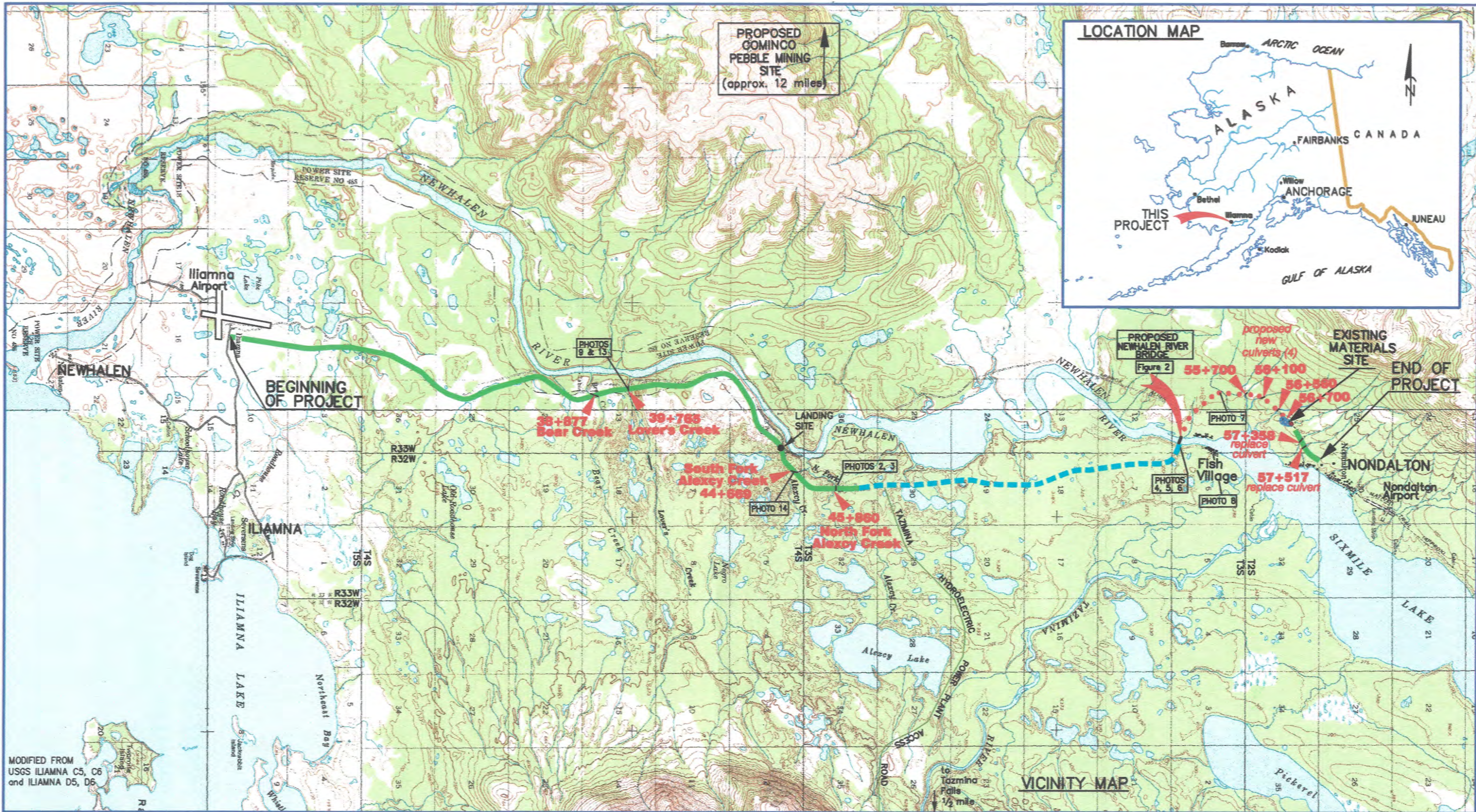


# FIGURES





MODIFIED FROM  
USGS ILIAMNA C5, C6  
and ILIAMNA D5, D6



DIVISION OF  
STATEWIDE DESIGN AND ENGINEERING SERVICES  
PRELIMINARY DESIGN  
AND  
ENVIRONMENTAL SECTION



0 1  
Scale in Miles

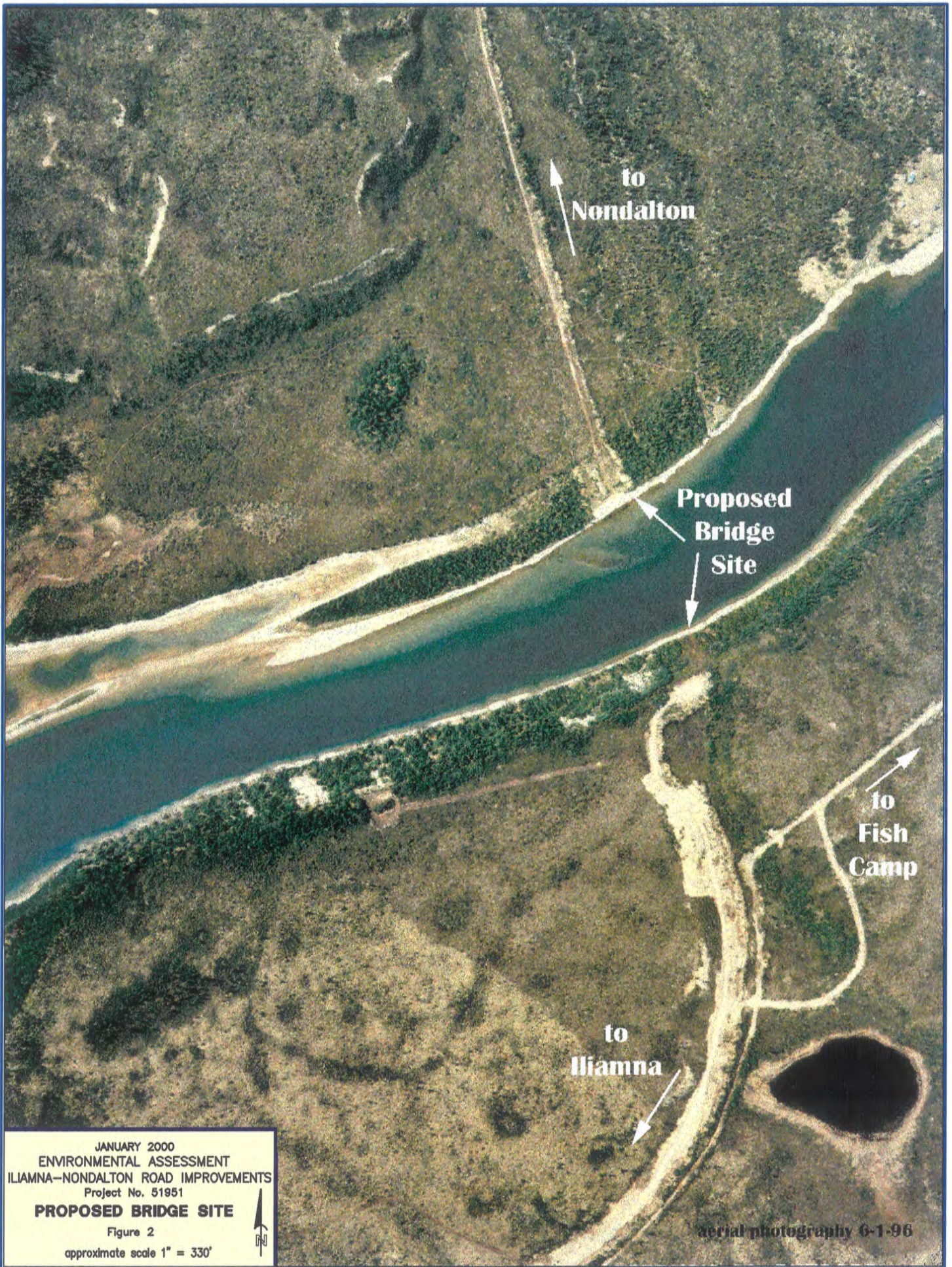
**LEGEND**

- EXISTING ROAD (resurface only)
- - - - EXISTING ROAD (to be improved and resurfaced)
- EXISTING PIONEER ROAD/ATV TRAIL (construct to roadway standards)

ENVIRONMENTAL ASSESSMENT  
ILIAMNA-NONDALTON ROAD IMPROVEMENTS  
Project No. 51951  
**LOCATION and  
VICINITY MAPS**

Figure 1





to  
Nondalton

Proposed  
Bridge  
Site

to  
Fish  
Camp

to  
Iliamna

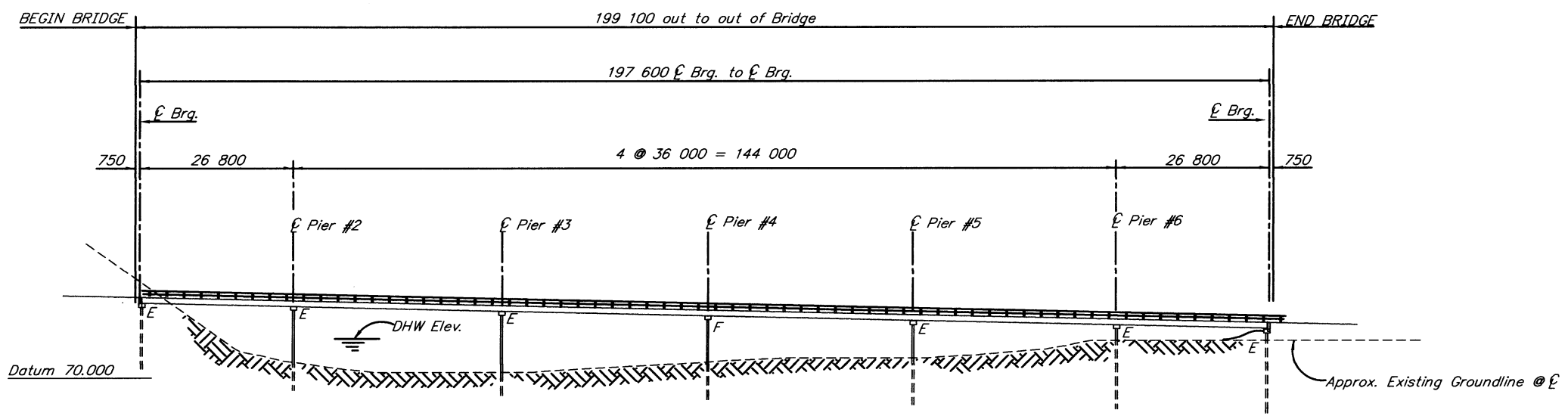
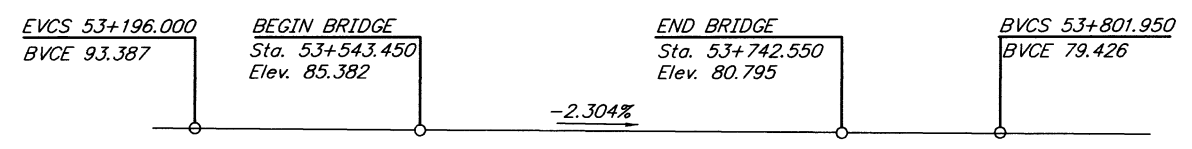
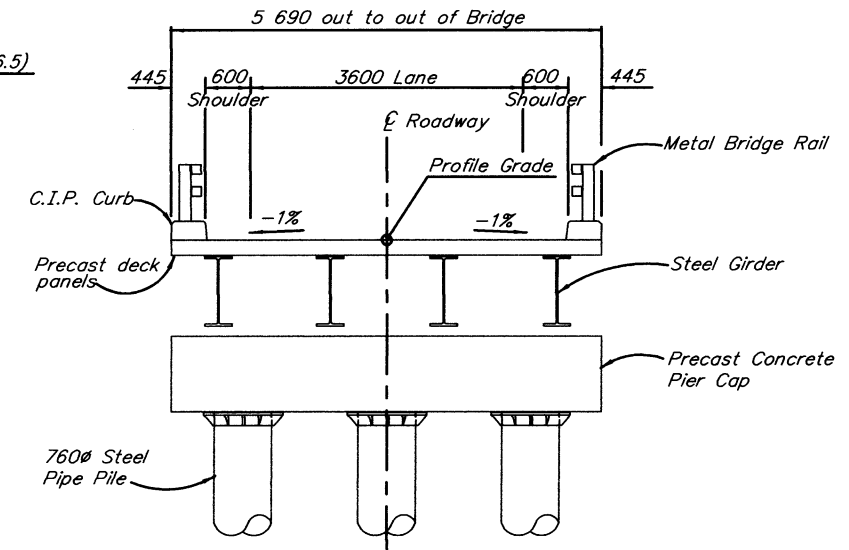
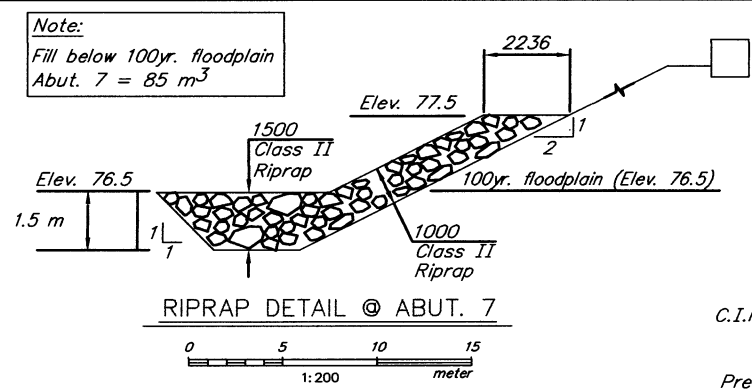
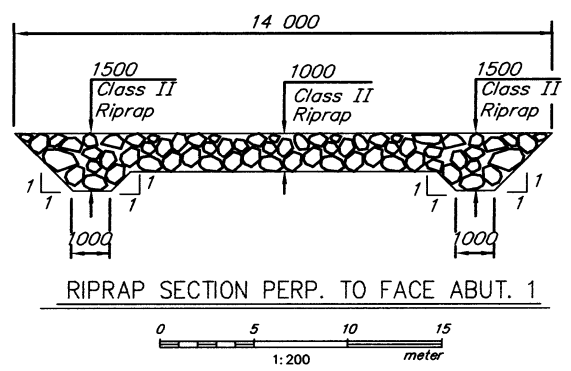
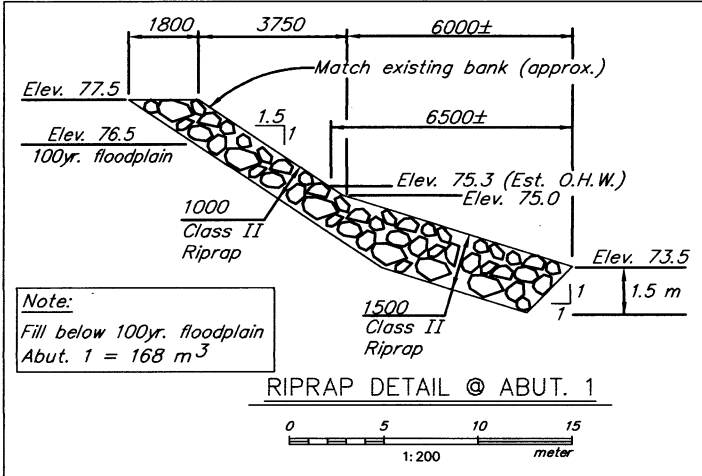
aerial photography 6-1-96

JANUARY 2000  
ENVIRONMENTAL ASSESSMENT  
ILIAMNA-NONDALTON ROAD IMPROVEMENTS  
Project No. 51951  
**PROPOSED BRIDGE SITE**  
Figure 2  
approximate scale 1" = 330'

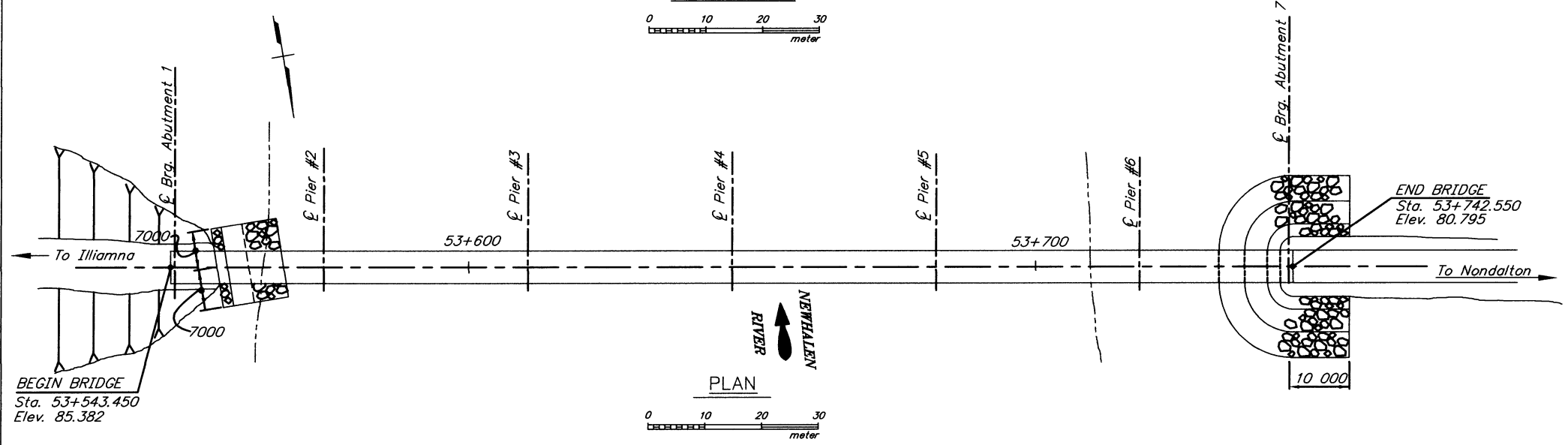


both.tif





DRAWING INDEX	
TITLE	DWG. NO.
General Layout	1
Site Plan	2
Abutments	3
Piers	4
Bearing & Exp.	5
Typical Section	6
Precast Deck Panels	7
Framing Plan	8
Girder Detail 1	9
Girder Detail 2	10
Girder Splice	11
Camber Detail	12
Metal Bridge Rail	13
Test Hole Logs	14-16



**PRELIMINARY**  
FOR DESIGN STUDY

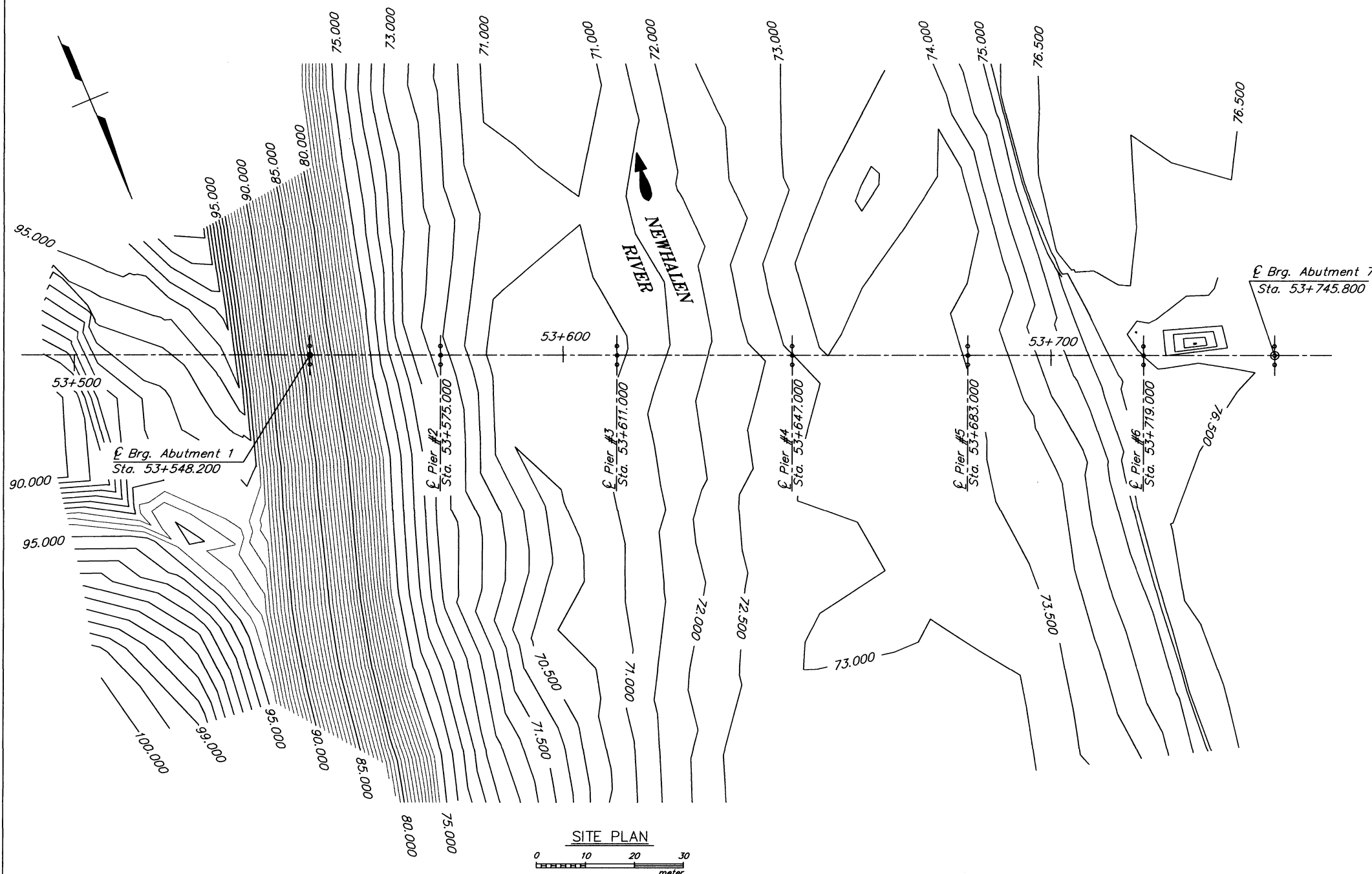
**NEWHALEN RIVER BRIDGE**  
ROUTE S-214  
GENERAL LAYOUT

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
and PUBLIC FACILITIES  
JUNEAU, ALASKA



BRIDGE NO. 1286  
FIGURE 3

Designed By: EEM  
Detail Check By:  
Design Check By:  
P: 1208\1286-1.dwg  
3/25/1999 12:37  
Plot Scale = 12.70  
Reviewed By: CSA



**GENERAL NOTES**

**SPECIFICATION:**

Design:..... AASHTO LRFD Bridge Design Specification, 1994 Edition, with the latest Interim Specifications.

Construction:..... State of Alaska Interim Standard Specifications for Highway Construction, (Metric) 94M with Special Provisions.

Live Load:..... HL93

Dead Load:..... 1.1 kPa for future paving.

**MATERIAL PROPERTIES:**

Structural Steel:.....  $F_y = 345 \text{ MPa}$

Cast-in-Place Concrete:.....  $f'_c = 21 \text{ MPa}$

Precast Concrete:.....  $f'_c = 41 \text{ MPa}$

Reinforcing Steel:.....  $F_y = 414 \text{ MPa}$

**STRUCTURAL MATERIALS:**

Concrete:..... All cast in place concrete shall be Class "A".

Reinforcing Steel:..... All reinforcing steel shall be standard U.S. sizes and shall conform to ASTM A615M Grade 400.

Structural Steel:..... All structural steel for Girders, Splice plates & Brg. stiffeners shall be ASTM A572M GR345. All other structural steel shall be ASTM A36 unless otherwise noted.

All Piles shall be 760x19 thick, ASTM A572M, Grade 345.

All high strength bolts shall be ASTM A325

**PILE SPECIFICATIONS:**

Piling:..... Design pile load = 645 kn  
Ultimate bearing capacity = 1780 kn

PILE TIP ELEVATION		
	DESIRABLE	ESTIMATED
Abut. 1	58.0 m	54.5 m
Pier 2	58.0 m	54.5 m
Pier 3	58.0 m	54.5 m
Pier 4	58.0 m	54.5 m
Pier 5	58.0 m	54.5 m
Pier 6	58.0 m	54.5 m
Abut. 7	58.0 m	54.5 m

HYDRAULIC & HYDROLOGIC SUMMARY			
	50 Yr.	100 Yr.	500 Yr.
Flood frequency (Yr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Design discharge (cms)	1169	1266	1481
Design Highwayer (m)	76.3	76.5	76.8
Anticipated additional backwater (m)	<0.1	<0.1	-
Contraction scour (m)	-	1.0	1.0
Abutment scour (m)	-	Na	Na
Pier scour (m)	-	1.2	1.3

Drainage area for this crossing: .....8620 square kilometers

Hydraulic Capacity:..... 2460 cms at low superstructure elevation 78.31 m which has an exceedance probability of equal to or less than 0.2 percent.

Total scour equals contraction scour + local scour

**SITE PLAN**  
0 10 20 30  
meter

ESTIMATE OF QUANTITIES					
ITEM NO.	ITEM	UNIT	SUBSTR.	SUPERSTR.	TOTAL
501(1)	Class A Concrete	L.S.-m	49	44	93
501(8)	Precast Concrete Deck Panel	Ea.	—	132	132
501(9)	Precast Concrete Pile Cap	Ea.	7	—	7
503(1)	Reinforcing Steel	L.S.-kg.	18,582	1,645	20,227
504(2a)	Structural Steel, Furn., Fab.d and Erected A572m, Grade 345	Kg	—	226,500	226,500
504(2b)	Structural Steel, Furn., Fab.d and Erected A36m, Grade 345	Kg	—	13,017	13,017
505(5)	Structural Steel Piles—Furnished	m	500,115	—	500,115
505(6)	Structural Steel Piles—Driven	Ea.	21	—	21
507(1)	Metal Bridge Railing	m	—	398.200	398.200
606(12)	Guardrail/Bridge Rail Connection	Ea.	—	4	4
611(1)	Riprap, Class II	m <sup>3</sup>	205	—	205
631(2)	Geotextile, Erosion Control, Class A	m <sup>2</sup>	205	—	205

Item numbers are for reference only. Quantities shown are not necessarily the pay quantities nor the total quantity of the particular item. Reinforcing steel lap lengths are not included in the quantity shown.

**PRELIMINARY**  
FOR DESIGN STUDY

NEWHALEN RIVER BRIDGE  
ROUTE S-214  
SITE PLAN

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
and PUBLIC FACILITIES  
JUNEAU, ALASKA

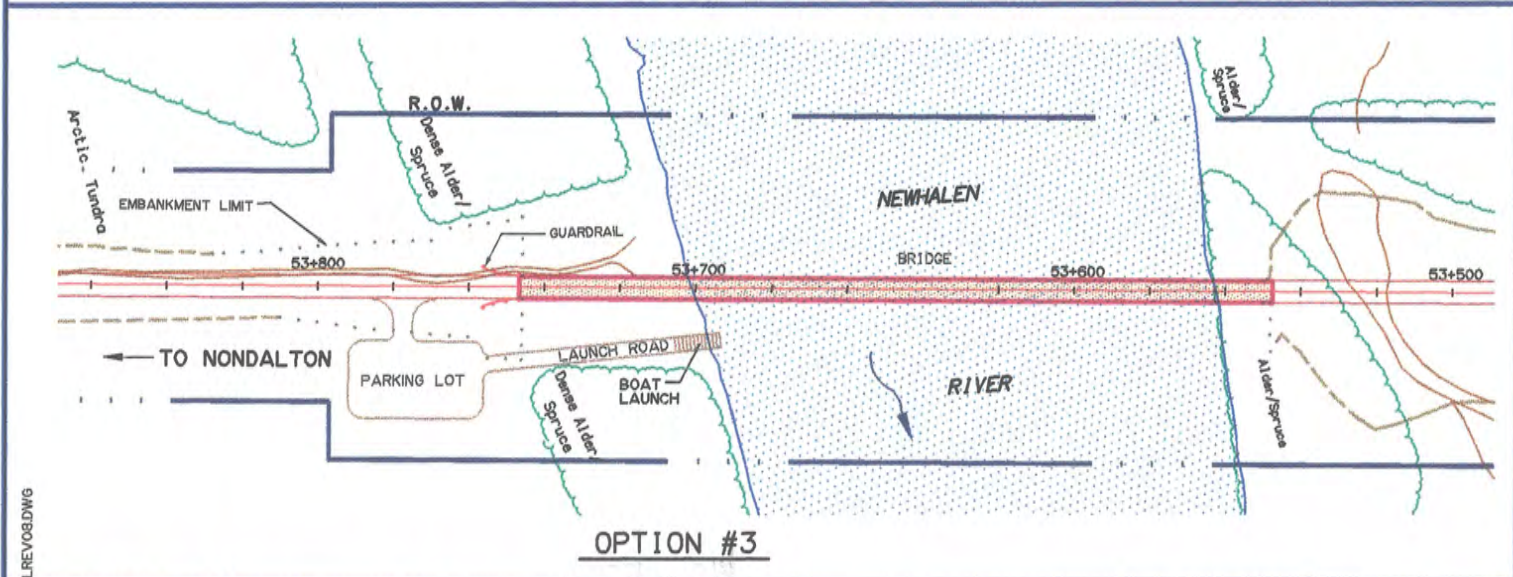
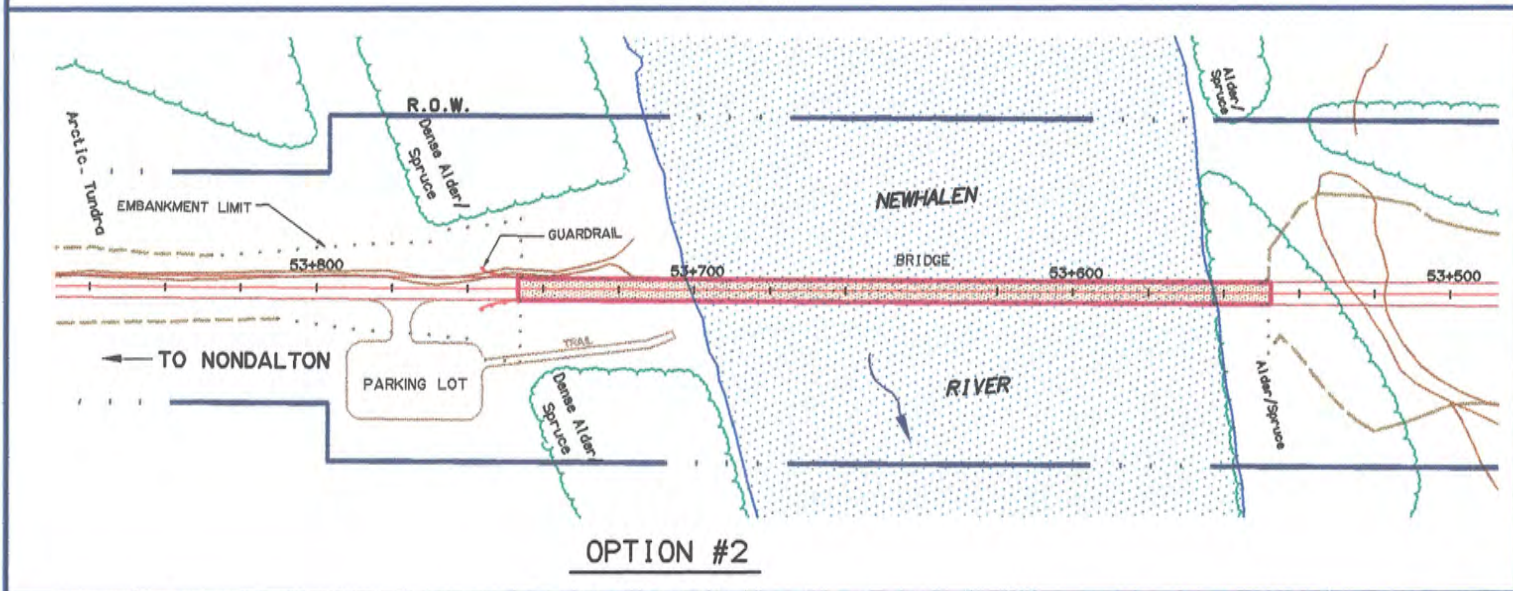
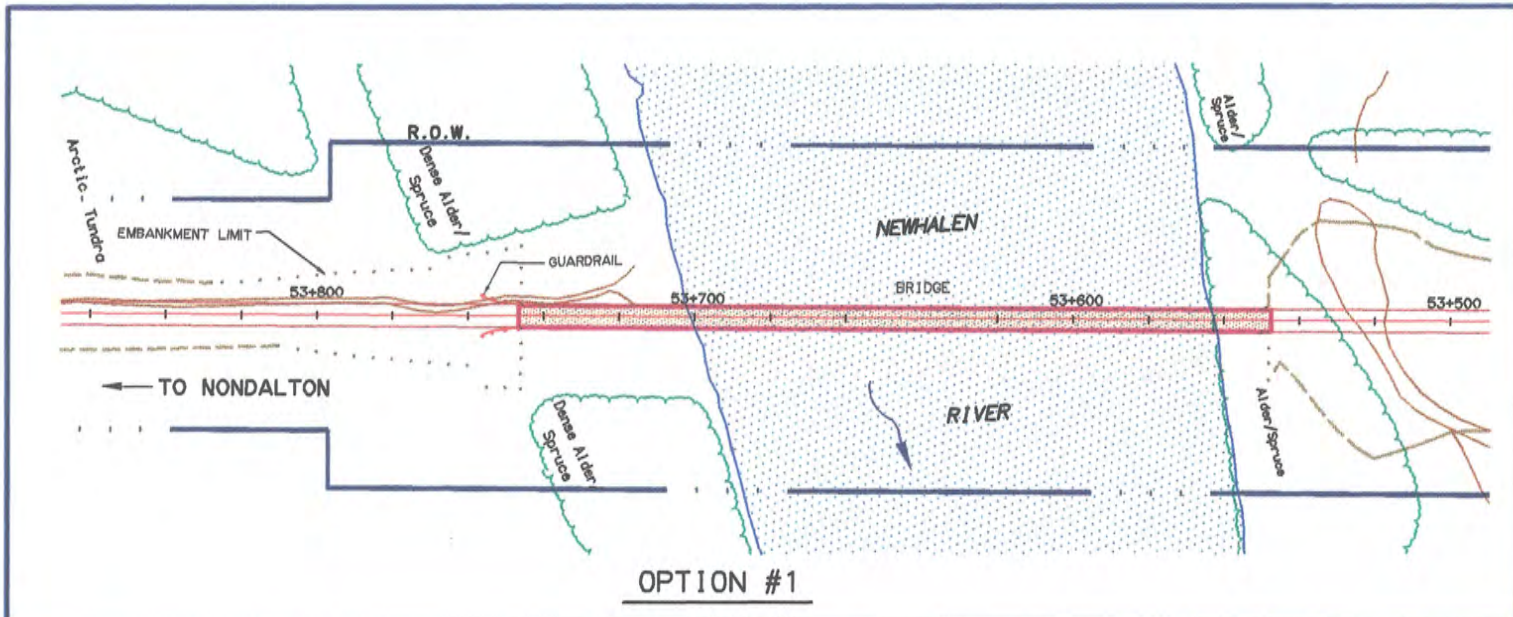


BRIDGE NO. 1286  
FIGURE 4

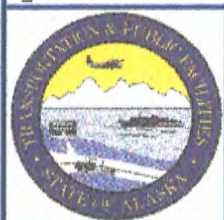
Designed By: EEM  
Detail Check By:  
Drawn or Revised By: SHS

P: 1206/1206-24  
7/23/1997 15:57  
Plot Scale = 1:250





LREVO8.DWG



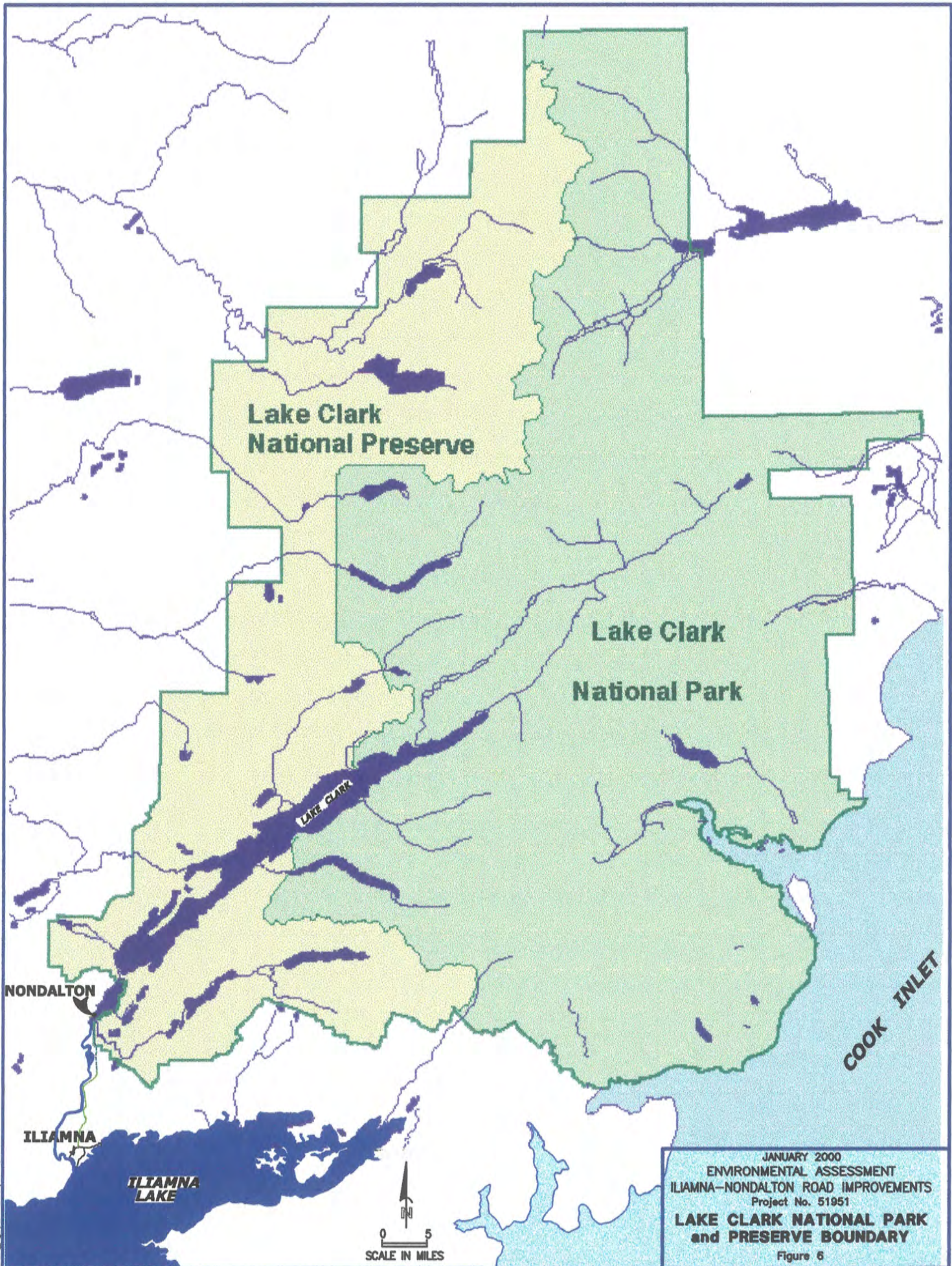
DIVISION OF  
 STATEWIDE DESIGN AND ENGINEERING SERVICES  
 PRELIMINARY DESIGN  
 AND  
 ENVIRONMENTAL SECTION



JANUARY 2000  
 ENVIRONMENTAL ASSESSMENT  
 ILIAMNA-NONDALTON ROAD IMPROVEMENTS  
 Project No. 51951  
**NEWHALEN RIVER ACCESS OPTIONS**

Figure 5





Lake Clark  
National Preserve

Lake Clark  
National Park

Lake Clark

NONDALTON

ILIAMNA

ILIAMNA  
LAKE

COOK INLET



JANUARY 2000  
ENVIRONMENTAL ASSESSMENT  
ILIAMNA-NONDALTON ROAD IMPROVEMENTS  
Project No. 51951  
**LAKE CLARK NATIONAL PARK  
and PRESERVE BOUNDARY**  
Figure 6

z:\p0\aired.bmp





Photo 1: Typical view of Iliamna-Nondalton Road. INNEC Power Line in the upper right, which parallels roadway. 7-10-96.



Photo 2: Aerial view of Alexcy Creek Bridge, reconstructed in 1995. 5-18-96.

**FIGURE 7**





Photo 3: Alexcy Creek Bridge, reconstructed in 1995. 7-14-95.



Photo 4: From the bank on the Iliamna side, looking across the Newhalen River towards the ATV trail leading to the Nondalton material site. 7-10-96.

**FIGURE 8**



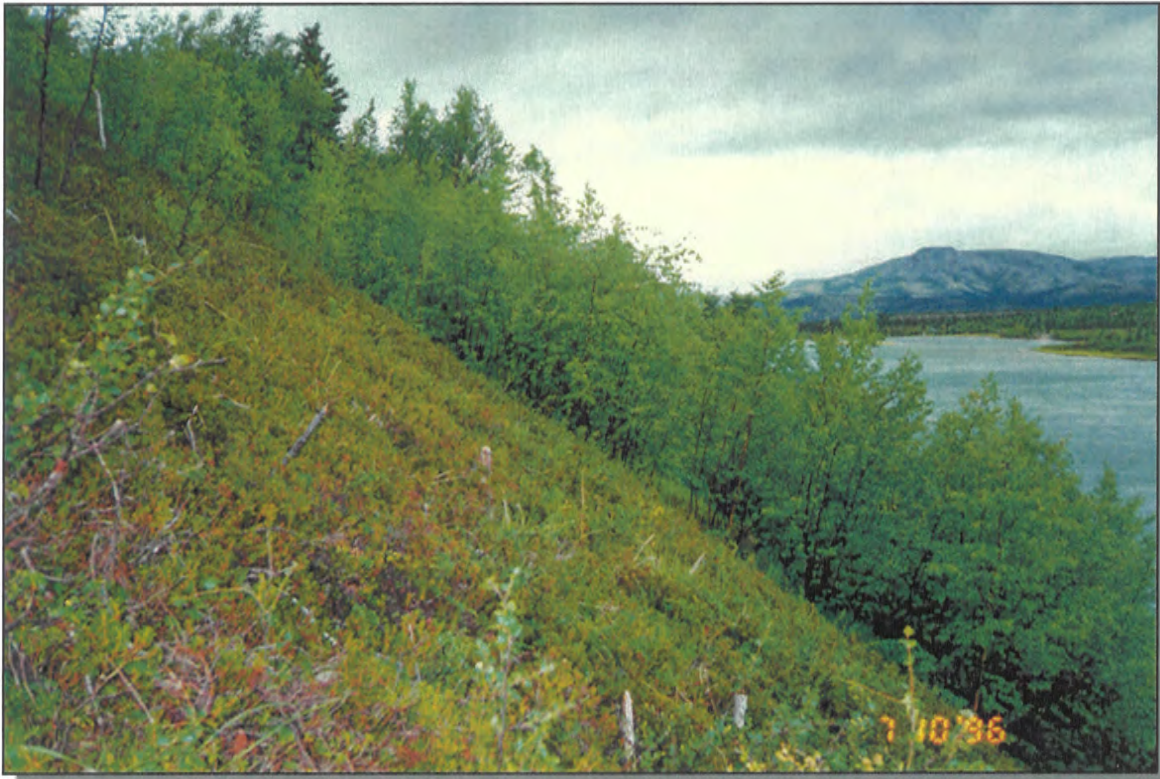


Photo 5: The steep Iliamna bank of the Newhalen River, approximately 60 feet above the opposite Nondalton bank. 7-10-96.



Photo 6: From the bank on the Iliamna side, looking across the Newhalen River towards Nondalton. 6-5-96.

**FIGURE 9**





Photo 7: Typical view of the ATV trail between the Newhalen River and the Nondalton material site. 7-14-95.



Photo 8: "Fish Village" or "Fish Camp" on the Iliamna side of the Newhalen River, looking across the River towards Nondalton. 6-5-96.

**FIGURE 10**





Photo 9: Large culvert and eroded bank along the Iliamna-Nondalton Road. 7-10-96



Photo 10: Typical view of erosion along the Iliamna-Nondalton Road. Photo probably taken in 1995.





Photo 11: Aerial view of wide footprint along the Iliamna-Nondalton Road. Looking south towards Iliamna. 5-18-96.



Photo 12: Aerial view of wide footprint along the Iliamna-Nondalton Road. Looking south towards Iliamna. 5-18-96.





Photo 13: Eroded road embankment at Lover's Creek. 8-24-99.

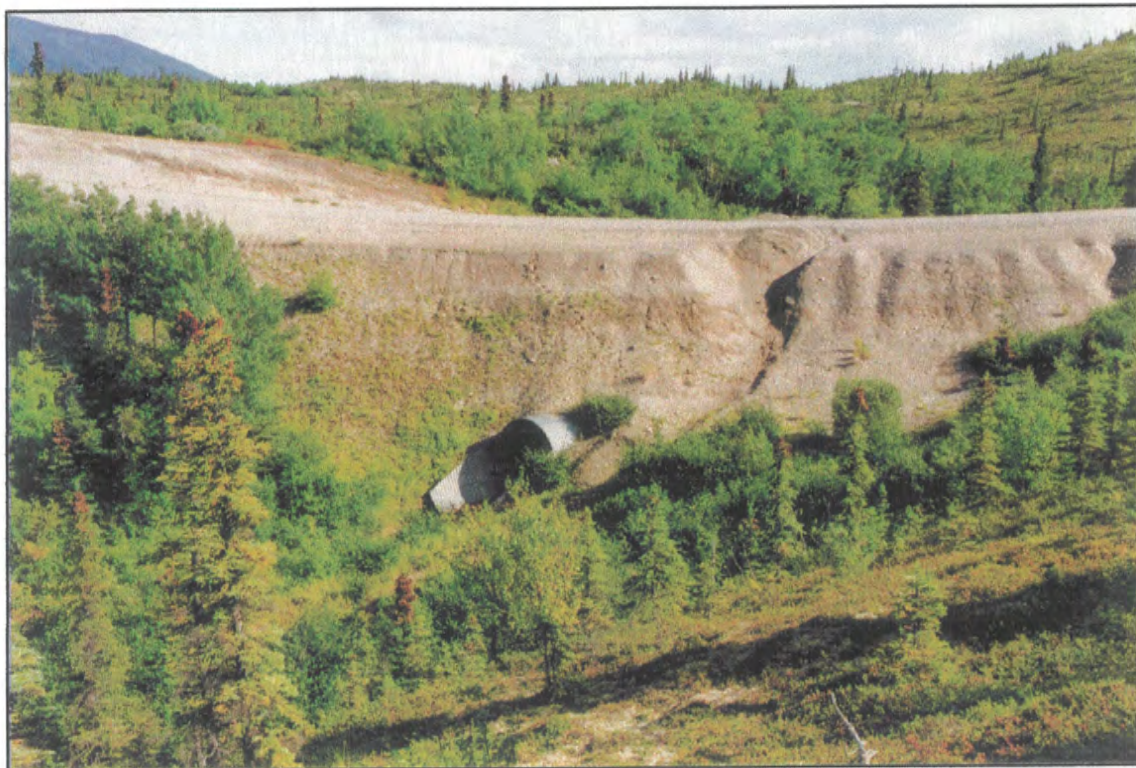


Photo 14: Eroded road embankment at S. Fork Alexcy Creek. Looking at the outlet culvert. 8-24-99.

**FIGURE 13**