DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. Box 6898
JBER, AK 99506-0898

REPLY TO
ATTENTION OF:

Engineering Division 13 October 2011

TO: Memorandum for Record

THRU: Marcus D. Palmer, P.E.
Chief of Geotechnical and Materials

FILE NO: Barge Landing and Launch Ramp
Perryville, Alaska

FROM: Tu Nguyen
CEPOA-EN-GES-GM

TELEPHONE NO: (907) 753-5698

SUBJECT: Perryville Barge Landing and Launch Ramp Project Site Visit

US Army Corps of Engineers, Alaska District (USACE-AD) personnel Nathan Epps (EN-CW-HH) and Tu Nguyen (EN-GES-GM) traveled to Perryville, Alaska on 11 to 13 April, 2011 to conduct a preliminary site investigation for a proposed barge landing and launch ramp project by the Denali Commission. This memorandum documents the findings of the geotechnical engineering aspects of the site investigation. For a detailed discussion of the investigation in its entirety, a Trip Report dated April 2011 prepared by Epps is available.

The beach encompassing the planned barge landing consists of black, fine to medium, poorly graded sand. Surface samples were collected for particle size analysis near the upper end of the alignment (upper slope), midway along the alignment (mid slope), and near the lower end of the alignment (lower slope). The results of the particle size analysis are attached. An allowable bearing capacity of 3,000 psf is permitted for these soils provided a confining pressure equivalent to that produced by an overburden of three feet is provided.

11301 Olive Lane
Anchorage, AK 99515

TERRA FIRMA TESTING

Laboratory Testing / Construction Monitoring

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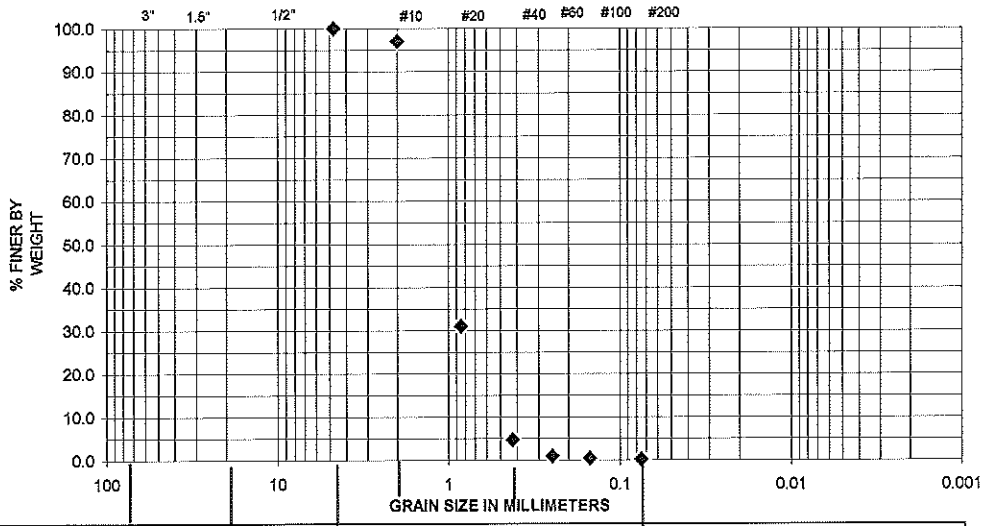
PROJECT CLIENT:	COE - Alaska District
PROJECT NAME:	Perryville Barge Landing & Launch Ramp
PROJECT NO.:	2701-11
SAMPLE LOCATION:	Upper Slope
SAMPLE NO/ DEPTH	1
DESCRIPTION:	Poorly grd. sand
DATE TESTED:	5/25/2011
TESTED BY:	DP
REVIEWED BY:	Ron Caron C.E.T.

% GRAVEL:	0.0	USC:	SP
% SAND:	99.8	FC:	NFS
% SILT/CLAY:	0.2	.02 mm:	

ASTM D1557(uncorrected)	pcf
ASTM D4718 (corrected)	pcf
OPTIMUM M.C.% (corrected)	
NATURAL M.C. %	8.2

PARTICLE SIZE ANALYSIS

ASTM D422/ C136



COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

SIEVE ANALYSIS RESULT

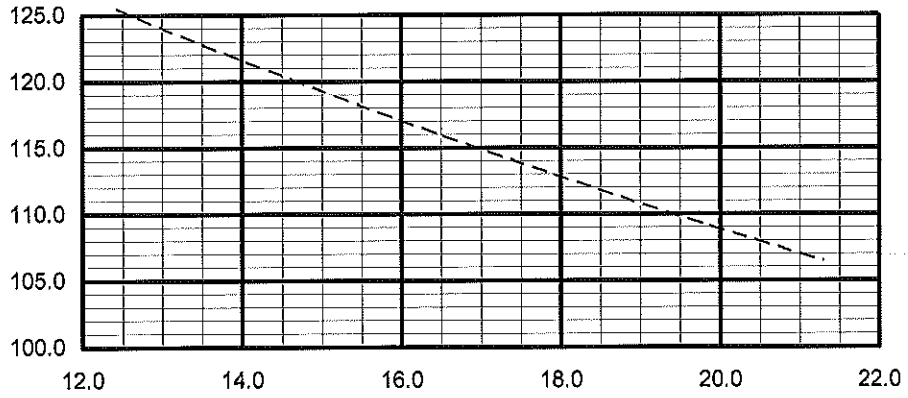
SIEVE SIZE (mm)	SIEVE SIZE (in.)	TOTAL % PASSING	SPEC
152.4	6"		
76.2	3"		
38.1	1.5"		
19.05	3/4"		
12.7	1/2"		
9.5	3/8"		
4.75	# 4	100	
2	#10	97	
0.85	#20	31	
0.425	#40	5	
0.25	# 60	1	
0.15	#100	0	
0.075	#200	0.2	

HYDROMETER RESULT

ELAPSED TIME	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

MOISTURE-DENSITY RELATIONSHIP

ASTM D1557



Hyd. Conductivity (ASTM D2438)	
Degradation (ATM T-13)	
Atterberg Limit ASTM 4318	

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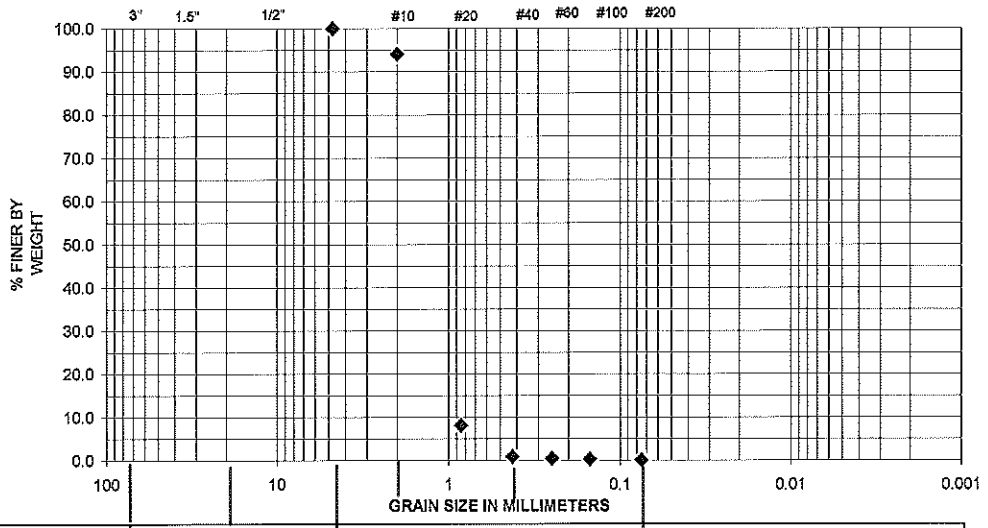
PROJECT CLIENT:	COE - Alaska District
PROJECT NAME:	Perryville Barge Landing & Launch Ramp
PROJECT NO.:	2701-11
SAMPLE LOCATION:	Mid Slope
SAMPLE NO/ DEPTH	2
DESCRIPTION:	Poorly grd. sand
DATE TESTED:	5/25/2011
TESTED BY:	DP
REVIEWED BY:	Ron Caron C.E.T.

% GRAVEL:	0.0	USC:	SP
% SAND:	99.9	FC:	NFS
% SILT/CLAY:	0.1	.02 mm:	

ASTM D1557(uncorrected)	pcf
ASTM D4718 (corrected)	pcf
OPTIMUM M.C.% (corrected)	
NATURAL M.C. %	8.7

PARTICLE SIZE ANALYSIS

ASTM D422/ C136



COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

SIEVE ANALYSIS RESULT

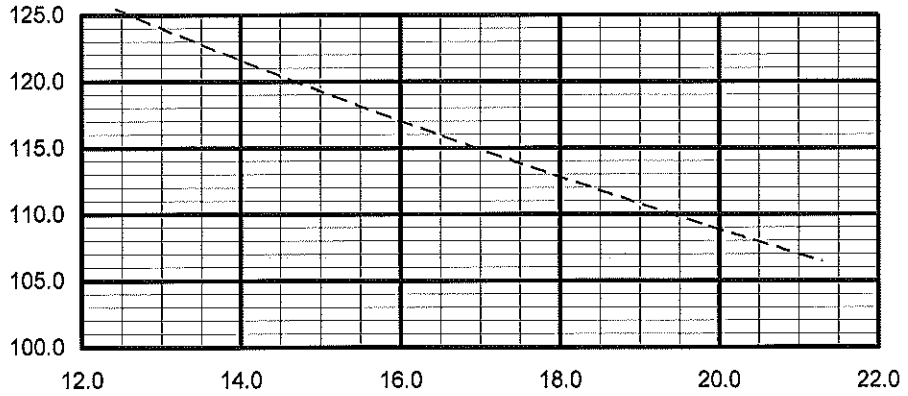
SIEVE SIZE (mm)	SIEVE SIZE (in.)	TOTAL % PASSING	SPEC
152.4	6"		
76.2	3"		
38.1	1.5"		
19.05	3/4"		
12.7	1/2"		
9.5	3/8"		
4.75	# 4	100	
2	#10	94	
0.85	#20	8	
0.425	#40	1	
0.25	# 60	0	
0.15	#100	0	
0.075	#200	0.1	

HYDROMETER RESULT

ELAPSED TIME	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

MOISTURE-DENSITY RELATIONSHIP

ASTM D1557



Hyd. Conductivity (ASTM D2438)	
Degradation (ATM T-13)	
Atterberg Limit ASTM 4318	

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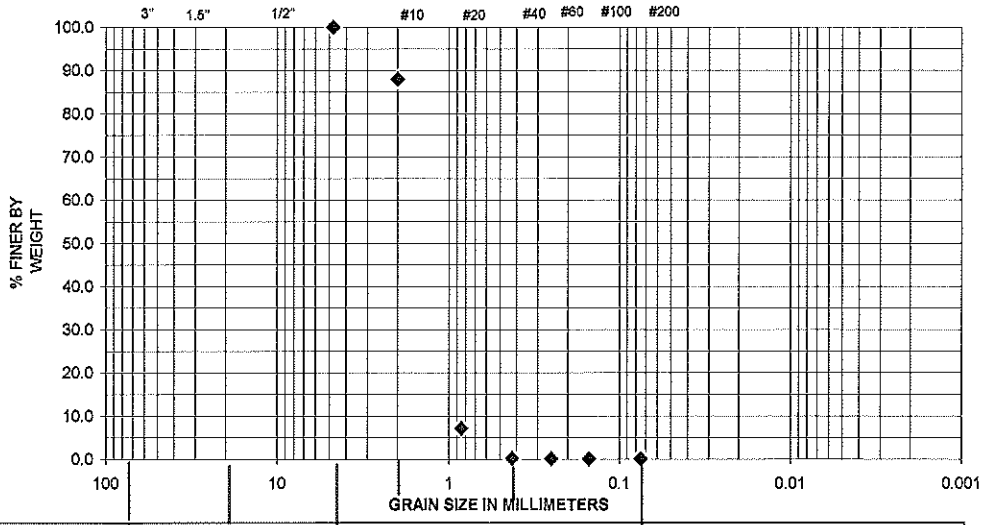
PROJECT CLIENT:	**COE - Alaska District**
PROJECT NAME:	**Perryville Barge Landing & Launch Ramp**
PROJECT NO.:	**2701-11**
SAMPLE LOCATION:	**Lower Slope**
SAMPLE NO/ DEPTH	**3**
DESCRIPTION:	**Poorly grd. sand**
DATE TESTED:	**5/25/2011**
TESTED BY:	**DP**
REVIEWED BY:	**Ron Caron C.E.T.**

% GRAVEL:	**0.0**	USC:	**SP**
% SAND:	**99.9**	FC:	**NFS**
% SILT/CLAY:	**0.1**	.02 mm:	

ASTM D1557(uncorrected)	pcf
ASTM D4718 (corrected)	pcf
OPTIMUM M.C.% (corrected)	
NATURAL M.C. %	**16.6**

PARTICLE SIZE ANALYSIS

ASTM D422/ C136



COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

SIEVE ANALYSIS RESULT

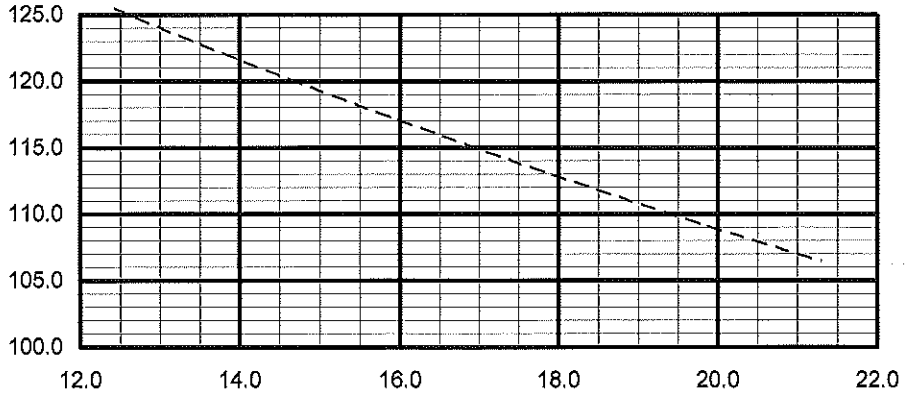
SIEVE SIZE (mm)	SIEVE SIZE (in.)	TOTAL % PASSING	SPEC
152.4	6"		
76.2	3"		
38.1	1.5"		
19.05	3/4"		
12.7	1/2"		
9.5	3/8"		
4.75	# 4	**100**	
2	#10	**88**	
0.85	#20	**7**	
0.425	#40	**0**	
0.25	# 60	**0**	
0.15	#100	**0**	
0.075	#200	**0.1**	

HYDROMETER RESULT

ELAPSED TIME	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2		
4		
8		
15		
30		
60		
250		
1440		

MOISTURE-DENSITY RELATIONSHIP

ASTM D1557



Hyd. Conductivity (ASTM D2438)	
Degradation (ATM T-13)	
Atterberg Limit ASTM 4318	