Part 2 of 2

25-229K
9-97

STATE OF ALASKA
Department of Transportation & Public Facilities
Central Materials Lab

5750 EAST TUDOR RD, ANCHORAGE AK 99507
Phone (907)-269-6200 FAX (907) 269-6201

Laboratory Report

PRECONSTRUCTION

PROJECT NAME: Williamsport to Pile Bay Rd. Repair PROJECT NO. 51651

SAMPLE OF: ITEM/SPECIFICATION NO.:
SAMPLED FROM: Stockpile @ Pit, MP 4.0
SOURCE/SUPPLIER: Centerline QUANTITY REPRESENTED
LOCATION/ADDRESS: SUBMITTED BY: C. Boeckman
EXAMINED FOR: Gradation, LA, Deg, Sulfate Soundness & SpG

LABORATORY NO. 05A-0973
FIELD NO.: FS05-8
DATE SAMPLED: 06/22/2005
DATE RECEIVED: 06/24/2005
DATE COMPLETED: 07/20/2005
DATE REPORTED: 07/20/2005

Sieve Analysis AASHTO T 27 & T 11

SIEVE	Lab	Specs.
4"	100	
3"	93	
2"	82	
1 1/2"	80	
1"	75	
3/4"	68	
1/2"	52	
3/8"	41	
1/4"	28	
#4	21	
#8	11	
#10	10	
#16	5	
#30	2	
#40	1	
#50	1	
#80		
#100	0	
#200	0.3	
.02mm		
.002mm		

Fineness Modulus

LL	
PL	
PI	

	% Fracture	Lab	Specs
	Single Face		
	Double Face		
	Flat Elongated, 1:3		
	1:5		
	Uncompacted Voids of FA		

Dry Unit Wt., pcf

		Coarse	Specs	Fine	Specs
	Specific Gravity, Bulk	2.69			
	Specific Gravity, SSD	2.71			
	Specific Gravity, App.	2.75			
AASHTO T 85	% Absorption	0.8			
	Lightweight Part., %				
	Friable Particles, %				
AASHTO T 104	Sulfate Sound, % Loss	3			
AASHTO T 96	L.A. Abrasion, % Loss	41			
	% Loss @ 100 revs				
	Nordic Abrasion				
ATM 313	Degradation	71			
	Sticks & Roots, %				
	Sand Equivalent				
	% Organic				

MORTAR MAKING PROPERTIES OF SAND
Organic Impurities [ ]Less [ ]More than 500 PPM
Compressive Strength, psi (if More than....)

	Control	Sample	Ratio	Spec.
7 Day				
28 Day				

Remarks:

When Processed to conform to grading requirements, this material is satisfactory for:

The Material as Submitted Conforms to Specifications
Yes[ ] No[ ] NA[X]

Signature Newton Bingham
Newton J. Bingham, PE
Regional Materials Engineer

D2 THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED.

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Laboratory Report

PRECONSTRUCTION

PROJECT NAME: Williamsport to Pile Bay Rd. Repair PROJECT NO. 51651

SAMPLE OF: ITEM/SPECIFICATION NO.:
SAMPLED FROM: Rock Cut MP 1.0 , Depth Surface
SOURCE/SUPPLIER: Centerline QUANTITY REPRESENTED
LOCATION/ADDRESS: SUBMITTED BY: C. Boeckman
EXAMINED FOR: LA, Deg, Nordic Abrasion & SpG

LABORATORY NO. 05A-0974
FIELD NO.: FS05-9
DATE SAMPLED: 06/23/2005
DATE RECEIVED: 06/24/2005
DATE COMPLETED: 07/11/2005
DATE REPORTED: 07/18/2005

Sieve Analysis

SIEVE	Lab	Specs.
4"		
3"		
2"		
1 1/2"		
1"		
3/4"		
1/2"		
3/8"		
1/4"		
#4		
#8		
#10		
#16		
#30		
#40		
#50		
#80		
#100		
#200		
.02mm		
.002mm		

Fineness Modulus

LL		
PL		
PI		

	% Fracture	Lab	Specs
	Single Face		
	Double Face		
	Flat Elongated, 1:3		
	1:5		
	Uncompacted Voids of FA		

Dry Unt Wt pcf

		Coarse	Specs	Fine	Specs
	Specific Gravity, Bulk	2.79			
	Specific Gravity, SSD	2.80			
	Specific Gravity, App.	2.83			
AASHTO T 85	% Absorption	0.5			
	Lightweight Part., %				
	Friable Particles, %				
	Sulfate Sound, % Loss				
AASHTO T 96	L.A. Abrasion, % Loss	33			
	% Loss @ 100 revs				
ATM 312	Nordic Abrasion	17.0			
ATM 313	Degradation	68			
	Sticks & Roots, %				
	Sand Equivalent				
	% Organic				

MORTAR MAKING PROPERTIES OF SAND
Organic Impurities [ ]Less [ ]More than 500 PPM
Compressive Strength, psi (if More than....)

	Control	Sample	Ratio	Spec.
7 Day				
28 Day				

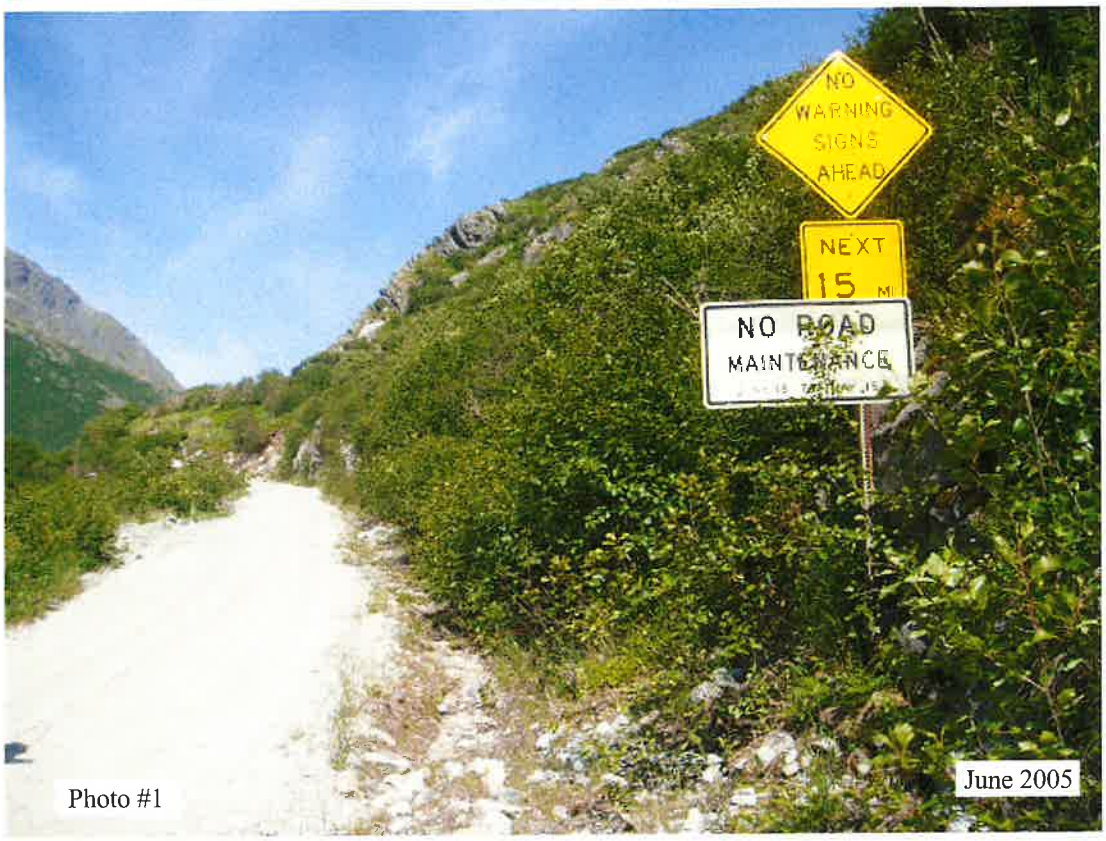
Remarks:

When Processed to conform to grading requirements, this material is satisfactory for:

The Material as Submitted Conforms to Specifications
Yes[ ] No[ ] NA[X]

Signature Newton Bingham
Newton J. Bingham, PE
Regional Materials Engineer

D2 THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED.



MP 0.35 - Little to no rock fall problems from 0.35 (start of rock cuts) to MP 0.9. Relatively small cuts. There is significant vegetation cover that stabilizes the slopes.

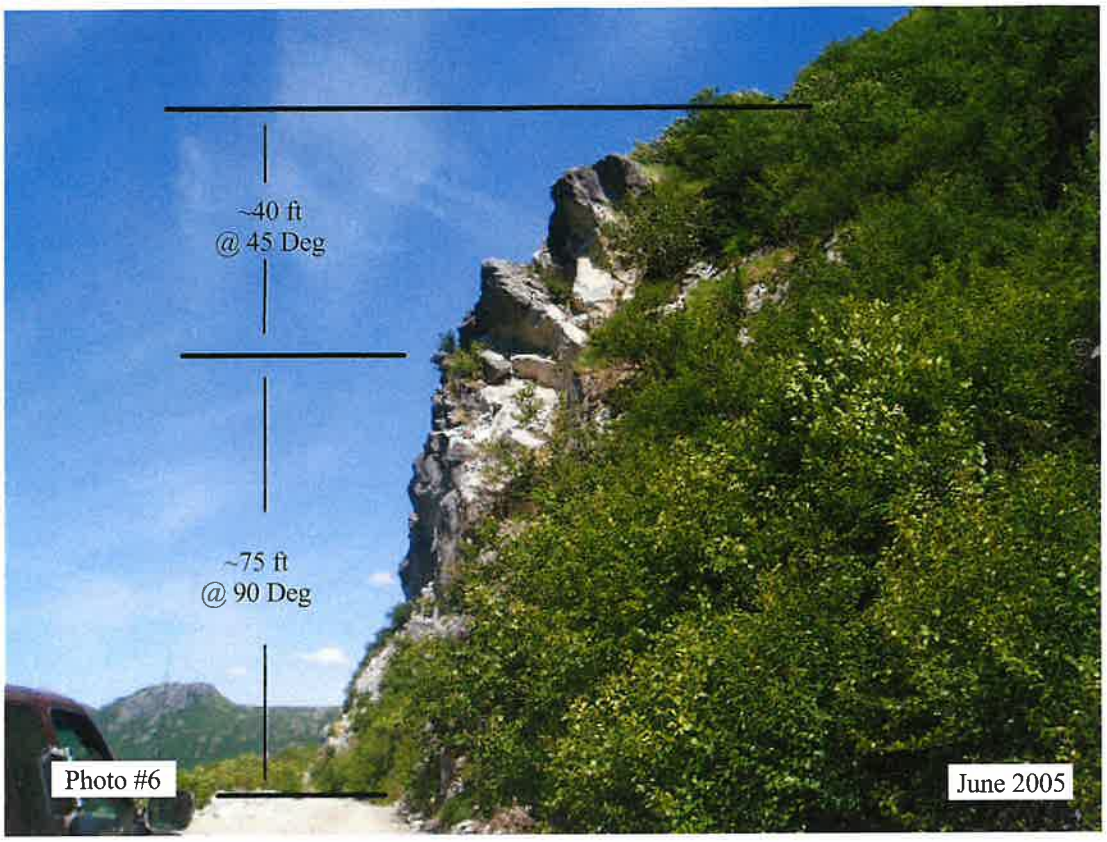
MP 0.85 - Looking back at Williamsport from MP 0.85.

MP 1.0 - Looking up at the rock "chute" and the talus fan at the road. Rock fall area.

The slope of the chute is 49 degrees.
The distance up to the first bench is about 330 ft.

From MP 0.90 - Looking upstation at the slope above the cut at about MP 1.04. This is locally called 1-mile bluff.

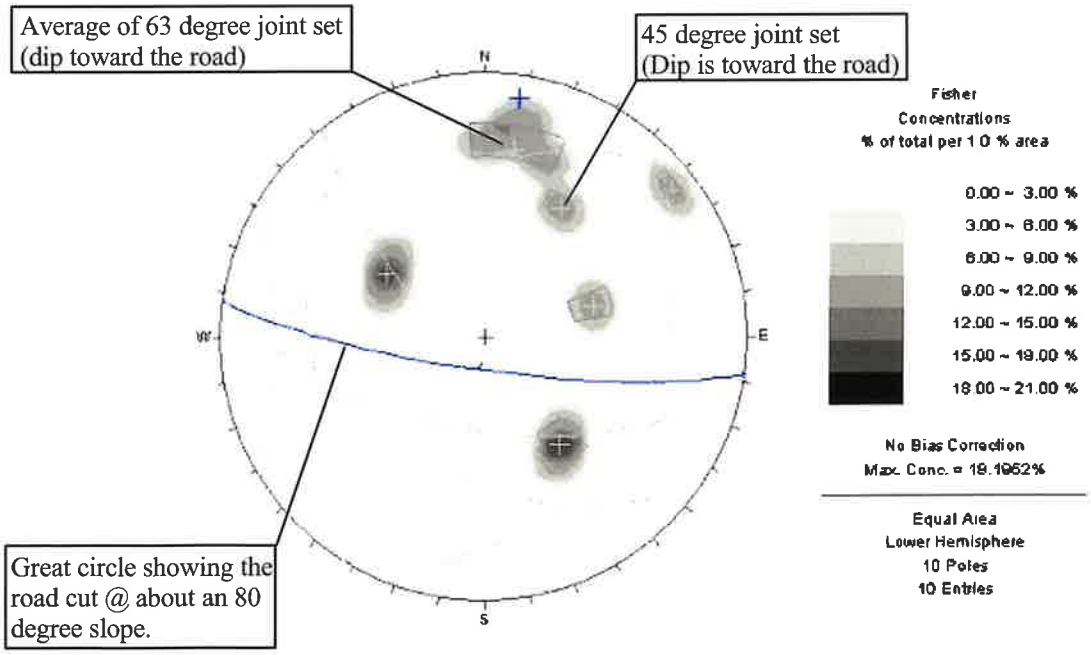
From MP 1.1 - Looking back at MP 1.04 cut area.



MP 1.04 - Rough dimensions of the slope.

MP 1.04 - Looking at a gillnet type boat being hauled past the cut.

Photo of the rock cut at MP 1.04 (local maintenance contractor calls this "1-mile bluff"). The road is only 12 ft wide here. North is to the left in the photo.

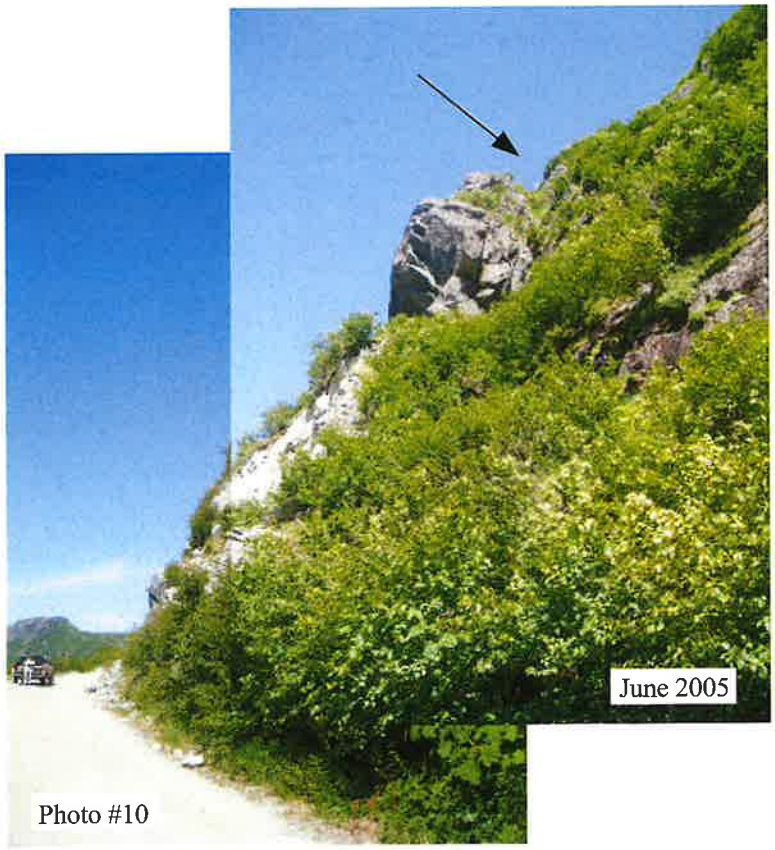


Stereonet of major joints at MP 1.0 cut - This contour stereonet presents limited data of the rock structure at this cut.

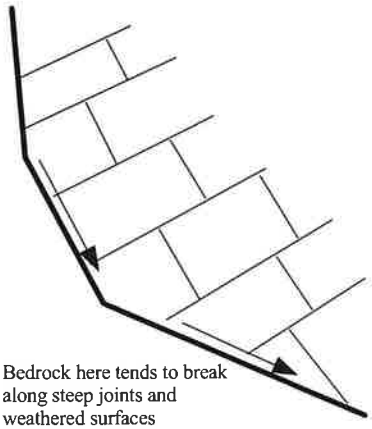
MP 1.04 - Looking at rock fall from 9-2004. Ray Williams photo. A large rock hit the edge of the road and failed the embankment. The road was only 8 ft wide as a result of the rock fall (see red dashed line in the photo).

MP 1.1 - Looking upstation at the slope.

Arrow points to a deep open joint or fracture behind the rock overhang.



MP 1.1 - Looking at the slope and the curved failure surface. This slope was shot in the 1950s.



Bedrock here tends to break along steep joints and weathered surfaces forming a curvature.

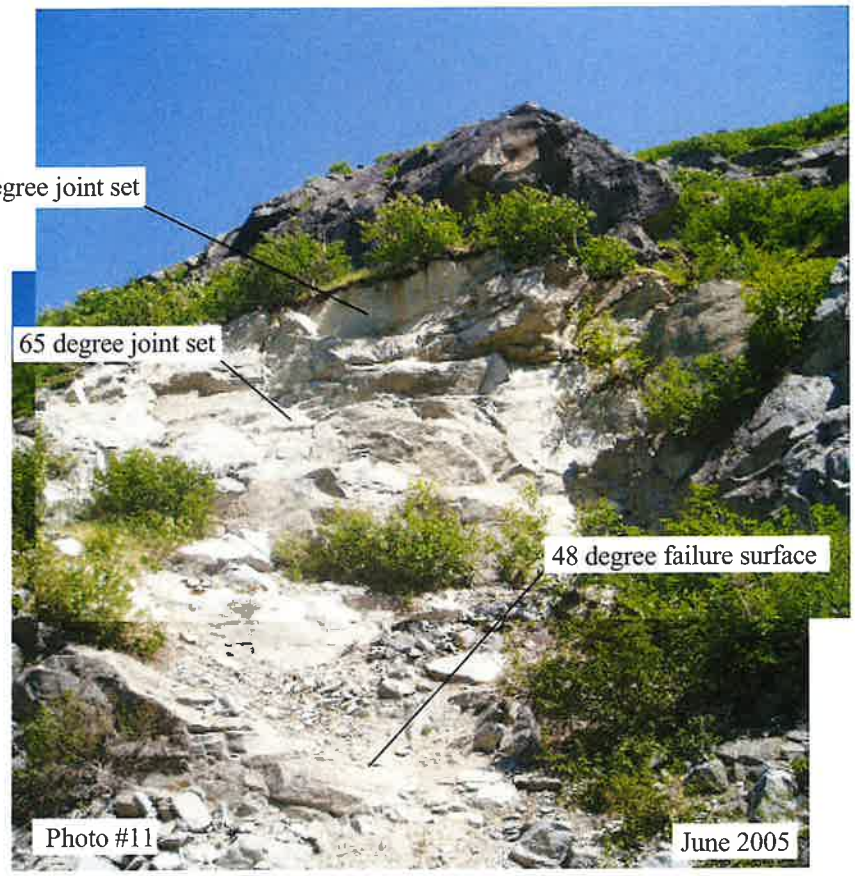
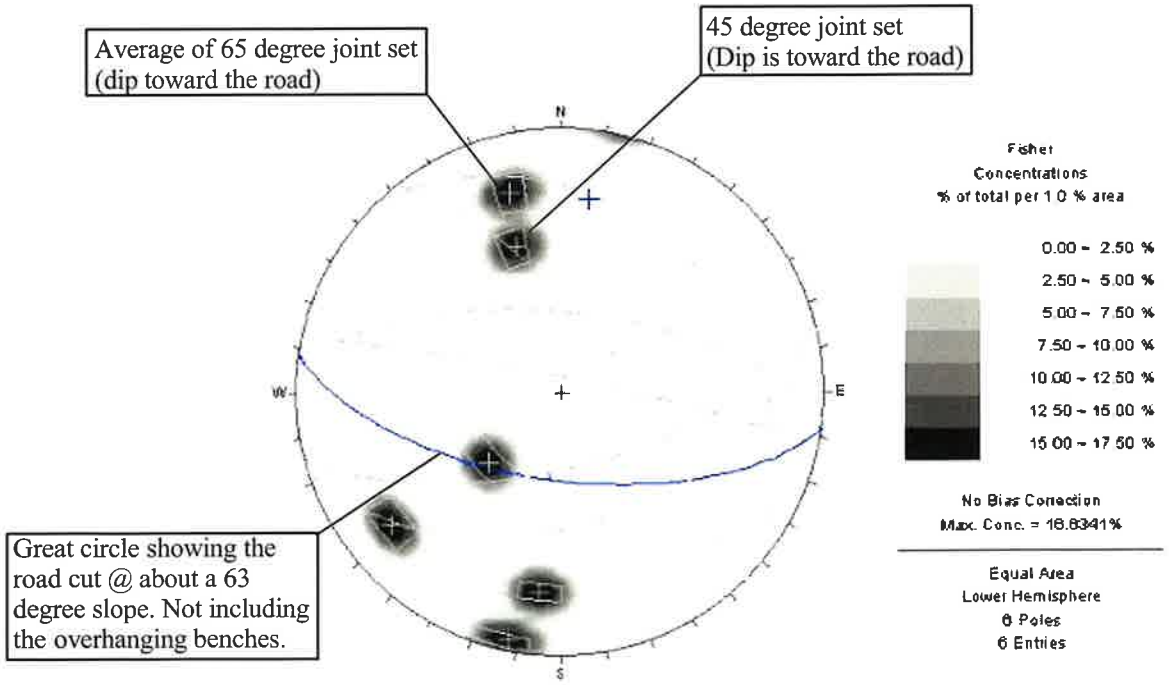


Photo is looking north.



Stereonet of major joints at MP 1.1 bluff - This contour stereonet presents limited data of the rock structure at this cut.

MP 1.35 - Relatively smaller cuts. Less rock fall problems. Rock structure is similar as MP 1.1.

MP 1.45 - Looking downstation at the slopes. From about MP 1.2 the slopes becomes less steep. Possible material source at this site. A colluvium washout from a deep valley.

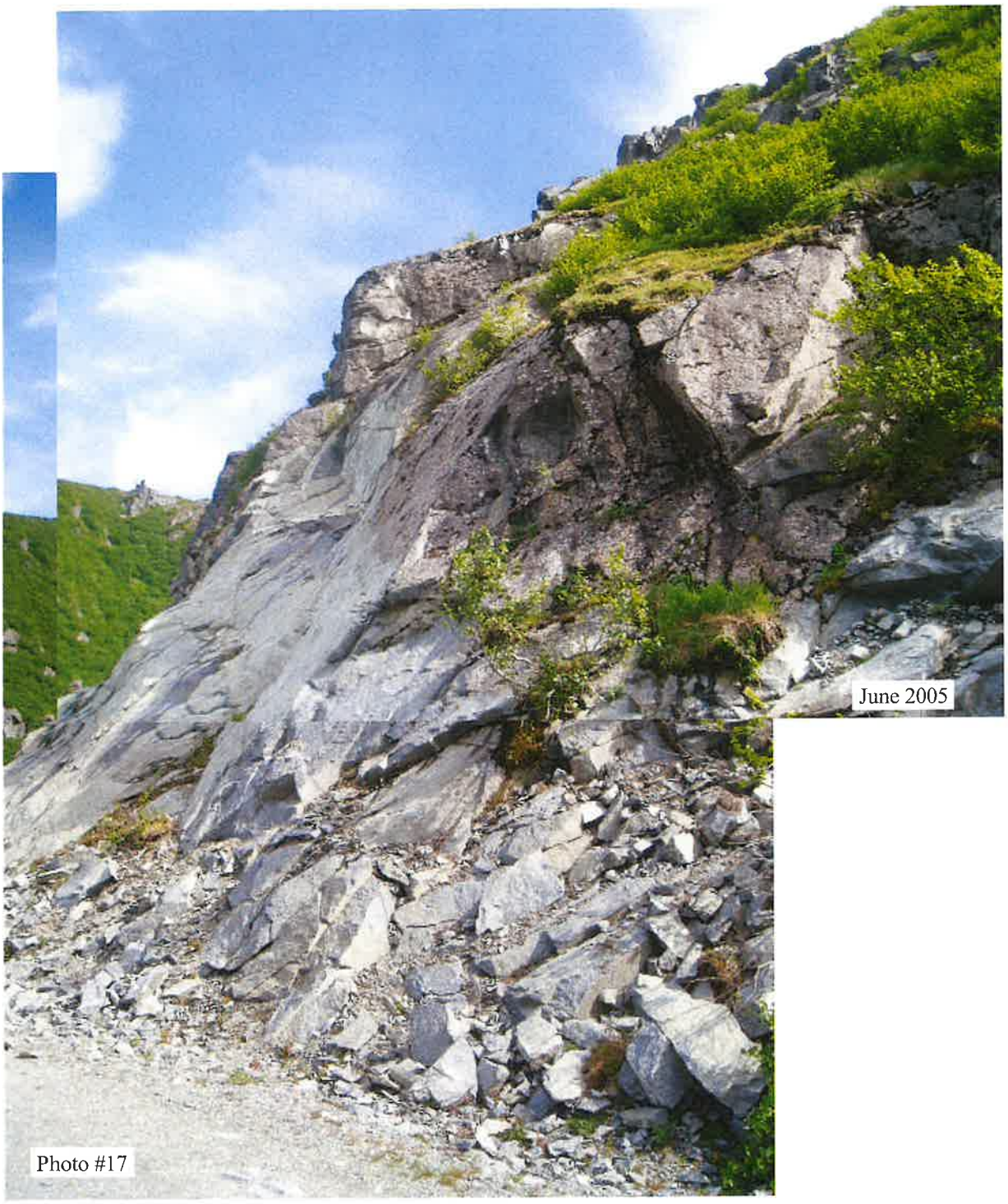

Photo #14


Photo #15

MP 1.9 - Poor rock quality due to nearby fault zone? Possible road instability issues here if the rock below the road is weathering. The slope above the road is about 53 degrees.


Photo #16

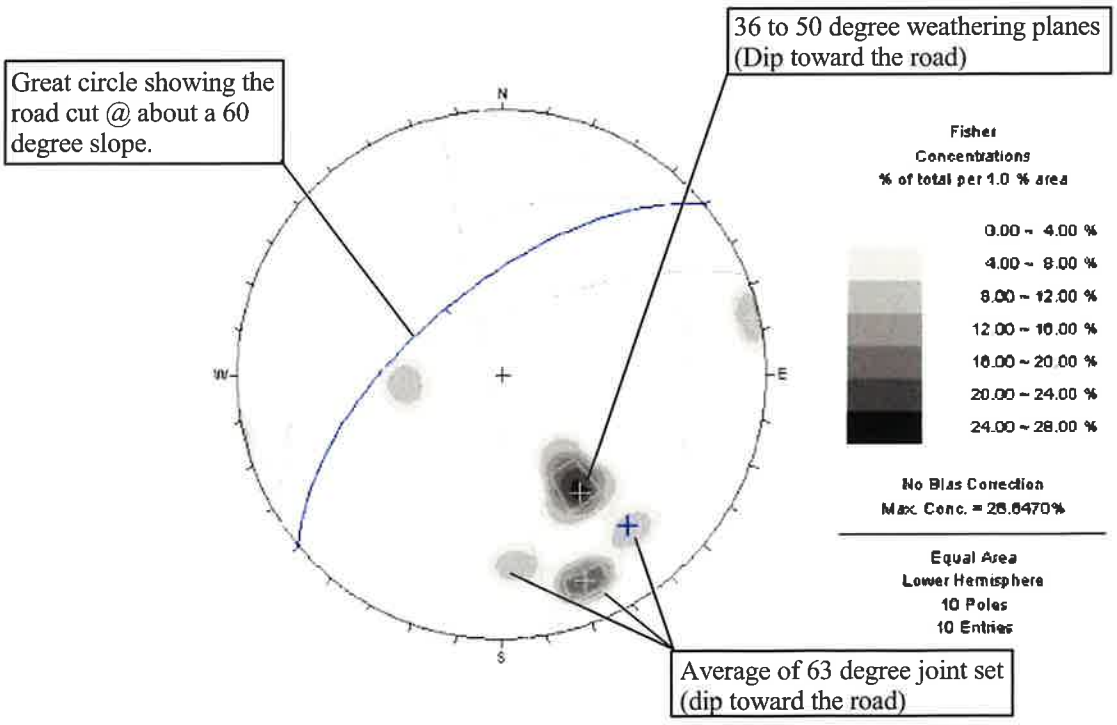
MP 2.05 - Pass. Talus boulders.



MP 2.2 - Construction fatality here during blasting
in the 1950s. Rock fails along exfoliation surfaces that start at joints.

Joints 63 to 80 degrees.
Failure surface from 36 to 50 degrees.

MP 2.2 - Slope failure surfaces/exfoliation type weathering along joints. North is to the right in the photo.

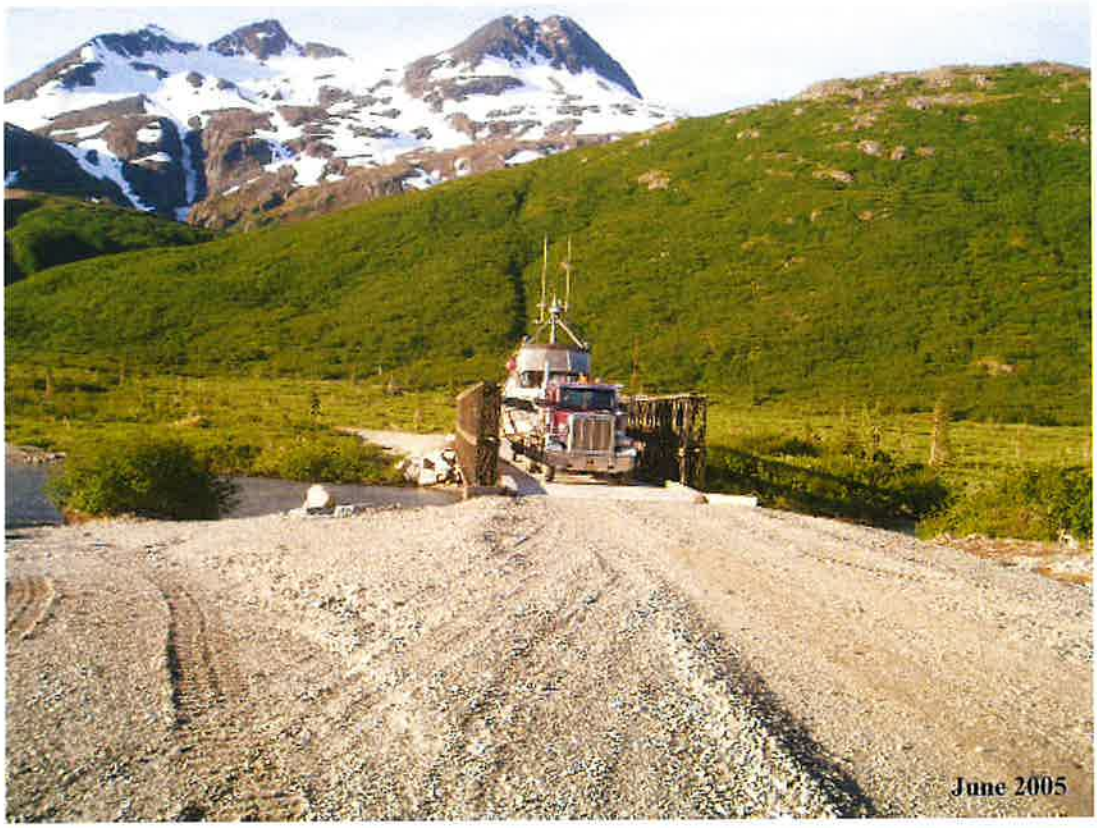


Stereonet of major joints and weathering planes between MP 2.1 and 2.4 - This contour stereonet presents limited data of the rock structure along this slope.

MP 2.4 - Rock fall from steep joints and exfoliation planes.

MP 2.6 - Glacial till boulders frequently roll from this slope.

MP 3.6 - Looking at the road washed out at the bridge that crosses Chinkelyes Creek. The bridge is in the background of photo. Looking back toward Williamsport.



MP 3.5 - Photo of the Bridge over Chinkelyes Creek and a boat being hauled over the bridge.

MP 3.9 - Looking at the existing material site at MP 4.0 from the road.

MP 4 Pit - Existing gravel pit at MP 4. Owned by CIRI. Collected a sample from the stockpile. The material is mined from below water. Groundwater is only 2 ft below ground.

MP 6 Pit - Existing gravel pit at MP 6. Owned by CIRI. Collected a sample from the edge of the pond at berm/stockpile. The material is mined from below water. Groundwater is only 2 ft below ground.

MP 7.6 - Embankment wash out at the bridge that crosses Timberline Creek.

MP 11 - "old" bridge that crosses the Iliamna River at flood stage.

MP 11 - New bridge next to the old bridge at the Iliamna River. The bridge is about 2-3 ft higher than the old bridge.

MP 9.2 - Looking northwest along the road. Two culverts allow for drainage in this area.

MP 9.4 - Top of the "S-curve". The embankment shown consists of organic and silt overburden, glacial till, and bedrock.

MP 11.4 - The maintenance contractor widenend the ditch in this area for better drainage.

MP 13.4 - Bedrock exposed in the cut. Wide spaced joint pattern in this cut makes it a good prospect for a rip rap source.