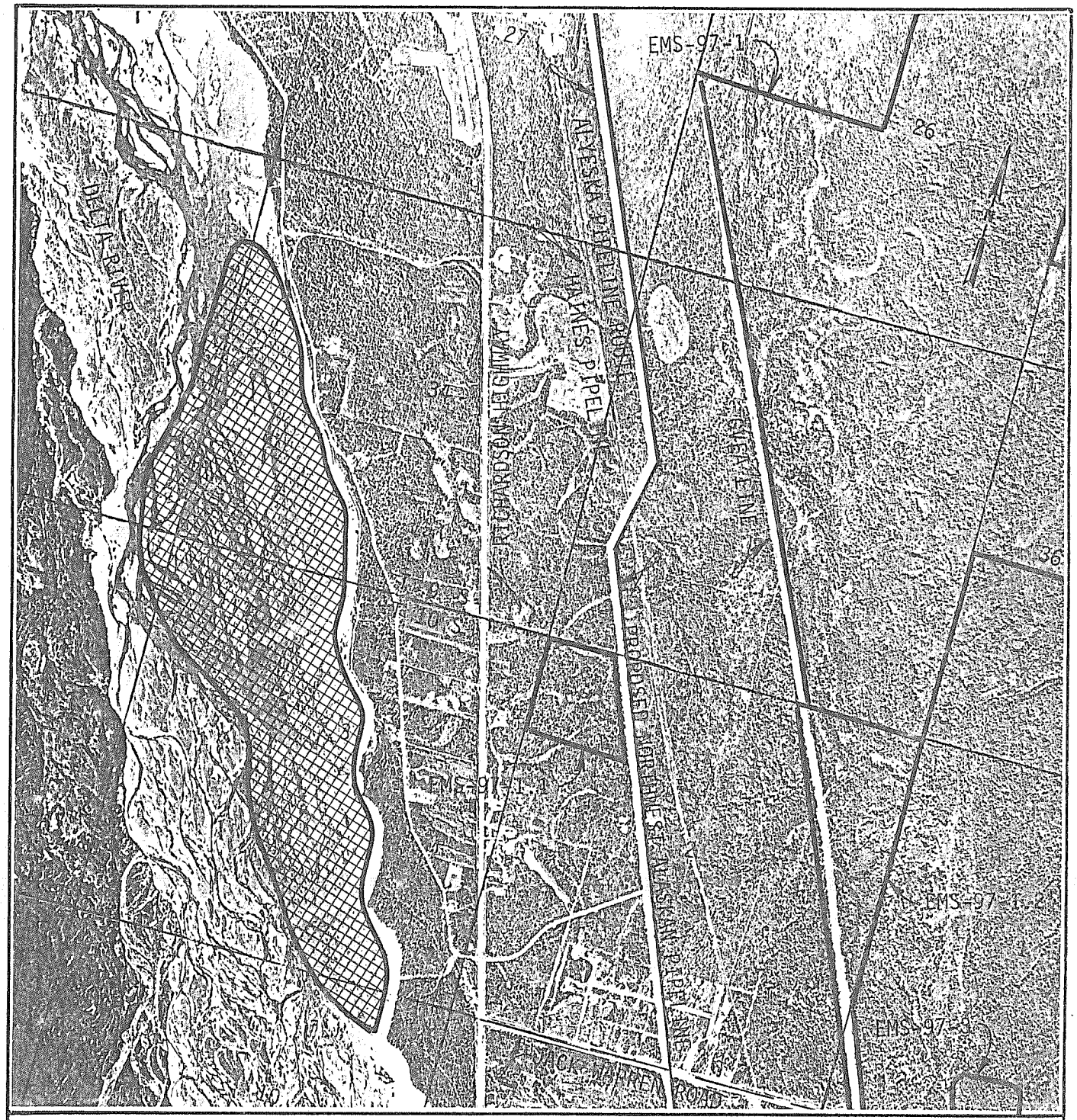
- A drill rig will make six test holes to 15 feet in depth every 1000 feet along the GVEA R.O.W., plus an additional six test holes will be placed as shown on the Site Map.

Proposed Access

- The GVEA R.O.W. will be utilized for access.

Special Note:

- This exploration plan was prepared by using aerial photo interpretation and existing soil boring information.



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

E½ E½ Section 33
W½ Section 34
T9S, R10E, Fairbanks Meridian
Section 3
NE¼ Section 4
NE¼ Section 10
T10S, R10E, Fairbanks Meridian

EMS-97-2

November 1979 Area: 402 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 97-2

Location

- The proposed site is an existing pit located 1000 feet west of the intersection of Jack Warren Road and the Richardson Highway, and two miles north of Delta Junction. It lies within the E½E½ Section 33, W½ Section 34, T9S, R10E, Section 3, NE¼ Section 4, NE¼ Section 10, T10S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon the active braided floodplain of the Delta River and incorporates a number of gravel bars.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a coarse sandy gravel, with some cobbles.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- There is no vegetation. The site is convered by a large number of snags.

Apparent Overburden

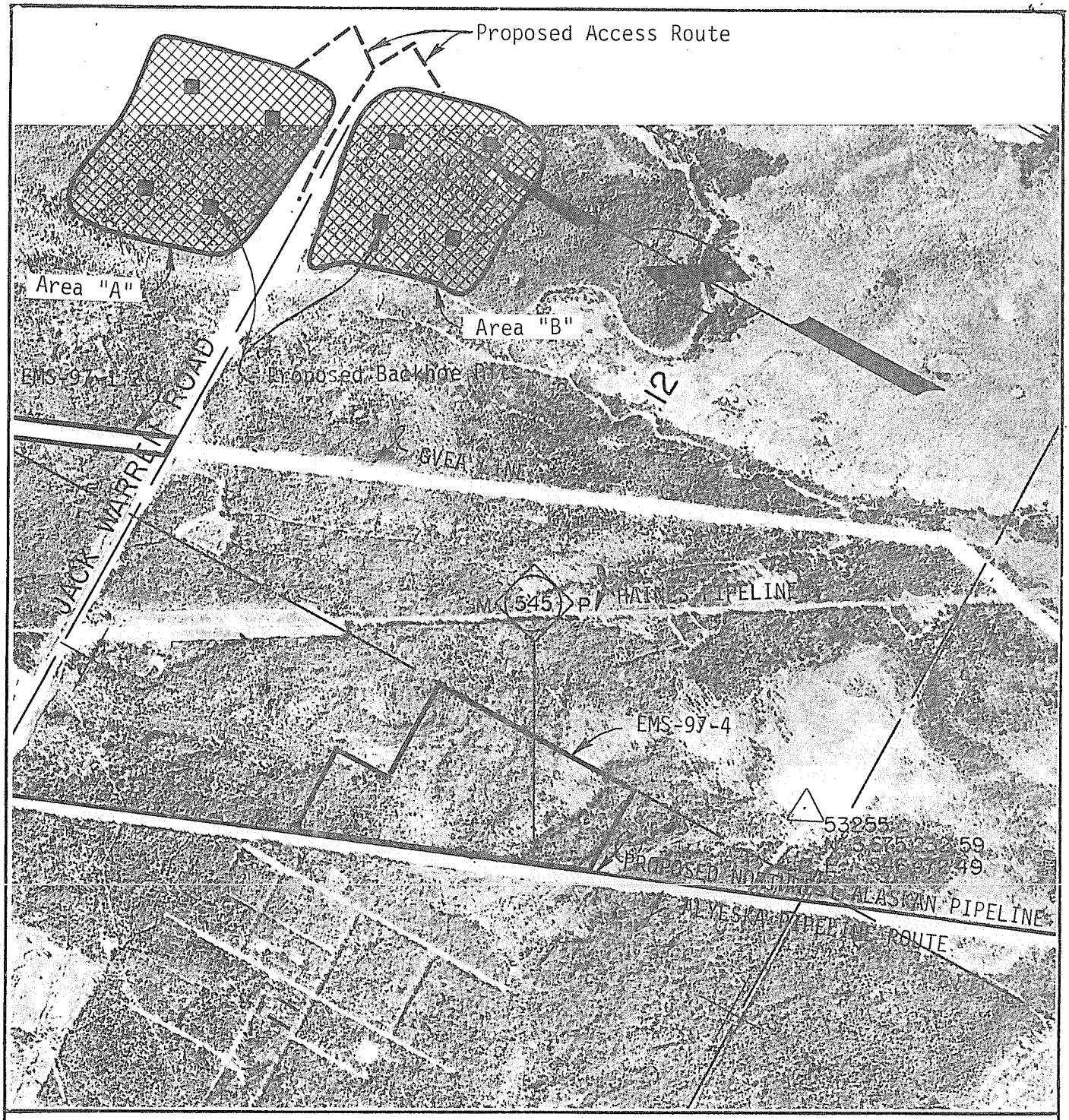
- There is no overburden.

Exploration Proposed

- Representative hand samples will be taken from selected locations.

Proposed Access

- Helicopter assistance will be required.



8 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

S½ Section 1
N½ N½ Section 12
T10S, R10E, Fairbanks Meridian

EMS-97-3

Area: "A": 34 acres±
"B": 32 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 97-3

Location

- The proposed site is composed of two areas located one and one-quarter miles east of the intersection of Jack Warren Road and the Richardson Highway. It lies within the S½ of Section 1, N½N½ Section 12, T10S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is separated by a road cut and is situated upon the terminal glacial moraine of Delta Glaciation, and lies on a steep bluff overlooking floodplain deposits of the Delta River. Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a glacial fluvial deposit consisting of a coarse sandy gravel with cobbles and boulders to 24 inches in diameter. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter, plus moss and grasses.

Apparent Overburden

- The overburden consists of 12 inches of organics and silt.

Exploration Proposed

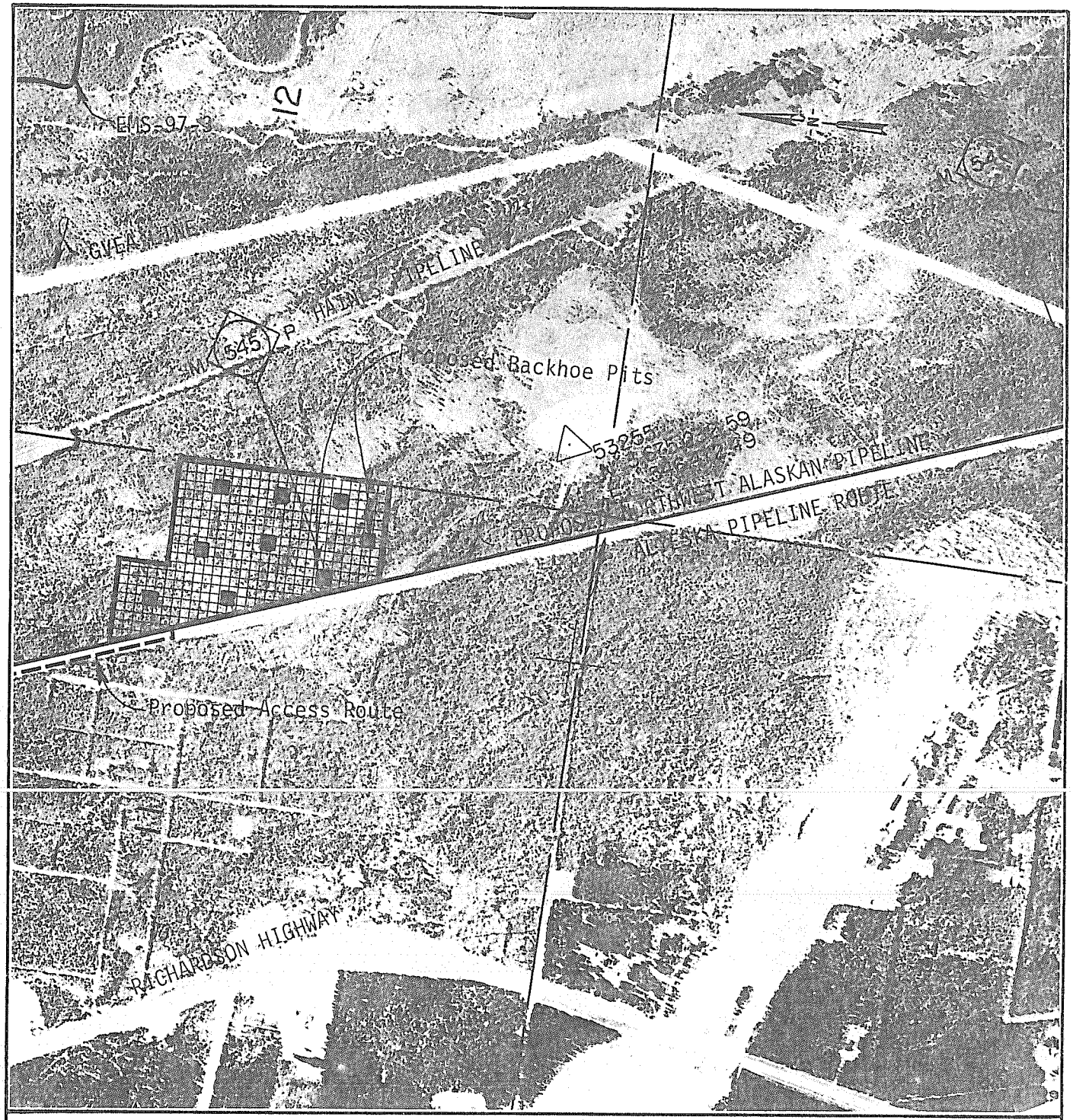
- A backhoe will excavate eight test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize Jack Warren Road for access as shown on the Site Map.

Special Note:

This exploration plan was prepared using aerial photo interpretations, geologic literature research, and visual inspection from public roads.



9 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 500 1000 2000

SCALE IN FEET

NE¼ SE¼, SE¼ NE¼ Section 11
T10S, R10E, Fairbanks Meridian

EMS-97-4

November 1979 Area: 39 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

EMS 97-4

Location

- The proposed site is located adjacent to the Alyeska Pipeline Workpad and lies approximately one mile north of Delta Junction. It lies within the SE¼NE¼, NE¼SE¼, Section 11, T10S, R10E, Fairbanks Meridian.

Geology & Topography

- The site is situated upon a low river terrace of the Delta River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a fluvial deposit and consists of a sandy gravel with cobbles.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar plus grass and moss.

Apparent Overburden

- The overburden consists of organics and silts.

Exploration Proposed

- A backhoe will excavate nine test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the Alyeska Pipeline Workpad for access, from Jack Warren Road.

Special Note:

This exploration plan was prepared using aerial photo interpretation and existing soil boring information.

7 Drill Holes to 20' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

Section 36
T3S, R3E, Fairbanks Meridian

ERMS-1-0

November 1979 Area: 52 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLANS

ERMS 1-0

Location

- The proposed site is an existing pit located approximately two miles south of Eielson Air Force Base and 300 feet east of the Richardson Highway. It lies within that part of Section 36, T3S, R3E, Fairbanks Meridian lying east of the Richardson Highway R.O.W.

Geology & Topography

- The site is on an old floodplain of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to three inches in diameter, plus moss. The already cleared southern area of the pit has a thick cover of grass.

Apparent Overburden

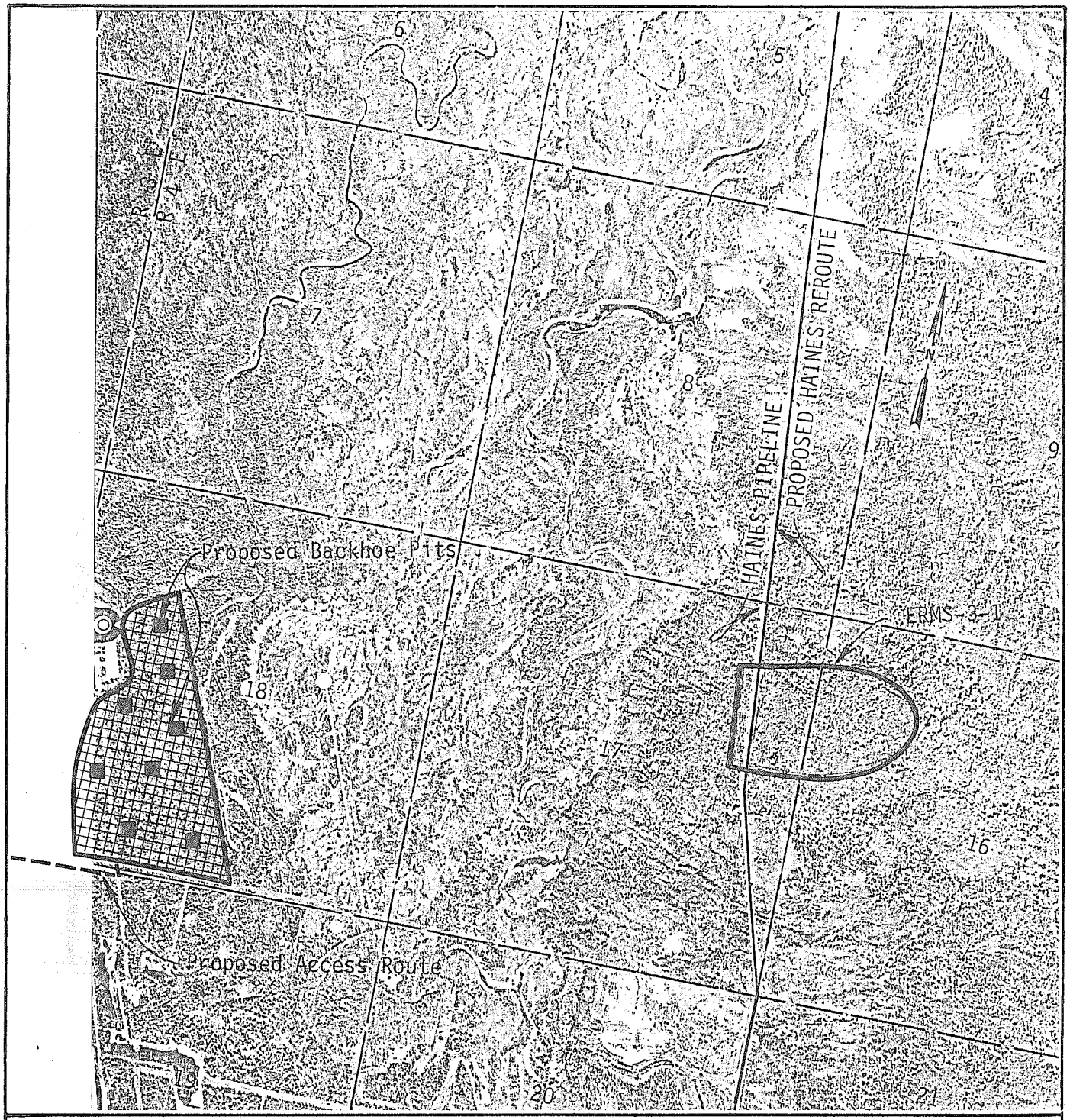
- The overburden consists of 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make seven borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.



8 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

Section 18
T4S, R4E, Fairbanks Meridian

ERMS-3-0

November 1979 Area: 119 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 3-0

Location

- The proposed site is adjacent to an existing pit and lies approximately 500 feet east of the Richardson Highway and one mile north of Johnson Road. It lies within Section 18, T4S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is upon a lower terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to eight inches in diameter with a ground cover of moss and grass.

Apparent Overburden

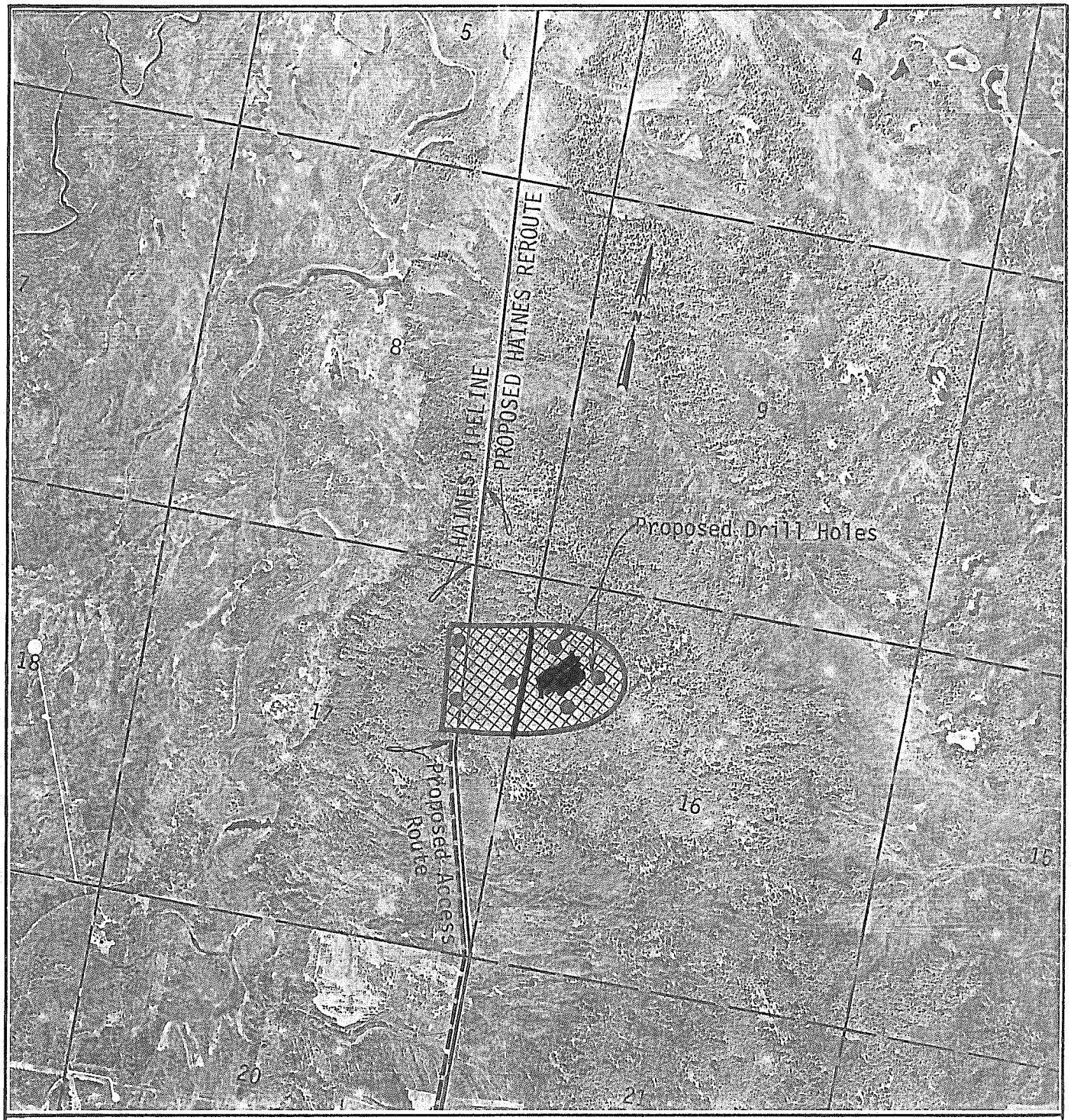
- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A backhoe will excavate eight test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing road for access as shown on the Site Map.



6 Drill Holes to 40' depth
EXPLORATION AREA LIES WITHIN:

W½ Section 16
E½ Section 17
T4S, R4E, Fairbanks Meridian

ERMS-3-1

0 1000 2000 4000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

November 1979 Area: 87 acres±

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLANS

ERMS 3-1

Location

- The proposed site is located on the Haines Pipeline R.O.W. and is approximately one and one-half miles north of Johnson Road. It lies within the E½ Section 17, W½ Section 16, T4S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a gently sloping bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to eight inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

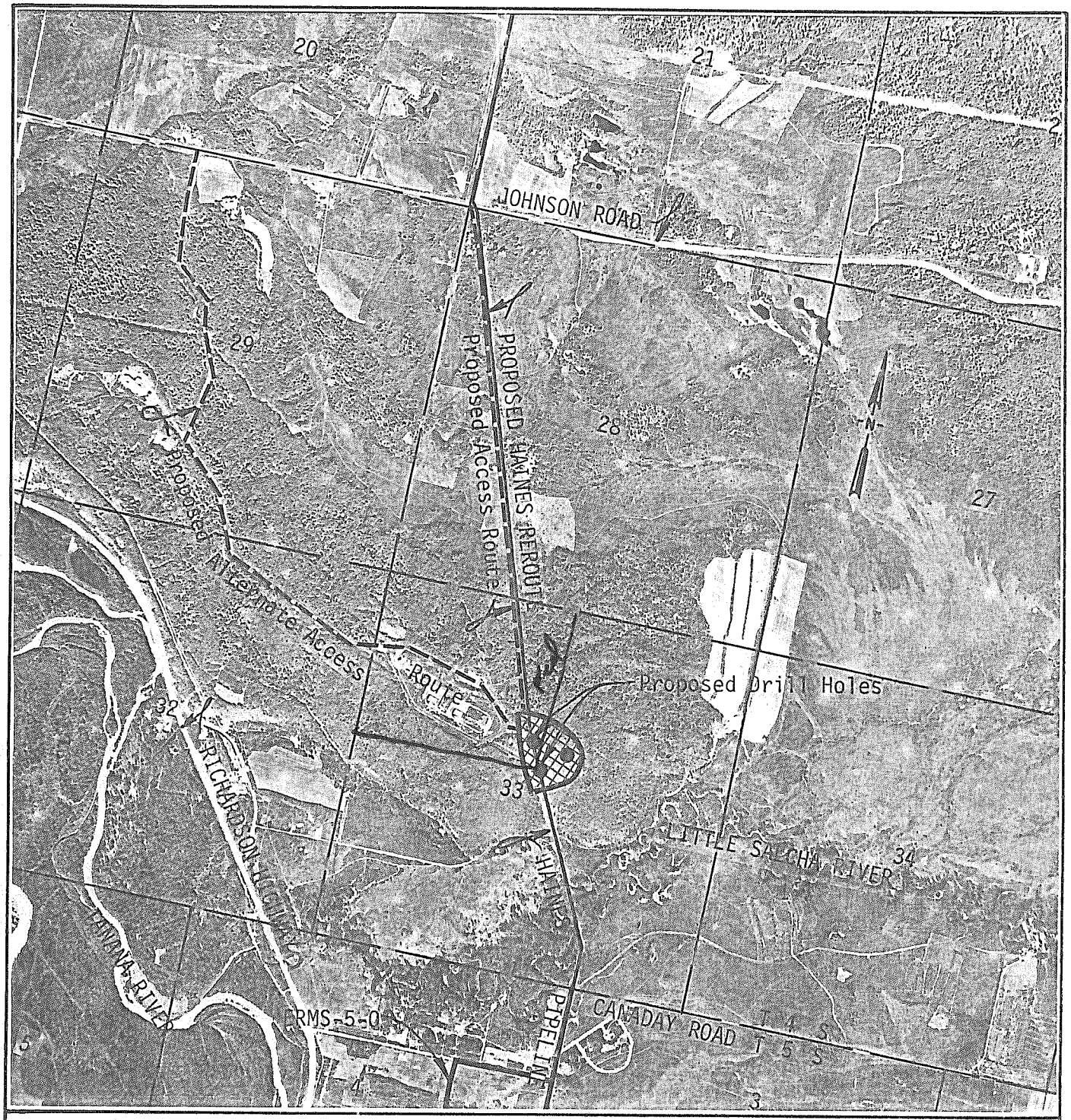
- A drill rig will make six test borings to 40 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. from Johnson Road for access as shown on the Site Map.

Special Note:

No access permits were acquired so no on-site investigations were conducted. This exploration plan was developed using aerial photo interpretation, U.S.G.S. Topographic Maps and aerial reconnaissance.



3 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

Section 33
T4S, R4E, Fairbanks Meridian

ERMS-4-1

November 1979 Area: 18 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

access Fed. aid
NW¼ Sec. 33

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 4-1

Location

- The proposed site is located on the Haines Pipeline R.O.W. approximately one and one-half miles south of Johnson Road. It lies within Section 33, T4S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a steeply sloping bedrock ridge overlooking the Little Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to eight inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

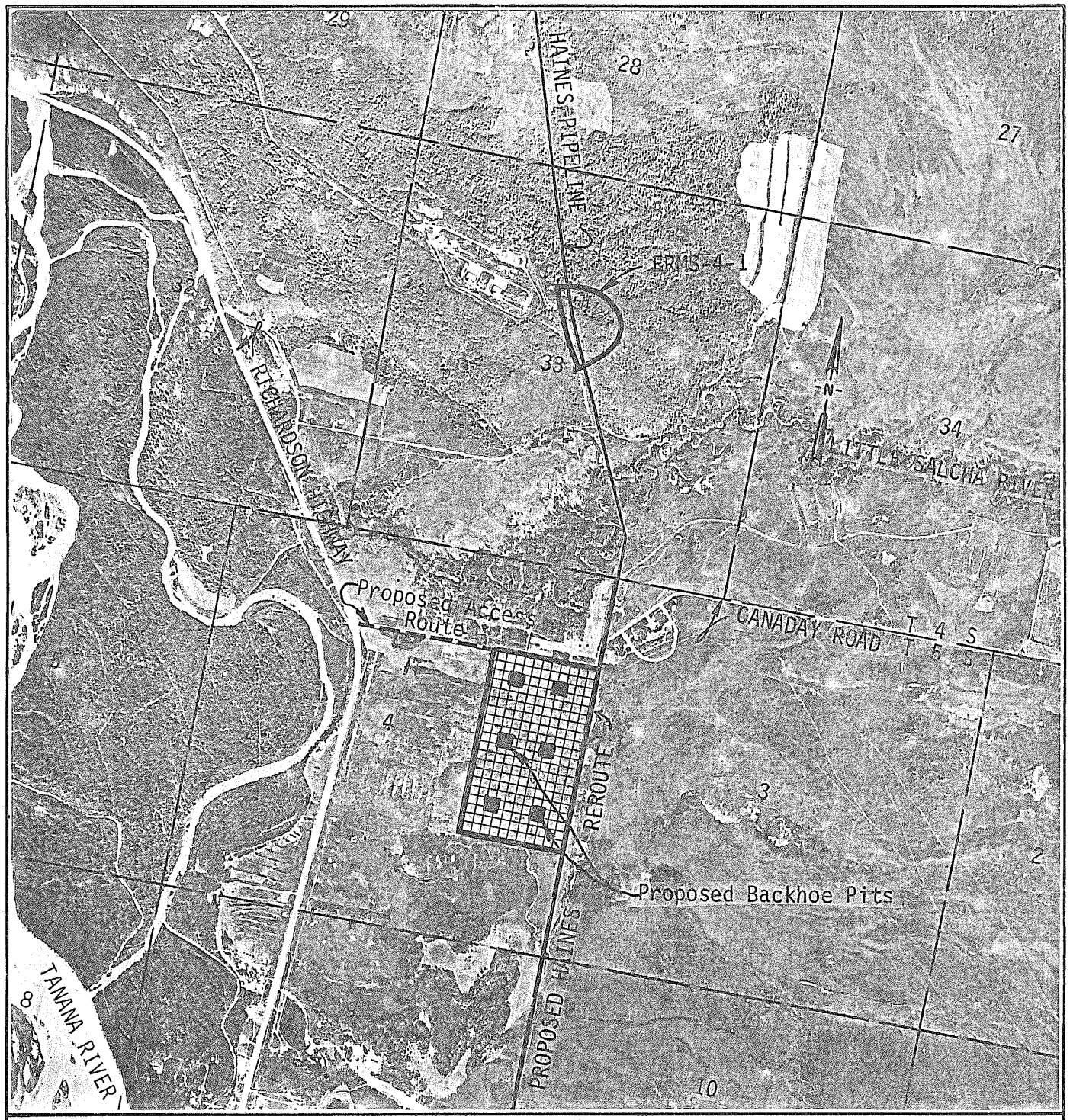
- A drill rig will make three test borings to 50 feet in depth.

Proposed Access

- The drill rig will utilize the existing roads and the Haines Pipeline R.O.W. for access. Two possible access routes are shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exporation plan was developed using aerial photo interpretation, U.S.G.S. Topographic Maps, and aerial reconnaissance.



6 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

SE¼ NE¼ & NE¼ SE¼ Section 4
T5S, R4E, Fairbanks Meridian

ERMS-5-0

November 1979 Area: 83 acres±

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Rv 1.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 5-0

Location

- The proposed site is approximately 1000 feet south of the Little Salcha River and 2000 feet east of the Richardson Highway. It lies within the SE¼NE¼ and the NE¼SE¼ Section 4, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a lower terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for work-pad construction and select backfill can be produced from this site.

Vegetation Cover

- The site lies in a cleared field and the vegetation is composed of grasses and small poplar.

Apparent Overburden

- The overburden consists of organics and silt plus slash berms from clearing.

Exploration Proposed

- A backhoe will excavate six test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.

6 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ SE¼ Section 9
T5S, R4E, Fairbanks Meridian

ERMS-6-0

November 1979 Area: 41 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 6-0

Location

- The proposed site is approximately one and one-half miles north of the Salcha River and 700 feet west of the Haines Pipeline R.O.W.. It lies within the S½SE¼ Section 9, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a lower terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of grasses and moss and small poplar to one inch in diameter.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

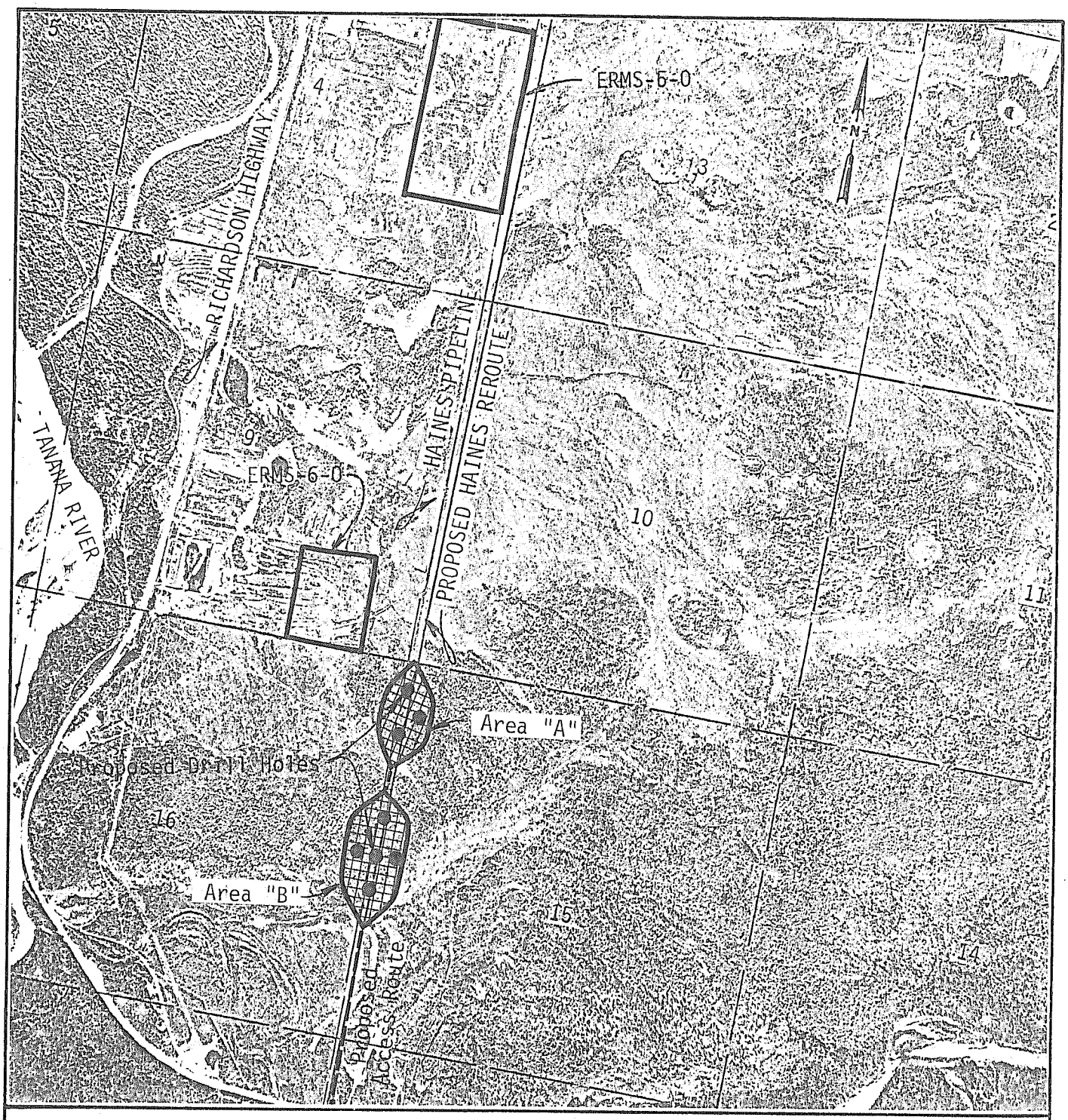
- A drill rig will make six test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the route shown on the Site Map for access.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



8 Drill Holes to 40' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ W½ Section 15
E½ E½ Section 16
T5S, R4E, Fairbanks Meridian

ERMS-6-1

Area: "A": 16 acres±
"B": 23 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 6-1

Location

- The proposed site includes two areas located on the Haines Pipeline R.O.W. approximately one and one-half miles north of the Salcha River. It lies within the W½W½ Section 15, E½E½ Section 16, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on two small bedrock knobs lying immediately to the west of the Salcha Bluffs.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to six inches in diameter with a ground cover of grass and mosses.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make eight test borings to 40 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topography Maps and aerial reconnaissance.

9 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

NE¼ NE¼ Section 21
NW¼ NW¼ Section 22
T5S, R4E, Fairbanks Meridian

ERMS-7-0

Area: "A": 30 acres±
"B": 27 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 7-0

Location

- The proposed site includes an existing pit and is 300 feet north of the Richardson Highway at a point approximately one-quarter mile west of the Salcha River Bridge. It lies within the NE¼NE¼ Section 21, NW¼NW¼ Section 22, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

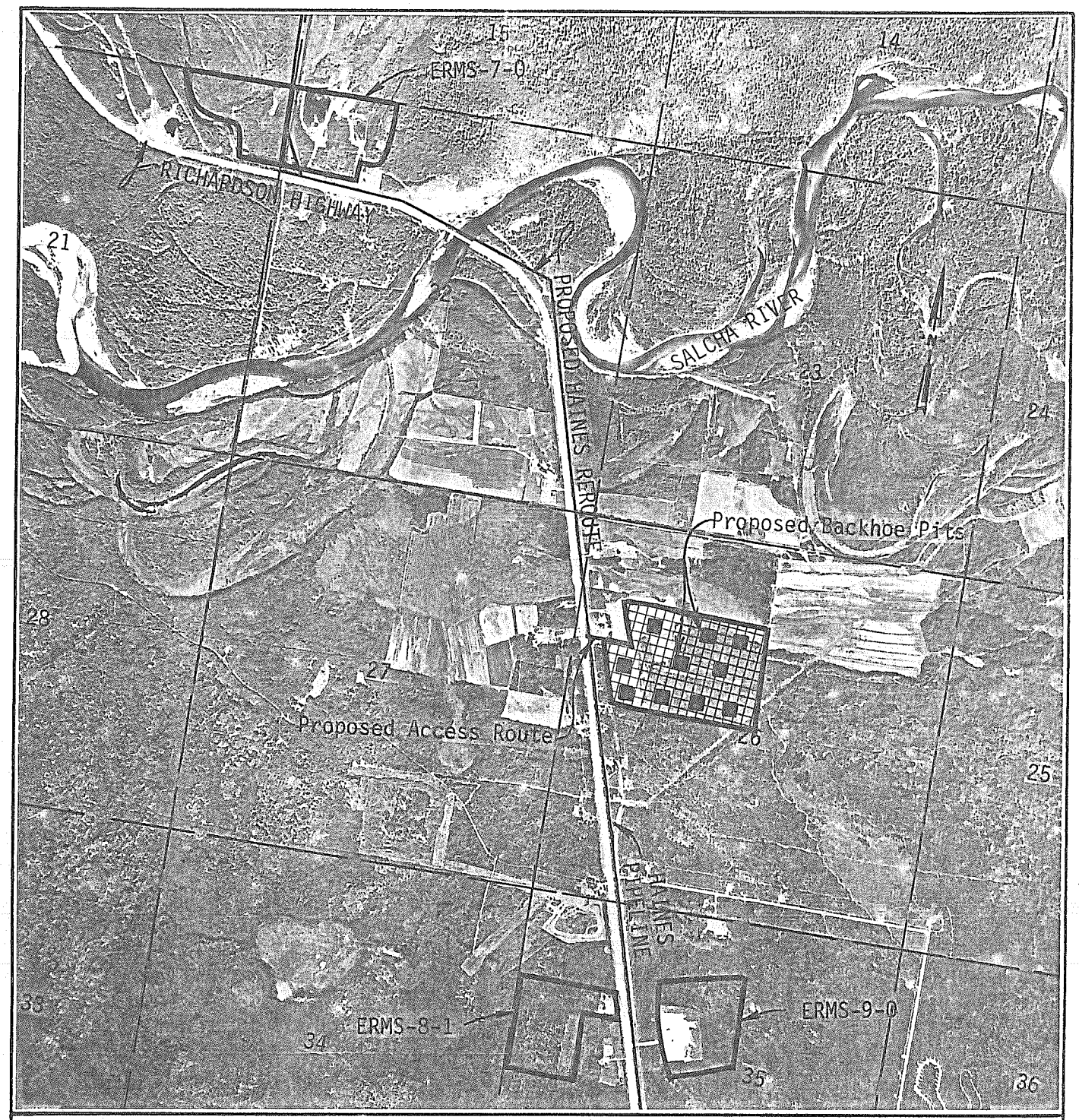
- A drill rig will make nine test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



10 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

NW¼ Section 26
T5S, R4E, Fairbanks Meridian

ERMS-8-0

November 1979 Area: 66 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pvt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 8-0

Location

- The proposed site is an existing pit approximately one mile south of the Salcha River and 300 feet east of the Richardson Highway. It lies within the NW¼ Section 26, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a terrace of the Salcha River near its confluence with the Tanana.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce with a ground cover of grass and moss in the undisturbed areas.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

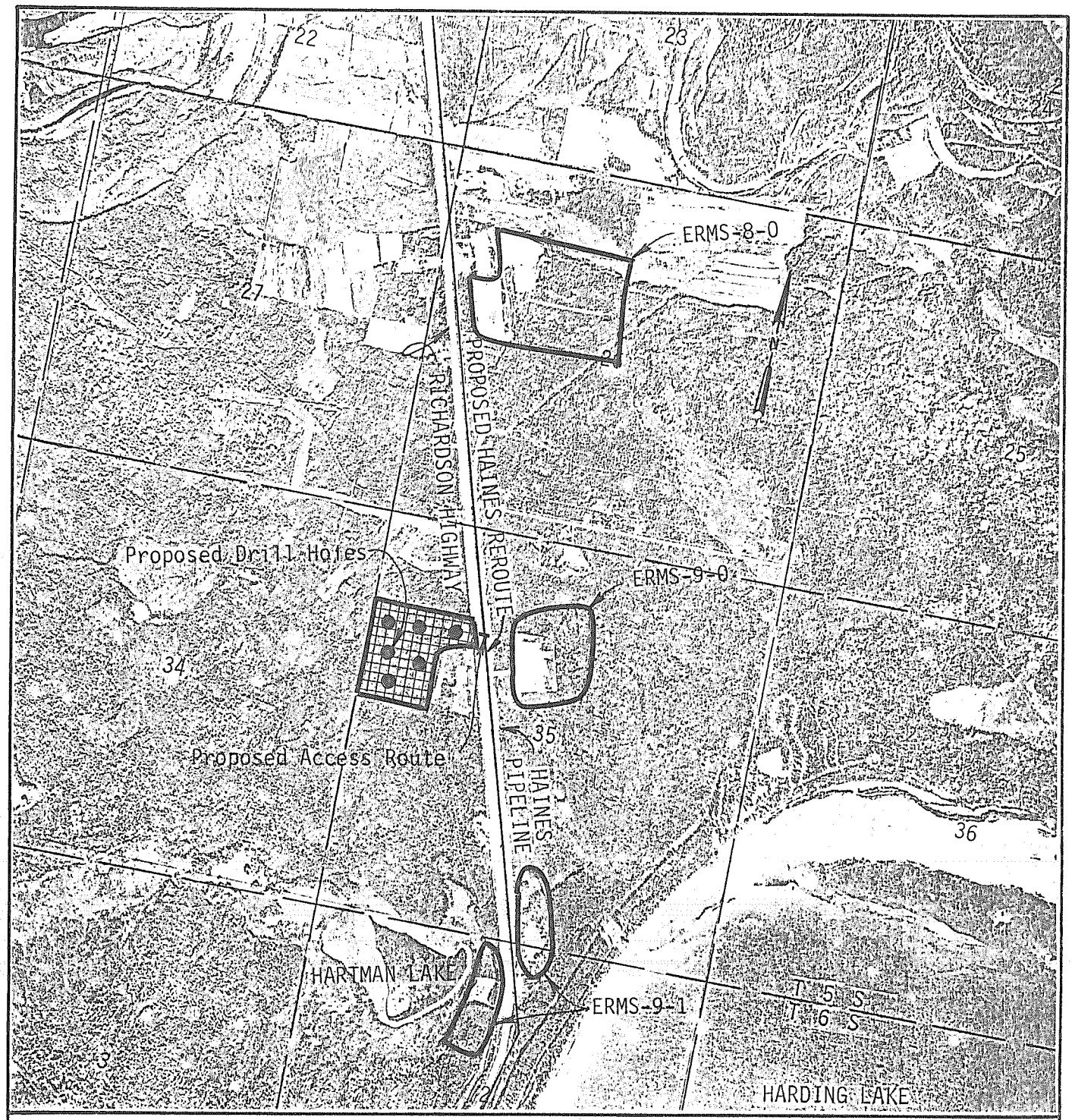
- A backhoe will excavate 10 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



6 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ Section 35
T5S, R4E, Fairbanks Meridian

ERMS-8-1

November 1979 Area: 38 acres ±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 8-1

Location

- The proposed site includes a small existing pit and is located approximately one mile north of Harding Lake and 100 feet west of the Richardson Highway. It is in that portion of the W½ of Section 35, T5S, R4E, Fairbanks Meridian, lying west of the Richardson Highway.

Geology & Topography

- The site is on a terrace of the Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel with interlayered lenses of sand. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make six test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize the existing road into the pit for access, as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.

6 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ NE¼ & E½ NW¼ Section 35
T5S, R4E, Fairbanks Meridian

ERMS-9-0

November 1979 Area: 37 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 9-0

Location

- The proposed site includes an existing pit and is located approximately one mile north of Harding Lake and 400 feet east of the Richardson Highway. It lies within the W½NE¼ and that part of the E½NW¼ lying east of the Richardson Highway in Section 35, T5S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a terrace of the Salcha River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

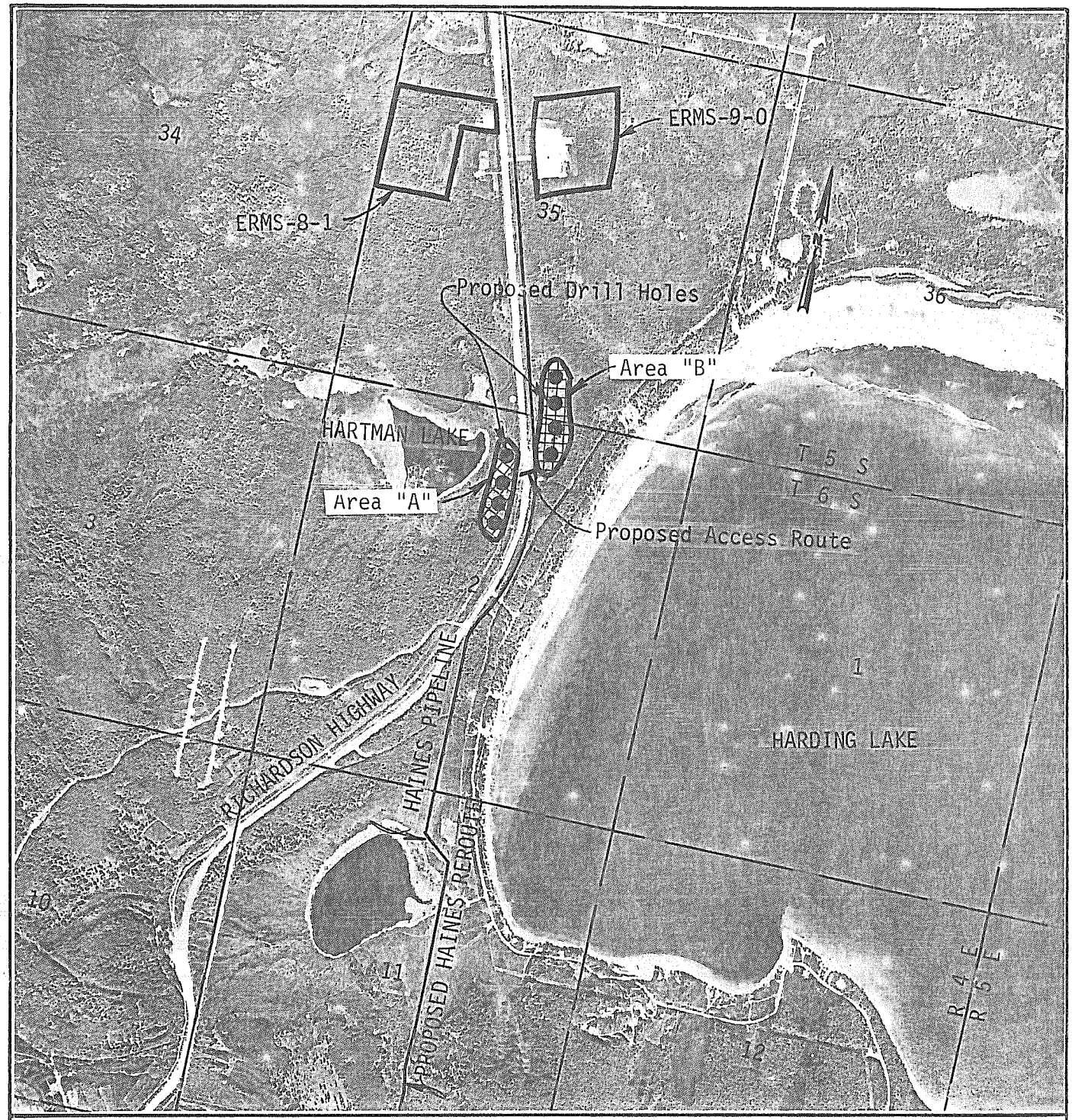
- A drill rig will make six test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



8 Drill Holes to 20' depth
EXPLORATION AREA LIES WITHIN:

N½ Section 2
T6S, R4E, Fairbanks Meridian
S½ S½ Section 35
T5S, R4E, Fairbanks Meridian

ERMS-9-1

Area: "A": 14 acres±
"B": 15 acres±

November 1979

0 1000 2000 4000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 9-1

Location

- The proposed site consists of two areas that include existing pits adjacent to the Richardson Highway and on either side of it near M.P. 320. The site is west of Harding Lake. Area "A" is in that portion of the N½ Section 2, T6S, R4E, Fairbanks Meridian, lying west of the Richardson Highway. Area "B" is in those portions of the S½S½ Section 35, T5S, R4E and the N½ Section 2, T6N, R4E, Fairbanks Meridian, lying east of the Richardson Highway.

Geology & Topography

- The site is on an old terrace of the Salcha River.

- Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation outside the pits appears to be moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

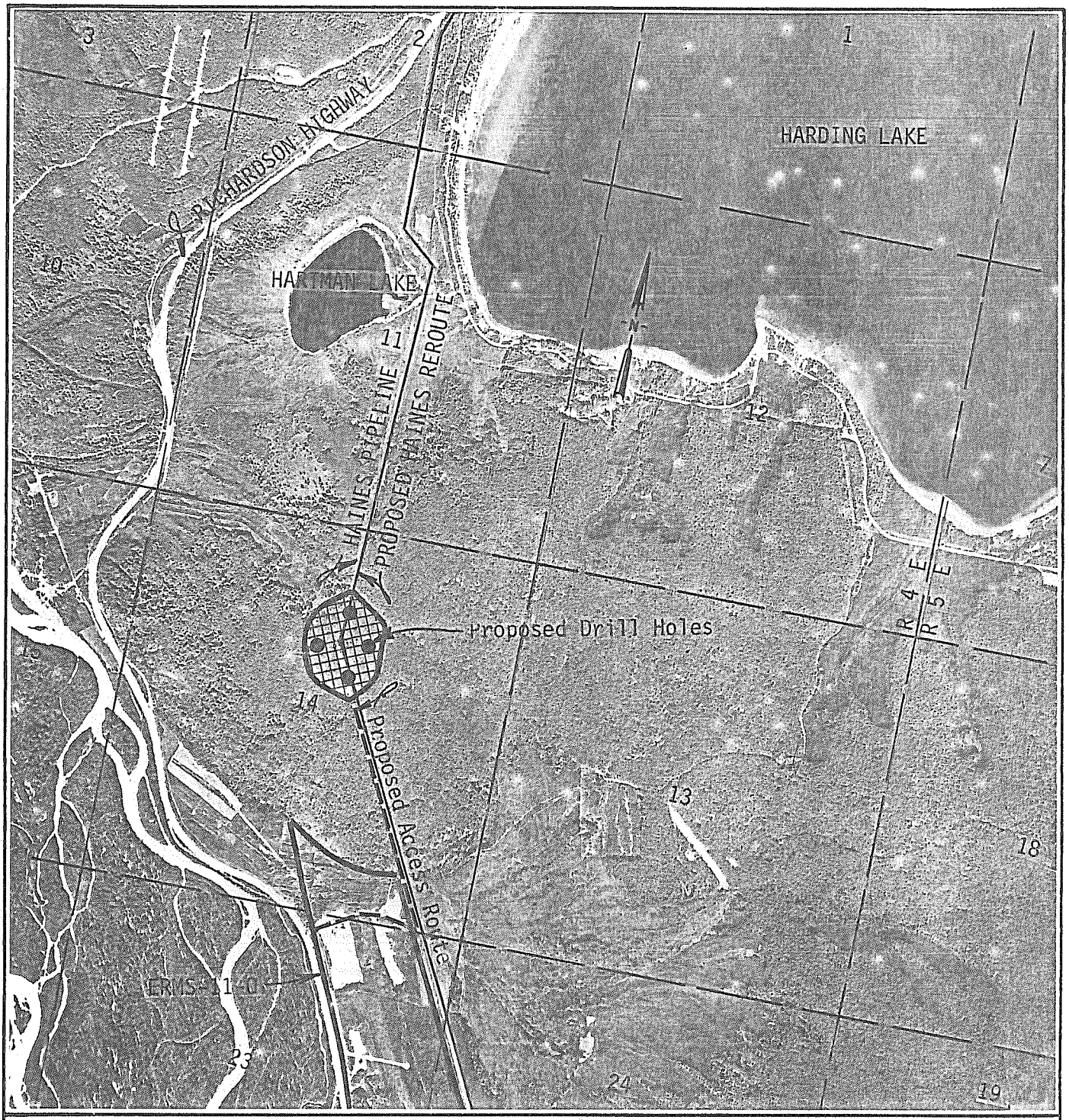
- A drill rig will make four test borings to 20 feet in depth in area "A" and four test borings to 20 feet in depth in area "B".

Proposed Access

- The drill rig will utilize an existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



4 Drill Holes to 50' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

N½ Section 14
T6S, R4E, Fairbanks Meridian

ERMS-10-0

November 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Blanket

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 10-0

Location

- The proposed site is approximately one mile south of Harding Lake and on the Haines Pipeline R.O.W. It lies within the N½ Section 14, T6S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on the top of a bedrock knob located on a steeply sloping ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to eight inches in diameter with a ground cover of grasses and moss.

Apparent Overburden

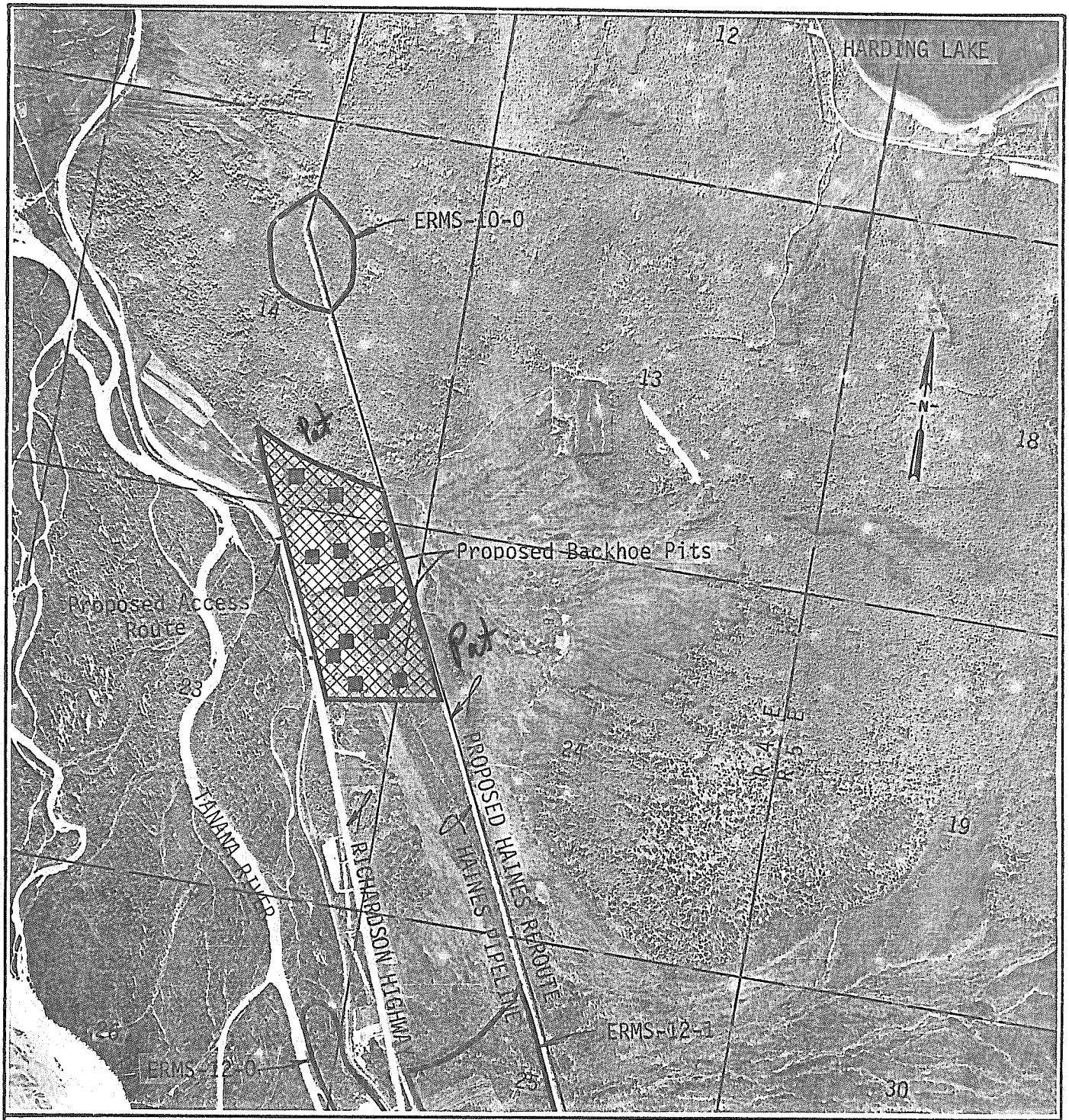
- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 50 feet in depth.

Proposed Access

- The drill rig will use the existing road and Haines Pipeline R.O.W. for access as shown on the Site Map.



12 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

S½ S½ Section 14
NE¼ Section 23
NW¼ Section 24
T6S, R4E, Fairbanks Meridian

ERMS-11-0

November 1979 Area: 105 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS-11-0

Location

- The proposed site includes two existing pits and is approximately one and one-half miles south of Harding Lake. It lies within those parts of the S½S½ Section 14, NE¼ Section 23, NW¼ Section 24, T6S, R4E, Fairbanks Meridian lying between the Richardson Highway R.O.W. and the Haines Pipeline R.O.W.

Geology & Topography

- The site is on an upper terrace of the Tanana River.

  Exploration will have no visual impact on highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

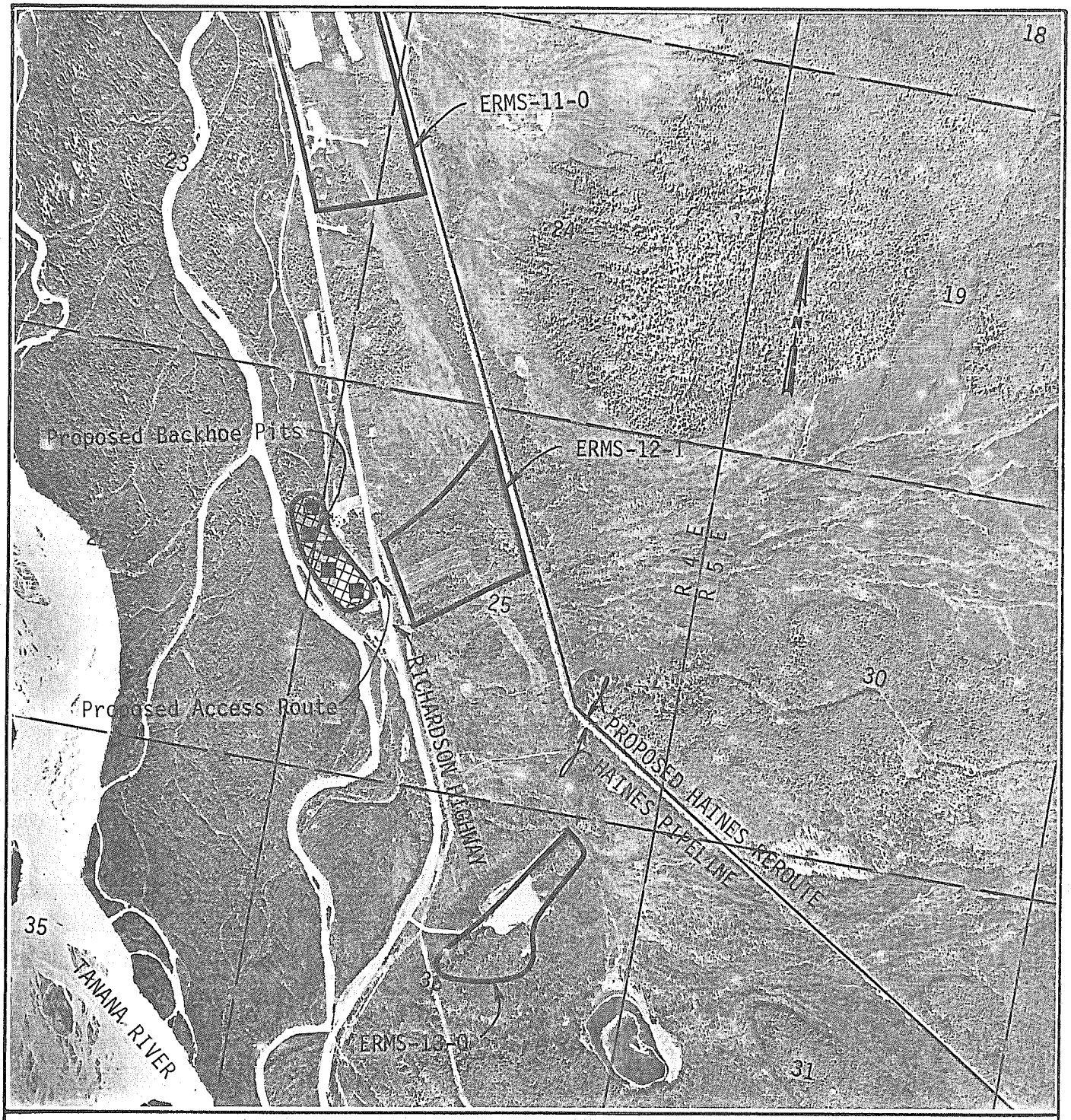
- A backhoe will excavate 12 test pits 12 to 15 feet in depth.

Proposed Access

- A backhoe will utilize existing driveways for access.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



5 Backhoe Pits to 15' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

N½ SW¼ & S½ NW¼ Section 25
SE¼ NE¼ & NE¼ SE¼ Section 26
T6S, R4E, Fairbanks Meridian

ERMS-12-0

November 1979 Area: 20 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 12-0

Location

- The proposed site includes an existing pit and is approximately three miles south of Harding Lake on the west side of the Richardson Highway. It lies within those parts of the N½SW¼, S½ NW¼ Section 25, lying west of the Richardson Highway and the SE¼NE¼, NE¼SE¼ Section 26, T6S, R4E Fairbanks Meridian.

Geology & Topography

- The site is on a terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar, plus grasses and moss, in the undisturbed area.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

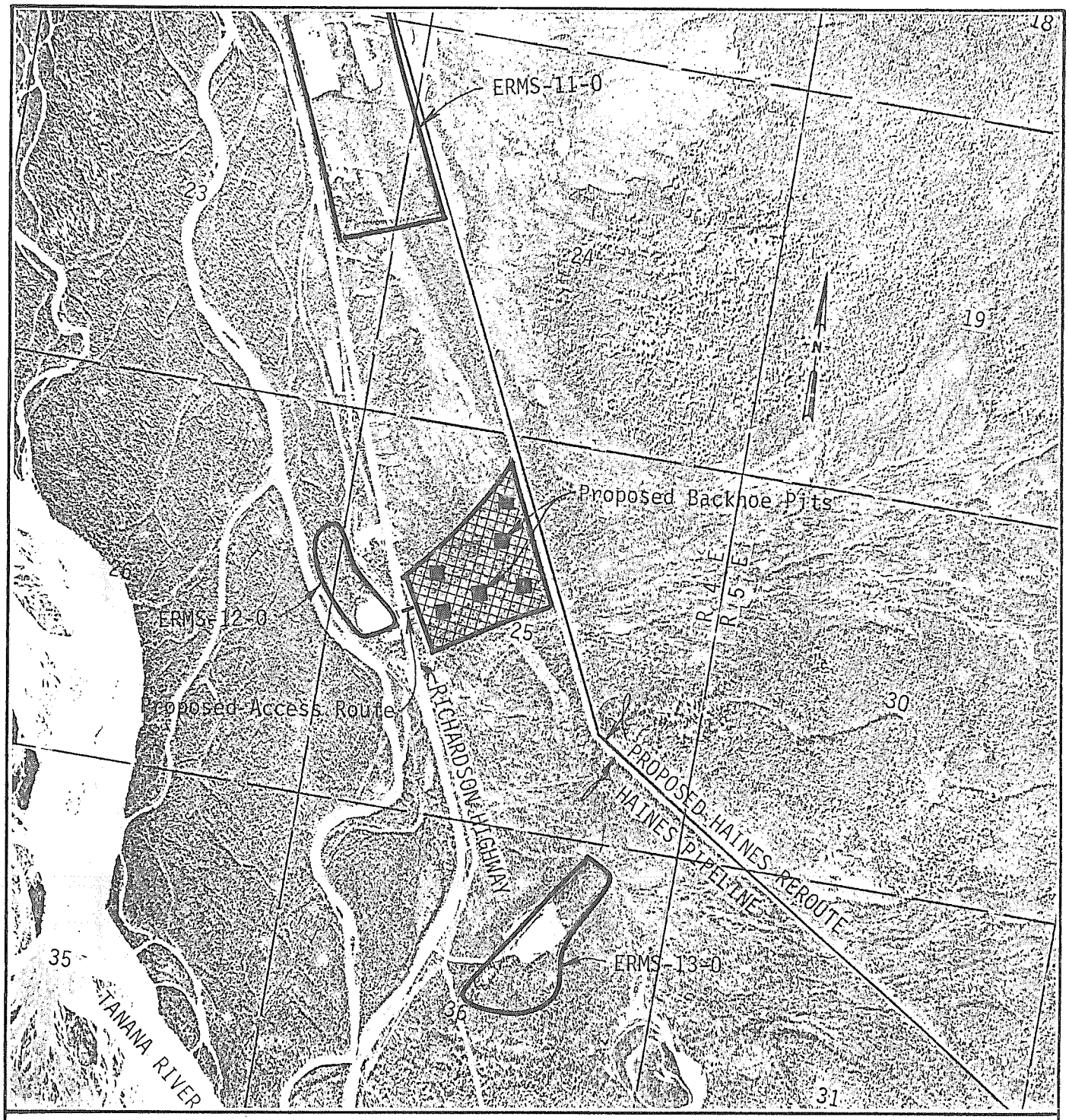
- A backhoe will excavate five test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing road for access.

Special Note:

The site is posted and no access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretation, U.S.G.S. Topographic Mapping and aerial reconnaissance.



6 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

N½ & N½ S½ Section 25
T6S, R4E, Fairbanks Meridian

ERMS-12-1

November 1979 Area: 12 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Part.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS-12-1

Location

- The proposed site is between the Richardson Highway and the Haines Pipeline R.O.W. and lies approximately three miles south of Harding Lake. It lies within those parts of the N½ & N½S½ Section 25, T6S, R4E, Fairbanks Meridian that lie between the Richardson Highway R.O.W. and the Haines Pipeline R.O.W.

Geology & Topography

- The site is on a terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to six inches in diameter with a ground cover of brush, grass, and moss. Part of the site lies in an old cleared field.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A backhoe will excavate six test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing driveway for access, as shown on the Site Map.

Special Note:

- No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photographs, U.S.G.S. Topographic Maps, and aerial reconnaissance.

11 Backhoe Pits to 15' Depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

Section 36
T6S, R4E, Fairbanks Meridian

ERMS-13-0

November 1979 Area: 39 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 13-0

Location

- The proposed site is an existing pit approximately four miles south of Harding Lake and 1000 feet east of the Richardson Highway. It lies within the part of Section 36 lying east of the Richardson Highway T6S, R4E, Fairbanks Meridian.

Geology & Topography

- The site is on a high terrace of the Tanana River. Permafrost is present outside the northern and southern limits of the pit.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce, poplar and birch to eight inches in diameter, with a ground cover of moss and grasses.

Apparent Overburden

- The overburden consists of 12 to 42 inches of organics and silt.

Exploration Plan

- A backhoe will excavate 11 test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize the existing road for access as shown on the Site Map.

3 Drill Holes to 30' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

S½ S½ Section 30
N½ Section 31
T6S, R5E, Fairbanks Meridian

ERMS-14-0

November 1979 Area: 18 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 14-0

Location

- The proposed site is approximately three and one-half miles south of Harding Lake and lies 300 feet east of Haines Pipeline R.O.W.. It lies within the S½S½ Section 30, N½ Section 31, T6S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is on the foot of a steep southern slope on a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of scattered birch to six inches in diameter with a ground cover of grass and moss. The area has been logged.

Apparent Overburden

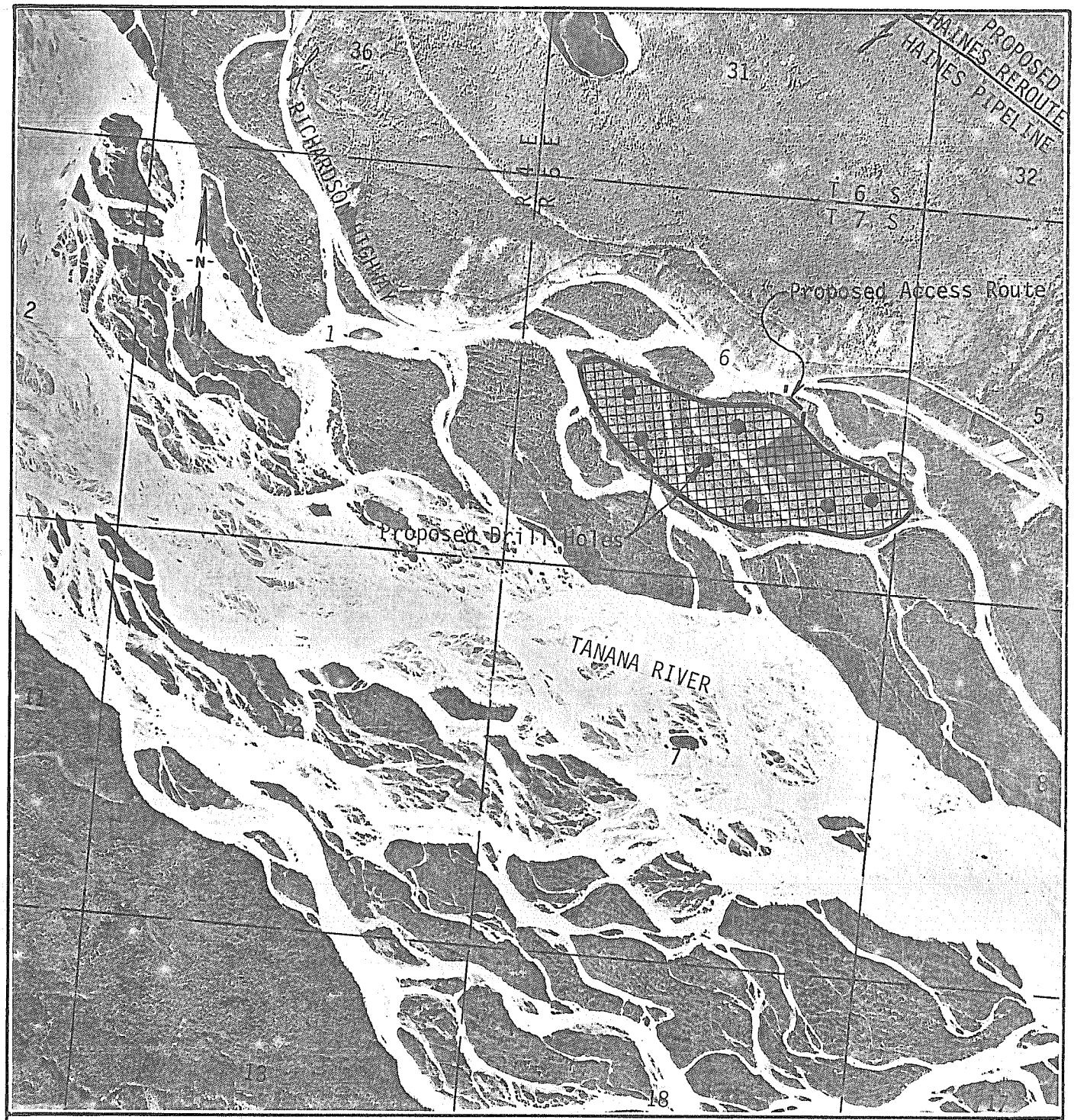
- The overburden consits of organics and silt 12 to 18 inches thick.

Exploration Proposed

- A drill rig will make three test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the access road to ERMS-13-0, then existing trails to the site.



7 Drill Holes to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

T7S
~~T6S~~, R5E, Fairbanks Meridian

W½ Section 5
Section 6

ERMS-15-0

NORTHWEST ALASKAN PIPELINE CO.
MINERAL MATERIALS EXPLORATION AREA SITE MAP
FLUOR NORTHWEST, INC.
MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

November 1979 Area: 105 acres±

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 15-0

Location

- The proposed site includes an existing pit and is approximately five miles south of Harding Lake and four miles west of Birch Lake. It lies within those parts of the W½ Section 5, and the Section 6, T6S, R5E, Fairbanks Meridian, lying south of the Richardson Highway.

Geology & Topography

- The site is upon the floodplain of the Tanana River and incorporates three large vegetated gravel bars.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to 10 inches in diameter and dense alder, with a ground cover of grass and moss.

Apparent Overburden

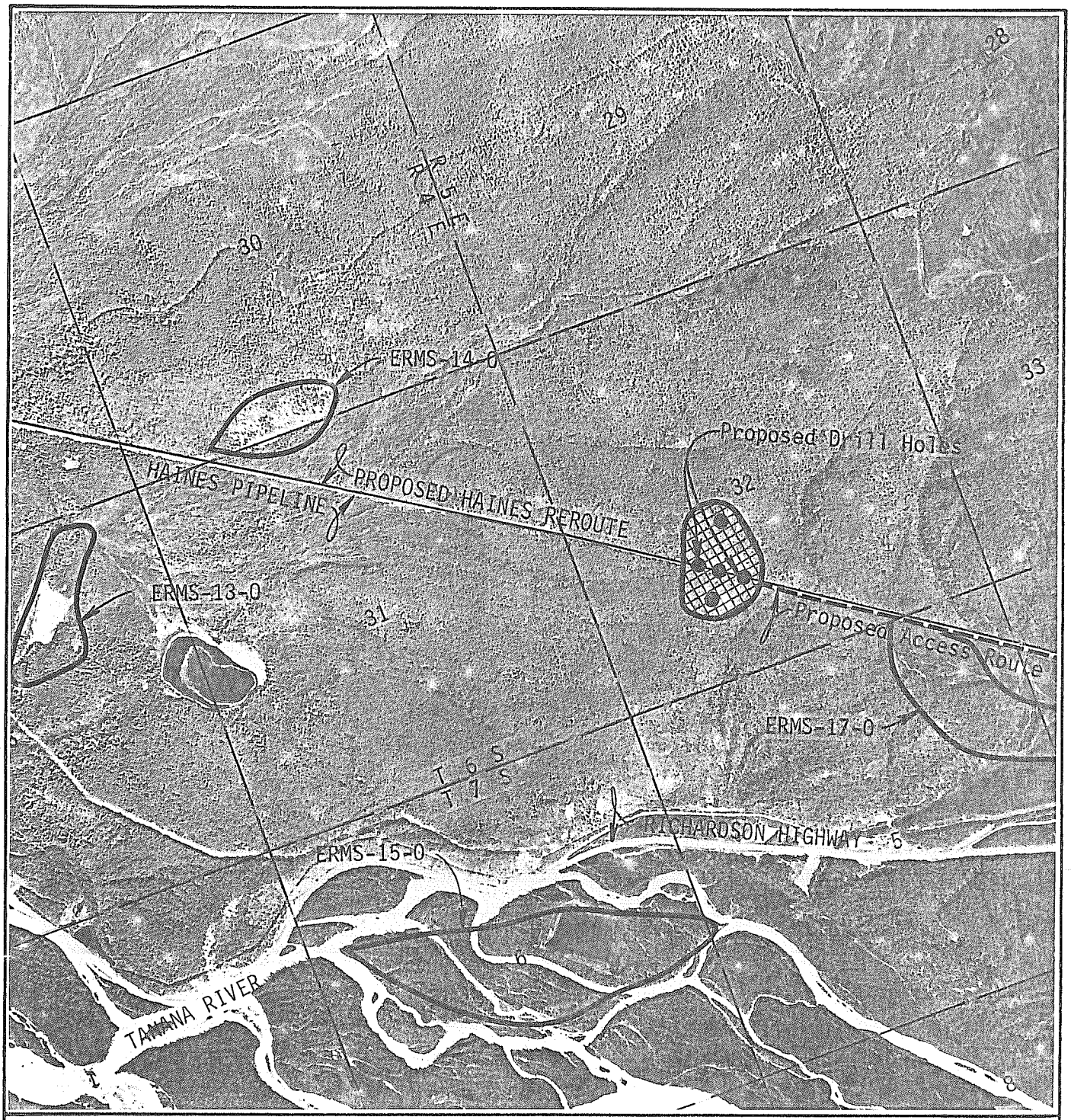
- The overburden consists of 30 inches of organics and silt.

Exploration Proposed

- A drill rig will make seven test borings to 15 feet in depth.

Proposed Access

- The drill rig will utilize the access shown on the Site Map, and will require crossing an active channel of the Tanana River.



5 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ Section 32
T6S, R5E, Fairbanks Meridian

ERMS-16-0

November 1979 Area: 37 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 16-0

Location

- The proposed site is approximately five miles south of Harding Lake and 4000 feet east of the Richardson Highway. It lies within the S½ Section 32, T6S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is in a saddle between two bedrock knobs on a high steeply sloping ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to eight inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make five test borings to 50 feet in depth.

Proposed Access

- The drill rig will utilize an existing trail and the Haines Pipeline R.O.W. as shown on the Site Map.

4 Drill Holes to 40' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ NW¼ Section 4
NE¼ Section 5
T7S, R5E, Fairbanks Meridian

ERMS-17-0

November 1979 Area: 67 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Patented

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 17-0

Location

- The proposed site is adjacent to the Haines Pipeline and lies approximately three and one-half miles west of Birch Lake. It lies within the W½NW¼ Section 4, NE¼ Section 5, T7S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is on the crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 40 feet in depth.

Proposed Access

- The drill rig will utilize an existing trail and the Haines Pipeline R.O.W. for access, as shown on the Site Map.

4 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

Section 10
T7S, R5E, Fairbanks Meridian

ERMS-18-0

November 1979 Area: 23 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Rt.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 18-0

Location

- The proposed site includes an existing pit and is approximately two miles northwest of Birch Lake and 200 feet south of the Richardson Highway. It lies within Section 10, T7S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is on the toe of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to four inches in diameter with a ground cover of grass and alder.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth.

Proposed Access

- The drill rig will use the existing road into the pit for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.

4 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ W½ Section 2
E½ E½ Section 3
T7S, R5E, Fairbanks Meridian

ERMS-18-1

November 1979 Area: 24 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 18-1

Location

- The proposed site is approximately one and one-half miles northwest of Birch Lake and lies adjacent to the Haines Pipeline R.O.W.. It is in the W½W½ Section 2, E½E½ Section 3, T7S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is on the nose of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize an existing trail and the Haines Pipeline R.O.W. for access, as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps, and aerial reconnaissance.

5 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ SW¼ Section 11
N½ NW¼ Section 14
T7S, R5E, Fairbanks Meridian

ERMS-19-0

November 1979 Area: 36 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 19-0

Location

- The proposed site includes an existing pit and is approximately one mile west of Birch Lake and 200 feet south of the Richardson Highway. It lies within the S½SW¼ Section 11&N½NW¼ Section 14, T7S, R5E, Fairbanks Meridian & those areas lying south of the Richardson Highway.

Geology & Topography

- The site is on a terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for work-pad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce to four inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

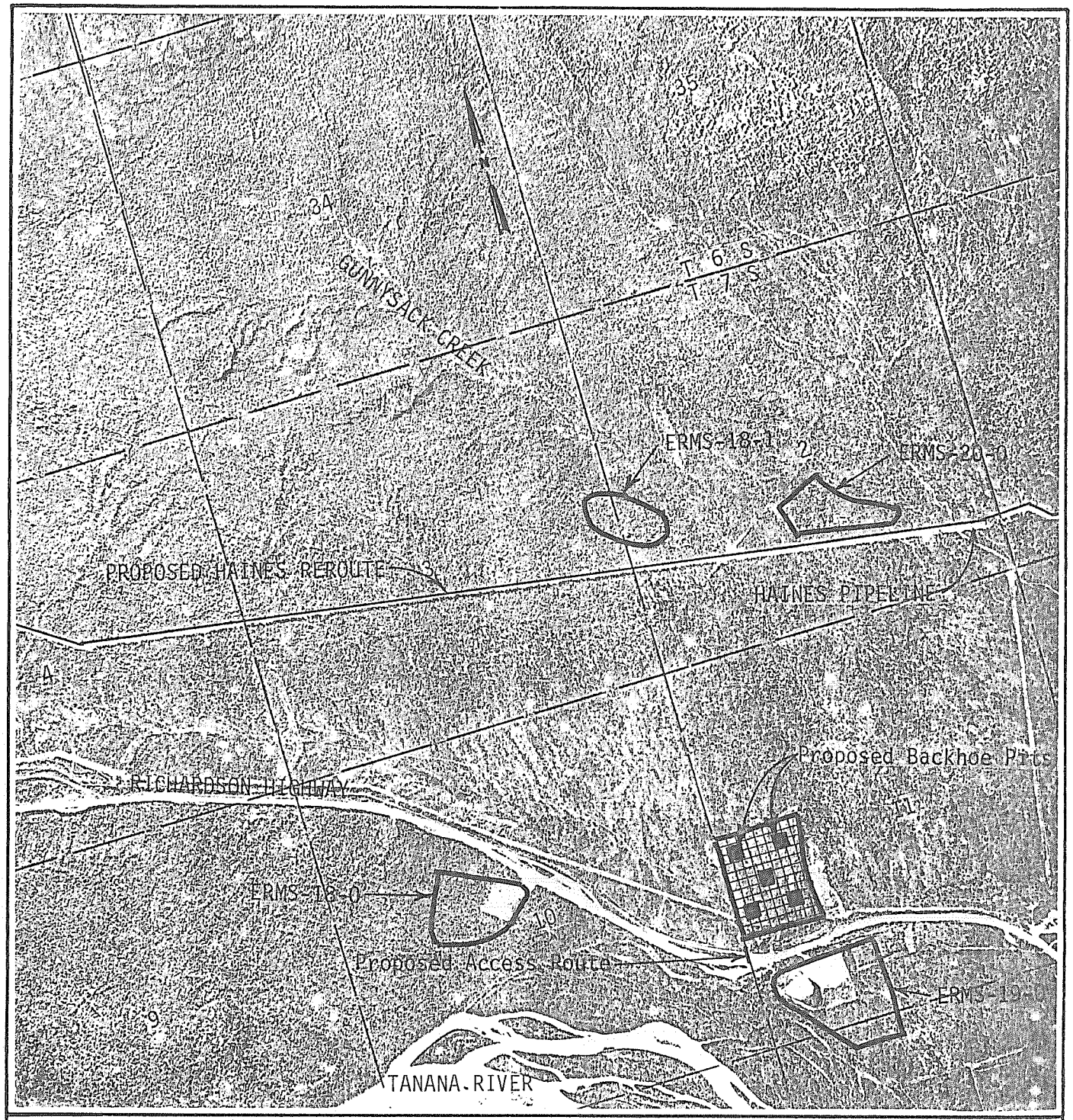
- A drill rig will make five test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps, and aerial reconnaissance.



5 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ Section 11
T7S, R5E, Fairbanks Meridian

ERMS-19-1

November 1979 Area: 31 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pit.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 19-1

Location

- The proposed site is approximately one mile west of Birch Lake and is 400 feet north of the Richardson Highway. It lies within the W½ Section 11, T7S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is on a terrace of the Tanana River.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The area is a cleared field and the vegetation is composed of brush and grasses.

Apparent Overburden

- The overburden consists of organics and silt, plus slash berms.

Exploration Proposed

- A backhoe will excavate five test pits 12 to 15 feet deep.

Proposed Access

- The backhoe will utilize existing roads to the property for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps, plus aerial reconnaissance.

5 Drill Holes to 20' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

S½ Section 2
T7S, R5E, Fairbanks Meridian

ERMS-20-0

November 1979 Area: 16 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Ref.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 20-0

Location

- The proposed site is adjacent to the Haines Pipeline R.O.W. and is approximately one mile north of Birch Lake. It lies within the S½ Section 2, T7S, R5E, Fairbanks Meridian.

Geology & Topography

- The site is a small bedrock knob.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to eight inches in diameter with occasional alders, and a ground cover of moss and grass.

Apparent Overburden

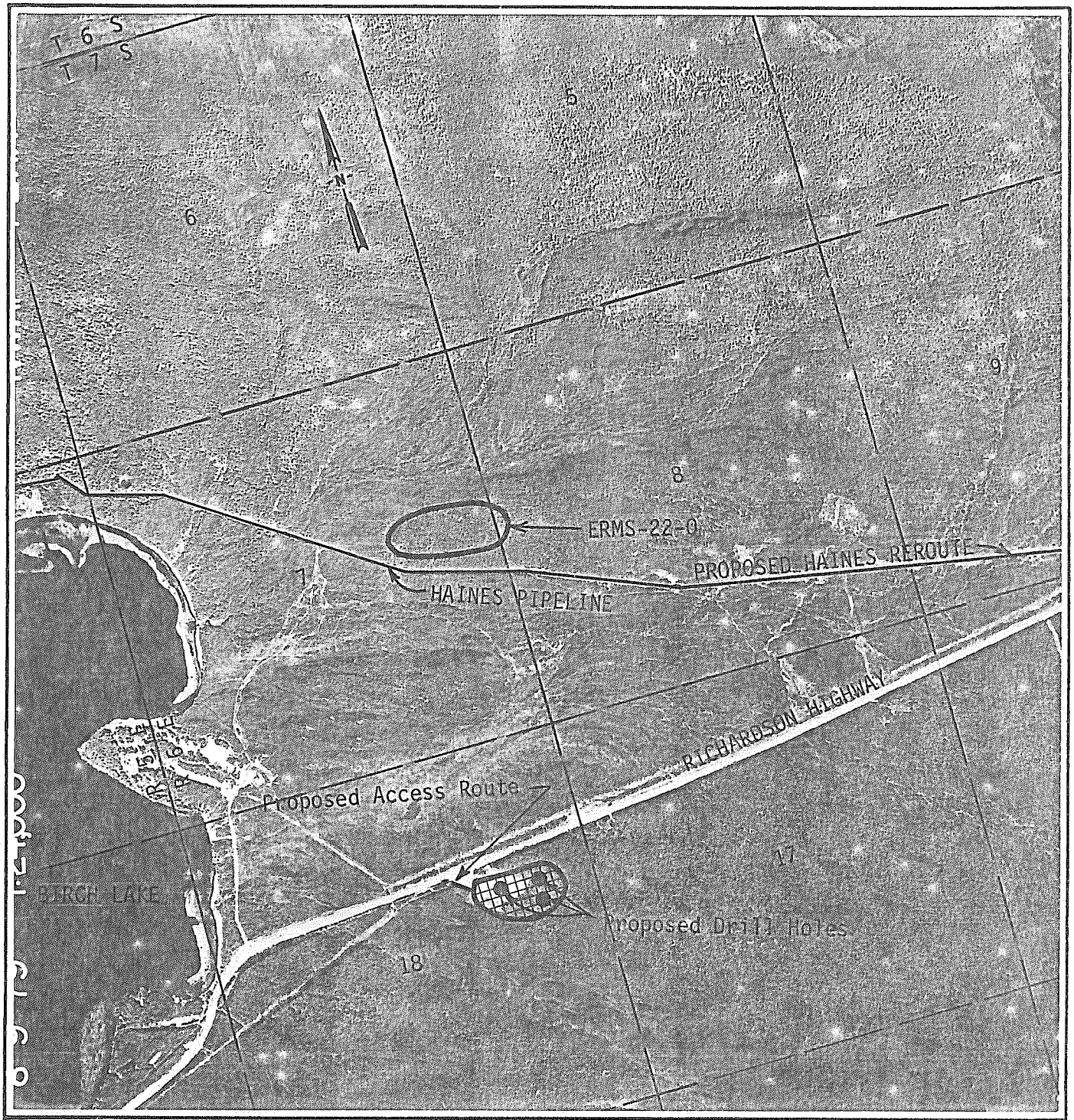
- The overburden consists of one to three feet of organics and silt, which thickens down slope.

Exploration Proposed

- A drill rig will make five test borings to 20 feet in depth.

Proposed Access

- The drill rig will utilize existing trails and the Haines Pipeline R.O.W. for access as shown on the Site Map.



3 Drill Holes to 25' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

NE¼ Section 18
T7S, R6E, Fairbanks Meridian

ERMS-21-0

November 1979 Area: 16 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 21-0

Location

- The proposed site is an existing pit approximately one mile east of Birch Lake, on the south side of the Richardson Highway. It lies within that part of the NE¼ of Section 18, T7S, R6E, Fairbanks Meridian lying south of the Richardson Highway.

Geology & Topography

- The site is on the toe of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered granitic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of one to two feet of organics and silt in the undisturbed areas.

Exploration Proposed

- A drill rig will make three test borings to 25 feet in depth.

Proposed Access

- The drill rig will utilize the existing road for access as shown on the Site Map.

4 Drill Holes to 30' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

NE¼ & N½ SE¼ Section 7
NW¼ & N½ SW¼ Section 8
T7S, R6E, Fairbanks Meridian

ERMS-22-0

November 1979 Area: 24 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 22-0

Location

- The proposed site is adjacent to the Haines Pipeline R.O.W. and is approximately one-half mile east of Birch Lake. It lies within the NE¼ & N½SE¼, section 7, NW¼ & N½SW¼ Section 8, T7S, R6E, Fairbanks Meridian.

Geology & Topography

- The site is the crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and poplar to eight inches in diameter with a ground cover of moss and grass.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. for access from and to ERMS-20-0 or ERMS-23-0, as shown on the Site Map.

Special Note:

1) RRMS-22 was relocated approximately one mile to the west for the purpose of reducing haul distance.
2) No access permits were acquired so an on-site investigation was not performed. This exploration was developed using aerial photo interpretations, U.S.G.S Topographic Maps and aerial reconnaissance.

2 Drill Holes to 30' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

SE¼ Section 9

T7S, R6E, Fairbanks Meridian

ERMS-23-0

November 1979 Area: 10 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

58.
Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 23-0

Location

- The proposed site is an existing pit adjacent to the Haines Pipeline R.O.W. and two and one-half miles east of Birch Lake. It lies within the SE¼ Section 9, T7S, R6E, Fairbanks Meridian.

Geology & Topography

- The site is on a small elongated bedrock knob.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered granitic rock.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of moss and lichens.

Apparent Overburden

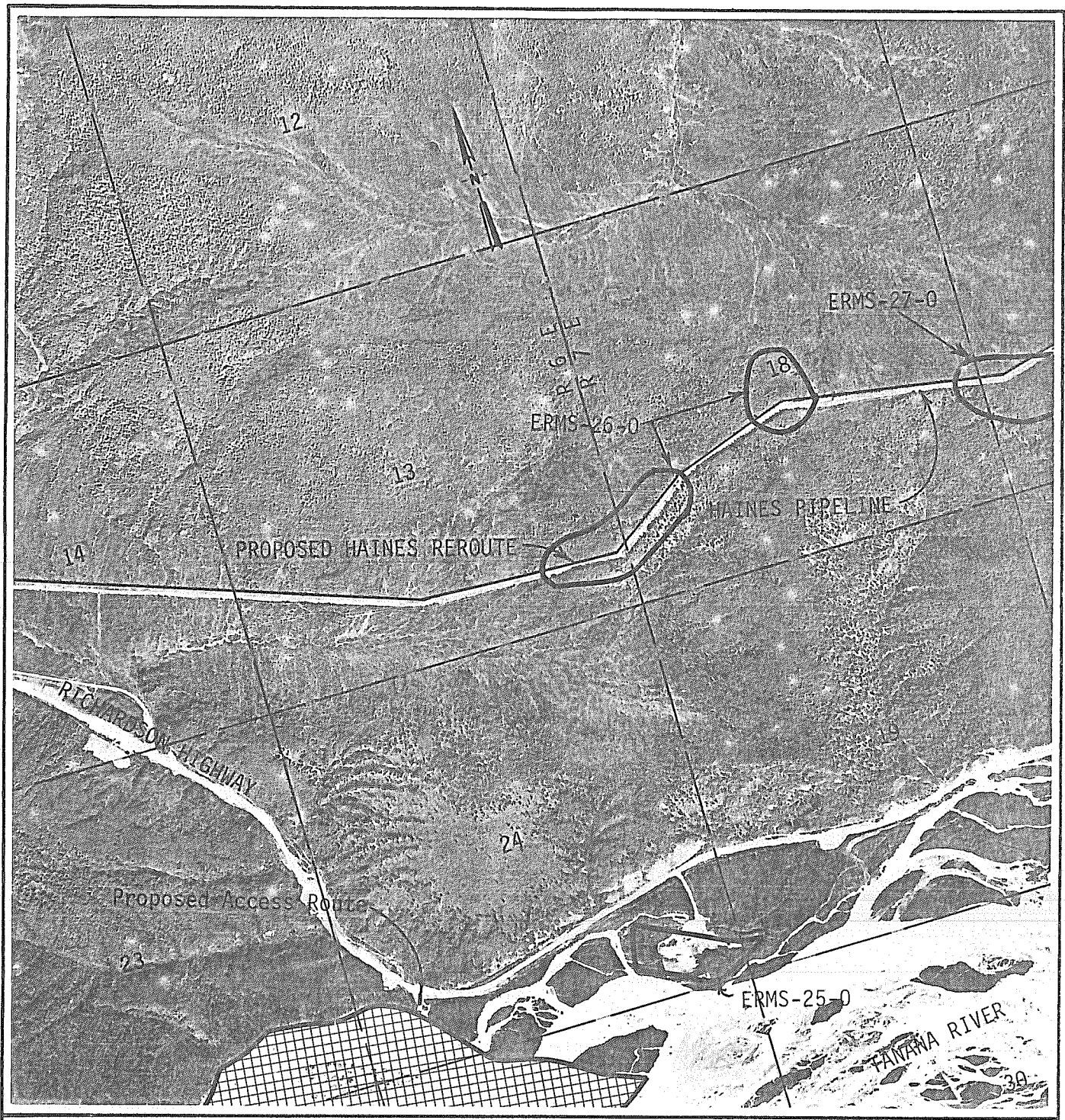
- The overburden consists of up to 24 inches of organics and silt in the undisturbed areas. There is no overburden in the existing pits.

Exploration Proposed

- A drill rig will make two test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the existing access road as shown on the Site Map.



Obtain Hand Samples

EXPLORATION AREA LIES WITHIN:

S½ Section 23
Section 24
Section 25
Section 26
T7S, R6E, Fairbanks Meridian

ERMS-24-0

November 1979 Area: 191 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 24-0

Location

- The proposed site is approximately four miles west of the Richardson Roadhouse. It lies within those parts of the S½ of Section 23 and Section 24 lying south of the Richardson Highway and Section 25 and Section 26, T7S, R6E, Fairbanks Meridian.

Geology & Topography

- The site is on the active floodplain of the Tanana River, and incorporates a number of gravel bars.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

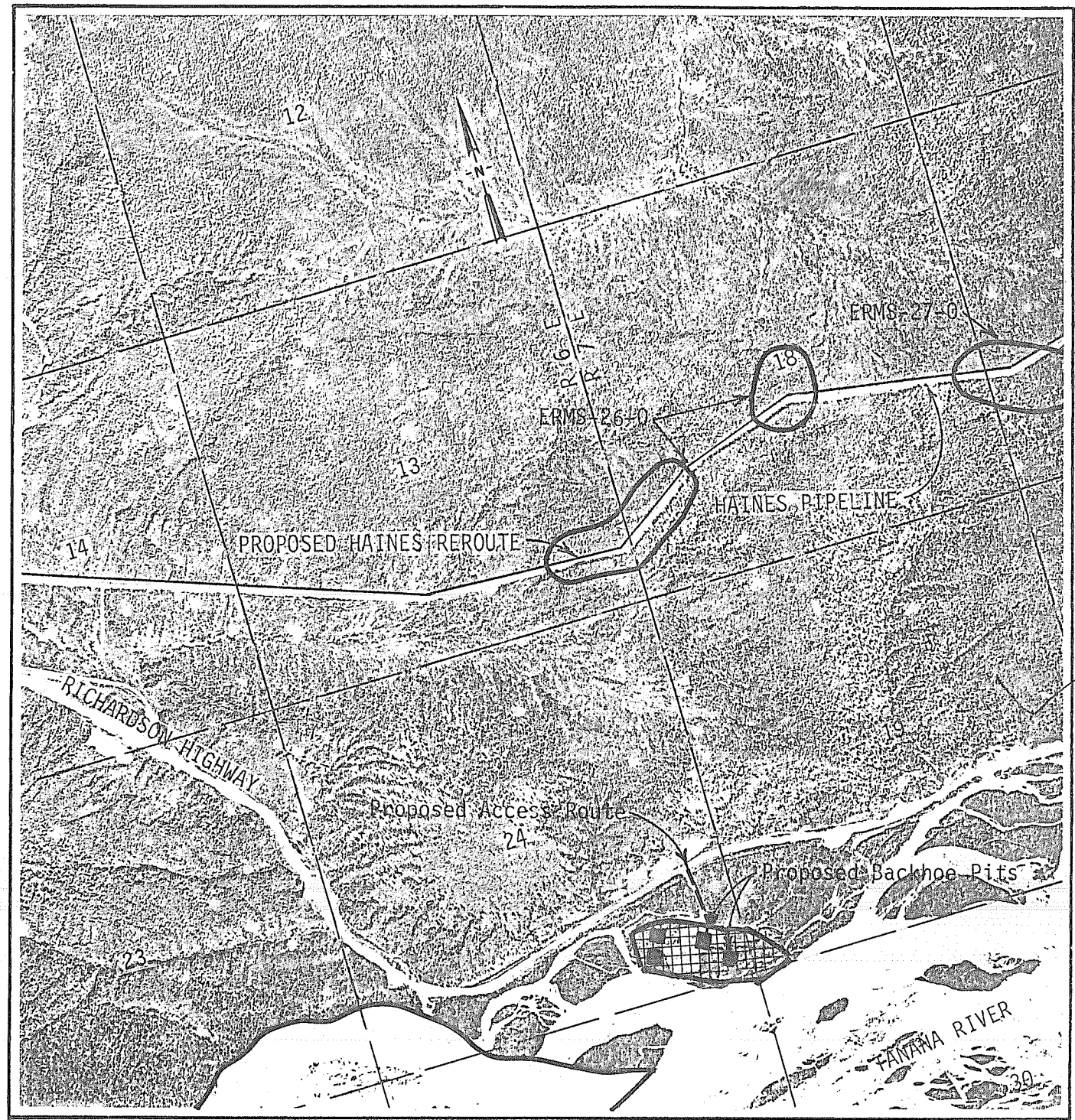
- The vegetation is composed of scattered patches of willow brush.

Apparent Overburden

- Representative hand samples will be taken from selected locations within the site.

Proposed Access

- Helicopter assistance will be required.



4 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

SE¼ Section 24
NE¼ Section 25
T7S, R6E, Fairbanks Meridian

SW¼ Section 19
NW¼ Section 30
T7S, R7E, Fairbanks Meridian

ERMS-25-0

November 1979 Area: 20 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 25-0

Location

- The proposed site includes an existing pit and is approximately 500 feet south of the Richardson Highway at a point four miles west of the Richardson Roadhouse. It lies within the SE¼ Section 24, NE¼ Section 25, T7S, R6E, SW¼ Section 19, NW¼ Section 30, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the floodplain of the Tanana River and lies on a vegetated gravel bar.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel.

  Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar to three inches in diameter and alder with a ground cover of grass and moss.

Apparent Overburden

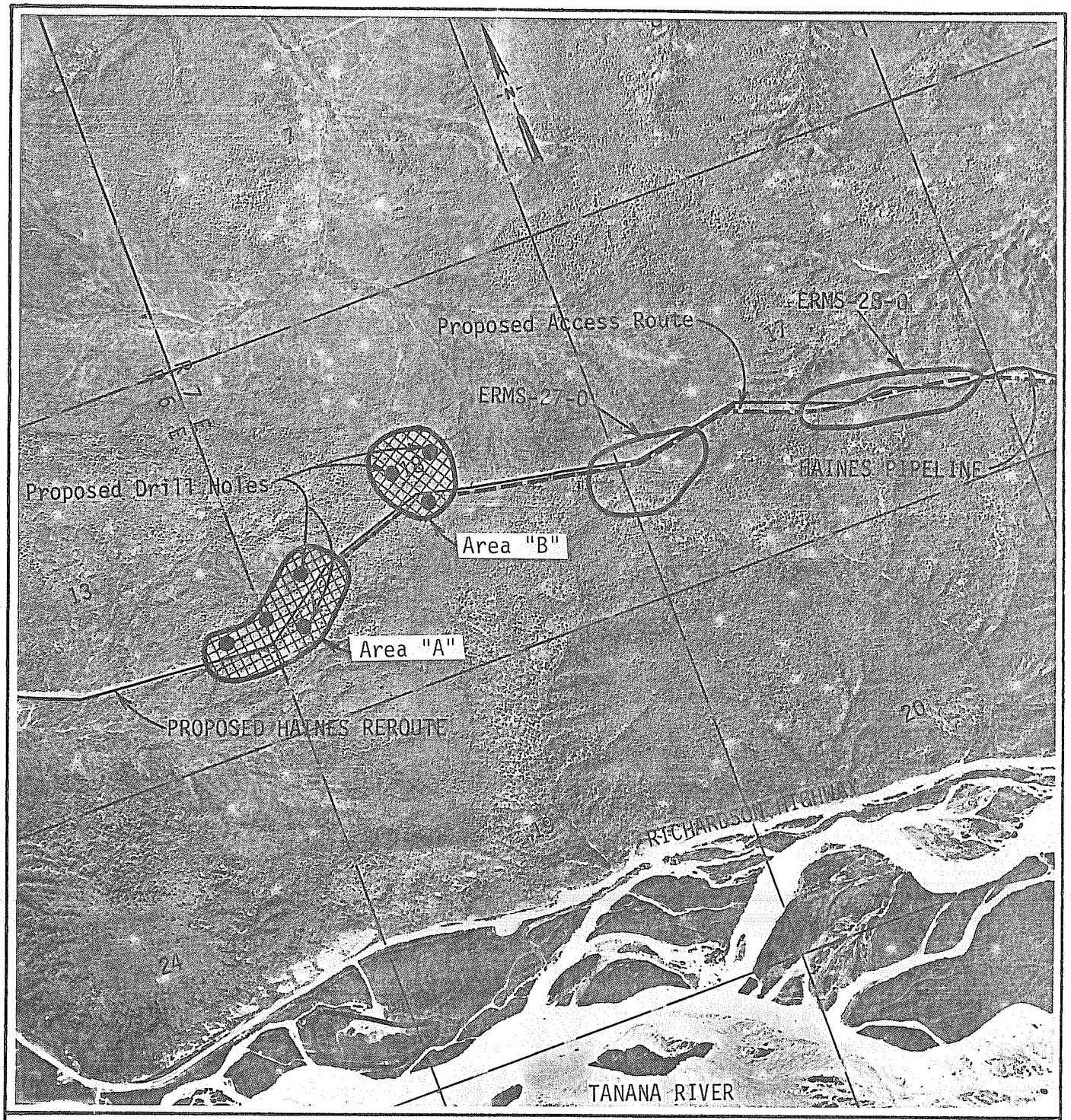
- The overburden consists of 18 inches of organics and silt.

Exploration Proposed

- A backhoe will excavate four test pits, 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize an existing road for access as shown on the Site Map.



7 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

E½ E½ Section 13
T7S, R6E, Fairbanks Meridian
Section 18
T7S, R7E, Fairbanks Meridian

ERMS-26-0

Area: "A": 43 acres±
"B": 17 acres±

November 1979

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 26-0

Location

- The proposed site is on the Haines Pipeline R.O.W. in an area approximately three miles west of Banner Creek. It lies within the E½E½ Section 13, T7S, R6E, and Section 18, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the narrow crest and slope of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to four inches in diameter with a ground cover of grass and moss.

Apparent Overburden

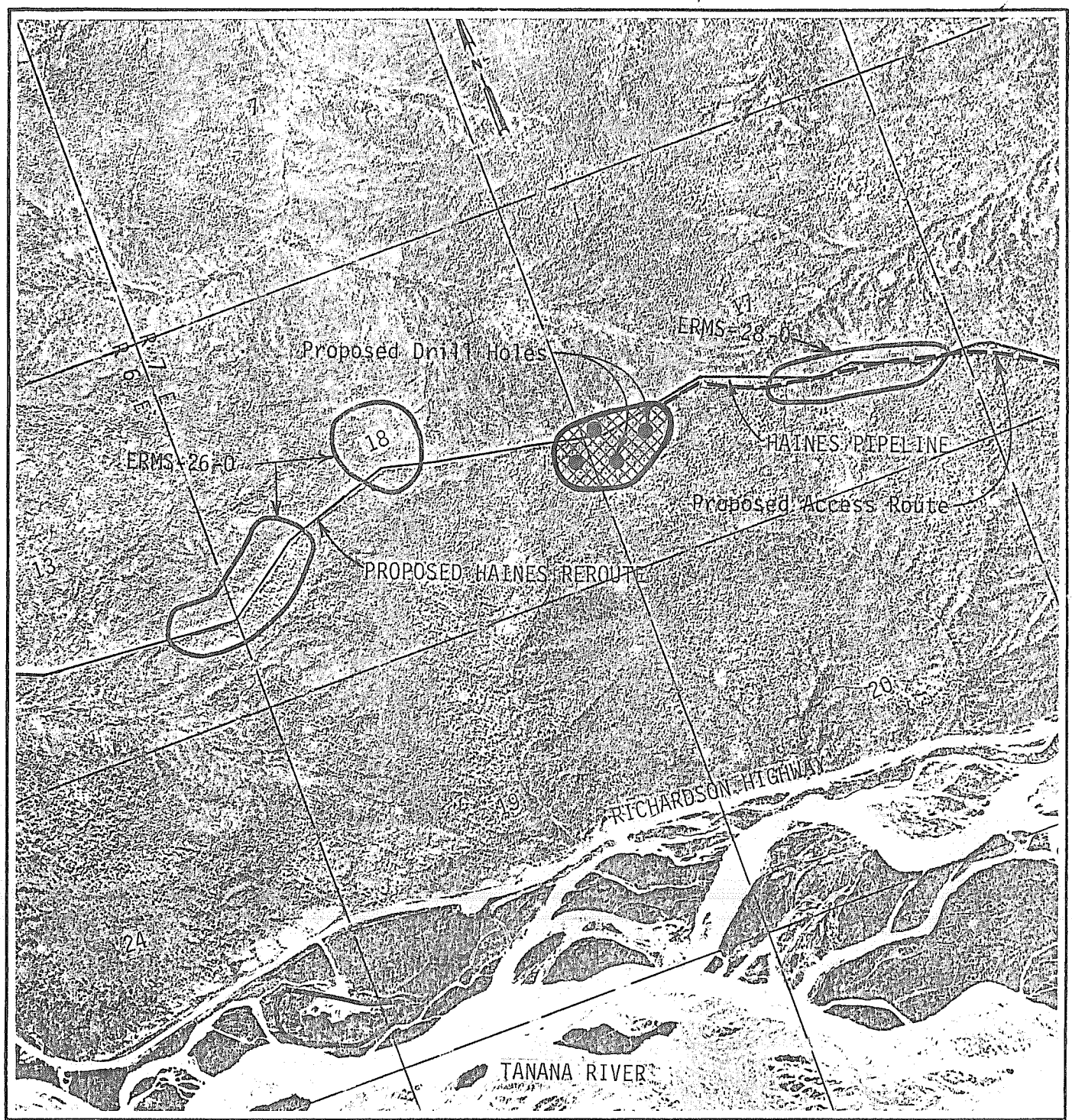
- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make seven test borings, to 25 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. for access from ERMS-27-0 as shown on the Site Map.



4 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

W½ Section 17
E½ E½ Section 18
T7S, R7E, Fairbanks Meridian

ERMS-27-0

November 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State Ltd.
Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 27-0

Location

- The proposed site is on the Haines Pipeline R.O.W. in an area approximately two and one-half miles west of Banner Creek. It lies within the W½ Section 17, E½E½ Section 18, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the narrow crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of two feet of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 25 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. for access from ERMS-28-0 as shown on the Site Map.

4 Drill Holes to 25' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

S½ Section 17
T7S, R7E, Fairbanks Meridian

ERMS-28-0

November 1979 Area: 33 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

State Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 28-0

Location

- The proposed site is on the Haines Pipeline R.O.W. and lies approximately two miles north of Banner Creek. It lies within the S½ Section 17, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the narrow crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock.

  Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense poplar and spruce to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

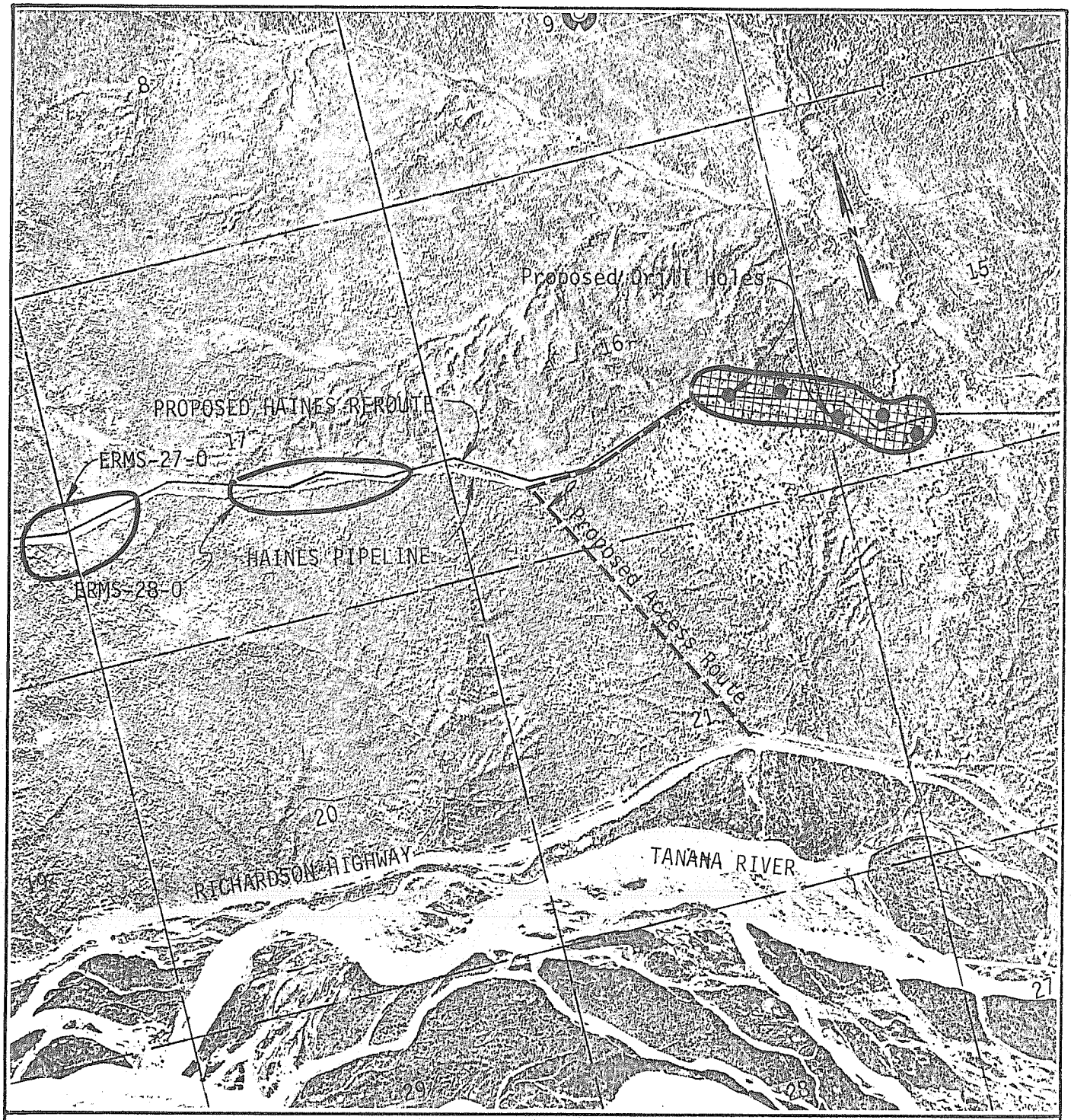
- The overburden consists of 8 to 12 inches of organics and silt.

Exploration Proposed

- A drill rig will make four test borings to 25 feet in depth.

Proposed Access

- The drill rig will utilize a cleared utility R.O.W. plus the Haines Pipeline R.O.W. for access, as shown on the Site Map.



5 Drill Holes to 25' depth

EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000

SCALE IN FEET

SW¼ Section 15
S½ Section 16
T7S, R7E, Fairbanks Meridian

ERMS-28-1

November 1979 Area: 56 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 28-1

Location

- The proposed site is approximately 1500 feet west of Banner Creek and one mile north of the Richardson Highway on the Haines Pipeline R.O.W.. It lies within the SW¼ Section 15, S½ Section 16, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the narrow crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to 12 inches in diameter with a ground cover of willow, alder, grass and moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

- A drill rig will make five test borings to 25 feet in depth.

Proposed Access

- The drill rig will utilize the utility R.O.W. and the Haines Pipeline R.O.W. for access as shown on the Site Map.

Special Note:

No access permit was acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.

5 Backhoe Pits to 15' depth
EXPLORATION AREA LIES WITHIN:

SE¼ SE¼ Section 21
SW¼ SW¼ Section 22
NW¼ Section 27
NE¼ Section 28
T7S, R7E, Fairbanks Meridian

ERMS-29-0

November 1979 Area: 91 acres±

0 1000 2000 4000
SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed ?

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 29-0

Location

- The proposed site is adjacent to an existing pit and is approximately seven miles north of Shaw Creek and across the Richardson Highway from the Richardson Roadhouse. It lies within the SE¼SE¼ Section 21, SW¼SW¼ Section 22, NW¼ Section 27, NE¼ Section 28, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the floodplain of the Tanana River and incorporates a vegetated gravel bar.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a sandy gravel. Material for work-pad and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and alder with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

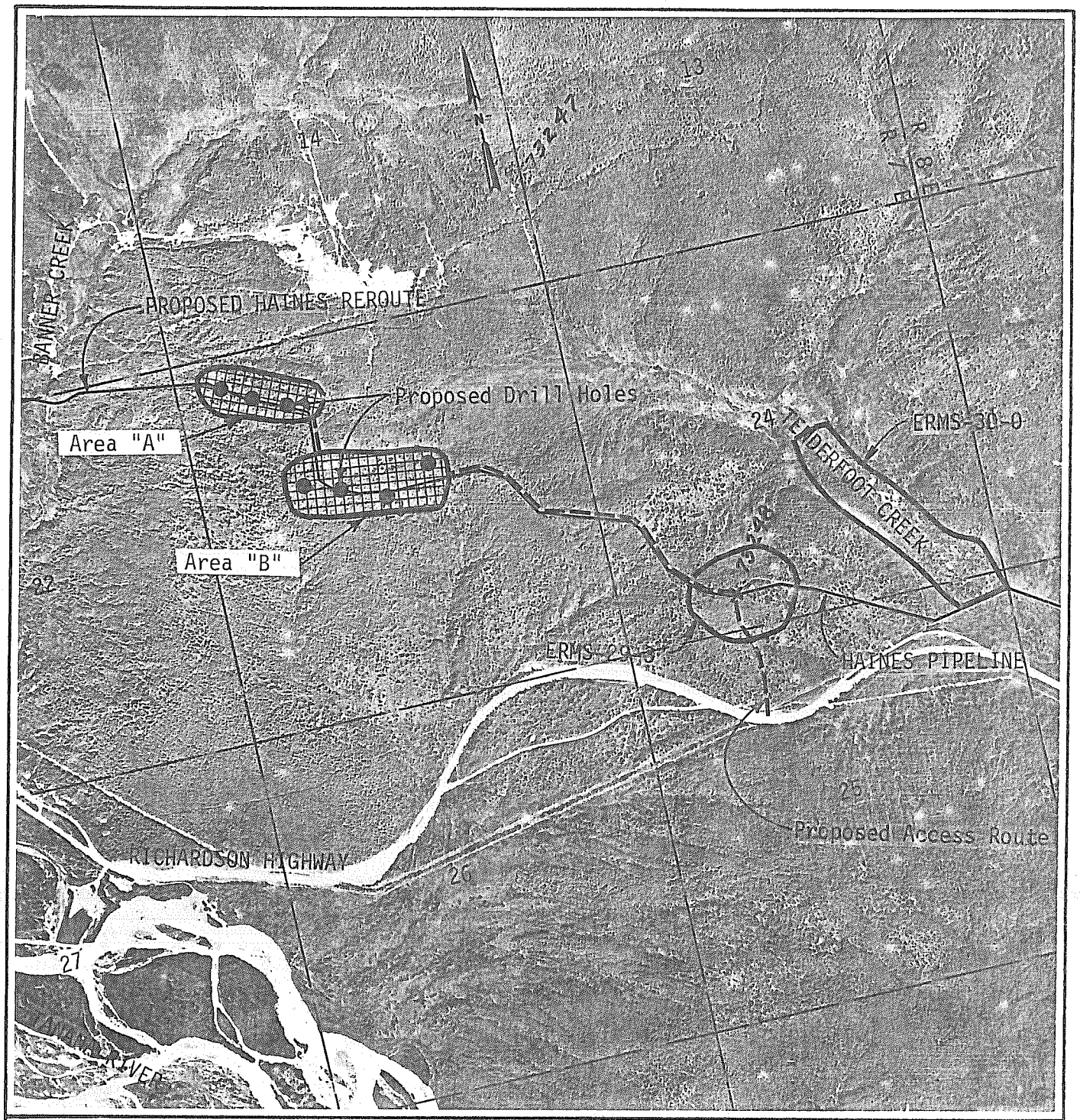
- A backhoe will excavate five test pits 12 to 15 feet in depth.

Proposed Access

- The existing road into the pit will be utilized for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not conducted. This exploration plan was developed using aerial photo interpretations, U.S.G.S Topographic Maps and aerial reconnaissance.



7 Drill Holes to 30' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

Section 23
T7S, R7E, Fairbanks Meridian

ERMS-29-2

Area: "A": 20 acres±
"B": 38 acres±

November 1979

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Intented

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 29-2

Location

- The proposed site includes two areas on the Haines Pipeline R.O.W. and is approximately 2000 feet south of Banner Creek. It lies within Section 23, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- Area "A" of the site is on a steep hillside and area "B" is on the crest of a ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to 12 inches in diameter, plus alder and willow with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of one to two feet of organics and silt.

Exploration Proposed

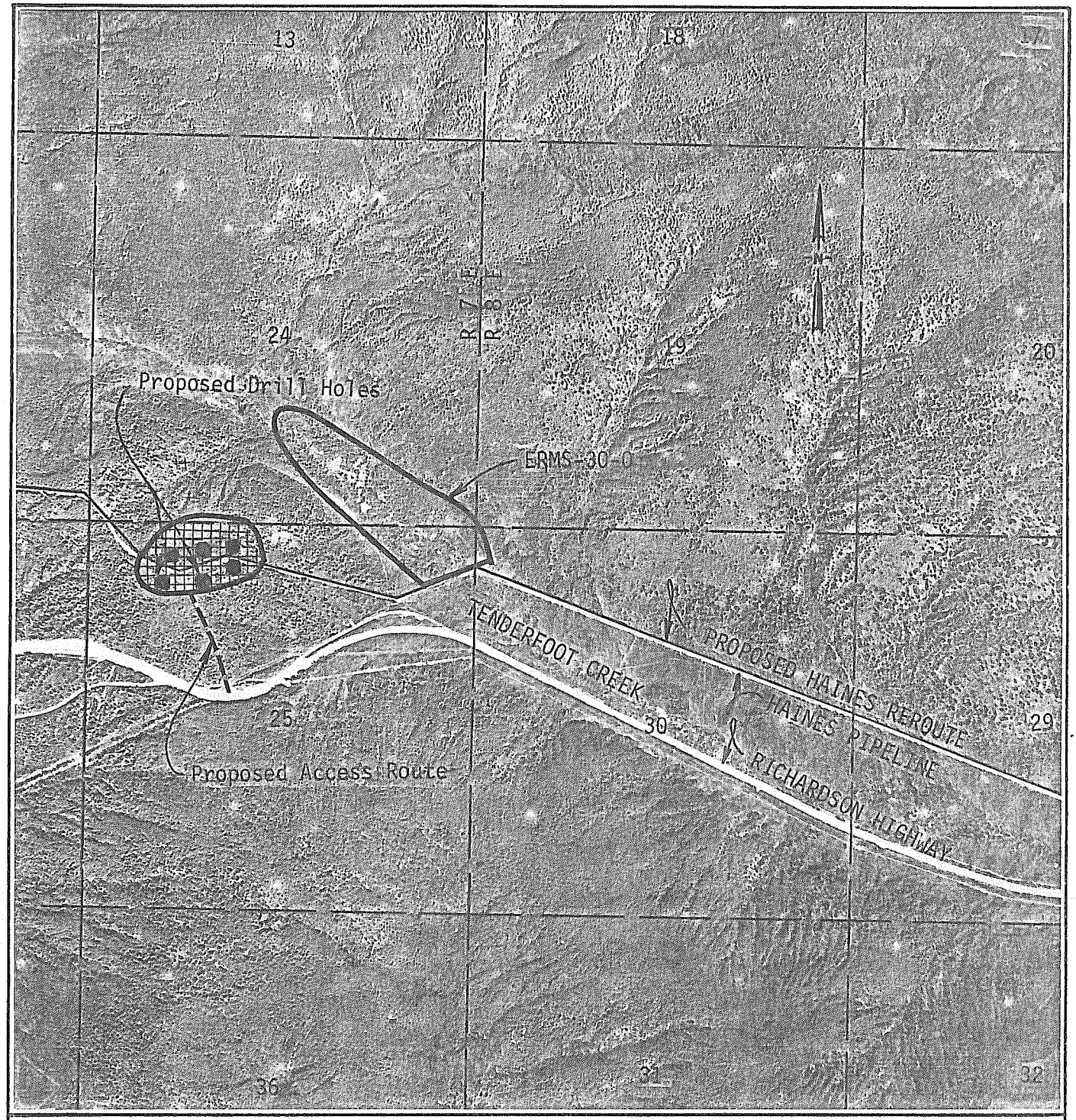
- A drill rig will make seven test borings to 30 feet in depth.

Proposed Access

- The drill rig will use the existing trail and the Haines Pipeline R.O.W. for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



6 Drill Holes to 30' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

S½ Section 24
N½ Section 25
T7S, R7E, Fairbanks Meridian

ERMS-29-3

November 1979 Area: 26 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 29-3

Location

- The proposed site is on the Haines Pipeline R.O.W. approximately two miles west of the Richardson Roadhouse. It lies within the S½ Section 24, N½ Section 25, T7S, R7E, Fairbanks Meridian.

Geology & Topography

- The site is on the crest of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense birch and spruce to 12 inches in diameter with a ground cover of moss.

Apparent Overburden

- The overburden consists of 12 to 24 inches of organics and silt.

Exploration Proposed

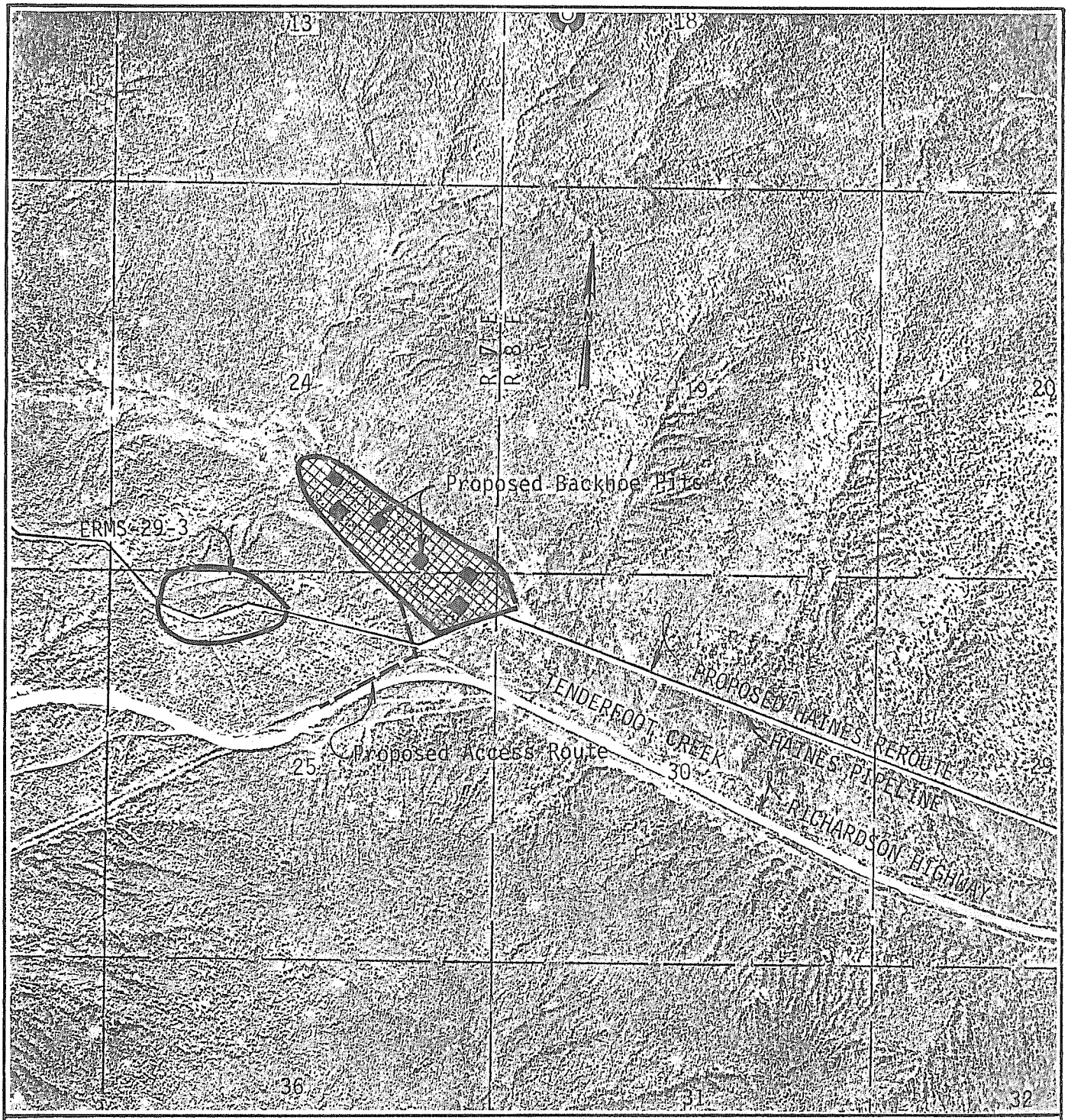
- A drill rig will make six borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the existing trail for access, as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



6 Backhoe Pits to 15' depth

EXPLORATION AREA LIES WITHIN:

SE¼ Section 24
NE¼ NE¼ Section 25
T7S, R7E, Fairbanks Meridian
SW¼ SW¼ Section 19
NW¼ NW¼ Section 30
T7S, R8E, Fairbanks Meridian

ERMS-30-0

November 1979 Area: 59 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Fed.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 30-0

Location

- The proposed site is on Tenderfoot Creek, approximately two and one-half miles east of the Richardson Roadhouse. It lies within the SE¼ Section 24, NE¼NE¼ Section 25, T7S, R7E, SW¼SW¼ Section 19, NW¼NW¼ Section 30, T7S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is on the upper reaches of Tenderfoot Creek and is composed in part of placer tailings.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is gravel. Material for workpad construction and select backfill can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and poplar to four inches in diameter, plus alder, willow and a ground cover of grass.

Apparent Overburden

- The overburden consists of organics.

Exploration Proposed

- A backhoe will excavate six test pits 12 to 15 feet in depth.

Proposed Access

- The backhoe will utilize existing roads and trails for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps, and aerial reconnaissance.

3 Drill Holes to 30' depth
EXPLORATION AREA LIES WITHIN:

0 1000 2000 4000
SCALE IN FEET

E½ Section 33
W½ W½ Section 34
T7S, R8E, Fairbanks Meridian

ERMS-32-1

November 1979 Area: 27 acres±

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Pat.

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 32-1

Location

- The proposed site is on the Haines Pipeline R.O.W. and lies approximately two miles west of Shaw Creek. It lies within the E½ Section 33, W½W½ Section 34, T7S, R8E, Fairbanks Meridian.

Geology & Topography

- The site is on the slope of a bedrock ridge.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

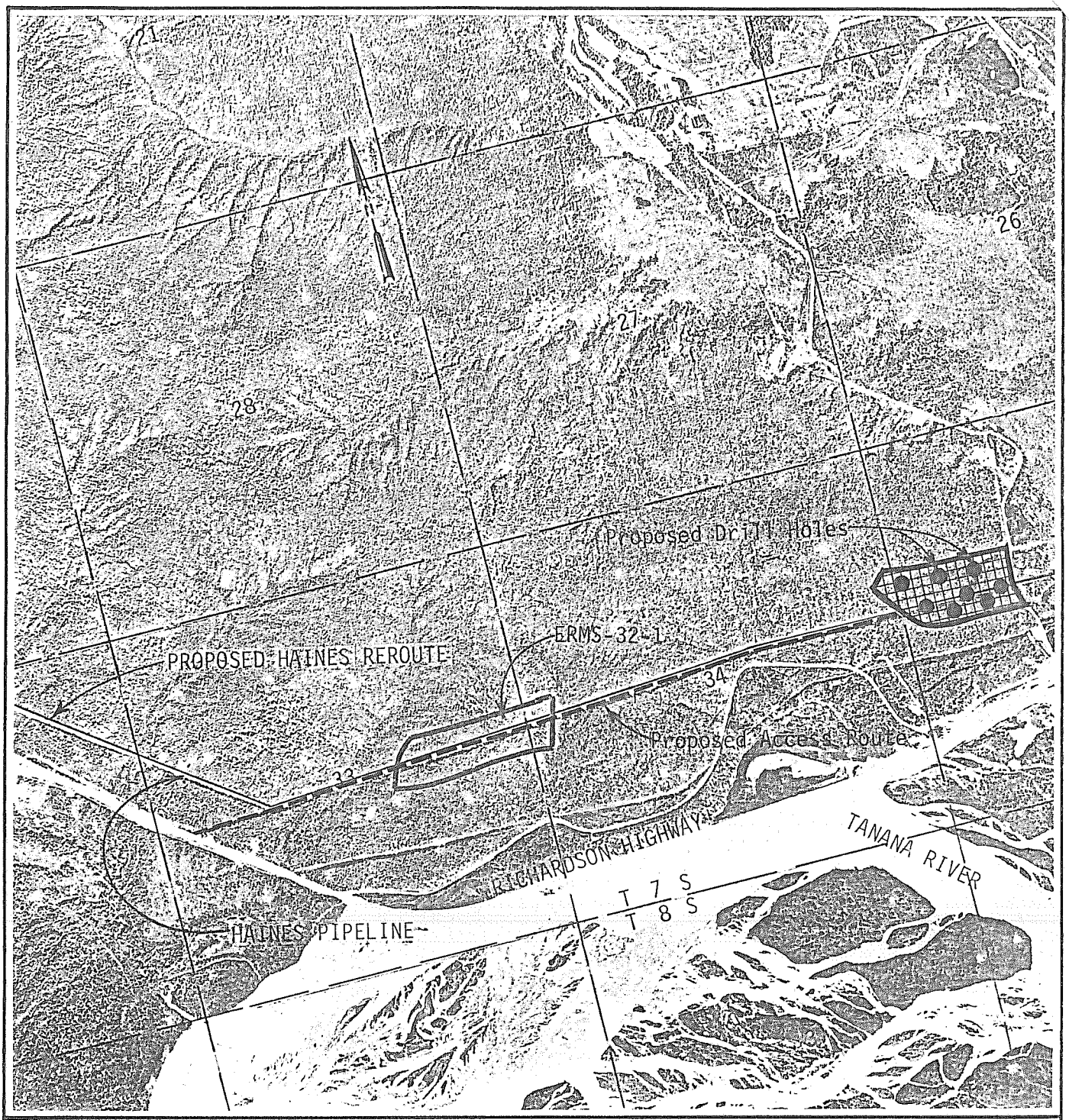
- A drill rig will make three test borings to 30 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. and existing trails for access, as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretations, U.S.G.S. Topographic Maps and aerial reconnaissance.



8 Drill Holes to 50' depth

EXPLORATION AREA LIES WITHIN:

E½ E½ Section 34
W½ Section 35
T7S, R8E, Fairbanks Meridian

ERMS-33-1

November 1979 Area: 21 acres±

0 1000 2000 4000

SCALE IN FEET

NORTHWEST ALASKAN PIPELINE CO.

MINERAL MATERIALS
EXPLORATION AREA
SITE MAP

FLUOR NORTHWEST, INC.

MICHAEL BAKER, JR., INC. CONSULTING ENGINEERS

Patented

NORTHWEST ALASKAN PIPELINE COMPANY

EXPLORATION PLAN

ERMS 33-1

Location

- The proposed site is across the Haines Pipeline R.O.W. and lies approximately 1000 feet west of Shaw Creek. It lies within those parts of the E½E½ Section 34 and the W½ Section 35, T7N, R8E, Fairbanks Meridian lying north of the Richardson Highway.

Geology & Topography

- The site is on a bedrock ridge that drops sharply toward Shaw Creek.

  Exploration will have no visual impact upon highway travelers.

Apparent Material

- The material is a weathered bedrock. Material for workpad construction can be produced from this site.

Vegetation Cover

- The vegetation is composed of moderately dense spruce and birch to six inches in diameter with a ground cover of grass and moss.

Apparent Overburden

- The overburden consists of organics and silt.

Exploration Proposed

- A drill rig will make eight test borings to 50 feet in depth.

Proposed Access

- The drill rig will utilize the Haines Pipeline R.O.W. for access as shown on the Site Map.

Special Note:

No access permits were acquired so an on-site investigation was not performed. This exploration plan was developed using aerial photo interpretation, U.S.G.S. Topographic Maps and aerial reconnaissance.

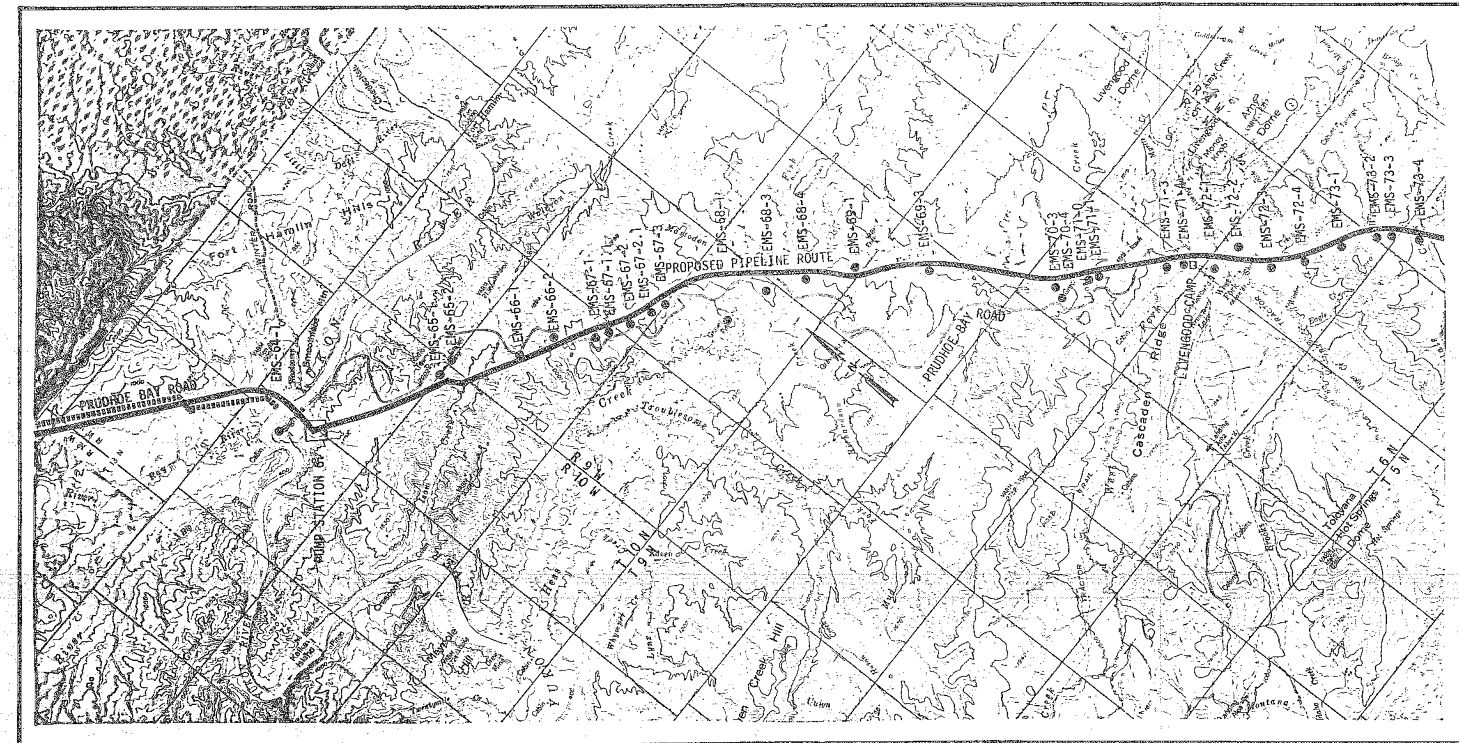
SECTION II

INDEX MAPS

FOR

MATERIAL SITE EXPLORATION PROGRAM

YUKON RIVER TO DELTA JUNCTION



Topography compiled from U.S.G.S. 1:250,000 quadrangles dated 1952, and 1958. Origin of land Grid shown is Fairbanks Meridian.

PRUDHOE BAY ROAD
PROPOSED PIPELINE ROUTE
EXPLORATION MATERIAL SITES

SCALE 1:250000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

INDEX MAP

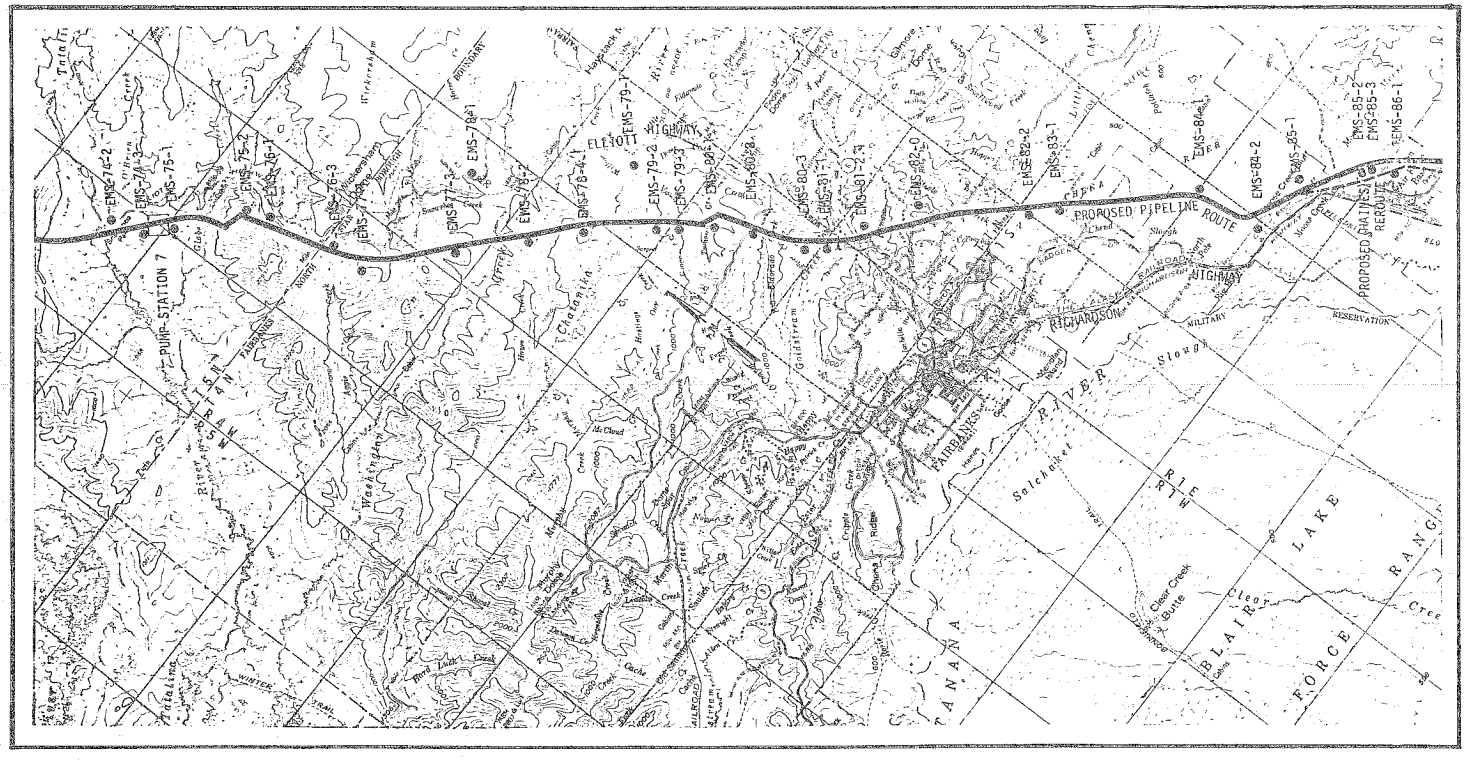
EXPLORATION MATERIAL SITES

YUKON RIVER TO DELTA JUNCTION

Prepared by Michael Baker, Jr., Inc.

November, 1979

SHEET 1 OF 3



Topography compiled from U.S.G.S. 1:250,000 quadrangles dated 1952, and 1958. Origin of land Grid shown is Fairbanks Meridian.

PROPOSED PIPELINE ROUTE
EXPLORATION MATERIAL SITES
PROPOSED (HAINES) REROUTE

SCALE 1:250,000

5 0 5 10 15 20 25 MILES

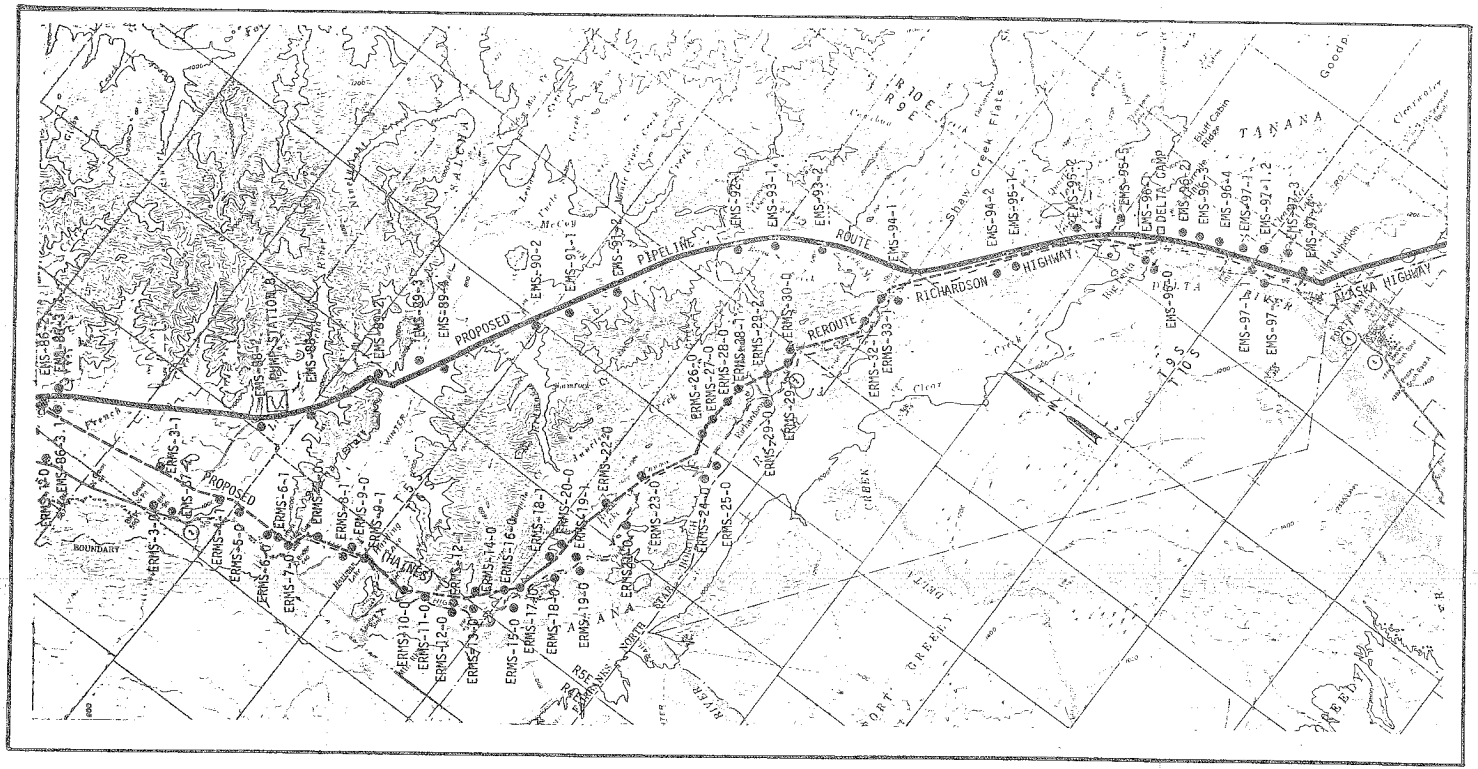
5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
DASHED LINES REPRESENT 100 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

INDEX MAP
EXPLORATION MATERIAL SITES
YUKON RIVER TO DELTA JUNCTION

Prepared by Michael Baker, Jr., Inc.

November, 1979



Topography compiled from U.S.G.S. 1:250,000 quadrangles dated 1952, and 1958. Origin of land Grid shown is Fairbanks Meridian.

PROPOSED PIPELINE ROUTE
EXPLORATION MATERIAL SITES
PROPOSED (HAINES) REROUTE

SCALE 1:750000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

INDEX MAP
EXPLORATION MATERIAL SITES
YUKON RIVER TO DELTA JUNCTION

Prepared by Michael Baker, Jr., Inc.

November , 1979