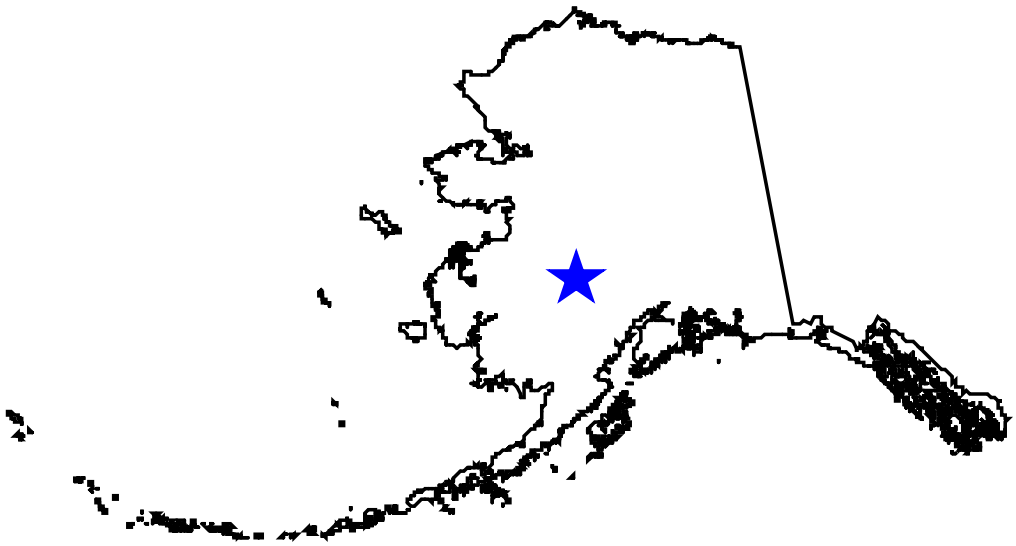
GEOTECHNICAL REPORT

TAKOTNA AIRPORT REHABILITATION

PROJECT NO. CFAPT00805

SEPTEMBER 2025



Prepared By
ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Central Region Materials
Anchorage, Alaska

ALASKA
Department of Transportation
& Public Facilities

GEOTECHNICAL REPORT

TAKOTNA AIRPORT REHABILITATION

PROJECT NO. CFAPT00805

SEPTEMBER 2025

Prepared By:

Flynn Plumlee
Engineering Geologist 3
Central Region Materials

Prepared and Reviewed By:

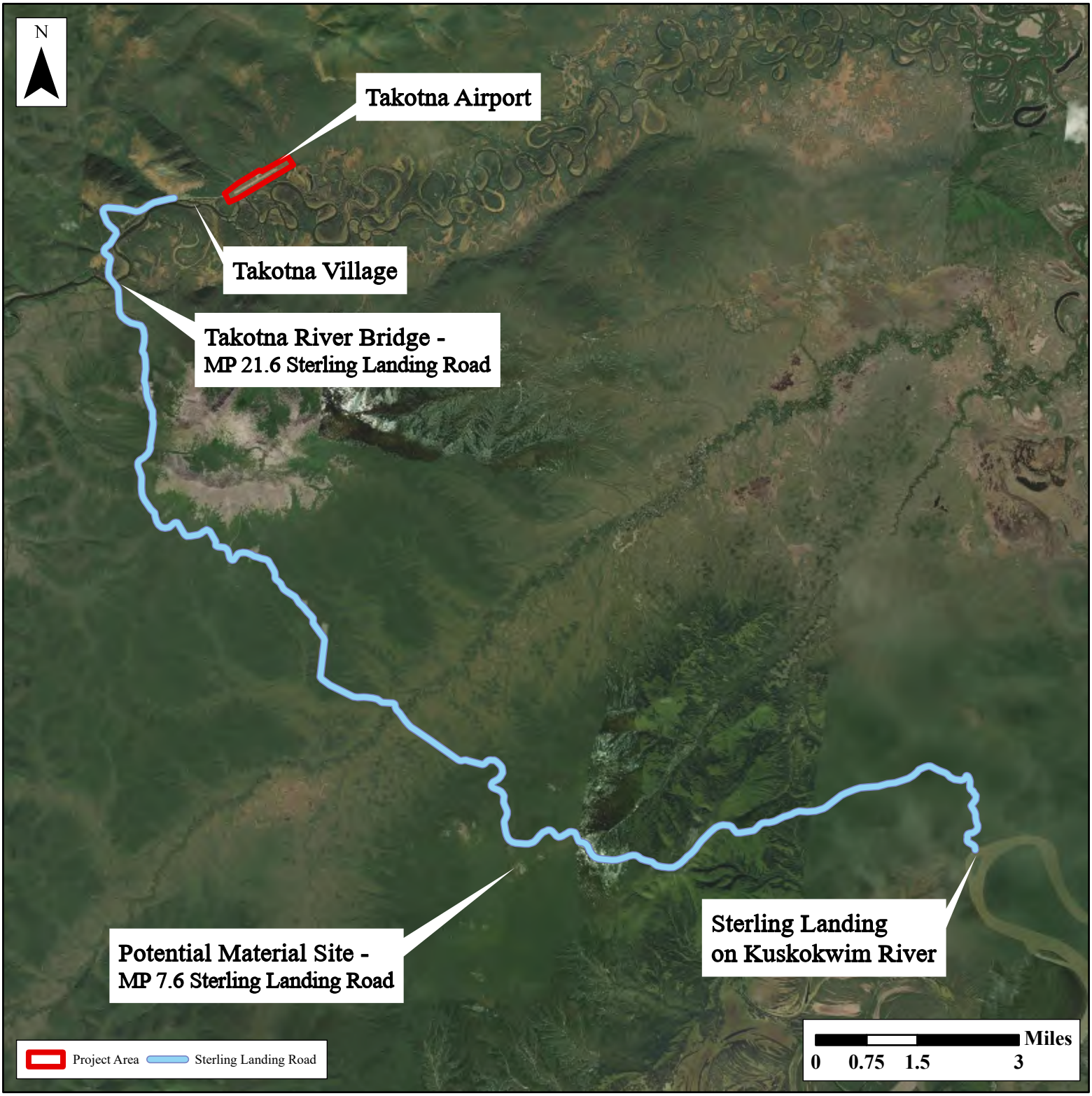
Craig Boeckman, C.P.G.
Regional Geologist
Central Region Materials

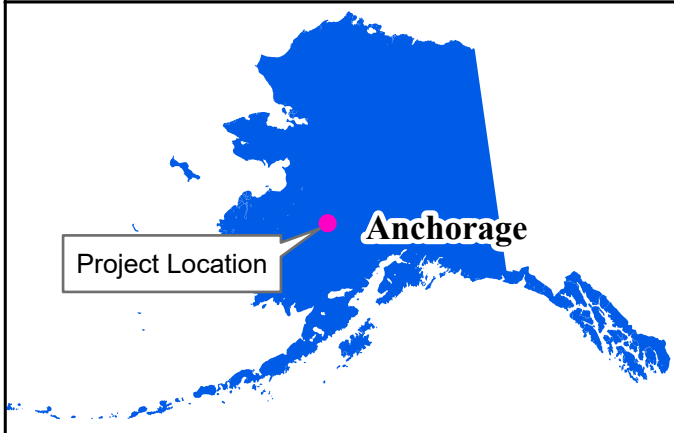
Approved By:

Mitch Miller, P.E.
Regional Materials Geotechnical Engineer
Central Region Materials

Table of Contents

List of Appendices





Alaska Department of Transportation & Public Facilities

Takotna Airport Rehabilitation
Project No. CFAPT00805

FIGURE 1

Vicinity Map

Background Image: Esri 2020

INTRODUCTION

Project Scope and Location

The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes resurfacing the Takotna Airport runway, taxiway, apron, and access road to correct deep cracks, uneven surfaces, soft spots, and areas where subbase is exposed. The rehabilitation will also replace lighting and NAVAIDS and improve drainage.

Takotna is located in interior Alaska on the north bank of the Takotna River in the Kilbuck-Kuskokwim Mountains. The village is located 17 air miles west of McGrath and 240 air miles northwest of Anchorage (see Vicinity Map – Figure 1). Summer road access to Takotna is via the barge landing at Sterling Landing on the Kuskokwim River. Sterling Landing Road stretches about 22 miles north from the Sterling Landing to the village of Takotna.

Geotechnical Investigation Scope

In December 2021, Alaska DOT&PF Central Region Materials (CRM) Section performed a geotechnical investigation to characterize the subsurface conditions along the existing runway that was built in 2009/2012 in order to determine the amount of surfacing material on the runway and the extent of permafrost in and under the embankment.

A total of 24 "shallow" test holes were drilled in 2021 to depths ranging from 1.25 to 3 feet below ground surface (bgs), intended to define thickness of gravel surface course. A total of 11 "deep" test holes were drilled to depths ranging from 17 to 37 feet bgs to define the runway embankment conditions. The test hole locations are shown on the 2004 and 2021 Test Hole Location Map(s) included in Appendix A (Figures 2 through 4).

In June 2025, three test holes were drilled on a bedrock ridge located at about MP 7.6 of the Sterling Landing Road (SLR) in order to determine if the material is suitable for use during reconstruction of the airport.

Historical Geotechnical Investigations

In 2004 CRM Section performed an extensive geotechnical investigation for the relocation of the existing Takotna Airport. Eighty test holes were drilled in the proposed area of the new runway, apron, airport access road, and at proposed material sources. Reported under "*Alaska DOT&PF Geotechnical Report – Takotna Airport Relocation*" (Alaska DOT&PF 2007), Project No. 56774 (also included in the References Section). A copy of this report is available from CRM upon request.

GEOLOGY AND CLIMATE

Regional Geology

Takotna lies in the Kuskokwim Mountains of the Western Alaska Province physiographic division (Wahrhaftig, 1965). The Kuskokwim Mountains consist of northeast tending ridges with flat

summits drained by tributaries of the Yukon and Kuskokwim Rivers. Most of these mountains are composed of a folded sequence of Cretaceous age sedimentary rocks, commonly greywacke and shale. Younger igneous rocks intrude the sedimentary rocks in some areas, including nearby Takotna Mountain. Permafrost is common in the province. Valley floors are covered by coarse-grained floodplain and terrace alluvial deposits consisting of silty soils with gravel and sand.

Site Geology and Topography

The village of Takotna is at approximately 500 feet in elevation. Takotna Mountain is located three miles to the south of the village with a summit of 3,203 feet and is comprised of intrusive and metamorphic hornfels, monzonite, monzodiorite, and porphyritic volcanic rocks. Topography in this region is largely a result of freeze/thaw processes and erosion from surface drainage. The mountains are rounded and have been dissected by streams. The river floodplain is characteristically flat, but its topography is locally irregular due to current and remnant meanders in the Takotna River.

The Takotna Airport lies on a terrace surface between low hills (Kuskokwim Mountain range) to the northwest and the floodplain of the meandering Takotna River to the southeast. The native materials comprising the terrace landform include a thick mantle of loess and organic silts, overlying granular alluvial deposits.

Permafrost Conditions at the Runway

This project is in the zone of discontinuous permafrost, and based on our August 2004 drilling for this project, our drilling indicated shallow permafrost from 1 to 6 feet below original ground in uplands silty-type soil and 11 to more than 35 feet below original ground in bogs and drainages with sand, gravel, or silty sand type soils (Alaska DOT&PF, 2007). Several stream channels dissect the runway alignment. Tundra shrub and brush covered most of the area where the new runway was built. The runway was constructed from 2009 to 2012. Cracks in the runway were reported by M&O four years after construction in 2016. CRM staff travelled to the site in summer 2016 to assess the runway conditions following the M&O observations. CRM staff observed differential settlement along the edges of the runway, generally outside the light line.

In summer 2021 CRM staff travelled to the site again to assess the runway conditions. More cracks had developed since 2016 and were located using a Trimble GPS. A drone was operated during the 2021 recon to generate a point cloud to generate maps, and the locations of the cracks in the runway were recorded using GPS.

Test holes were drilled in December 2021 along the runway to assess its current condition. The depth to permafrost in two test holes drilled in 2021 compared to two test holes drilled in 2004 (within 20 feet of each other and in similar original ground conditions) indicated permafrost had thawed 5 to 13.5 feet beneath the new runway embankment.

Climate

Takotna falls within the Continental Climatic Zone of Alaska, which covers two-thirds of the state. The Continental Climatic Zone has the greatest seasonal temperature variation of any zone in the state (Miller & Whitehead, 1997). Monthly average minimum temperatures range from −17.2°F in January to 49.5°F in July, with an annual mean of 16.4°F. Precipitation increases in occurrence from April to its highest values in August with an annual average of 17.16 inches per year. Snowfall is highest from October to April with an annual average of 90.6 inches per year.

The following table (Table 1) summarizes the available climate data for the weather station at McGrath, Alaska.

Table 1: McGrath AP, Alaska (505769) – 04/01/1939 to 06/09/2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	1.0	28.1	35.9	44.5	56.0	66.8	68.5	63.2	52.9	32.3	13.0	2.2	35.8
Average Min. Temperature (°F)	-17.2	-11.3	-3.8	16.7	34.9	45.8	49.5	45.4	35.8	18.9	-2.8	-14.8	16.4
Average Total Precipitation (in.)	0.99	0.85	0.79	0.71	0.91	1.60	2.27	2.91	2.29	1.37	1.27	1.22	17.16
Average Total Snowfall (in.)	14.6	12.3	11.1	6.3	0.8	0	0	0	1.0	9.5	16.6	18.4	90.6
Average Snow Depth (in.)	22	25	26	17	1	0	0	0	0	1	8	16	10

(Western Region Climate Center – http://www.wrcc.dri.edu)

INVESTIGATION PROCEDURES

Field Methods

The December 2021 runway geotechnical investigation consisted of drilling 35 test holes using a Geoprobe 6620DT track-mounted drill rig advancing hollow stem auger. The drill rig was operated by GeoTek Alaska Inc. of Anchorage, Alaska. CRM field staff supervised the drilling operations and sampled and logged subsurface conditions.

Two reconnaissance level material site investigations were performed in June 2021 and October 2023 consisting of collecting rock samples from the surface at various locations to identify rock quality at several proposed and existing material sites in the area.

In March and June 2025, a geotechnical drilling investigation was performed at MP 7.6 of the SLR consisting of drilling three test holes using a CME 850 track-mounted drill rig operated by Alaska DOT&PF Northern Region Materials drillers and supervised by CRM field staff. Drilling consisted of wireline rock coring to collected bedrock samples. CRM staff logged the subsurface conditions.

Soil Sampling

CRM field staff examined and visually classified soil samples in the field following the Unified Soil Classification System (USCS) Visual Manual Method (ASTM D2488). The field classifications, sample intervals, and other pertinent information were recorded in field books. This data was later entered into gINT software (a geotechnical software that stores field and lab data, soils data, and generates report quality test hole logs).

Soil sampling methods for the December 2021 work consisted of the following:

- Grab samples collected from auger cuttings while drilling shallow two-foot-deep test holes.
- Grab samples collected from auger cuttings while drilling deep test holes to the pre-planned sample interval at 2.5 feet bgs or deeper.
- Standard Penetration Tests (SPT) (ASTM-1586) were conducted using a 1.4 inch internal diameter split barrel sampler driven by a 140 pound hammer to collect soil samples and estimate uncorrected N values. The number of blows required to drive the sampler through undisturbed soil were recorded for each 6-inch increment for 24-inch intervals.

Rock sampling methods for the March and June 2025 work consisted of the following:

- Driven casing and wire line rock coring to collect NQ sized rock core.

Laboratory Testing

In addition to the visual classification by the CRM field staff, selected samples were tested by the CRM Laboratory to verify the field soil classification. If needed, the field classifications were corrected to reflect laboratory results per the USCS Laboratory Classification Method (ASTM D2487) and these corrections are reflected in the Test Hole Logs (Appendix B). Lab results are summarized in the Preconstruction Sample Summary Reports (Appendix C).

All lab testing followed specifications indicated in the DOT&PF Geotechnical Procedures Manual, AASHTO, or ASTM as appropriate. Testing for this project included the following methods and specifications:

- Soils Classification, Unified Soils Classification System (ASTM D2487).
- Sieve Analysis (AASHTO T27, T11, or T88 or ASTM C136 and C117).
- Organic Content (Alaska Test Method ATM 203).
- Micro-Deval Abrasion (AASHTO T327).
- Degradation (ATM 313).
- Specific Gravity (AASHTO T85).
- Sodium Sulfate Soundness (AASHTO T104).
- LA Abrasion (AASHTO T96).

- Moisture Content (AASHTO T255/T265 or ASTM D2216).
- Atterberg Limits: Liquid Limit, Plastic Limit, and Plasticity Index (AASHTO T89/T90 or ASTM D4318).

STATION TO STATION DESCRIPTIONS

The tables below summarize the soil layers observed in both the "shallow" and "deep" test holes drilled on the runway in 2021. See the "Takotna Airport 2004 & 2021 Test Hole Maps" in Appendix A (Figures 2 through 4). The maps include topographic lines that were generated by a drone flight along the runway in June 2021. This drone generated topography is a relative surface that was not tied to the ground. However, it does generally identify settlement features along the runway. Appendix A also includes maps showing material sites in the Takotna area (Figures 5 and 6) and maps of Sterling Landing Road material sites (Figures 7 through 10). In addition Figure 11 shows the 2025 test holes drilled at a material site located at about SLR MP 7.6. Stationing (STA) on the maps are approximate. For detailed information of subsurface soil conditions please refer to the 2021 and 2025 Test Hole Logs in Appendix B. A Photo Log showing settlement areas on the runway and the area around MP 7.6 SLR are included in Appendix E.

Runway: STA 98+00 to 109+00 (Figure 2)

This section of the project is at the southwest end of the runway. Deep test holes TH21-11 and TH21-26 drilled in this section indicated about 7 to 7.5 feet of embankment material over original ground. The 2004 test holes drilled in this section (TH04-151 to TH04-153) before the runway was built indicated about 1 to 6 feet of organic and silty type soil overlying ice-rich permafrost (Alaska DOT&PF 2007). The permafrost temperature, based on a thermistor installed in TH04-152, was measured at 31.5 degrees Fahrenheit (°F).

Annotated Cross Sections (see Appendix D) were generated to compare the 2004 test hole data to the 2021 test hole data. Cross Sections for STA 99+00, 102+00, and 106+50 only had 2004 test holes plotted on them with no 2021 data to compare to. However, what they do show is relatively shallow permafrost (1.5 to 5.5 ft below original ground in 2004) in the upland silt-type soil. The cross section for 103+50 had two 2021 test holes plotted. Test hole TH21-11 indicated permafrost at about 13.5 ft below original ground. This test hole was drilled in a drainage and may have already had relatively deep thawed soil. Test hole TH21-26 indicated a depth to permafrost of 9 ft below original ground. This test hole was drilled on uplands soil type.

Shallow test holes (TH21-11, 12, 13, 14 and TH21-27, 28, and 29) were drilled in this section to determine thickness of remaining surface course material. Table 2 below summarizes the 2021 Test Hole soil data for deep and shallow test holes between these stations.

Table 2: Summary of Geotechnical Conditions (Figure 2)

Test Hole Number	**Station** (approx.)	**Depth Below Surface** (feet)	**Material Type**	**Other Comments**
TH21-27	97+99	0 to 1	Silty Sand with Gravel (SM)	--

	12 Rt		P200 = 23%, Sa = 49%, Gr = **28%**	
		1 to 2	Silty Sand with Gravel (SM) P200 = 31%, Sa = 45%, Gr = **24%**	
TH21-13	100+70 50 Rt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 21%, Sa = 44%, Gr = **35%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 34%, Sa = 51%, Gr = **15%**	
TH21-28	101+31 20 Lt	0 to 1	Silty Sand with Gravel (SM) P200 = 20%, Sa = 43%, Gr = **37%**	--
		1 to 1.75	Silty Sand with Gravel (SM) P200 = 30%, Sa = 46%, Gr = **24%**	
TH21-11	103+69 72 Lt	0 to 0.75	Gravel with Silt and Sand (GP-GM) P200 = 11%, Sa = 34%, Gr = **55%**	Granular embankment to 7 ft below surface. Groundwater at 15 ft while drilling. Permafrost at 26 ft below runway surface.
		0.75 to 5	Silty Gravel with Sand (GM) P200 = 14%, MC = 5.8%	
		5 to 7	Gravel with Silt and Sand (GP-GM) P200 = 12%, MC = 6.0%	
		7 to 7.75	Peat (PT) MC = 25.5%	
		7.75 to 20	Slightly Organic Silt with Sand (ML) P200 = 85%, MC = 26.6 to 35.6%	
		20 to 22	Silty Sand with Gravel (SM) P200 = 28%, MC = 19.6%	
		22 to 32	Slightly Organic Silt (ML) P200 = 89%, MC = 33.3 to 43.9%	
TH21-26	103+55 62 Rt	0 to 0.5	Silty Gravel with Sand (GM) P200 = 13%, Sa = 41%, Gr = **46%**	Granular embankment to 7.5 ft below surface. Groundwater at 7 ft while drilling. Permafrost at 19 ft below runway surface.
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 25%, Sa = 48%, Gr = **27%**	
		1.25 to 7.5	Sand with Silt and Gravel (SP-SM) P200 = 12%, MC = 6.0%	
		7.5	Geotextile Fabric	
		7.5 to 17	Slightly Organic Sandy Silt (ML) P200 = 66%, MC = 32.9 to 41.1%	
		17 to 22	Slightly Organic Silt (ML) P200 = 94%, MC = 33.6 to 40.0%	
TH21-29	105+06 9 Rt	0 to 1	Silty Sand with Gravel (SM) P200 = 23%, Sa = 49%, Gr = **28%**	--
		1 to 2	Silty Sand with Gravel (SM) P200 = 27%, Sa = 47%, Gr = **26%**	
TH21-12	106+34 49 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 20%, Sa = 45%, Gr = **35%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 33%, Sa = 46%, Gr = **21%**	

TH21-14	106+74 61 Rt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 19%, Sa = 45%, Gr = **36%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 29%, Sa = 48%, Gr = **23%**	

Runway: STA 109+00 to 114+00 (Figures 2 and 3)

This section of the project is 500 feet south of the taxiway. Deep test hole TH21-35 was drilled in a former bog/drainage path. The test hole log for TH21-35 indicates 12.5 feet of granular embankment material was placed over original ground at this location (see Cross Section 110+00 in Appendix D). Cracks in the runway (near the light line) generally follow the topographic contours on the runway (Figure 2). The 2004 test hole drilled in this section (TH04-150) before the runway was built indicated 4 feet of organic and silty type soil overlying ice-rich permafrost (Alaska DOT&PF 2007). Test hole TH04-149 was drilled where the cross culvert was installed (see Cross Section 113+00). This test hole indicated deteriorating permafrost from 2 to 8 ft below original ground (perched layer) and deeper permafrost at 14 ft below original ground.

Shallow test holes drilled within this section (TH21-15, 21-19, and 21-30) generally indicated a silty sand material with < 50% gravel in the top two feet of the runway surface. Table 3 below summarizes the 2021 test hole soil data for deep and shallow test holes between these stations.

Table 3: Summary of Geotechnical Conditions (Figures 2 and 3)

Test Hole Number	**Station** (approx.)	**Depth Below Surface** (feet)	Material Type	**Other Comments**
TH21-30	110+65 13 Rt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 19%, Sa = 47%, Gr = 34%	--
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 24%, Sa = 46%, Gr = 30%	
TH21-19	111+22 9 Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 21%, Sa = 46%, Gr = 33%	--
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 27%, Sa = 47%, Gr = 26%	
TH21-15	113+78 55 Rt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 20%, Sa = 45%, Gr = 35%	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 35%, Sa = 46%, Gr = 19%	
TH21-35	109+81 67 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 15%, Sa = 44%, Gr = 41%	Groundwater at 12.5 ft while drilling. Granular embankment to 12.5 ft below surface.
		0.5 to 5	Silty Sand with Gravel (SM) P200 = 19%, MC = 6.8 %	
		5 to 12.5	Gravel with Silt and Sand (GP-GM) P200 = 12%, MC = 6.0 to 6.3%	
		12.5 to 13.5	Highly Organic Silt (OL) MC = 56.8%, Org. = 16.5%	

		13.5 to 27	Slightly Organic Silt (ML) P200 = 84%, MC = 29.1 to 32.6%, Org. = 2.6%	
		27 to 37	Organic Silt (OL/ML) MC = 42.3 to 44.6%, Org. = 6.5%	

Runway: STA 114+00 to 122+00 (Figure 3)

This section of the project is at the intersection of the runway with the taxiway. Deep test holes drilled in this section (TH21-04 through 21-07) indicate 8 to 13 feet of granular embankment material was placed over original ground. Cross sections 115+50, 116+50, 117+50, 119+00, and 120+50 indicate permafrost ranged from 6 to 15 ft below original ground in 2021. The test holes drilled in 2004 in this section (TH04-148 and 04-147) before the runway was built indicated one to 11 feet of organic and silty type soil overlying permafrost that was ice-rich (Alaska DOT&PF, 2007). Based on the cross sections this section of runway seems to have had a slower rate of permafrost thaw compared to other areas along the runway, perhaps due to cross drainage being restricted by the apron embankment.

Shallow test holes drilled within this section (TH21-16, 21-17, 21-18, 21-20 and 21-21) generally indicated a silty sand material with < 50% gravel within the top two feet of the runway surface. Table 4 below summarizes the 2021 test hole soil data for deep and shallow test holes between these stations.

Table 4: Summary of Geotechnical Conditions (Figure 3)

Test Hole Number	**Station** (approx.)	**Depth Below Surface** (feet)	**Material Type**	**Other Comments**
TH21-07	115+12 22 Lt	0 to 1.25	Silty Sand with Gravel (SM) P200 = 18%, Sa = 45%, Gr = **37%**	Granular embankment to 7.5 ft below surface. Groundwater at 13 ft while drilling. Permafrost at 16.5 ft below runway surface.
		1.25 to 2.0	Silty Sand with Gravel (SM) P200 = 24%, Sa = 50%, Gr = **26%**	
		2.0 to 12	Silty Sand with Gravel (SM) P200 = 13 to 20%, MC = 5.1 to 7.5%	
		12 to 13	Gravel with Silt and Sand (GP-GM) P200 = 10%, MC = 6.5%	
		13	Geotextile Fabric	
		13 to 17	Peat (PT) MC = 77.4 to 285.5%,	
		17 to 27	Organic Silt (ML) MC = 29.7 to 49.4%, Org. = 7.1 to 9.5%	
TH21-18	116+05	0 to 1.0	Silty Sand with Gravel (SM)	--

	12 Lt		P200 = 24%, Sa = 45%, Gr = **31%**	
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 33%, Sa = 50%, Gr = **17%**	
TH21-06	116+50 49 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 16%, Sa = 46%, Gr = **38%**	Granular embankment to 13 ft below surface. No groundwater while drilling. Permafrost at 28 ft below runway surface.
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 29%, Sa = 48%, Gr = **23%**	
		1.25 to 13	Silty Sand with Gravel (SM) P200 = 13 %, MC = 5.1 to 6.6%	
		13	Geotextile Fabric	
		13 to 13.5	Highly Organic Silt (OL)	
		13.5 to 37	Organic Silt (ML) MC = 29.8 to 55.3%, Org. = 6.9 to 13.4%	
TH21-17	177+60 22 Rt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 25%, Sa = 45%, Gr = **30%**	--
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 30%, Sa = 45%, Gr = **25%**	
TH21-05	117+54 48 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 17%, Sa = 49%, Gr = 34**%**	Granular embankment to 12 ft below surface. No groundwater while drilling. Permafrost at 17.5 ft below runway surface
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 29%, Sa = 49%, Gr = **22%**	
		1.25 to 12	Silty Sand with Gravel (SM) P200 = 13 to 15%, MC = 5.7 to 6.9%	
		12 to 14	Highly Organic Silt (OL) MC = 117.1%, Org. = 39.7%	
		14 to 16.5	Slightly Organic Silt (OL) MC = 30.3%, Org. = 4.3%	
		16.5 to 17.5	Peat (PT)	
		17.5 to 19.5	Slightly Organic Silt (ML) MC = 41.5%, Org. = 4.3%	
		19.5	Geotextile Fabric	
		19.5 to 22	Silt (ML) MC = 42.9%	
TH21-16	118+94 14 Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 29%, Sa = 48%, Gr = **23%**	--
		1.0 to 2.0	Silty Sand with Gravel (SM) P200 = 33%, Sa = 47%, Gr = **20%**	
TH21-20	120+23 at CL	0 to 1.25	Silty Sand with Gravel (SM) P200 = 26%, Sa = 45%, Gr = **29%**	--

		1.25 to 2.0	Silty Sand with Gravel (SM) P200 = 29%, Sa = 48%, Gr = **23%**	
TH21-04	120+63 55 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 17%, Sa = 48%, Gr = **35%**	Granular embankment to 8 ft below surface. No groundwater while drilling. Permafrost at 12 ft below runway surface
		0.5 to 7	Silty Sand with Gravel (SM) P200 = 17 to 28%, MC = 5.7 to 11.6%	
		7 to 8	Gravel with Silt and Sand (GP-GM) P200 = 11%, MC = 7.1%	
		8 to 13	Organic Silt (ML) and thin Peat layers	
		13 to 27	Organic Silt (ML) MC = 34.6 to 50.8%, Org. = 5.0 to 10.5%	
TH21-21	121+27 54 Rt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 19%, Sa = 46%, Gr = **35%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 31%, Sa = 49%, Gr = **20%**	

Runway: STA 122+00 to 127+00 (Figure 3 and 4)

This section of the project is 400 feet north of the intersection of the runway with the taxiway. The 2021 test hole drilled in this section (TH21-08) indicated 10 feet of granular embankment material was placed over original ground. Cross sections 122+50, 123+00, 123+50, and 126+50 indicate permafrost ranged from 6 to 15 ft below original ground in 2021. The test holes drilled in 2004 in this section (TH04-137 through 04-140) before the runway was built indicated 1 to 3 feet of organic and silty type soil overlying permafrost that was ice-rich (Alaska DOT&PF, 2007). Test hole TH04-139 was drilled in the stream channel and was thawed to the bottom of the test hole at 31 feet. This is where another cross culvert was installed. North of the culvert tension cracks had started to appear (in 2021) at the center of the runway (Figure 4).

Cross Section 126+50 has a 2004 and 2021 test hole that are in close proximity to each other. They also were drilled into similar soils (original ground/uplands). Comparing the two test holes it appears that there has been about 5 to 7 feet of thaw under the runway in this area since the runway was built.

Shallow test holes drilled within this section (TH21-22 and 21-31) generally indicated a silty sand material with < 50% gravel within the top two feet of the runway surface. See Table 5 below for a summary of the test hole data.

Table 5: Summary of Geotechnical Conditions (Figure 3 and 4)

Test Hole Number	**Station** (approx.)	**Depth Below Surface** (feet)	**Material Type**	**Other Comments**
TH21-22	122+71	0 to 0.5	Silty Sand with Gravel (SM)	--

	48 Lt		P200 = 14%, Sa = 48%, Gr = **38%**	
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 29%, Sa = 50%, Gr = **21%** Degradation = 10	
TH21-31	125+53 26 Rt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 25%, Sa = 48%, Gr = **27%**	--
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 27%, Sa = 50%, Gr = **23%**	
TH21-08	126+67 47 Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 16%, Sa = 43%, Gr = **41%**	Granular embankment to 10 ft below surface. No groundwater while drilling. Permafrost at 13 ft below runway surface
		0.5 to 10	Silty Sand with Gravel (SM) P200 = 28%, MC = 6.0 to 7.6%	
		10	Geotextile Fabric	
		10 to 19.5	Organic Silt (ML) MC = 36.1 to 40.2%	

Runway: STA 127+00 to 135+00 (Figure 4)

This section of the project is at the north end of the runway. The 2021 test holes drilled in this section (TH21-09 and 21-10) indicate 12 to 14.5 feet of granular embankment material was placed over original ground. Test hole TH04-136 drilled before the runway was built indicated thawed soil to 35 feet below original ground (Alaska DOT&PF, 2007). This test hole was drilled in a large drainage/bog area.

Cross Section 132+00 has a 2004 and 2021 test hole that are in close proximity to each other. They were also drilled into similar soils (original ground/uplands). Comparing the two test holes it appears that there has been about 13.5 feet of thaw under the runway in this area since the runway was built. Shallow test holes drilled within this section (TH21-23, 21-24, 21-32, 21-33, and 21-34) generally indicated a silty sand material with < 50% gravel within the top 2 feet of the runway surface. See Table 6 below for a summary of test hole data.

Table 6: Summary of Geotechnical Conditions (Figure 4)

Test Hole Number	**Station** (approx.)	**Depth Below Surface** (feet)	**Material Type**	**Other Comments**
TH21-23	128+22 51 Rt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 15%, Sa = 44%, Gr = **41%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 27%, Sa = 48%, Gr = **25%**	
TH21-32	129+18 22 Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 24%, Sa = 48%, Gr = **28%**	--

		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 31%, Sa = 51%, Gr = **18%**	
TH21-33	131+31 3 Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 22%, Sa = 49%, Gr = **29%**	--
		1.0 to 2.0	Silty Sand with Gravel (SM) P200 = 28%, Sa = 49%, Gr = **23%**	
TH21-10	132+33 32’ Lt	0 to 0.75	Silty Sand with Gravel (SM) P200 = 19%, Sa = 43%, Gr = **38%**	Groundwater at 13.5 ft while drilling.
		0.75 to 2.0	Silty Sand with Gravel (SM) P200 = 30%, Sa = 49%, Gr = **21%**	
		2 to 12	Silty Sand (SM) P200 = 15 to 20%, MC = 5.5 to 7.2%	
		12 to 14.5	Sand with Silt and Gravel (SP-SM) P200 = 12%, MC = 6.1%	
		14.5 to 21	Silty Sand (SM) P200 = 43%, MC = 40.9%	
		21 to 34.5	Organic Silt with Organics (OL/ML) MC = 36.5 to 51.8%, Org = 6.9%	
TH21-24	132+75 49 Rt	0 to 0.5	Silty Gravel with Sand (GM) P200 = 16%, Sa = 38%, Gr = **46%**	--
		0.5 to 1.25	Silty Sand with Gravel (SM) P200 = 27%, Sa = 51%, Gr = **22%**	
TH21-34	134+82 at CL	0 to 1.0	Silty Sand with Gravel (SM) P200 = 26%, Sa = 51%, Gr = **23%**	--
		1.0 to 2.0	Silty Sand with Gravel (SM) P200 = 31%, Sa = 51%, Gr = **18%**	
TH21-09	135+08 60’ Lt	0 to 0.5	Silty Sand with Gravel (SM) P200 = 16%, Sa = 42%, Gr = 42**%** Micro-Deval = 26.5	N/A
		0.5 to 5	Silty Sand with Gravel (SM) P200 = 19%, Sa = 47%, Gr = **34%** Micro-Deval = 22.5	
		5 to 12	Gravel with Silt and Sand (GP-GM) P200 = 12%, Sa = 40%, Gr = **48%**	
		12	Geotextile Fabric	
		12 to 22	Organic Silt (OL/ML) MC = 38.6 to 59.4%, Org = 5.8 to 6.8%	

Taxiway and Apron: STA 200+50 to 202+50 (Figure 3)

This section of the project is at the apron and taxiway. The only 2021 test holes drilled in this section (TH21-01) indicate about 11 feet of granular embankment material was placed over original ground. Groundwater was noted at 11 feet bgs at the base of the embankment fill. The

permafrost table was just below the embankment fill and a 1 foot layer of peat (about 12 ft bgs). Test hole TH21-01 was drilled in uplands type soil.

Shallow test holes drilled within this section (TH21-02, 21-03, and 21-25) generally indicated a silty sand material with < 50% gravel within the top two feet of the runway surface. Table 7 below summarizes the test hole data.

Table 7: Summary of Geotechnical Conditions (Figure 3)

Test Hole Number	Station (approx.)	Depth Below Surface (feet)	Material Type	Other Comments
TH21-02	119+16 214' Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 30%, Sa = 49%, Gr = **21%**	N/A
		1.0 to 3	Silty Sand with Gravel (SM) P200 = 25%, Sa = 50%, Gr = **25%**	
TH21-03	119+07 119' Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 24%, Sa = 47%, Gr = **29%**	N/A
		1.0 to 3.0	Silty Sand with Gravel (SM) P200 = 24%, Sa = 48%, Gr = **28%**	
TH21-25	119+50 339' Lt	0 to 1.0	Silty Sand with Gravel (SM) P200 = 28%, Sa = 53%, Gr = **19%**	N/A
		1.0 to 1.75	Silty Sand with Gravel (SM) P200 = 35%, Sa = 49%, Gr = **16%**	
TH21-01	118+95 417' Lt	0 to 1	Gravel with Sand (GP) MC = 9.4%	Groundwater at 11 ft while drilling.
		1 to 1.75	Silty Sand with Gravel (SM) P200 = 29%, MC = 6.1%	
		1.75 to 11	Gravel with Silt and Sand (GP-GM) P200 = 12%, MC = 2.4 to 7.7%	
		11 to 12	Peat (PT)	
		12 to 17	Organic Silt (ML) MC = 27.4 to 41.4%, Org. = 6.8%	

Runway: STA 98+00 to 135+00 (Figures 2, 3, and 4)

Soil samples were collected from the shallow test holes along the entire length of the runway and tested for gradation and limited rock quality analyses (specifically Micro-Deval). This gravel material (CASC) at and near the surface of the runway was mined from material site MS-6 east/southeast of the runway in the Takotna River flood plain gravels.

Table 8 below summarizes the gradation and limited rock quality data.

Table 8: Summary of Runway Surface Course Samples for Gradation and Rock Quality

Sample Location	Station (approx..)	Sample Depth (feet)	Gradation and Micro-Deval Test Results				Sample Description
			Gravel	Sand	Silt	Micro-Deval	
TH21-07	115+12 22 Lt	0 - 1.25	37	45	18	25.4	These two samples were combined for a composite M-D test.
TH21-18	116+05 12 Lt	0 - 1.0	31	45	24		
TH21-07	115+12 22 Lt	1.25 - 2.0	26	50	24	27.3	These two samples were combined for a composite M-D test.
TH21-06	116+50 49 Lt	0.5 - 1.25	23	48	29		
TH21-09	135+08 60 Lt	0 - 0.5	42	42	16	26.5	--
TH21-09	135+08 60 Lt	0.5 - 1.25	34	47	19	22.5	These three samples were combined for a composite M-D test.
TH21-10	132+33 32 Lt	0.75 – 1.5	21	49	30		
TH21-33	131+31 3 Lt	1.25 - 2.0	23	49	28		
TH21-11	103+69 72 Lt	0 - 0.75	55	34	11	21.7	These three samples were combined for a composite M-D test.
TH21-12	106+34 49 Lt	0 - 0.5	35	45	20		
TH21-28	101+31 20 Lt	0 - 1.0	37	43	20		
TH21-11	103+69 72 Lt	0.75 - 1.5	51	35	14	42.2	These three samples were combined for a composite M-D test.
TH21-12	106+34 49 Lt	0.5 - 1.25	21	46	33		
TH21-26	103+55 62 Rt	0.5 - 1.25	27	48	25		

MATERIAL SITES

2004 Investigation: Runway Area Material Sites

During the original airport relocation project a geotechnical investigation was performed in 2004. CRM engineering geology staff and a Statewide Materials drill crew advanced test holes or collected rock samples at five proposed material sites in the vicinity of the proposed new airport site (see Figure 5). Three material sites were existing or active and two locations were proposed new material sites (Alaska DOT&PF, 2007). The Takotna Airport Relocation Geotechnical Report (Alaska DOT&PF, 2007) described the five material sites as follows:

- MS-1: Takotna River floodplain, located at Takotna River Bridge along the Sterling Landing Road.
- MS-2: Small cut in the hillside next to Sterling Landing Road, approximately 1 1/4 miles west of Takotna.
- MS-3: Material site located at the old runway. The bedrock material is from the poor-quality mudstone/siltstone/shale of the Kuskokwim Formation rock types.
- MS-5: Low hill at the south end of the runway approximately 1/2 miles east of Takotna
- MS-6: Takotna River floodplain, located approximately 1,400 feet east of the new/existing Takotna Airport runway.

See the Takotna Area Material Sites Map (Figure 5 – Appendix A) that shows the material sites in the Takotna area. Test holes were drilled at the proposed material site (MS-6) to see if it could be used as a source for clean fill and for crushed aggregate surface course (CASC) (Alaska DOT&PF, 2007). During the follow-on construction from about 2009 to 2011, MS-6 was used as a source of CASC, although some of the specifications for rock quality (degradation) were relaxed to more closely match the 2004 rock quality results. MS-6 site was largely excavated to the material site limits during the 2009-2011 construction project. Parts of the excavation encountered frozen gravel. A lake feature is the result of the excavation. See Figure 6 (Appendix A) for the location of 2004 test holes drilled at MS-6 and the excavation limits at MS-6 as of June 2021.

Material site MS-3 by the old airport runway was used as a source of embankment and is generally characterized as overburden soil over a poor-quality bedrock (see Figure 5). Rock samples for quality were collected from four of these five sites and the results are provided in the table below:

Table 8: Summary of Rock Quality Data from 2004 Investigation

Date & Sample Location	Lab Sample Number	Quality Test Results				Location Description
		LA Abrasion (% Loss)	Degradation	Sodium Sulfate Soundness Crs/Fn (% Loss)	Micro-Deval	
8-20-04 MS-1	2004A-2610	24	45	0/2	--	Takotna River Floodplain at Bridge
8-6-04 MS-2	2004A-2565	19	25	0/1	--	Road Cut on Sterling Landing Road by Takotna
8-3-04 MS-3	2004A-2566	22	1	22/1	--	Former Airport Material Site
8-3-04 MS-3	2004A-2623	24	29	0/1	--	Former Airport Material Site
9-18-04 MS-6	2004A-2616	--	19	--	--	Takotna River Floodplain by New Runway

9-18-04 MS-6	2004A-2620	19	25	1/1	--	Takotna River Floodplain by New Runway

2009/2010 Airport Runway Construction

In 2009/2011 Central Region Construction staff collected quality samples from material sites MS-3 and MS-6. MS-3 was used as a source for embankment and MS-6 was used for CASC. Construction staff also collected a rock sample from a talus covered slope (off project) for material recon. Micro-Deval samples were not collected at this time since the analyses were not developed as a specification at this time. Table 9 below summarizes construction test results for MS-3 and MS-6.

Table 9: Summary of Rock Quality Data from 2009/2010 Construction

Date & Sample Location	Lab Sample Number	Quality Test Results				Location Description
		LA Abrasion (% Loss)	Degradation	Sodium Sulfate Soundness Crs/Fn (% Loss)	Micro-Deval	
7-26-10 MS-3	2010-1846	22	2	41/5	--	Former Airport Material Site
7-26-10 MS-3	2010-1847	20	10	3/5	--	Former Airport Material Site
7-25-10 MS-6	2010-1845	18	20	3/4	--	Taktona River Floodplain by New Runway
8/3/10 Talus Covered Slope	2010-1898	13	77	1/7	--	Sample Location off Sterling Landing Road at about MP 19.15 - East up the Valley

2021 Material Site Recon Investigation

In 2021 CRM staff performed a recon of a bedrock knob located at about MP 7.6 of the Sterling Landing Road (see Figures 7 and 8 – Appendix A). CRM staff collected rock samples from the surface at this location and tested them at the CRM lab (see Table 10 below).

Table 10: Summary of Rock Quality Data from 2021 Recon

Date & Sample Location	Lab Sample Number	Quality Test Results				Location Description
		LA Abrasion (% Loss)	Degradation	Sodium Sulfate Soundness Crs/Fn (% Loss)	Micro-Deval	
6-9-21 MP 7.6 Sterling Landing Road	2021A-1268	14	72.7	1/	5.8	Talus Covered Slope Above the Road.
6-9-21 MP 7.7 Sterling Landing Road	2021A-1269	15	77.9	1/	5.4	Talus Covered Slope Above the Road.
6-9-21 MP 9.0 Sterling Landing Road	2021A-1270	26	72.7	1/	4.7	Talus Covered Slope Above the Road.

2023 Material Site Recon Investigation

In 2023, new surface samples were collected at several of the previously sampled locations for further quality testing. Two samples were taken at the potential MP 7.6 site, one sample was taken at the previously identified MS-1 site, and one sample was taken from the material site at the former location of the Takotna Airport (MS-3) (see Table 11).

Table 11: Summary of Rock Quality Data from 2023 Recon

Date & Sample Location	Lab Sample Number	Quality Test Results				Location Description
		LA Abrasion (% Loss)	Degradation	Sodium Sulfate Soundness Crs/Fn (% Loss)	Micro-Deval	
10-25-23 MP 7.6 Sterling Landing Road	2023A-3128	13	66.8	1/	6.9	Scree / Talus Covered Hillside
10-25-23 MP 7.6 Sterling Landing Road	2023A-3129	14	62.4	2/	7.6	Scree / Talus Covered Hillside
10-25-23 MS-1	2023A-3130	22	4.7	8/	23	Taktona River Floodplain

10-25-23 MS-3	2023A-3131	21	1	23/	55.2	Hillside Cut

2025 Material Site Investigation: Sterling Landing Road MP 7.6

In March and June 2025 CRM performed a subsurface investigation at the bedrock source near Sterling Landing Road MP 7.6. This investigation consisted of drilling three test holes using a CME 850 track-mounted drill rig operated by Alaska DOT&PF Northern Region Materials. CRM field staff supervised the drilling operations, collected samples and logged subsurface conditions. Three test holes were drilled at the proposed material site. TH25-01 (drilled in March 2025 in deep snow) was inadvertently drilled in a boulder field and was abandoned at 13.5 ft bgs due to drilling conditions. TH25-02 (advanced in June 2025) was drilled to about 100 feet and generally found rock of good quality, similar to the four surface grab samples collected from the site in 2021 and 2023. TH25-03 (also drilled in June 2025) was different from TH25-02 in that the rock was more fractured and of lower quality than the rock core in TH25-02 (see Table 12 below). The bottom 20 feet of rock core in TH25-03 (from 86.5 to 103 feet) also had low recovery percentages. See drill site and rock core photos in the Photo Log (Appendix E) and the test hole logs in Appendix B.

Table 12: Summary of Rock Quality Data – Sterling Landing Road MP 7.6

Date, Test Hole Number, Sample Depth	Lab Sample Number	Quality Test Results				Test Hole Location & Description
		LA Abrasion (% Loss)	Degradation	Sodium Sulfate Soundness Crs/Fn (% Loss)	Micro-Deval	
3-28-25 TH25-01 (0-13 feet)	2025A-0142	--	71.5	--	8.0	Drilled halfway up the slope on packed snow. The site was in a boulder field. Could only get to 13.5 feet below surface.
6-20-25 TH25-02 (6-33 feet)	2025A-0954	12	85.1	1/	3.1	Drilled near the top of the ridge. Rock outcrops in the area.
6-20-25 TH25-02 (33-88 feet)	2025A-0955	12	85.1	0/	2.6	--
6-20-25 TH25-02 (88-100 feet)	2025A-0956	12	83.6	0/	3.1	--
6-27-25 TH25-03 (12.5-52.5 feet)	2025A-0957	11	67.9	1/	4.1	Drilled near the top of the ridge. Rock outcrops in the area. Bedrock was more

						fractured in this test hole compared to TH25-02.
6-27-25 TH25-03 (52.5-104 feet)	2025A-0958	11	39.3	2/	15.5	Very low percent recovery of rock core samples from 86 to 104 feet below surface.

REFERENCES

Alaska DOT&PF. *"Alaska Geotechnical Procedures Manual"*. May 2007.

Alaska DOT&PF. *"Geotechnical Report – Takotna Airport Relocation".* Project No. 56774. May 2007.

Miller, J.A., and Whitehead, R.L., *"Ground Water Atlas of the United States: Alaska".* U.S. Geological Survey publication HA 730-N. 1999.

R&M Consultants. *"Investigation of Potential Riprap Quarry Sites Near McGrath, Alaska"*. R&M Project No. 851033. September 1988.

Wahrhaftig, Clyde, *"Physiographic Divisions of Alaska*". United States Geological Survey, Professional Paper 482, 1965.

Western Regional Climate Center. "*Monthly climate summary for McGrath AP, Alaska".* http://www.wrcc.dri.edu/. Accessed 2022.

APPENDIX A

TEST HOLE LOCATION MAPS
&
Takotna Area and Sterling Landing Road Site Maps

Alaska Department of Transportation & Public Facilities
Takotna Airport Rehabilitation
Project No. CFAPT00805

FIGURE 2

Takotna Airport 2004 & 2021 Test Hole Map

Service Layer Credits: World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

TH04-117
TH04-116
TH04-115
61+00
59+00
TH21-11
TH21-12
TH21-35
TH21-28
TH04-153
96+00
100+00
105+00
110+00
TH21-1
TH21-27
TH04-151
TH04-150
TH04-152
TH21-29
TH21-30
TH21-13
TH21-26
TH21-14

Legend

- Tkt_CL_alignment
- 2021 Shallow Test Hole Locations
- 2021 Deep Test Hole Locations
- 2004 Test Hole Locations
- 2016 Mapped Cracks
- Stationing
- RW_1S Contours_drone
- RW_2S Contours_drone
- RW_ES Contours_drone
- Apron_Taxiway Contours_drone
- 2021 Mapped Cracks
- Bog/Drainage

Feet
0 75 150 300

Alaska Department of Transportation & Public Facilities
Takotna Airport Rehabilitation
Project No. CFAPT00805

FIGURE 3

Takotna Airport 2004 & 2021 Test Hole Map

Service Layer Credits: World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

TH04-119
TH04-120
TH04-142
TH04-144
71+00
73+00
TH04-143
201+00
TH21-01
TH21-25
TH04-145
TH04-146
203+00
TH21-02
TH04-141
TH21-03
TH21-35
TH21-06
TH21-05
TH21-04
TH21-22
TH04-138
TH21-19
110+00
TH21-07
TH21-18
TH21-16
120+00
TH04-150
TH21-30
TH04-149
115+00
TH04-148
TH21-17
TH04-147
TH21-20
TH04-140
TH21-15
TH21-21
TH04-139

Legend

- Tkt_CL_alignment
- 2021 Shallow Test Hole Locations
- 2021 Deep Test Hole Locations
- 2004 Test Hole Locations
- 2016 Mapped Cracks
- Stationing
- RW_1S Contours_drone
- RW_2S Contours_drone
- RW_ES Contours_drone
- Apron_Taxiway Contours_drone
- 2021 Mapped Cracks
- Bog/Drainage

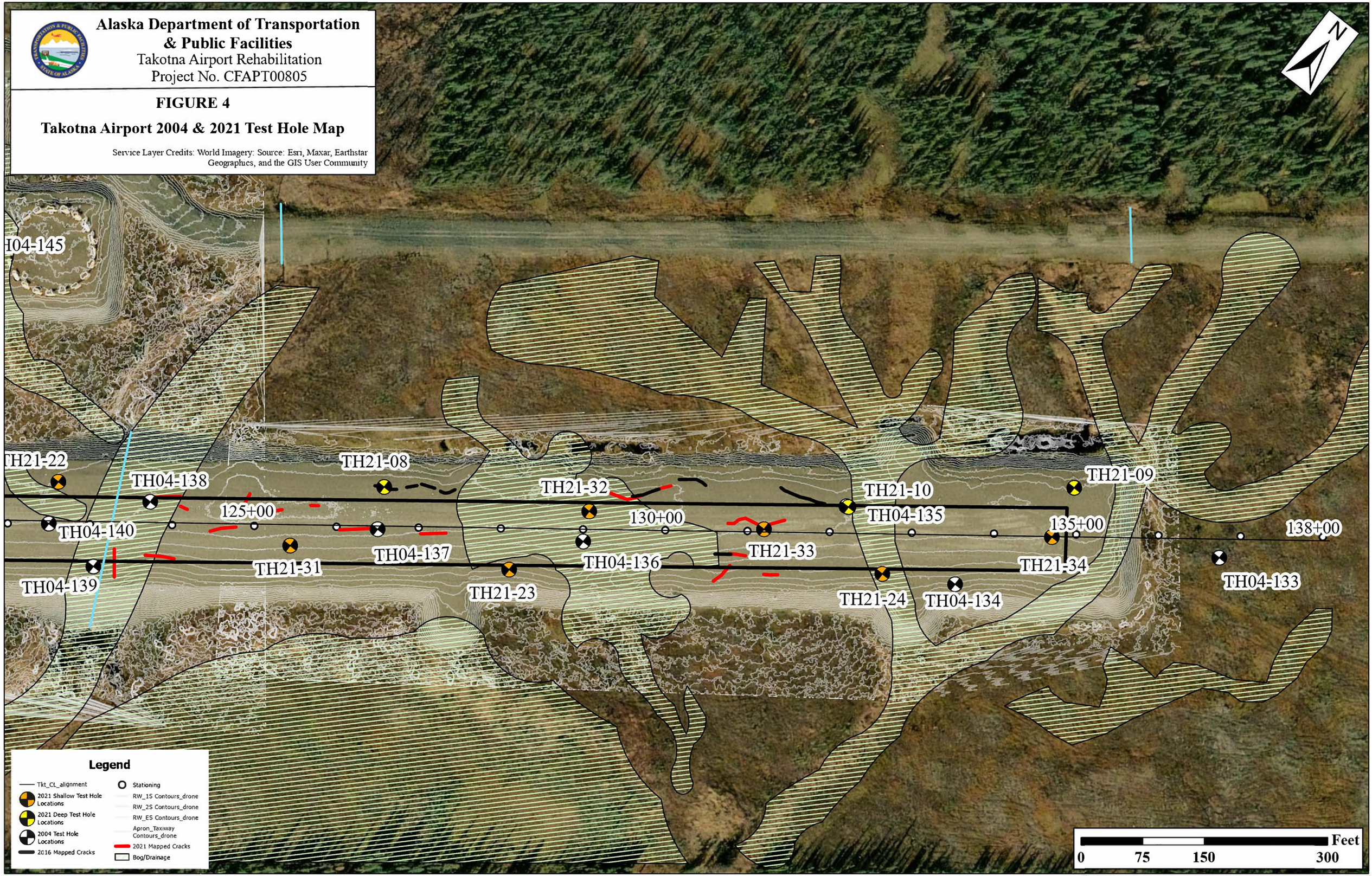
0 75 150 300 Feet

Alaska Department of Transportation & Public Facilities
Takotna Airport Rehabilitation
Project No. CFAPT00805

FIGURE 4

Takotna Airport 2004 & 2021 Test Hole Map

Service Layer Credits: World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



MS 260-08-02
Referred to as
"MS-3" in the 2007
Geotechnical Report

Referred to as
"MS-6" in the 2007
Geotechnical Report

Takotna

Referred to as
"MS-2" in the 2007
Geotechnical Report

MS 261-002-1
Referred to as "MS 1
in the 2007
Geotechnical Report

Bridge over
Takotna
River

0 1,400 2,800 5,600 Feet

Legend

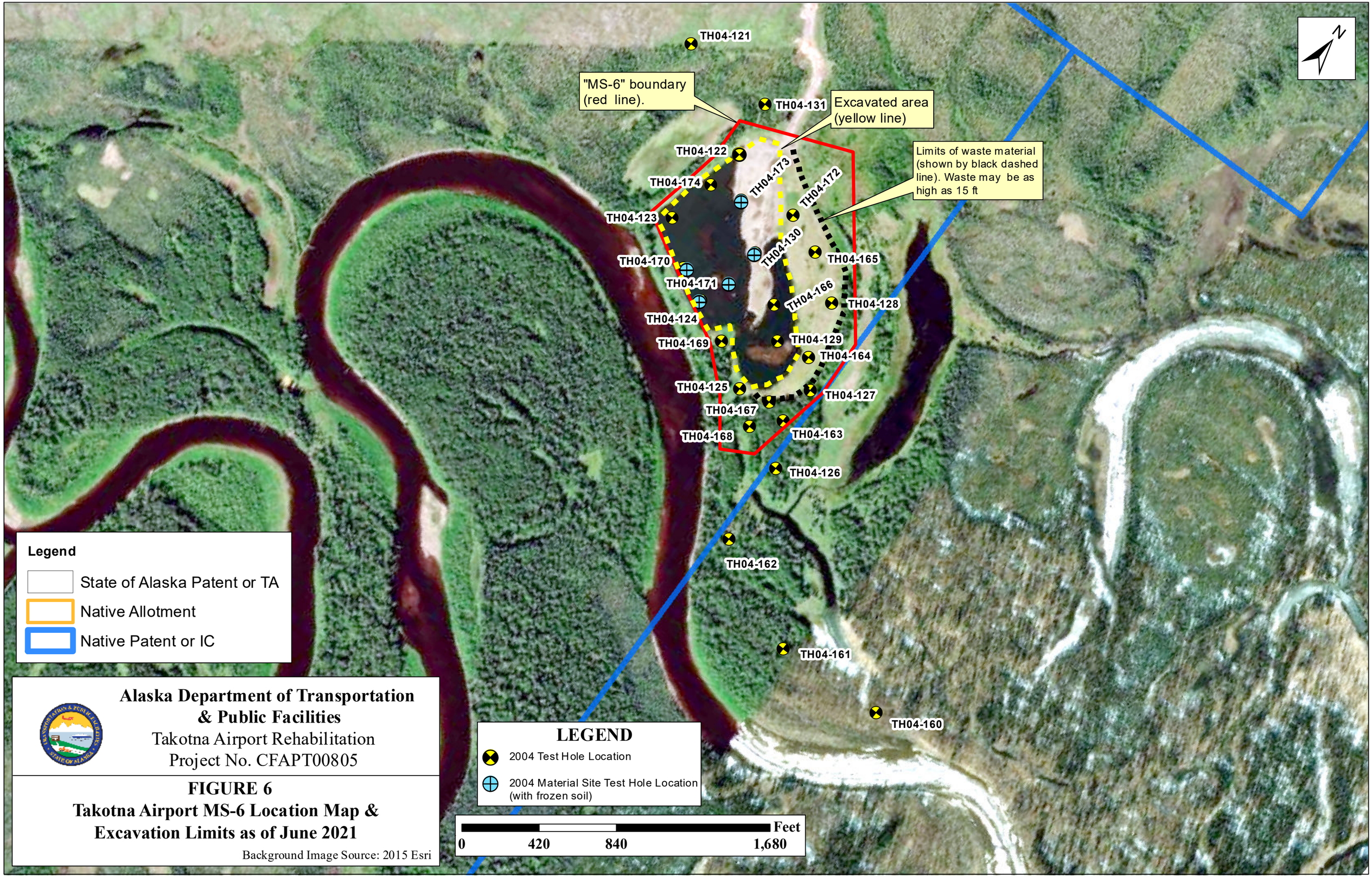
- State of Alaska Patent or TA
- Native Allotment
- Native Patent or IC
- USA Topo Maps

N

Alaska Department of Transportation & Public Facilities
Material Site Research
of them Takotna Area

FIGURE 5
Takotna Area Material Sites

Background Image Source: 2015 Esri.
& National Geographic Topo (2013)



Alaska Department of Transportation & Public Facilities

Takotna Airport Rehabilitation

Project No. CFAPT00805

FIGURE 6

Takotna Airport MS-6 Location Map & Excavation Limits as of June 2021

Background Image Source: 2015 Esri

MP 15 Existing Material Site with Approximate Mile Post (MP)

LEGEND

- Native Allotment
- Native Patent or IC
- State of Alaska Patent or TA

0 0.25 0.5 1 Miles

N

Sterling Landing Road

MP 1.4

MP 6.1

Proposed Area for a Rock Quarry - Sterling Landing Road MP 7.6

Sterling Landing

Kuskokwim River

Candle Placer

Candle Creek Landing Strip

VABM Candle 1842

T32N, R35W, Sxn 16, South half. South of Road. MTNT Lands? &

T32N, R35W, Sxn 21, North half. South of Road. State Lands?

Lat 62.856367°
Long -155.844722°

Alaska Department of Transportation & Public Facilities
Material Site Research
of the Takotna Area

FIGURE 7
Sterling Landing Road
Existing Material Site Locations

Geology Map Source: TK Bundtzen and GM Laird., "Geologic Map of the McGrath D-6 Quadrangle, Alaska." 1983. Land ownership information obtained from the DNR Website. The TOPO! maps are scanned images of USGS paper topographic maps. http://goto.arcgisonline.com/maps/USA_Topo_Maps. 2013 National Geographic Society, i-cubed.

Map by: Central Region Materials - February 24, 2021

Sxn 16

Sxn 15

Sxn 21

Sxn 22

MP 9.0

MP 7.6

MP 6.1

Sterling Landing Road

Proposed MP 7.6 Site for Exploration

Placer

1500

20

N

0 0.1 0.2 0.4 Miles

Image © 2021 CNES / Airbus

Google Earth

Alaska Department of Transportation & Public Facilities

Material Site Research of the Takotna Area

FIGURE 8
Sterling Landing Road
Existing Material Site Locations

Geology Map Source: TK Bundtzen and GM Laird., "Geologic Map of the McGrath D-6 Quadrangle, Alaska." 1983. Land ownership information obtained from the DNR Website. The TOPO! maps are scanned images of USGS paper topographic maps. http://goto.arcgisonline.com/maps/USA_Topo_Maps. 2013 National Geographic Society, i-cubed.

Map by: Central Region Materials - February 24, 2021

MP 15 Existing Material Site with Approximate Mile Post (MP)

LEGEND

N

Native Allotment

Native Patent or IC

State of Alaska Patent or TA

0 0.25 0.5 1 Miles

Tatalina Air Force Station

MP 15.5

MP 15

Tatalina Landing Strip

Tatalina Bridge

Alaska Department of Transportation & Public Facilities

Material Site Research of the Takotna Area

FIGURE 9
Sterling Landing Road Existing Material Site Locations

Geology Map Source: TK Bundtzen and GM Laird., "Geologic Map of the McGrath D-6 Quadrangle, Alaska," 1983. Land ownership information obtained from the DNR Website. The TOPO! maps are scanned images of USGS paper topographic maps. http://goto.arcgisonline.com/maps/USA_Topo_Maps. 2013 National Geographic Society, i-cubed.

Map by: Central Region Materials - February 24, 2021

MP 15 Existing Material Site with Approximate Mile Post (MP)

LEGEND

N

Native Allotment

Native Patent or IC

State of Alaska Patent or TA

0 0.25 0.5 1 Miles

Takotna River Bridge

MP 19.7

MP 19.15

2010 Const. Rock Sample

Tatalina Air Force Station

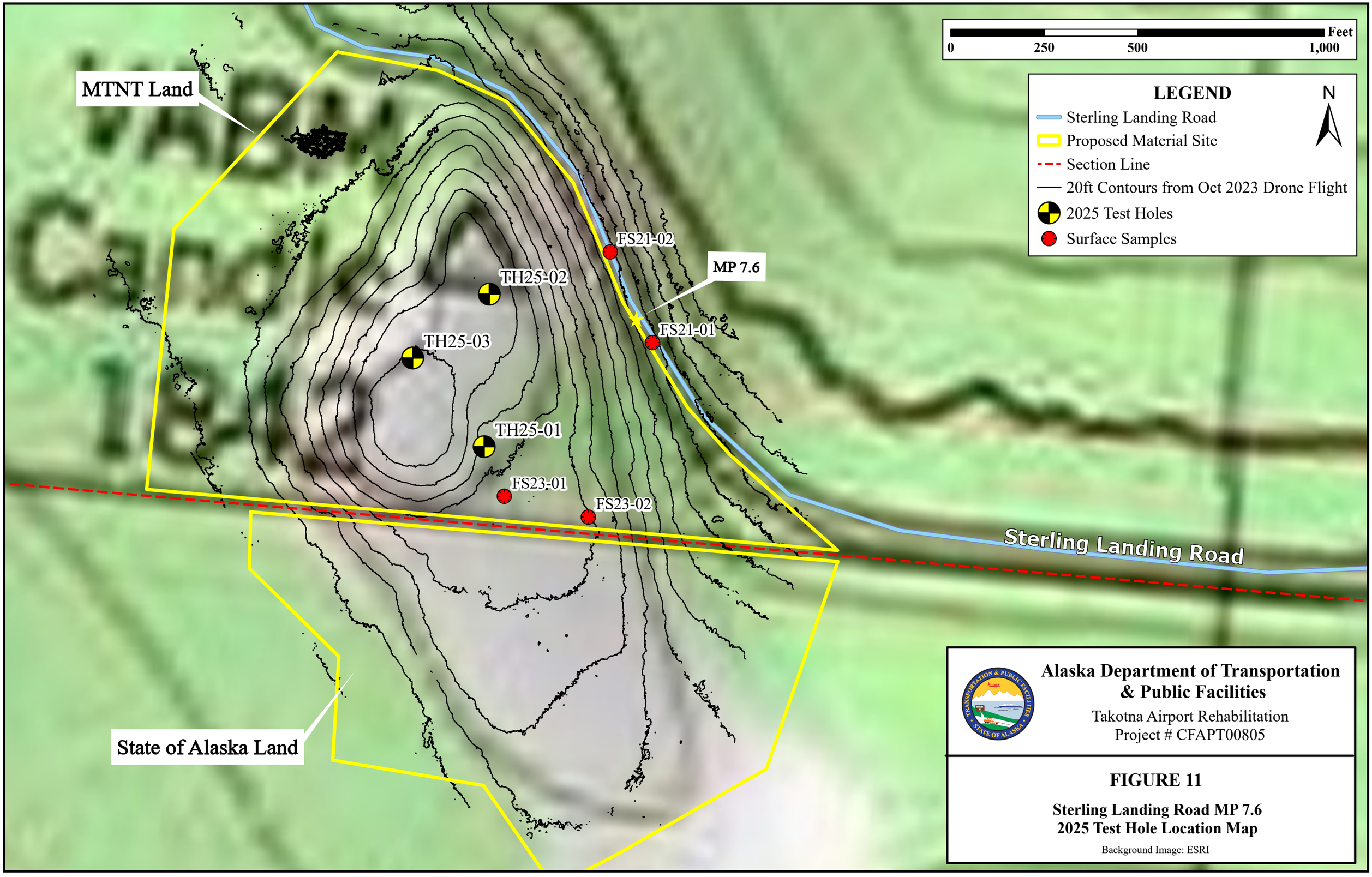
Alaska Department of Transportation & Public Facilities

Material Site Research of the Takotna Area

FIGURE 10
Sterling Landing Road Existing Material Site Locations

Geology Map Source: TK Bundtzen and GM Laird., "Geologic Map of the McGrath D-6 Quadrangle, Alaska." 1983. Land ownership information obtained from the DNR Website. The TOPO! maps are scanned images of USGS paper topographic maps. http://goto.arcgisonline.com/maps/USA_Topo_Maps. 2013 National Geographic Society, i-cubed.

Map by: Central Region Materials - February 24, 2021



Alaska Department of Transportation & Public Facilities

Takotna Airport Rehabilitation
Project # CFAPT00805

FIGURE 11

Sterling Landing Road MP 7.6
2025 Test Hole Location Map

Background Image: ESRI

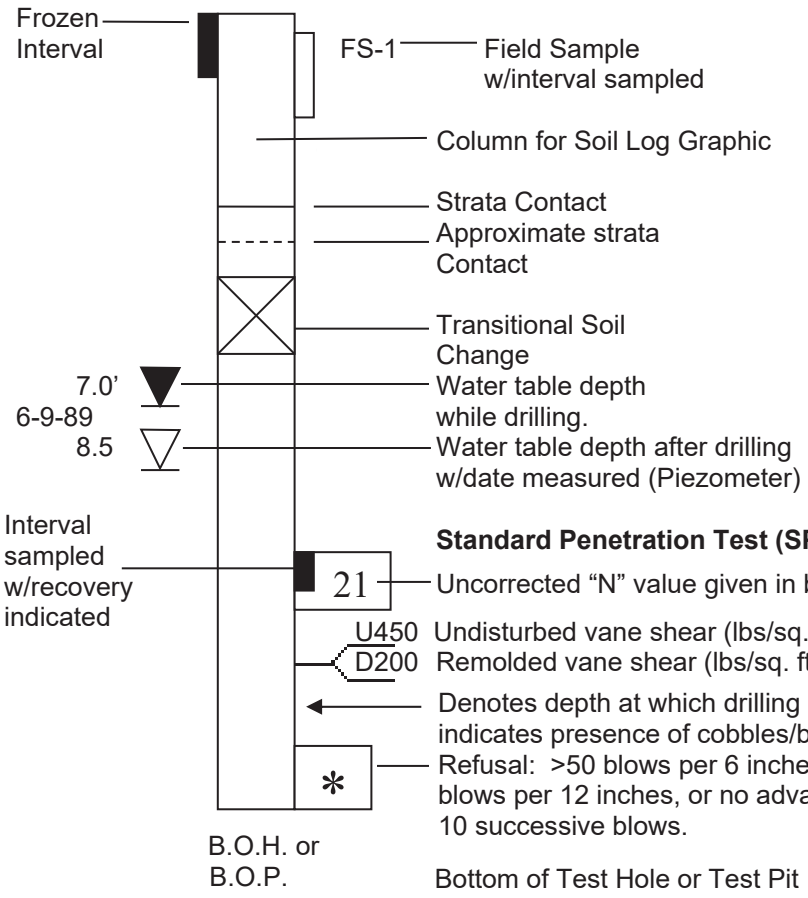
APPENDIX B

2004, 2021, and 2025 TEST HOLE LOGS

TEST HOLE AND TEST PIT LOG EXPLANATION

ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

TH 03-3 ——— Test Hole (TH) or Test Pit (TP); Year - Number
Sta. 15+00, 15' Rt. — Location and Offset from Centerline ℄
Northing, Easting — Coordinate Location (Lat/Long)
Elev. 86.5 ——— Elevation (feet)
6-8-89 ——— Date drilled or excavated



Standard Penetration Test (SPT):

SAMPLE DATA
Unified Soil Classification System

USCS Name:	Silty Sand with Gravel
USCS Symbol:	(SM)
Soil Size Distribution:	
Gravel	Gr = 22%
Sand	Sa = 35%
Fines	Si/Cl or P200 = 43.2%
Atterberg Limits:	
Liquid Limit	LL = 16 NV = No Value
Plasticity Index	PI = 2 NP = Nonplastic
Moisture Content	Moisture = 20.5%
Organic Content	Org = 1.2%

NOTE: All soil samples collected in the field are classified by the Geologist using the Visual Manual Field Procedures in ASTM D2488. For quality control - field samples are submitted to a soils laboratory and lab tests performed for classification using ASTM D2487. The field classifications are changed, if necessary, to match the laboratory classification on the final TH Log.

Abbreviations

Auger = Auger Cuttings
Core = Rock Core
Grab = Grab Sample
MS = Modified Shelby Tube
NR = No Recovery
SNT = Sample Not Tested
SPT = Standard Penetration Test
SS = 2.5-inch (OD) Split Spoon Advanced by 340# Hammer
MC = 3.0-inch (OD) Split Spoon Advanced by 340# Hammer
ST = Shelby Tube
UNDIST = Undisturbed Sample
VANE = Vane Shear Test

Refer to the May 2007 Alaska Geotechnical Procedures Manual for specific and additional descriptions for bedrock, soil, organic soil, and frozen soil.

Soil Size Distribution

Based on U.S. Standard Sieve Sizes:
Boulders: > 12"
Cobbles: 3" to 12"
Gravel: #4 to 3"
Sand: #200 to #4
Silt/Clay: < #200

PLAN VIEW SYMBOLS

- Penetrometer Hole
- Power Auger Test Hole
- Hand Auger Test Hole
- 4.5' Soil Probe & Depth
- Hand Dug Test Pit
- Dozer/Backhoe Test Pit
- Surface or Grab Sample

Soil Log Graphic Symbols

(Two or more soil symbols may be used together to indicate a combination of soil types.)

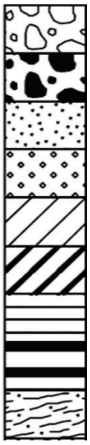
- Cobbles and/or Boulders
- Gravel (GP/GP-GM)
- Sand (SP/SP-SM)
- Organic (OL)
- Silt (ML)
- Clay (CL)
- Bedrock (BX - vary based on rock type)
- Ice (Massive, no soil)

TEST HOLE AND TEST PIT LOG EXPLANATION (Continued)

ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

Soil Log Graphic Symbols (Continued)

(Two or more soil symbols may be used together to indicate a combination of soil types).



GRAVEL (GP)

GRAVEL (GW)

SAND (SP)

SAND (SW)

SILT (ML)

SILT (MH)

CLAY (CL)

CLAY (CH)

Peat (PT) fibric (f), hemic (h), or sapric (s)

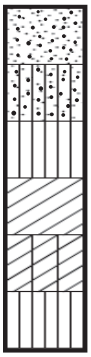
Density Based on blow count for Non-Cohesive Soil

Number of blows per foot	Density
0-4	Very loose
5-10	Loose
11-30	Medium dense
31-50	Dense
>50	Very dense

Density Based on blow count for Cohesive Soil

Number of blows per foot	Consistency
<2	Very soft
2-4	Soft
5-8	Firm
9-15	Stiff
16-30	Very stiff
>30	Hard

Soil Log Graphic Symbols and Explanation for Organic Soil Types



Slightly Organic Coarse Grained Soil (SP) 2-5% Organics in course grained soil.

Organic Coarse Grained Soil (OL/SP) 5-15% Organics in course grained soil.

Highly Organic Coarse Grained Soil (OL) 15-75% Organics in coarse grained soil.

Slightly Organic Fine Grained Soil (ML) 2-5% Organics in fine grained soil.

Organic Fine Grained Soil (OL/ML) 5-15% Organics in fine grained soil.

Highly Organic Fine Grained Soil (OL) 15-75% Organics in fine grained soil.

Sample Methods

SPT Standard Penetration Test. 1.4-inch ID Split Spoon, 140 pound hammer

SS Penetration Test. 2.0-inch ID Split Spoon, 340 pound hammer

MC Modified Calif Penetration Test. 2.5-inch ID Split Spoon, 340 pound hammer

Grab Sample

Auger Cutting Sample

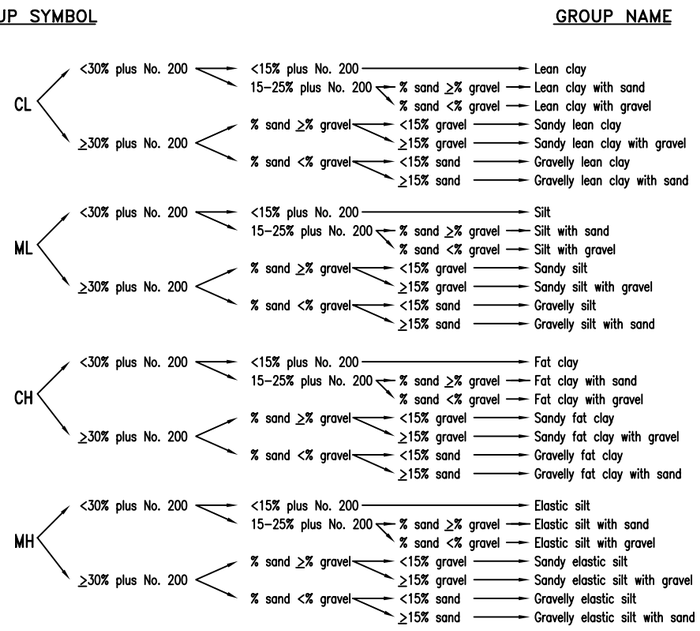
Excavator Bucket Sample

Rock Core

Shelby Tube Sample- Thin Wall 3-inch O.D.

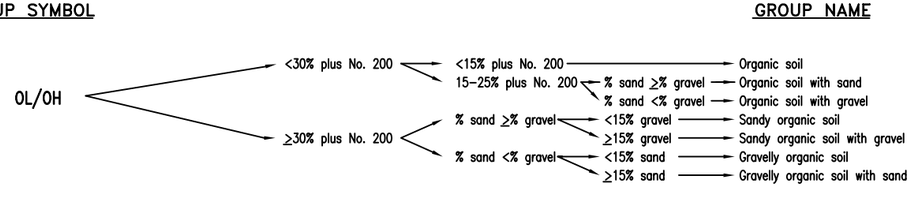
Field Classification

of Soils for Engineering Purposes
Unified Soil Class. System
ASTM D2488



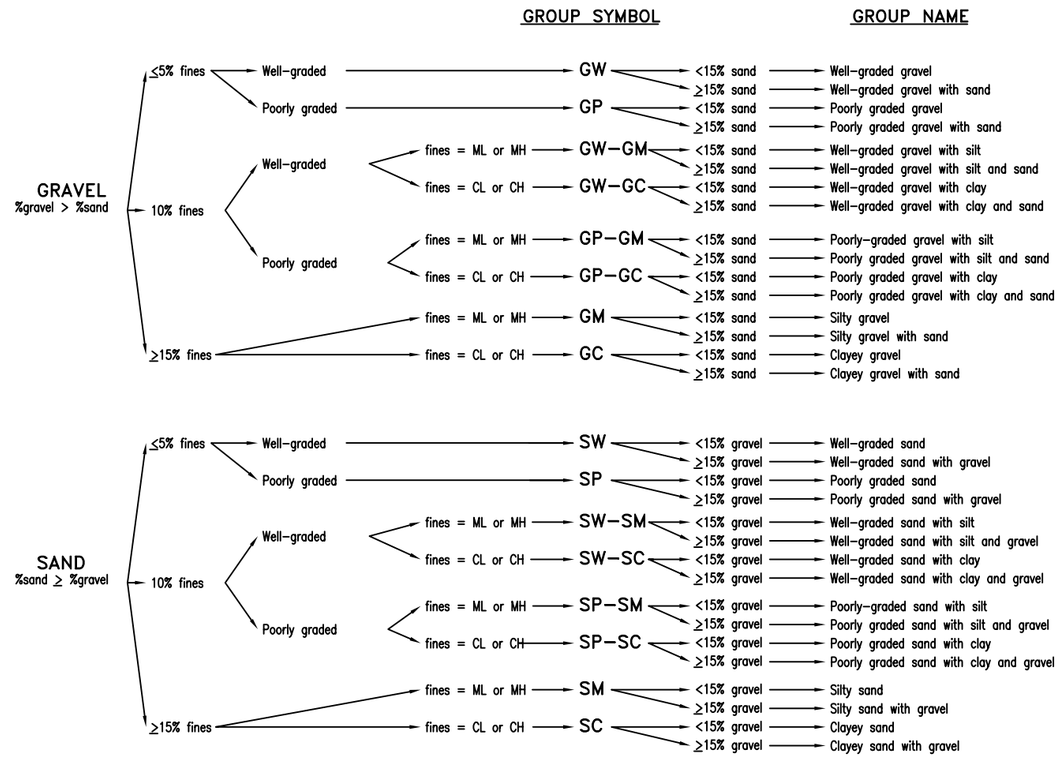
Note 1 – Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5%.

Figure 1a: Flow Chart for Identifying Inorganic Fine–Grained Soil (50% or more fines)



Note 1 – Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5%.

Figure 1B: Flow Chart for Identifying Organic Fine–Grained Soil (50% or more fines)



Note 1 – Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5%.

Figure 2: Flow Chart for Identifying Coarse–Grained Soils (less than 50% fines)

H:\GEOLOGY StwMat\USCS CHART\ASTM D2487-D2488 Chart.dwg

Laboratory Classification

of Soils for Engineering Purposes
Unified Soil Class. System
ASTM D2487

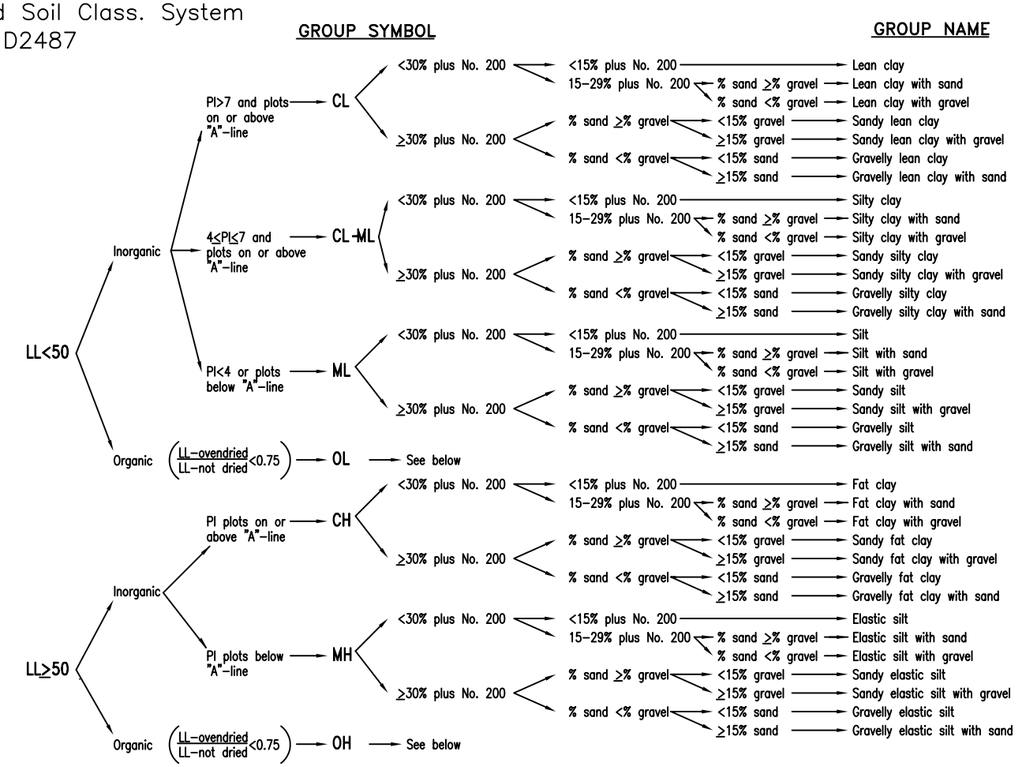


Figure 1: Flow Chart for Classifying Fine–Grained Soil (50% or More Passes No. 200 Sieve)

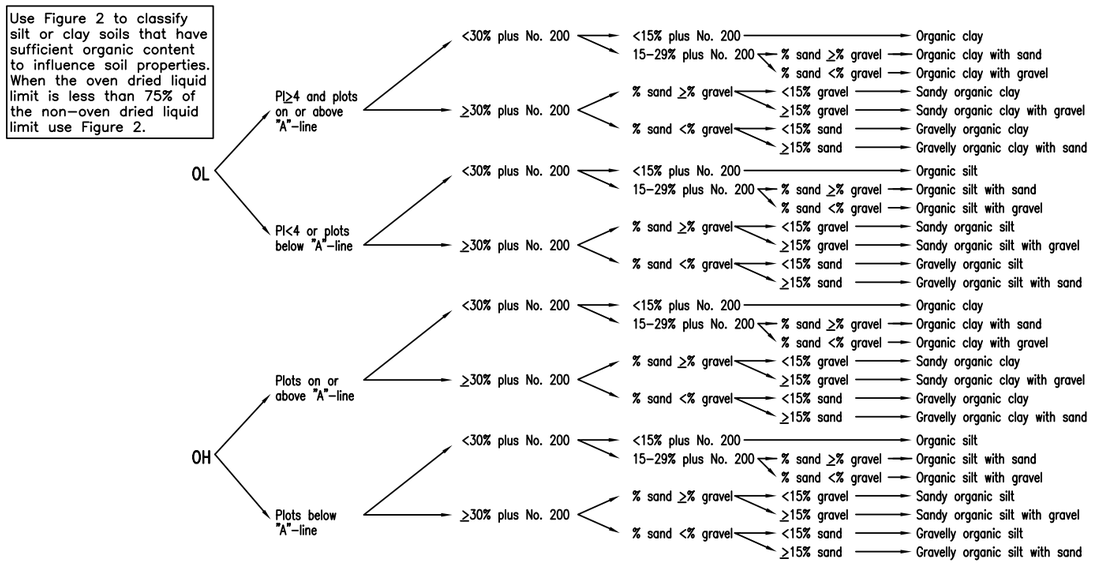
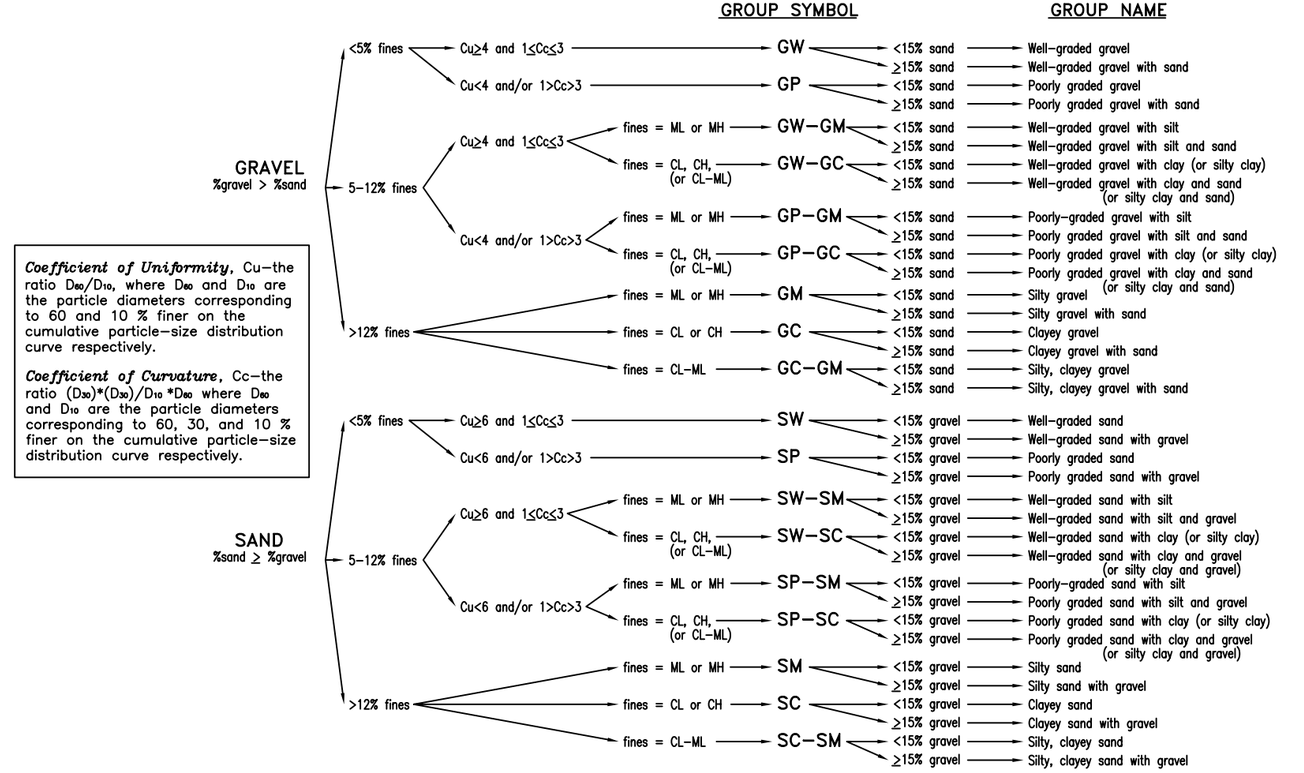


Figure 2: Flow Chart for Classifying Organic Fine–Grained Soil (50% or More Passes No. 200 Sieve)



Coefficient of Uniformity, Cu–the ratio D_{60}/D_{10}, where D_{60} and D_{10} are the particle diameters corresponding to 60 and 10 % finer on the cumulative particle–size distribution curve respectively.

Coefficient of Curvature, Cc–the ratio $(D_{30})^*(D_{30})/D_{10}{}^*D_{60}$ where D_{60} and D_{10} are the particle diameters corresponding to 60, 30, and 10 % finer on the cumulative particle–size distribution curve respectively.

Figure 3: Flow Chart for Classifying Coarse–Grained Soil (More Than 50% Retained on No. 200 Sieve)

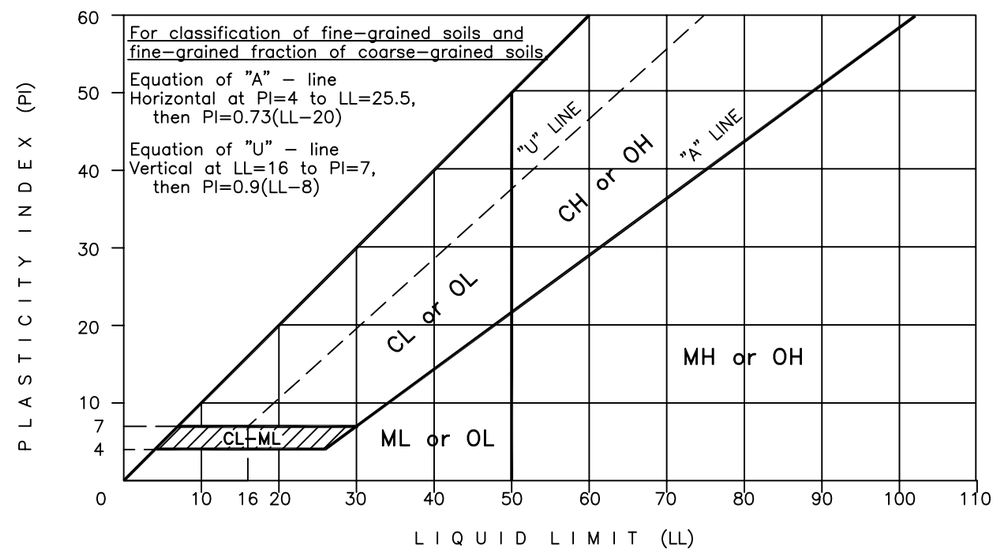
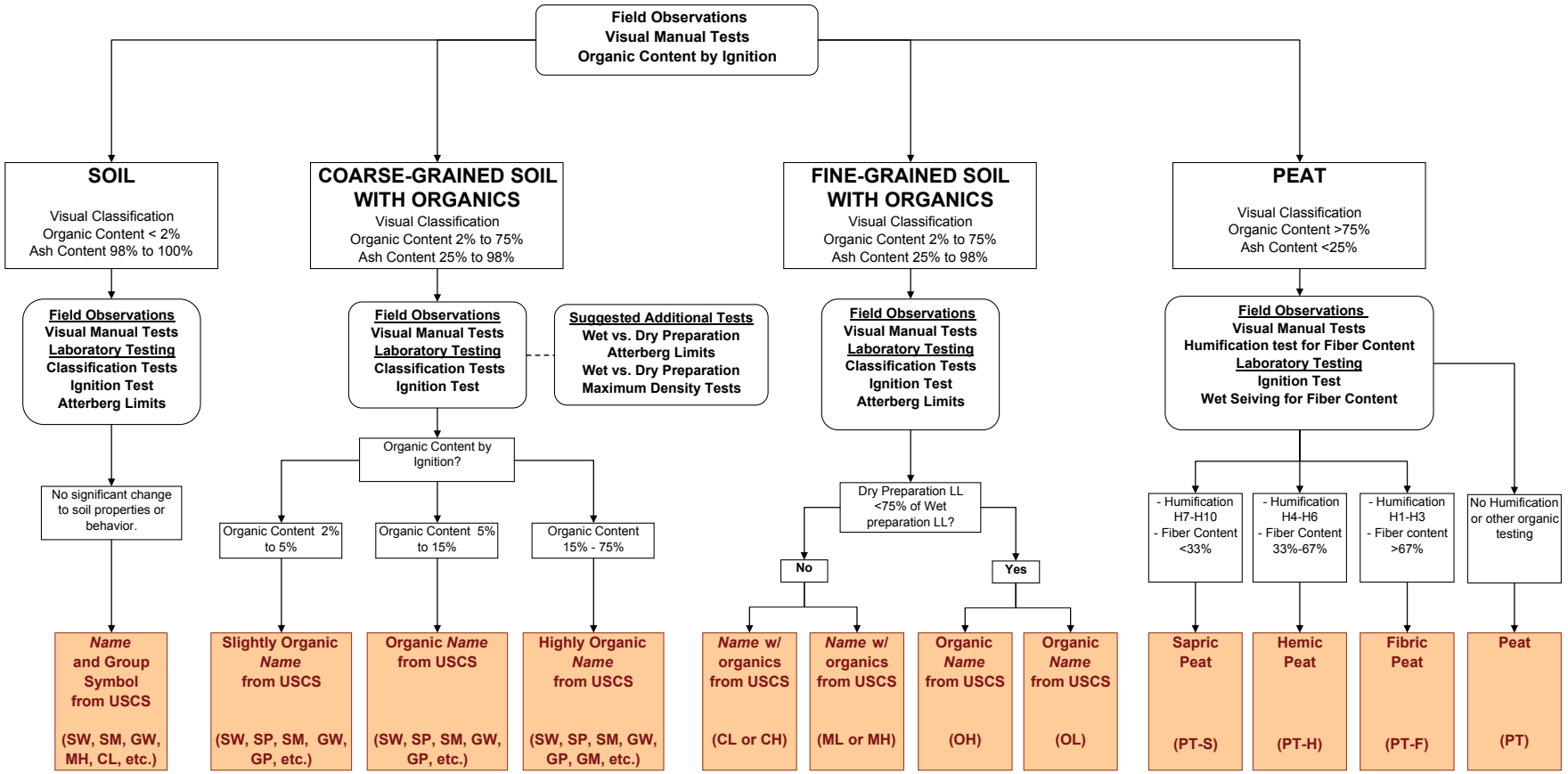


Figure 4: Plasticity Chart

H:\GEOLOGY StwMat\USCS CHART\ASTM D2487–D2488 Chart.dwg

Peat and Organic Soil Classification System



Note: The naming convention above for Fine-Grained soils is dependent on performing wet and dry preparation of submitted samples to determine Liquid Limit (LL). If dry and wet preparation is not performed, Central Region Materials will deviate from the Fine-Grained naming convention above and substitute the Course-Grained naming convention (ei., 2-5% Organic Content = Slightly Organic, 5-15% Organic Content = Organic, 15-75% Organic Content = Highly Organic). March 2019

Weathering and Alteration Grades (ISRM 1977)

Grade	Term	Description
I	Fresh	No visible sign of rock material weathering; perhaps slight discoloration on major discontinuity surfaces.
II	Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
III	Moderately weathered	Less than half the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones.
IV	Highly weathered	More than half the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present as a discontinuous framework or as corestones.
V	Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
VI	Residual Soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

Source: Excerpted from "Alaska Geotechnical Procedures Manual" (AK DOT & PF, May 2007).

Figure 6-1
Description and Classification of Frozen Soils
(After ASTM D4083)

DESCRIPTION AND CLASSIFICATION OF FROZEN SOILS

Part I Description of Soil Phase **(a)** (Independent of Frozen State)	Major Group		Sub-Group		Field Identification (6)	Pertinent Properties of Frozen Materials which may be measured by physical tests to supplement field identification. (7)	Guide for Construction on Soils Subject to Freezing and Thawing	
	Description (2)	Designation (3)	Description (4)	Designation (5)			Thaw Characteristics (8)	Criteria (9)
Part II Description of Frozen Soil	Segregated ice is not visible by eye **(b)**	**N**	Poorly Bonded or Friable	**Nf**	Identify by visual examination. To determine presence of excess ice, use procedure under note **(c)** below and hand magnifying lens as necessary. For soils not fully saturated, estimate degree of ice saturation: Medium, Low. Note presence of crystals, or of ice coatings around larger particles.	In-Place Temperature Density and Void Ratio a) In Frozen State b) After Thawing in Place Water Content (Total H_2O, including ice) a) Average b) Distribution Strength a) Compressive b) Tensile c) Shear d) Adfreeze Elastic Properties Plastic Properties Thermal Properties Ice Crystal Structure (using optional instruments.) a) Orientation of Axes b) Crystal size c) Crystal shape d) Pattern of Arrangement	Usually Thaw-Stable	The potential intensity of ice segregation in a soil is dependent to a large degree on its void sizes and may be expressed as an empirical function of grain size as follows: Most inorganic soils containing 3 percent or more of grains finer than 0.02 mm in diameter by weight are frost-susceptible. Gravels, well-graded sands and silty sands, especially those approaching the theoretical maximum density curve, which contain 1.5 to 3 percent finer than 0.02 mm by weight without being frost-susceptible. However, their tendency to occur interbedded with other soils usually makes it impractical to consider them separately. Soils classed as frost-susceptible under the above criteria are likely to develop significant ice segregation and frost heave if frozen at normal rates with free water readily available. Soils so frozen will fall into the thaw-unstable category. However, they may also be classed as thaw-stable if frozen with insufficient water to permit ice segregation. Soils classed as non-frost-susceptible (*NFS) under the above criteria usually occur without significant ice segregation and are not exact and may be inadequate for some structure applications: exceptions may also result from minor soil variations. In permafrost areas, ice wedges, pockets, veins, or other ice bodies may be found whose mode of origin is different from that described above. Such ice may be the result of long-time surface expansion and contraction phenomena or may be glacial or other ice which has been buried under a protective earth cover.
			No excess ice Well Bonded Excess ice	**Nb** **n** **e**				
	Segregated ice is visible by eye. (Ice 1 inch or less in thickness) **(b)**	**V**	Individual ice crystals or inclusions	**Vx**	For ice phase, record the following as applicable: Location Size Orientation Shape Thickness Spacing Pattern of arrangement Length Hardness } per part III Below Structure } Color } Estimate volume of visible segregated ice present as percent of total sample volume			
			Ice coatings on particles	**Vc**				
			Random or irregularly oriented ice formations	**Vr**				
			Stratified or distinctly oriented ice formations	**Vs**				
Part III Description of Substantial Ice Strata	Ice (Greater than 1 inch in thickness)	**Ice**	Ice with soil inclusions	**Ice + Soil Type**	Designate material as ICE **(d)** and use descriptive terms as follows, usually one item from each group, as applicable: Hardness: Hard, Soft (mass, not indi- crystals) Structure: Clear, Cloudy, Porous, Candled, Granular, Stratified Color: e.g.: Color-less, Gray, Blue Admixtures: e.g.: Contains Thin Silt Inclus-ions			
			Ice without soil inclusions	**Ice**		Same as Part II above, as applicable, with special emphasis on Ice Crystal Structure.	Usually Thaw-Unstable	

DEFINITIONS:

Ice Coatings on Particles are discernible layers of ice found on or below the larger soil particles in a frozen soil mass. They are sometimes associated with hoarfrost crystals, which have grown into voids produced by the freezing action.

Ice Crystal is a very small individual ice particle visible in the face of a soil mass. Crystals may be present alone or in a combination with other ice formations.

Clear ice is transparent and contains only a moderate number of air bubbles. **(e)**

Cloudy Ice is translucent, but essentially sound and non-pervious

Porous Ice contains numerous voids, usually interconnected and usually resulting from melting at air bubbles or along crystal interfaces from presence of salt or other materials in the water, or from the freezing of saturated snow. Though porous, the mass retains its structural unity.

Candled ice is ice which has rotted or otherwise formed into long columnar crystals, very loosely bonded together.

Granular Ice is composed of coarse, more or less equidimensional, ice crystals weakly bonded together.

Ice Lenses are lenticular ice formations in soil occurring essentially parallel to each other, generally normal to the direction of heat loss and commonly in repeated layers.

Ice Segregation is the growth of ice as distinct lenses, layers, veins and masses in soils, commonly but not always oriented normal to direction of heat loss.

Well-bonded signifies that the soil particles are strongly held together by the ice and that the frozen soil possesses relatively high resistance to chipping or breaking.

Poorly-bonded signifies that the soil particles are weakly held together by the ice and that the frozen soil consequently has poor resistance to chipping or breaking.

Friable denotes a condition in which material is easily broken up under light to moderate pressure.

Thaw-Stable frozen soils do not, on thawing, show loss of strength below normal, long-time thawed values nor produce detrimental settlement.

Thaw-Unstable frozen soils show on thawing, significant loss of strength below normal, long-time thawed values and/or significant settlement, as a direct result of the melting of the excess ice in the soil.

Modified from: Linell, K. A. and Kaplar, C. W., 1966, *Description and Classification of Frozen Soils*, Proc. International Conference on Permafrost (1963), Lafayette, IN, U.S. National Academy of Sciences, Publ. 1287, pp 481-487.

NOTES:

(a) When rock is encountered, standard rock classification terminology should be used.

(b) Frozen soils in the N group may on close examination indicate presence of ice within the voids of the material by crystalline reflections or by a sheen on fractured or trimmed surfaces. However, the impression to the unaided eye is that none of the frozen water occupies space in excess of the original voids in the soil. The opposite is true of frozen soils in the V group.

(c) When visual methods may be inadequate, a simple field test to aid evaluation of volume of excess ice can be made by placing some frozen soil in a small jar, allowing it to melt and observing the quantity of supernatant water as a percent of total volume.

(d) Where special forms of ice, such as hoarfrost, can be distinguished, more explicit description should be given.

(e) Observer should be careful to avoid being misled by surface scratches or frost coating on the ice.

2004 RUNWAY TEST HOLE LOGS

LOG OF TEST HOLE

HOLE # 04-135

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3292015.3722*, ***EASTING :*** *1969210.6958*

Station / Location: *Proposed R/W; 132+20*
Offset: *30' Lt*
Elevation: *409.2 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *11.5 feet*
Date: *8/12/2004 - 8/12/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** 0.0
1	GRAB	04-4592					ML		**Peat** (Hemic, H5) 0.4
2									**SILT with Organics**(ML) Brown, moist, est. 3-5% fine organics 0.8
3	SPT		5 6 7			13			04-4592 Moisture=66.3% @2.7-4.2' sample: est. 20% segregated ice by volume, in horizontal laminations 1/8-1/4" thick 3.0
4									
5									Vs
6									
7									
8									
9									
10	SPT		5 10 9			19			@10-11.5' sample: est. 5% organics, including 1" thick wood fragment (cored); est. <1% free ice 10.0
11								BOH 11.5	11.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-136

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291784.3134*, ***EASTING :*** *1968984.7419*

Station / Location: *Proposed Runway*
Offset: *17' Rt*
Elevation: *409.4 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *35.0 feet*
Date: *8/12/2004 - 8/13/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)	30	8.0
Time		00:00
Date	8/13/04	8/13/04
Symbol	▼	▽

Weather: Partly cloudy, hot

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** fresh swamp moss — 0.0
1									**Peat** Brown, wet, grades from fibric peat (humification H3) to hemic peat (humification H5) — 0.4
2	AUGER	04-4593							04-4593 Moisture=540.0%
3							ML		**SILT with Organics**(ML) Light gray, moist to wet, very loose, trace fine organics; nonplastic — 3.0
4									
5									
6	SPT	04-4594	2 2 2			4			04-4594 Moisture=32.3%, Org=4.2%
7									
8	▽								
9									
10									
11	SPT	04-4595	2 3 3			6			04-4595 Moisture=37.7%
12									
13							ML/OL		**ORGANIC SILT**(ML/OL) loose, variable organic content, est. 5-10% at 15.5-17' sample — 13.0
14									
15									
16	SPT		2 3 4			7			@15.5 - 17' sample: est. 5-10% organics — 15.5
17									
18									
19									
20									@20.5-22' sample: OL, contains occasional peat interlayers to 1/2" thick — 20.0
21	SPT		3 3 5			8			
22									
23									
24									
25									@25.5-26.9' sample: hemic peat (H5) interlayer 26.3-26.6'; organics in silt typically concentrated in partings or interlayers, trace only disseminated organic fragments — 25.0
26	SPT		3 4 6			10			
27									
28									
29									
30	▼								
31	SPT		0 0 5			5	SP		**SAND** (SP) Gray, wet, contains silt interlayers to 3/4" thick; grades coarser with depth — 30.0 confined aquifer — 31.0
32									

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-136

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291784.3134*, ***EASTING :*** *1968984.7419*

Station / Location: *Proposed Runway*
Offset: *17' Rt*
Elevation: *409.4 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *35.0 feet*
Date: *8/12/2004 - 8/13/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)	30	8.0
Time		00:00
Date	8/13/04	8/13/04
Symbol	▼	▽

Weather: Partly cloudy, hot

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
32									**SAND** (SP) Gray, wet, contains silt interlayers to 3/4" thick; grades coarser with depth (cont.)
33							GP		33.0 **GRAVEL with Sand**(GP)
34									
35								BOH 35	35.0 Notes: Observed very pronounced sand-heave at 35' level.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-137

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291642.1238*, ***EASTING :*** *1968778.479*

Station / Location: *Proposed Runway*
Offset:
Elevation: *413.6 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *11.5 feet*
Date: *8/13/2004 - 8/13/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** fresh 0-0.2' — 0.0
1										**Peat** old mat; organic silt @0.9-1' — 0.2 / 1.0
2	SPT		10 13 13	X	■	26	ML			**SILT** (ML) Light gray with orange-brown oxidation, ice rich, est. 30-40% by volume, in fine-parting pattern
3										Vs
4										
5										5.0
6	SPT	04-4596	9 12 12	X	■	24				@5': est. <1% organics, disseminated; occasional ORGANIC SILT (OL) interlayers; frozen with est <1% segregated ice 04-4596 Combined Samples: 04-133, 137, USCS Class: ML, Silt, p200=99%, Sa=1%, PI=NP, LL=27
7										Vx
8										8.0
9							ML			**SILT with Organics**(ML) Light gray with brown organics, est. 5+% organics, usually fine fragments, but occasionally contains coarse fibers and wood fragments; trace free ice
10										Vx
11	SPT		7 14 14	X		28			BOH 11.5	11.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-138

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291498.0297*, ***EASTING :*** *1968539.948*

Station / Location: *Proposed Runway*
Offset: *25' Lt*
Elevation: *397.6 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.5 feet*
Date: *8/13/2004 - 8/13/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** 0.0
1									**Peat** 0.3
2									@0.7-2': est. 70-80% organics, 20-30% mineral 1.0
3							OL		**ORGANIC SILT**(OL) Light gray with brown organics, est. 20% organics, mostly disseminated, ranging from fine fibers to >1/4" diameter wood pieces; frozen, est. <1% segregated ice, in very irregular patches 2.0
4									Vx
5									04-4597 Moisture=84.4%
6	SPT	04-4597	6 10 9	X		19			
7									
8									
9									**ICE (?)** 9.0
10							ML		**SILT with Organics**(ML) est. <5% organics, variable; frozen 9.5
11	SPT		5 8 11	X		19			
12									
13									
14									
15									
16	SPT	04-4598	5 7 10	X			CL-ML		**SILT with Clay**(CL-ML) Gray, slightly plastic; very ice-rich, est. 75% ice @15.8-16.3' in ice lenses to 1 1/4" thick 15.7
								BOH 16.5	Vs 04-4598 (16.4-16.5 ft), PI=5, LL=44 16.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-139

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291393.507*, ***EASTING :*** *1968533.8312*

Station / Location: *Proposed Runway*
Offset: *54' Rt*
Elevation: *392.0 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *31.0 feet*
Date: *8/13/2004 - 8/13/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)	0.2	
Time		
Date	8/13/04	
Symbol	▼	

Weather: Intermittent rain

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0							OL		**Vegetative Mat** 0.0 **ORGANIC SILT**(OL) Grayish brown, est. 50% organics; contains sand interlayers 0.2
5	SPT	04-4599	2 2 2			4			@5-6.5' sample: est. 10% organics, relatively fresh 5.0
10	SPT	04-4599	2 2 2			4			@10-11.5' sample: relatively evenly spaced 1/2-1" peat layers, ~2" apart; occasional sand layers 04-4599 Moisture=61.3% 10.0
15	SPT		0 1 4				SP		**SAND** (SP) Gray, wet, fine to medium-grained sand; est. <10% fine gravel, to 3/4" size max 16.0
18	SS						SP		**SAND with Gravel**(SP) Gray, wet, est. 30-35% fine gravel, to 1/4" size max 18.0
20	SS		7 8 10/1"						24.0
25							GP		**GRAVEL with Cobbles**(GP) classified by drill and reaction; loose, consistent drilling
30	SS	04-4600 (SNT)	23 49				GM		**SILTY GRAVEL with Sand**(GM) Greenish gray, est. 20% fines; 35% sand; subangular to subrounded gravel, recovered 1" size max; typical area basal gravel composition 28.5 31.0
								BOH 31	Notes: Located in stream channel.

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-140

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291401.1766*, ***EASTING :*** *1968459.0181*

Station / Location: *Proposed Runway*
Offset:
Elevation: *402.8 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *21.3 feet*
Date: *8/14/2004 - 8/14/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Mostly overcast, 50° F

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** 0.0
1									1.1
2							OL		**SILTY PEAT** 1.5
3	SPT	04-4600A	6 6 7	X	■	13			**ORGANIC SILT**(OL) Gray with brown organics, est. 20% organics, fine fibers plus stems and roots to 1/2" diameter; frozen, <1% free ice segregated into isolated patches
4									Vx
5									04-4600A Moisture=9.9% 5.0
6	SPT		5 5 7	X	■	12			@4.8-6.4' sample: slight increase in segregated ice percentage
7							ML		**SILT with Organics**(ML) 7.0
8									
9									
10	SPT	04-4601	3 9 11	X	■	20			04-4601 Org=6.4%, PI=NP, LL=35 10.0
11									@9.8-11.4' sample: as at 5', but trace only segregated ice
12									
13							ML		**SILT** (ML) est. <1% organics, fine fragments; no segregated ice 12.5
14									
15	SPT		4 8 12	X		20			Nbn
16									
17									
18									
19									
20	SPT		6 7 7	X	■		OL		**ORGANIC SILT**(OL) est. 10+" organics, fine-fibrous and coarse fragments to 1/8" size; no free ice 20.4
21							ML	BOH 21.3	21.0 21.3 **SILT with Clay** (ML) Gray, slightly plastic; segregated ice in well developed 1/4-1/2" lenses

Notes:

Installed thermistor-tube: Schedule 40, 1" diameter PVC installed to 20.2' depth. Pipe filled with glycol 9/21/04.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-141

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291366.5627*, ***EASTING :*** *1968193.1967*

Station / Location: *Proposed T/W*
Offset:
Elevation: *415.1 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *12.0 feet*
Date: *8/14/2004 - 8/14/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0									**Vegetative Mat** mostly fibric peat (H2)	0.0
1										
2							ML		**SILT with Organics** (ML) Light grayish brown, est. 2-3% organics; frozen, ice-rich est. 20% segregated ice by volume, in patches and poorly developed lenses to 1/4" max thickness	1.5
3										
4	SPT		7 9 10	X		19			Vr	
5										
6										
7										
8										
9										
10									Vx, @10.5-12' sample: est. 5% organics, occasionally varies to ORGANIC SILT (OL), with woody fragments to 1/4" size; est. 1% visible disseminated ice, some coarse-sugar grain ice	10.0
11	SPT		5 9 8	X		17				
12								BOH 12		12.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-142

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291631.3541*, ***EASTING :*** *1967752.2741*

Station / Location: *Proposed Apron*
Offset:
Elevation: *420.6 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *31.5 feet*
Date: *8/14/2004 - 8/14/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Good

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** fresh — 0.0
1							ML		**Peat** fibric (H2-H3)old mat; — 0.1
2									**SILT with Organics**(ML) Light gray, ice-rich, est. 30-40% @ 2.2-2.7' and 20% @2.7-3.7' — 0.7
3	SPT	04-4602	9 11 12	X	■	23			04-4602 Moisture=106.6%, Org=4.9%
4									Vx
5									@ 5' sample: fine organics; est. 15% segregated ice 04-4603 Moisture=52.7%, Org=4.3% — 5.0
6	SPT	04-4603	8 10 10	X	■	20			
7									Vx
8									@ 10' sample: est. 1% visible ice in small, thin, discontinuous patches — 8.0
9									
10									Vx 04-4604 Moisture=36.3%, Org=4.2%
11	SPT	04-4604	6 8 10	X	■	18			@~11-17': slightly plastic; occasional zones with 10+% organics, coarse fragments — 11.3
12									
13									
14									
15									Vr
16	SPT	04-4605	5 9 13	X	■	22			04-4605 Moisture=31.3%
17									est. 1-5% organics, very fine flakes ranging up to 1/8" stems; no segregated ice, but disseminated silt-sized ice crystals abundant — 17.0
18									
19									
20									
21	SPT	04-4606 (SNT)	6 11 14	X	■	25			Vx
22									
23									
24									
25									Vs, @25-26.5' sample: 1'-long ice lens, 0.1" thick — 25.0
26	SPT	04-4607 (SNT)	6 10 8	X	■	18			
27									
28							ML		**SILT** (ML) Light gray, disseminated ice as at 20', with rare horizontal ice laminations to 1/8" thick — 28.0
29									
30									Vs 04-4608 Moisture=31.0%
31	SPT	04-4608	4 9 10	X	■	19			— 31.5
								BOH 31.5	

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-143

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291506.092*, ***EASTING :*** *1967754.0637*

Station / Location: *Proposed Apron*
Offset:
Elevation: *0.0 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *32.1 feet*
Date: *8/14/2004 - 8/14/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Good

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** fresh — 0.0
1							ML			**Peat** Brown, hemic, humification H4 — 0.1 / 0.8
2	GRAB	04-4609								**SILT with Organics**(ML) Light gray, moist 04-4609 Moisture=28.0%
3										
4										
5										Vr
6	SPT		3 6 7							@5.5-7.0' sample: ice-rich, est. 25-30% by volume, in well developed lenses of variable orientations, up to 1/2" thick — 5.5 / 6.3
7							ML			**Peat** Brown, fibrous with est. 25% coarse fragments and 5+% silt; frozen — 6.9
8										**SLIGHTLY ORGANIC SILT**(ML) as above
9										
10										
11	SPT		5 9 12							**Peat** Brown, est. 20% silt — 10.7 / 11.2
12							ML			**SILT** (ML) as above, but with trace only fine organics; est. 2% segregated ice, in poorly developed laminations to 1/8" thick
13										Vr
14										
15										
16	SPT	04-4610	5 8 9			17				@15.5-17' sample: est. <1% organics; trace segregated ice, coarse sand-size to fine gravel-size ice crystals 04-4610 Moisture=30.9% — 15.5
17										
18							OL			**ORGANIC SILT**(OL) Gray with brown organics, est. 10+% organic, almost all are small leaves, @1/4-1/2" size; frozen, trace only free ice — 18.0
19										
20										
21	SPT		5 9 9							
22							ML			**SILT** (ML) Light gray, frozen, no segregated ice — 21.8
23							ML			Nbn — 23.0 **SILT with Organics**(ML) Light gray with brown organics, est. 5% organics; trace segregated ice, no lenses
24										
25										
26	SPT		5 7 9							Vx
27							ML			**SILT with Clay**(ML) Light gray — 26.9 / 27.0
28										@27-27.1': ICE
29							OL			**ORGANIC SILT**(OL) Gray with brown organics, est. 10% organics (grass); no visible ice — 28.5
30										
31	SPT	04-4611(SNT)	4 5 8			13				Nbn
32									BOH 32.1	32.1

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-144

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291771.9796*, ***EASTING :*** *1967936.8798*

Station / Location: *Proposed Apron*
Offset:
Elevation: *422.4 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *32.5 feet*
Date: *8/16/2004 - 8/16/2004*
Geologist: *B. Benko*

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Hazy-smoky

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0									**Vegetative Mat** fresh 0.0
1									**Peat** old mat, fibric, humification H2 0.1
2							ML		@1.1-1.4': humification H3 1.3
3									**SILT with Organics**(ML) Light gray, moist to wet 1.4
4									
5									@6-7.5' sample: est. 3-5% organics, mostly small leaves or stalks; frozen, est. <1% visible ice, in irregular horizontal lenses up to 1/20" thick; occasional PEAT or ORGANIC SILT (OL) interlayers to 1" thick 5.0
6									
7	SPT	04-4611A(SNT)	5 5 4	X	■	9			Vs
8									
9									
10									
11									
12	SPT	04-4612	13 8 9	X	■	17			@11-12.5' sample: no visible ice 11.5
13									Nbn 04-4612 Moisture=34.6%, Org=4.8%
14							ML		**SILT with Organics**(ML) Light gray, est. <3% organics; frozen, est. <1% ice, fine disseminated crystals or irregular patches of sugar-size crystals 13.5
15									
16									04-4613 USCS Class: ML, Silt, p200=97%, Sa=3%, PI=NP, LL=24
17	SPT	04-4613	5 8 12	X	■	20			Vx
18									
19									
20									
21									@21-22.5' sample: est. 3-5% organics and 1" thick layer ORGANIC SILT with est. 40% organics; trace only segregated ice, in horizontal, diffuse patches 04-4614 Moisture=35.5%, Org=3.9% 21.0
22	SPT	04-4614	5 9 11	X	■	20			
23									
24									Vs
25									
26									04-4615 Moisture=35.6%
27	SPT	04-4615	5 9 9	X	■	18			
28									
29									
30									
31									
32	SPT	04-4616 (SNT)	5 9 9	X	■	18			
								BOH 32.5	32.5

Notes:

Installed thermistor-tube: Schedule 40, 1" diameter PVC installed to ~32.5' depth, pipe stickup 5.8'.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-145

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291606.0911*, ***EASTING :*** *1968178.3296*

Station / Location: *Proposed Apron*
Offset:
Elevation: *416.3 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.6 feet*
Date: *8/16/2004 - 8/16/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Hot

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** fresh 0.0
1										**Peat** 0.1
2							ML			2.0
3										**SILT wth Organics** (ML) Light gray with brown organics, moist to wet, est. 5-10% organics and occasional interlayers Organic Silt with >50% organics
4										
5										
6	SPT		2 2 3/5"	X	■					
7										
8										
9										
10										Vs, @10.5-ft sample: est. 3% organics; frozen, est. 2% segregated ice, in lenses 1/8-1/4" thick, horizontal or @45 degrees, relatively warm frost. 10.0
11	SPT		4 6 7	X	■	13				
12										
13							SM			13.0
14										**SILTY SAND** (SM) Gray, est. 45% fines; medium to coarse-grained sand; frozen
15										Vx
16	SPT		6 9 6	X	■					
							ML		BOH 16.6	16.2 **SILT** (ML) est. <1% organics, with occasional peat interlayers 16.6

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-146

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291468.2666*, ***EASTING :*** *1968001.7475*

Station / Location: *Proposed Apron*
Offset:
Elevation: *414.3 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *35.0 feet*
Date: *8/16/2004 - 8/16/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)	34	
Time		
Date	8/16/04	
Symbol	▼	

Weather: Smoky haze

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** 0.0
1	GRAB	04-4617 (SNT)					ML			**Peat** hemic peat, humification H5 0.1
2										**SILT with Organics**(ML) 0.9
3							ML			**SILT** (ML) Light gray, moist, homogenous 3.0
4										
5										
6	SPT	04-4618	1 3 2							
7							OL			**SILT with Organics**(OL) est. 15% organics 6.8
8										04-4618 (7.1-7.3 ft), Org=3.9%
9							ML			**SILT** (ML) moist to wet, loose, est. <1% organics 8.5
10										
11	SPT	04-4619	2 2 4			6				04-4619 Moisture=28.3%
12										
13										
14							ML			**SILT with Organics**(ML) loose 14.0
15										
16	SPT		2 3 4			7				@16-17.5' sample: est. 2% organics, but with 1"- thick SILTY PEAT layer observed 16.0
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34	▼						SP			**SAND with Gravel**(SP) 34.0
35										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-146

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291468.2666*, ***EASTING :*** *1968001.7475*

Station / Location: *Proposed Apron*
Offset:
Elevation: *414.3 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *35.0 feet*
Date: *8/16/2004 - 8/16/2004*
Geologist: *B. Benko*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic
								BOH 35

Ground Water Data

Depth in (ft.)	34	
Time		
Date	8/16/04	
Symbol	▼	

Weather: Smoky haze

SUBSURFACE MATERIAL

35.0

Notes:

No drive-sampling past 17.5-ft depth, as drilling objective to identify transition to coarse-grained materials and/or frozen condition change.

Drilling penetrated methane-producing pocket, depth unconfirmed, but estimated at between 33-34 ft. Borehole sealed with grout (neat cement) 9/14/04.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-147

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3291191.1738*, ***EASTING :*** *1968173.4196*

Station / Location: *Proposed Runway*
Offset: *5' Lt*
Elevation: *414.3 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *12.3 feet*
Date: *8/17/2004 - 8/17/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Hot and smoky

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic
0								
1								
2							ML	
3	SPT		6 9 9			18		
4								
5								
6								
7	SPT		5 6 6			12		
8								
9							OL	
10								
11								
12	SPT	04-4620	3 5 7			12		BOH 12.3

SUBSURFACE MATERIAL

Vegetative Mat 0.0
0.3
Peat Orange-brown, fibric, humification H2 1.3
SILT (ML) Grayish brown with orange oxidation, trace organics; frozen 1.8
@1.8-2' sample: ice-rich, est. 50% visible ice by volume, in horizontal lenses to 1/5" thick
Vs, @2-3.5' sample: occasional segregated ice, and rare ice lenses to 1/4" thick 3.0
@5.8-7.3' sample: est. 1% segregated ice, in patches to 1/2" diameter, coarse ice crystals 6.0
Vx 8.0
Peat Orange brown, fibric, fine-fibrous 8.5
ORGANIC SILT(OL) Light gray with orange-brown organics, est. 10-20% organics, variable; no visible disseminated ice, with occasional horizontal ice lenses to 1/2" thick.
Vs
@11.3-12.3' sample: peat patches mixed in silt, est. 30% organic by volume in this depth range; no visible segregated disseminated ice; contains occasional horizontal ice lenses to 1/2" thick. 11.0 12.3

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-148

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3290979.668*, ***EASTING :*** *1967910.0119*

Station / Location: *Proposed Runway*
Offset:
Elevation: *408.1 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.9 feet*
Date: *8/17/2004 - 8/17/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0							PT			**Vegetative Mat**	0.0
1							OL			**Peat** (PT) Brown, hemic peat, humification H5	0.3
2							ML			**ORGANIC SILT**(OL)	0.9
3										**SILT** (ML) Light gray, moist to wet, est. 3-5%, mostly fine-fibrous disseminated organics	1.5
4											
5											
6	SPT	04-4621	0 3 3			6				04-4621 USCS Class: ML, Silt, p200=81%, Sa=19%, PI=NP, LL=28	
7											
8											
9											
10											
11	SPT		2 4 3							@11.1' sample: frozen, est. <1% free ice	11.0
12							OL			**ORGANIC SILT/PEAT**(OL) Light gray with brown organics, contains SILTY PEAT layers to 1"- thick, frozen	11.7 12.5
13							ML			**SILT** (ML) Light gray, trace organics; frozen, very finely disseminated ice with occasional poorly developed lenses to 1/8" thick	
14											
15											
16	SPT		5 6 7								
							OL			**ORGANIC SILT/PEAT**(OL) Gray with dark brown organics, est. 20+% disseminated coarse-fibrous organics plus common PEAT layers to 3/4" thick	16.3 16.9
									BOH 16.9		

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-149

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3290827.8286*, ***EASTING :*** *1967721.113*

Station / Location: *Proposed Runway*
Offset: *8' Rt*
Elevation: *399.2 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *21.3 feet*
Date: *8/17/2004 - 8/17/2004*
Geologist: *B. Benko*

Sample Data								Ground Water Data			Weather: Hot
Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification / Frozen Zone	Soil Graphic	Depth in (ft.)		
									Time		
									Date		
									Symbol		

SUBSURFACE MATERIAL

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification / Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0									**Vegetative Mat**	0.0
1							OL		**Peat**	0.2
2									**ORGANIC SILT**(OL) est. 40% organics	0.6
3										
4										
5	SPT	04-4622 (SNT)	6 5 4	X	■	9			@4.8-5.6' sample: est. 20% organics; frozen	4.8
6									@5.6-6.3' sample: est. 35% organics, coarse fibers; frozen, with "warm" segregated ice around organics	6.0
7							ML		**SILT** (ML) Gray, trace organics; thawed	7.0
8										
9										
10	SPT	04-4623	0 2 2	X	■				04-4623 Moisture=38.3%	
11							OL		**ORGANIC SILT**(OL) Gray with dark brown organics, est. 40-50% organics, some amorphous	11.1
12										
13							ML		**SILT** (ML) Gray, frozen, but not hard-frozen, visible ice is very fine, disseminated crystals	12.5
14									Vx	
15										
16	SPT		3 6 5	X	■	11				
17										
18										
19							ML		**SILT with Sand**(ML) Gray, est. 20% very fine sand; frozen; grades coarser with increasing depth	19.0
20	SPT		6 8 11	X	■					
21							SM		**SILTY SAND**(SM) Gray, est. 25-30% fines; fine to medium-grained sand; frozen, no free ice observed @19.8-21.3' sample; micaceous	20.5 21.3
								BOH 21.3		

Notes:

Frozen intervals in TH 149 not hard-frozen --drilled relatively quickly.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-150

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3290635.4917*, ***EASTING :*** *1967468.3893*

Station / Location: *Proposed Runway*
Offset: *10' Rt*
Elevation: *406.3 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.3 feet*
Date: *8/17/2004 - 8/17/2004*
Geologist: *B. Benko*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0										**Vegetative Mat**	0.0
1							OL			**Peat** Orange brown, moist, fibric, humification H2	0.2 / 0.9
2							ML			**ORGANIC SILT** (OL)	1.4
3										**SILT** (ML) Gray with abundant orange-oxidation	
4	SPT		0 4 3/5"							@3.9-4.5' sample: melting ice lenses, horizontal, to 1/2" thick, spaced ~1" apart	3.9
5											
6	SPT		4 4 5			9				@5.5-7' sample: homogenous but for occasional free ice; trace to <1% by volume, poorly developed, thin ice lenses, melting	5.5
7											
8										@7-10': trace(?) thin PEAT interlayers	7.5
9											
10											
11	SPT		4 9 9				ML			**SILT with Sand** (ML) Gray, est. 20% fine to medium-grained sand; 1 1/2" thick horizontal ice layer noted @ 10.6-10.75'	10.6
12											
13							OL			**ORGANIC SILT** (OL) est. 20% organics, fine and coarse fragments; no free ice	12.5
14										Nbn	
15	SPT		5 9 11								
16							ML		BOH 16.3	**SILT** (ML) trace organics; no free ice	15.9 / 16.3

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Hot

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AP.GPJ 2006DATATEMPLATE.GDT 5/7/07

LOG OF TEST HOLE

HOLE # 04-151

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3290419.5584*, ***EASTING :*** *1967182.2823*

Station / Location: *Proposed Runway*
Offset: *6' Rt*
Elevation: *411.2 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.7 feet*
Date: *8/18/2004 - 8/18/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)	0.5	
Time		
Date	8/18/04	
Symbol	▼	

Weather: Hot, est. high 80's, smoky-hazy

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** 0.0
1										**Peat** Brown, wet 0.2
2										
3							ML			2.5
4	SPT	04-4624	2 2 2	X	■	4				**SILT** (ML) Gray with abundant orange oxide, moist to wet, very loose, trace organics 04-4624 Moisture=24.3%
5										
6	SPT		0 4 5	X	■	9				@5.5-6.8' sample: gray; frozen @6.4'; thin ice lenses, horizontal 5.5
7										Vs
8										
9							OL			8.5 **ORGANIC SILT** (OL) est. 5-10% disseminated organics, and interlayers peat 1/8-1/4" thick; est. 5% segregated ice in conformable lenses 1/8-1/4" thick
10	SPT		5 8 8	X	■	16				Vs
11										
12										
13							ML			13.0 **SILT** (ML) Gray, trace disseminated organics; est. 10% segregated ice by volume, in multiple-oriented lenses 1/4-1/2" thick
14										
15										Vr
16	SPT		7 9 12	X		21			BOH 16.7	16.7

Notes:

Installed thermistor-tube: Schedule 40, 1" diameter PVC installed to 15', w/ 5' stick-up. Wet hole annulus backfilled with cuttings.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-152

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3290165.1247*, ***EASTING :*** *1966859.499*

Station / Location: *Proposed Runway*
Offset: *10' Rt*
Elevation: *410.4 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.4 feet*
Date: *8/19/2004 - 8/19/2004*
Geologist: *B. Benko*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Cloudless but smoky

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0										**Vegetative Mat** relatively dry lichen — 0.0
1	GRAB	4625					OL			**Peat** Fibric; humification H3 — 0.1
2							ML			**ORGANIC SILT**(OL) — 0.9
3	SPT	04-4626	7 10 7	X	■	17				4625 Moisture=59.7% — 1.5 **SILT with Organics**(ML) Light brownish gray, trace organics, disseminated; est. 20% ice by volume, in poorly developed horizontal lenses <1/8" thick 04-4626 Moisture=47.3%, Org=6.1%
4										
5	SPT		5 8 8	X	■	16				Vs, @4.5-6' sample: varies to ORGANIC SILT (ML), containing amorphous organics, dark brown; est. 5-10% segregated ice by volume — 5.0
6										
7										
8										
9										
10	SPT		3 6 12	X		18	ML			**SILT** (ML) Light gray, trace fine organics; est. 2% segregated ice, in occasional lenses 1/8-1/4" thick, ice grains to >0.1" thick; silt very slightly plastic — 9.8
11										
12										
13										
14										
15	SPT	04-4627(SNT)	5 9 11	X		20				@14.9-16.4' sample: nonplastic; trace organics, including small wood fragments; no visible ice — 15.0
16									BOH 16.4	— 16.4

Notes:

Installed thermistor-tube: Schedule 40, 1" diameter PVC installed to 15.6', w/ 4.4' stick-up. Hole annulus backfilled with cuttings.

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # 04-153

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *56774*
PROJECT : *Takotna AP Relocation*
NORTHING : *3289979.1553*, ***EASTING :*** *1966601.1472*

Station / Location: *Proposed Runway*
Offset:
Elevation: *410.7 feet*

Equipment_Type: *CME 850*
Drilling Method: *3.75" ID X 8" OD Holl-stem Auger*
Field Crew: *G. Hamrick & R. Ruth*

Total Depth: *16.5 feet*
Date: *8/19/2004 - 8/19/2004*
Geologist: *B. Benko*

Weather: Very smoky

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0							PTf			**Vegetative Mat** dry moss — 0.0
1							PTh			**Peat** (PTf) Orange-brown, dry to moist, fibric; humification H3 — 0.1
2							OL			**Peat** (PTh) Hemic, humification H5 — 0.9
3							ML			**ORGANIC SILT** (OL) — 1.5
4										**SILT with Organics** (ML) Light gray, est. 3-5% organics, disseminated, including stems to 1/8" diameter; est. 10% ice by volume, heterogeneous ice occurrence, lenses to 1/2" thick, except for 3" horizontal ice layer at @4.5-5' depth, with coarse granular ice — 1.8
5										
6	SPT		5 9 9	X	■	18				Vr
7										
8							ML			**SILT** (ML) Light gray, est. 5-10% segregated ice, occasional lenses to 1/4" thick — 7.5
9										
10										Vr
11	SPT		2 7 9	X	■	16				
12										
13										
14										
15										@15-ft sample: trace organics, fine and coarse fibers; est. 5-10% segregated ice, in patchy, discontinuous lenses of coarse-grained ice to 1/4" thick — 14.5
16	SPT		6 11 11	X	■	22				Vr — 16.5
										BOH 16.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

2021 RUNWAY TEST HOLE LOGS

TEST HOLE LOG

HOLE # TH21-01

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994244* ***LONGITUDE :*** *-156.03005*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *118+95*
Offset: *417' Lt*
Elevation:

Total Depth: *17.0 feet*
Date: *12/2/2021 - 12/2/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	11	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS01					GP			**GRAVEL with Sand** (GP) Brown, dry FS01 Moisture=9.4% — 0.0
1	GRAB	FS02					SM			**SILTY SAND with Gravel** (SM) Dark brown, dry FS02 p200=29%, Sa=54%, Gr=17%, Moisture=6.1% — 1.0
2							GP-GM			**GRAVEL with Silt and Sand** (GP-GM) Brown Grey, dry — 1.8
3	SPT	FS03	70R							FS03 Moisture=4.0%
4										
5			35							FS04, FS05, and FS06 combined for gradation., p200=12%, Sa=41%, Gr=47%, Moisture=3.7%
6	SPT		60 67 29			127				
7										
8			19							FS05 Moisture=7.7%
9	SPT	FS05	10 10 8			20				Bottom of seasonal frost at 8 ft — 8.0
10										FS06 Moisture=2.4%
11	SPT	FS06	7 8 22 7				PT			**Peat** (PT) Brown, moist to wet — 11.0
12							ML			**Organic SILT** (ML) Brown Grey, Nbn, Top of permafrost at 12 ft — 12.0
13			3							FS07 Moisture=27.4%
14	SPT	FS07	3 3 2			6				
15										FS08 Moisture=41.4%, Org=6.8%
16	SPT	FS08	2 3 4 3			7				
17									BOH 17	— 17.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-02

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993825* ***LONGITUDE :*** *-156.029241*
Coordinate System:

Station / Location: *119+16*
Offset: *214' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *3.0 feet*
Date: *12/2/2021 - 12/2/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS09					SM			**SILTY SAND with Gravel** (SM) Light brown, moist FS09 p200=30%, Sa=49%, Gr=21%, Moisture=4.8% — 0.0
1	GRAB						SM			**SILTY SAND with Gravel** (SM) FS10 and FS11 combined for gradation., p200=25%, Sa=50%, Gr=25%, Moisture=4.0% — 1.0
2	GRAB	FS11								FS11 Moisture=3.8%
3									BOH 3	3.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-03

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993602* ***LONGITUDE :*** *-156.028943*
Coordinate System:

Station / Location: *119+07*
Offset: *119' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *3.0 feet*
Date: *12/2/2021 - 12/2/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic
0	GRAB	FS12					SM		
1	GRAB						SM		
2	GRAB	FS14							
3									BOH 3

SUBSURFACE MATERIAL

0.0 **SILTY SAND with Gravel** (SM) Light brown, dry, Nf FS12 p200=24%, Sa=47%, Gr=29%, Moisture=5.8%

1.0 **SILTY SAND with Gravel** (SM)
FS13 and FS14 combined for gradation., p200=24%, Sa=48%, Gr=28%, Moisture=3.9%
FS14 Moisture=9.1%

3.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-04

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993704* ***LONGITUDE :*** *-156.02796*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *120+63*
Offset: *55' Lt*
Elevation:

Total Depth: *27.0 feet*
Date: *12/4/2021 - 12/4/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS15					SM		**SILTY SAND with Gravel** (SM) Brown Dark brown, dry FS15 p200=17%, Sa=48%, Gr=35%, Moisture=6.5% — 0.0
0.5	GRAB	FS16					SM		**SILTY SAND with Gravel** (SM) Brown Grey FS16 p200=28%, Sa=48%, Gr=24%, Moisture=5.7%
2									FS17 and FS18 combined for gradation, p200=17%, Sa=47%, Gr=36%, Moisture=6.5%
3	SPT		14 45 60 80			105			
5									FS18 Moisture=11.6%
6	SPT	FS18	50 78 58 42			136			
6.5									Bottom of seasonal frost at 7 ft
7							GP-GM		**GRAVEL with Silt and Sand** (GP-GM) Brown Grey, dry — 7.0
8		FS20	3						FS19 p200=11%, Sa=39%, Gr=50%, Moisture=7.1%
8	SPT	FS19	2 3 4				PT ML		**Peat** (PT) Brown, dry to moist FS20 Moisture=38.8%, Org=7.9% — 8.0 **Organic SILT** (ML) Grey, dry to moist — 8.3
10									FS21 Moisture=28.6%
11	SPT	FS21	3 2 2 3			4			
12									Nbn, Top of permafrost at 12 ft — 12.0
12.5							PT		**Peat** (PT) Brown FS22 Moisture=184.5% — 12.5
13		FS23	2				ML		**Organic SILT** (ML) Grey FS23 Moisture=50.8%, Org=10.5% — 13.0
13	SPT	FS22	1 3 5						
15									FS24 Moisture=34.7%, Org=5.0%
16	SPT	FS24	1 3 4 3			7			
17									
18									
19									
20									

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-04

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993704* ***LONGITUDE :*** *-156.02796*
Coordinate System:

Station / Location: *120+63*
Offset: *55' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *27.0 feet*
Date: *12/4/2021 - 12/4/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20			4						**Organic SILT** (ML) Grey FS23 Moisture=50.8%, Org=10.5% (cont.)
21	SPT	FS25	6 7 7			13			FS25 Moisture=34.6%, Org=5.0%
22									
23									
24									
25			5						FS26 Moisture=36.6%, Org=5.6%
26	SPT	FS26	7 8 7			15			
27								BOH 27	27.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-05

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.9932* ***LONGITUDE :*** *-156.029452*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *117+54*
Offset: *48' Lt*
Elevation:

Total Depth: *22.0 feet*
Date: *12/8/2021 - 12/8/2021*
Geologist: *F. Plumlee*

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS27					SM		**SILTY SAND with Gravel** (SM) Grey Brown, dry FS27 p200=17%, Sa=49%, Gr=34%, Moisture=9.8% — 0.0
0.5	GRAB	FS28					SM		**SILTY SAND with Gravel** (SM) FS28 p200=29%, Sa=49%, Gr=22%, Moisture=5.7% — 1.3
1							SM		**SILTY SAND with Gravel** (SM)
2									
3	SPT	FS29	45 70 65R						FS29 p200=15%, Sa=49%, Gr=36%, Moisture=5.7%
4									
5									
6	SPT	FS30	36 24 22 19			46			FS30 p200=13%, Sa=46%, Gr=41%, Moisture=6.2%
7									
8	SPT	FS31	9 7 6 4			13			FS31 Moisture=6.9% Bottom of seasonal frost at 8.5 ft — 8.5
9									
10									
11	SPT	FS32	3 4 3 3			7			FS32 Moisture=6.7%
12							OL		**Highly Organic ORGANIC SILT** (OL) Red Brown, dry to moist — 12.0
13	SPT	FS33	1 3 4						FS33 Moisture=117.1%, Org=39.7%
14		FS34	4				ML		**Slightly Organic SILT** (ML) Grey, moist FS34 Moisture=30.3%, Org=4.3% — 14.0
15									No Recovery
16			1 2 3						
17			1				PT		**Peat** (PT) Red Brown, dry to moist — 16.5
18	SPT	FS35	2 4 6 5			10	ML		**Slightly Organic SILT** (ML) Grey, Nbn, Top of permafrost at 17.5 ft. 1/2 to 3/4 inch ice lenses. FS35 Moisture=41.5%, Org=4.3% — 17.5
19									
20							ML		Geotextile fabric — 19.5 **SILT** (ML) Grey, 1/2 to 3/4 inch ice lenses. — 19.6
21	SPT	FS36	3 6 12 12			18			Vr FS36 Moisture=42.9%
22								BOH 22	— 22.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 8/26/25

TEST HOLE LOG

HOLE # TH21-06

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.99304* ***LONGITUDE :*** *-156.029957*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *116+50*
Offset: *49' Lt*
Elevation:

Total Depth: *37.0 feet*
Date: *12/8/2021 - 12/8/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS37					SM			**SILTY SAND with Gravel** (SM) Brown Grey, dry FS37 p200=16%, Sa=46%, Gr=38%, Moisture=9.6% — 0.0
0.5	GRAB	FS38					SM			**SILTY SAND with Gravel** (SM) FS38 Combined with FS52 for Micro-Deval. Micro-Deval: 27.3, p200=29%, Sa=48%, Gr=23%, Moisture=6.1% — 1.3
1							SM			**SILTY SAND with Gravel** (SM)
2										
3	SPT		38 37 42 26			79				FS39, FS40, and FS41 combined for gradation., p200=13%, Sa=46%, Gr=41%, Moisture=5.1%
4										
5										FS40 Moisture=5.5%
6	SPT	FS40	14 9 6 13			15				
7										Bottom of seasonal frost at 7 ft — 7.0
8	SPT	FS41	10 12 11 10			23				FS41 Moisture=6.2%
9										
10										FS42 Moisture=6.3%
11	SPT	FS42	4 9 5 5			14				
12										
13		FS43	3							FS43 Moisture=6.6%
			6				OL			Geotextile Fabric — 12.9 / 13.0
14	SPT	FS44	2 4				ML			**Highly Organic ORGANIC SILT** (OL) Grey Reddish brown FS44 Moisture=47.3%, Org=16.6% — 13.5 **Organic SILT** (ML) Grey Reddish brown
15										FS45 Moisture=37.7%, Org=8.3%
16	SPT	FS45	3 4 5 7			9				
17										
18	SPT	FS46	2 3 4 6			7				FS46 Moisture=55.3%, Org=13.4%
19										
20										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-06

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.99304* ***LONGITUDE :*** *-156.029957*
Coordinate System:

Station / Location: *116+50*
Offset: *49' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *37.0 feet*
Date: *12/8/2021 - 12/8/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20									**Organic SILT** (ML) Grey Reddish brown (cont.)
21	SPT	FS47	1 4 5 6			9			FS47 Moisture=44.9%, Org=9.7%
22									
23									
24									
25									FS48 Moisture=29.8%
26	SPT	FS48	2 3 6 5			9			
27									
28									Nbn, Top of permafrost at 28 ft — 28.0
29									
30									FS49 Moisture=37.6%, Org=6.9%
31	SPT	FS49	2 5 5 5			10			
32									
33									
34									
35									FS50 Moisture=44.1%
36	SPT	FS50	4 5 8 7			13			
37								BOH 37	37.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-07

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992758* ***LONGITUDE :*** *-156.030539*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *115+12*
Offset: *22' Lt*
Elevation:

Total Depth: *27.0 feet*
Date: *12/8/2021 - 12/8/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	13	
Time		
Date		
Symbol	▼	

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS51					SM			**SILTY SAND with Gravel** (SM) Brown Grey, dry FS51 Combined with FS116 for Micro-Deval. Micro-Deval: 25.4, p200=18%, Sa=45%, Gr=37%, Moisture=6.1%
0.0										
1	GRAB	FS52					SM			**SILTY SAND with Gravel** (SM) FS52 Combined with FS38 for Micro-Deval. Micro-Deval: 27.3, p200=24%, Sa=50%, Gr=26%, Moisture=6.1%
1.3										
2							SM			**SILTY SAND with Gravel** (SM)
2.0										
3	SPT	FS53	53 63R							FS53 p200=20%, Sa=47%, Gr=33%, Moisture=7.5%
4										
5										
6	SPT		40 74 37 32			111				FS54, FS55, and FS56 combined for gradation., p200=13%, Sa=45%, Gr=42%, Moisture=5.5%
7										
7.5										Bottom of seasonal frost at 7.5 ft FS55 Moisture=5.8%
8	SPT	FS55	7 8 6 9			14				
9										
10										FS56 Moisture=5.1%
11	SPT	FS56	7 17 13 11			30				
12							GP-GM			**GRAVEL with Silt and Sand** (GP-GM) Brown Grey
12.0										
12.8		FS57	7							FS57 p200=10%, Sa=38%, Gr=52%, Moisture=6.5%
13	SPT	FS58	8 3 1				PT			Geotextile Fabric
13.0										
13.1										**Peat** (PT) Reddish brown Grey, moist, FS58 Moisture=285.5%, Org=95.3%
14										
15										FS59 Moisture=77.4%, Org=29.4%
15.4										
16	SPT	FS59	2 1 3 6			4				
16.5										Nbn, Top of permafrost at 16.5 ft
17							ML			**Organic SILT** (ML) Grey
17.0										
18	SPT	FS60	3 4 5 7			9				FS60 Moisture=35.9%, Org=7.1%
19										
20										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-07

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992758* ***LONGITUDE :*** *-156.030539*
Coordinate System:

Station / Location: *115+12*
Offset: *22' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *27.0 feet*
Date: *12/8/2021 - 12/8/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	13	
Time		
Date		
Symbol	▼	

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20			1						**Organic SILT** (ML) Grey (cont.)
21	SPT	FS61	5 7 12			12			FS61 Moisture=29.7%
22									
23									
24									
25			4						FS62 Moisture=49.4%, Org=9.5%
26	SPT	FS62	6 5 7			11			
27								BOH 27	27.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-08

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994644* ***LONGITUDE :*** *-156.024968*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *126+67*
Offset: *47' Lt*
Elevation:

Total Depth: *19.5 feet*
Date: *12/9/2021 - 12/9/2021*
Geologist: *F. Plumlee*

Weather: Clear
Surface: Gravel

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS63					SM			**SILTY SAND with Gravel** (SM) Brown Grey, dry FS63 p200=16%, Sa=43%, Gr=41%, Moisture=7.8% — 0.0
0.5	GRAB	FS64					SM			**SILTY SAND with Gravel** (SM) FS64 p200=28%, Sa=52%, Gr=20%, Moisture=6.0% — 0.5
5	SPT	FS65	38 50R							FS65 Moisture=7.6%
8										moist to wet, Bottom of seasonal frost at 8 ft — 8.0
9.9										Geotextile Fabric — 9.9
10	SPT	FS66	3 2 2 2			4	ML			**Organic SILT** (ML) Grey FS66 Moisture=40.2% — 10.0
13	SPT	FS67	4 5 7 9			12				FS67 Moisture=36.1% Nbn, Top of permafrost at 13 ft — 13.0
16	SPT	FS68	3 4 7 9			11				FS68 Moisture=38.6%
18	SPT	FS69	5 8 11 11			19				Vs, Thin verticle ice veins. — 18.0
19.5									BOH 19.5	— 19.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-09

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.995999* ***LONGITUDE :*** *-156.020892*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *135+08*
Offset: *60' Lt*
Elevation:

Total Depth: *22.0 feet*
Date: *12/9/2021 - 12/9/2021*
Geologist: *F. Plumlee*

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS70					SM		**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS70 Micro-Deval: 26.5, p200=16%, Sa=42%, Gr=42%, Moisture=11.8% 0.0
0.5	GRAB	FS71					SM		**SILTY SAND with Gravel** (SM) FS71 Combined with FS80 and FS154 for Micro-Deval. Micro-Deval: 22.5, p200=19%, Sa=47%, Gr=34%, Moisture=7.4%
5	SPT		23 18 13 14			31	GP-GM		**GRAVEL with Silt and Sand** (GP-GM) Brown Grey, dry FS72, FS73, and FS74 combined for gradation., p200=12%, Sa=40%, Gr=48%, Moisture=5.4% 5.0
8	SPT	FS73	6 6 4 5			10			FS73 Moisture=5.9% Bottom of seasonal frost at 8 ft 8.0
11	SPT	FS74	3 7 3 4			10			FS74 Moisture=6.4%
12									Geotextile Fabric 12.0 12.1
14	SPT	FS75	1 1 3 2			4	OL/ML		**Organic SILT with Organics** (OL/ML) Grey, Moist to wet to 17.5 ft. FS75 Moisture=38.6%, Org=6.5%
16	SPT	FS76	0 0 0 0			0			FS76 Spoon advanced with hammer weight only., Moisture=39.9%, Org=6.8%
18	SPT	FS77	5 3 7 6			10			Vx, 1/2 to 1-inch ice layers. Top of permafrost at 17.5 ft FS77 Moisture=58.6%, Org=5.8% 17.5
21	SPT	FS78	0 3 9 8			12			FS78 Moisture=59.4%, Org=6.4%
22								BOH 22	22.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-10

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.995503* ***LONGITUDE :*** *-156.022141*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *132+33*
Offset: *32' Lt*
Elevation:

Total Depth: *34.5 feet*
Date: *12/9/2021 - 12/9/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	13.5	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS79					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS79 p200=19%, Sa=43%, Gr=38%, Moisture=7.0% — 0.0
1	GRAB	FS80					SM			**SILTY SAND with Gravel** (SM) FS80 Combined with FS71 and FS154 for Micro-Deval. Micro-Deval: 22.5, p200=30%, Sa=49%, Gr=21%, Moisture=5.6% — 0.8
2							SM			**SILTY SAND** (SM) Brown, wet — 2.0
3										
4										
5										FS81 p200=15%, Sa=50%, Gr=35%, Moisture=5.9%
6	SPT	FS81	32 35 30 21			65				
7										Bottom of seasonal frost at 7 ft. — 7.0
8	SPT	FS82	27 29 20 17			49				FS82 p200=17%, Sa=53%, Gr=30%, Moisture=5.5%
9										
10										FS83 p200=20%, Sa=58%, Gr=22%, Moisture=7.2%
11	SPT	FS83	9 11 10 9			21				
12							SP-SM			**SAND with Silt and Gravel** (SP-SM) Brn, wet, Bottom of fill ? — 12.0
13	SPT	FS84	8 9 6 6			15				FS84 p200=12%, Sa=48%, Gr=40%, Moisture=6.1%
14										
15							SM			**SILTY SAND** (SM) Brn, wet — 14.5
16	SPT		4 6 7 7			13				No Recovery
17										
18										
19										
20										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/4/25

TEST HOLE LOG

HOLE # TH21-10

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.995503* ***LONGITUDE :*** *-156.022141*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *132+33*
Offset: *32' Lt*
Elevation:

Total Depth: *34.5 feet*
Date: *12/9/2021 - 12/9/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	13.5	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20			1						**SILTY SAND** (SM) Brn, wet (cont.)
			3						FS85 p200=43%, Sa=53%, Gr=4%, Moisture=40.9%
21	SPT	FS85 FS86	5				OL/ML		**Organic SILT with Organics** (OL/ML) Grey, Moist to Wet to 28 ft. FS86 Moisture=36.5% 21.0
			7						
22									
23									
24									
25			1						FS87 Moisture=37.7%
			3						
26	SPT	FS87	4			7			
			4						
27									
			3						FS88 Moisture=46.3%, Org=6.9%
28			7						Nbn, Top of permafrost at 28 ft 28.0
	SPT	FS88	6			13			
29			9						
30									
			H						FS89 Moisture=51.8%
31	SPT	FS89	3			11			
			8						
32			7						
33			7						FS90 Moisture=47.5%, Org=5.2%
			9						
34	SPT	FS90	8			17			
			10						34.5
									BOH 34.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-11

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991031* ***LONGITUDE :*** *-156.036302*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *103+69*
Offset: *72' Lt*
Elevation:

Total Depth: *32.0 feet*
Date: *12/10/2021 - 12/10/2021*
Geologist: *F. Plumlee*

Ground Water Data

Depth in (ft.)	15	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS91					GP-GM		**GRAVEL with Silt and Sand** (GP-GM) Light brown, dry FS91 Combined with FS143 and FS104 for Micro-Deval. Micro-Deval: 21.7, p200=11%, Sa=34%, Gr=55%, Moisture=8.7% — 0.0
1	GRAB	FS92					GM		0.8 — **SILTY GRAVEL with Sand** (GM) Brown, dry FS92 Combined with FS133 and FS105 for Micro-Deval. Micro-Deval: 42.2, p200=14%, Sa=35%, Gr=51%, Moisture=5.8%
2									
3									
4									
5			8				GP-GM		5.0 — **GRAVEL with Silt and Sand** (GP-GM) Brown Grey, dry FS93 p200=12%, Sa=41%, Gr=47%, Moisture=6.0%
6	SPT	FS93	8 9 5			17			
7							PT		7.0 — **Peat** (PT) Brown, dry to moist
8	SPT	FS94	2 4 5 4				ML		FS94 Moisture=25.5% — 7.8 **Slightly Organic SILT with Sand** (ML) Grey, dry to moist — 8.0 Bottom of seasonal frost at 8 ft.
9									
10			2						FS95 p200=85%, Sa=15%, Gr=0%, Moisture=26.6%, PI=4, LL=29
11	SPT	FS95	3 5 4			8			
12									
13			2						FS96 Moisture=30.4%
14	SPT	FS96	3 4 4			7			
15 ▼									
16	SPT	FS97	1 1 4 3			5			FS97 Moisture=35.6%, PI=NP, LL=NV
17									
18	SPT	FS98	0 2 2 3			4			FS98 Moisture=34.4%, Org=4.5%
19									
20									

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-11

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991031* ***LONGITUDE :*** *-156.036302*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *103+69*
Offset: *72' Lt*
Elevation:

Total Depth: *32.0 feet*
Date: *12/10/2021 - 12/10/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	15	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20			1				SM			**SILTY SAND with Gravel** (SM) Grey, wet FS99 p200=28%, Sa=52%, Gr=20%, Moisture=19.6% — 20.0
21	SPT	FS99	3 4 2			7				
22							ML			**Slightly Organic SILT** (ML) Grey, moist to wet, slightlly plastic — 22.0
23			3							FS100 p200=89%, Sa=11%, Gr=0%, Moisture=36.3%, PI=7, LL=32
24	SPT	FS100	5 6 5			11				
25										FS101 Moisture=33.3%
26	SPT	FS101	4 5 5 5			10				Nbn, Top of permafrost at 26 ft. — 26.0
27										FS102 Moisture=38.5%
28	SPT	FS102	2 4 5 8			9				
29										FS103 Moisture=43.9%
30			5							
31	SPT	FS103	8 10 13			18				
32									BOH 32	— 32.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-12

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991409* ***LONGITUDE :*** *-156.034918*
Coordinate System:

Station / Location: *106+34*
Offset: *49' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.3 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS104					SM			**SILTY SAND with Gravel** (SM) Light brown Brown, dry FS104 Combined with FS91 and FS143 for Micro-Deval. Micro-Deval: 21.7, p200=20%, Sa=45%, Gr=35%, Moisture=8.5%	0.0
											0.5
1	GRAB	FS105					SM			**SILTY SAND with Gravel** (SM) Light brown Brown, dry FS105 Combined with FS133 and FS92 for Micro-Deval. Micro-Deval: 42.2, p200=33%, Sa=46%, Gr=21%, Moisture=5.9%	1.3
									BOH 1.25		

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-13

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.990285* ***LONGITUDE :*** *-156.037319*
Coordinate System:

Station / Location: *100+70*
Offset: *50' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.3 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS106					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS106 p200=21%, Sa=44%, Gr=35%, Moisture=10.0%	0.0 – 0.5
1	GRAB	FS107					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS107 p200=34%, Sa=51%, Gr=15%, Moisture=5.6%	0.5 – 1.3
										BOH 1.25	

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-14

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991229* ***LONGITUDE :*** *-156.034334*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *106+74*
Offset: *61' Rt*
Elevation:

Total Depth: *1.3 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS108					SM		**SILTY SAND with Gravel** (SM) Brown, dry FS108 p200=19%, Sa=45%, Gr=36%, Moisture=7.7% — 0.0 to 0.5
1	GRAB	FS109					SM		**SILTY SAND with Gravel** (SM) Brown, dry FS109 p200=29%, Sa=48%, Gr=23%, Moisture=5.4% — 0.5 to 1.3
								BOH 1.25	

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-15

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992376* ***LONGITUDE :*** *-156.030915*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *113+78*
Offset: *55' Rt*
Elevation:

Total Depth: *1.3 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS110					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS110 p200=20%, Sa=45%, Gr=35%, Moisture=10.2%	0.0 – 0.5
1	GRAB	FS111					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS111 p200=35%, Sa=46%, Gr=19%, Moisture=5.3%	0.5 – 1.3
									BOH 1.25		

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-16

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993347* ***LONGITUDE :*** *-156.028637*
Coordinate System:

Station / Location: *118+94*
Offset: *14' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS112					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS112 p200=29%, Sa=48%, Gr=23%, Moisture=6.4% — 0.0
1	GRAB	FS113					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS113 p200=33%, Sa=47%, Gr=20%, Moisture=4.3% — 1.0
2									BOH 2	2.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-17

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993055* ***LONGITUDE :*** *-156.029172*
Coordinate System:

Station / Location: *117+60*
Offset: *22' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS114					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS114 p200=25%, Sa=45%, Gr=30%, Moisture=6.7%	0.0
1	GRAB	FS115					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS115 p200=30%, Sa=45%, Gr=25%, Moisture=4.0%	1.0
									BOH 1.75		1.8

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-18

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992886* ***LONGITUDE :*** *-156.030048*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *116+05*
Offset: *12' Lt*
Elevation:

Total Depth: *1.8 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS116					SM		**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS116 p200=24%, Sa=45%, Gr=31%, Moisture=5.9% — 0.0
1	GRAB	FS117					SM		**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS117 p200=33%, Sa=50%, Gr=17%, Moisture=4.9% — 1.0
								BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-19

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992104* ***LONGITUDE :*** *-156.032401*
Coordinate System:

Station / Location: *111+22*
Offset: *9' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS118					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS118 p200=21%, Sa=46%, Gr=33%, Moisture=6.6% — 0.0
1	GRAB	FS119					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS119 p200=27%, Sa=47%, Gr=26%, Moisture=4.8% — 1.0
									BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-20

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993521* ***LONGITUDE :*** *-156.027961*
Coordinate System:

Station / Location: *120+23*
Offset: *0' CL*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/16/2021 - 12/16/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS120					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS120 p200=26%, Sa=45%, Gr=29%, Moisture=6.1% — 0.0
1	GRAB	FS121					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS121 p200=29%, Sa=48%, Gr=23%, Moisture=4.3% — 1.3
2									BOH 2	2.0

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-21

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.993563* ***LONGITUDE :*** *-156.027266*
Coordinate System:

Station / Location: *121+27*
Offset: *54' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.3 feet*
Date: *12/17/2021 - 12/17/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS122					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS122 p200=19%, Sa=46%, Gr=35%, Moisture=8.9%	0.0 – 0.5
1	GRAB	FS123					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS123 p200=31%, Sa=49%, Gr=20%, Moisture=6.0%	0.5 – 1.3
									BOH 1.25		

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-22

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994017* ***LONGITUDE :*** *-156.026913*
Coordinate System:

Station / Location: *122+71*
Offset: *48' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.3 feet*
Date: *12/17/2021 - 12/17/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS124					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS124 p200=14%, Sa=48%, Gr=38%, Moisture=8.4%	0.0 – 0.5
1	GRAB	FS125					SM		BOH 1.25	**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS125 FS125 and FS123 combined for Degradation., p200=29%, Sa=50%, Gr=21%, Moisture=5.8%, Degradation=10	0.5 – 1.3

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-23

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994668* ***LONGITUDE :*** *-156.023873*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *128+22*
Offset: *51' Rt*
Elevation:

Total Depth: *1.3 feet*
Date: *12/17/2021 - 12/17/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS126					SM		**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS126 p200=15%, Sa=44%, Gr=41%, Moisture=6.4%	0.0
										0.5
1	GRAB	FS127					SM		**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS127 p200=27%, Sa=48%, Gr=25%, Moisture=6.4%	
								BOH 1.25		1.3

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-24

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.99539* ***LONGITUDE :*** *-156.021652*
Coordinate System:

Station / Location: *132+75*
Offset: *49' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.3 feet*
Date: *12/17/2021 - 12/17/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS128					GM			**SILTY GRAVEL with Sand** (GM) Brown Light brown, dry FS128 p200=16%, Sa=38%, Gr=46%, Moisture=7.5%	0.0
											0.5
1	GRAB	FS129					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS129 p200=27%, Sa=51%, Gr=22%, Moisture=6.5%	
									BOH 1.25		1.3

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-25

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.99416* ***LONGITUDE :*** *-156.029501*
Coordinate System:

Station / Location: *119+50*
Offset: *339' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/17/2021 - 12/17/2021*
Geologist: *F. Plumlee*

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	
0	GRAB	FS130					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS130 p200=28%, Sa=53%, Gr=19%, Moisture=6.5%	0.0
1	GRAB	FS131					SM			**SILTY SAND with Gravel** (SM) Brown, dry FS131 p200=35%, Sa=49%, Gr=16%, Moisture=5.7%	1.0
									BOH 1.75		1.8

Ground Water Data

Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Light Snow

Surface: Gravel

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-26

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.990714* ***LONGITUDE :*** *-156.03589*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *103+55*
Offset: *62' Rt*
Elevation:

Total Depth: *22.0 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	7	
Time		
Date		
Symbol	▼	

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS132					GM			**SILTY GRAVEL with Sand** (GM) Light brown, dry FS132 p200=13%, Sa=41%, Gr=46%, Moisture=8.3% — 0.0
0.5	GRAB	FS133					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS133 Combined with FS92 and FS105 for Micro-Deval. Micro-Deval: 42.2, p200=25%, Sa=48%, Gr=27%, Moisture=7.1% — 1.3
1							SP-SM			**SAND with Silt and Gravel** (SP-SM) Brown Grey, dry
2										
3										
4										
5			13							FS134 p200=12%, Sa=54%, Gr=34%, Moisture=6.0%
6	SPT	FS134	43 48			91				
7			25							Bottom of seasonal frost at 7 ft. — 7.0
7.5										Geotextile Fabric FS135 Moisture=48.3%, Org=8% — 7.5
7.6			2				ML			**Slightly Organic SANDY SILT** (ML) Grey, moist to wet — 7.6
8	SPT	FS135	2 3 3							
9										
10			1							FS136 Moisture=36.2%, Org=6.1%
11	SPT	FS136	1 2 1			3				
12										
13			1							FS137 p200=66%, Sa=22%, Gr=12%, Moisture=41.1%, PI=4, LL=32
14	SPT	FS137	2 1 2			3				
15										FS138 Moisture=32.9%
16	SPT	FS138	1 1 1 2			2				
17							ML			**Slightly Organic SILT** (ML) Grey, moist, Slightly plastic — 17.0
18			1							FS139 Moisture=40.0%, Org=4.8%
19	SPT	FS139	2 3 8			5				Vr, Top of permafrost at 19 ft. 1/4-inch ice layers. — 19.0
20										
21	SPT	FS140	2 5 6 8			11				FS140 p200=94%, Sa=6%, Gr=0%, Moisture=33.6%, PI=5, LL=35
22									BOH 22	22.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-27

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.989933* ***LONGITUDE :*** *-156.038778*
Coordinate System:

Station / Location: *97+99*
Offset: *12' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS141					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS141 p200=23%, Sa=49%, Gr=28%, Moisture=6.9% — 0.0
1	GRAB	FS142					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS142 p200=31%, Sa=45%, Gr=24%, Moisture=6.3% — 1.0
2									BOH 2	2.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-28

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.990536* ***LONGITUDE :*** *-156.037275*
Coordinate System:

Station / Location: *101+31*
Offset: *20' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Weather: Clear

Surface: Gravel

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS143					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS143 Combined with FS91 and FS104 for Micro-Deval. Micro-Deval: 21.7, p200=20%, Sa=43%, Gr=37%, Moisture=10.4% — 0.0
1	GRAB	FS144					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS144 p200=30%, Sa=46%, Gr=24%, Moisture=4.5% — 1.0
									BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-29

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991076* ***LONGITUDE :*** *-156.035336*
Coordinate System:

Station / Location: *105+06*
Offset: *9' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Weather: Clear

Surface: Gravel

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS145					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS145 p200=23%, Sa=49%, Gr=28%, Moisture=5.7% — 0.0
1	GRAB	FS146					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS146 p200=27%, Sa=47%, Gr=26%, Moisture=4.1% — 1.0
2									BOH 2	2.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-30

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.991962* ***LONGITUDE :*** *-156.0326*
Coordinate System:

Station / Location: *110+65*
Offset: *13' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS147					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS147 p200=19%, Sa=47%, Gr=34%, Moisture=7.0% — 0.0
1	GRAB	FS148					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS148 p200=24%, Sa=46%, Gr=30%, Moisture=5.7% — 1.0
									BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-31

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994302* ***LONGITUDE :*** *-156.025269*
Coordinate System:

Station / Location: *125+53*
Offset: *26' Rt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS149					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS149 p200=25%, Sa=48%, Gr=27%, Moisture=8.5% — 0.0
1	GRAB	FS150					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS150 p200=27%, Sa=50%, Gr=23%, Moisture=5.1% — 1.0
									BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-32

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.994982* ***LONGITUDE :*** *-156.023652*
Coordinate System:

Station / Location: *129+18*
Offset: *22' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *1.8 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS151					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS151 p200=24%, Sa=48%, Gr=28%, Moisture=6.1% — 0.0
1	GRAB	FS152					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS152 p200=31%, Sa=51%, Gr=18%, Moisture=8.9% — 1.0
									BOH 1.75	1.8

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-33

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.995277* ***LONGITUDE :*** *-156.022544*
Coordinate System:

Station / Location: *131+31*
Offset: *3' Lt*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS153					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS153 p200=22%, Sa=49%, Gr=29%, Moisture=6.1% — 0.0
1										1.0
	GRAB	FS154					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS154 Combined with FS80 and FS154 for Micro-Deval. Micro-Deval: 22.5, p200=28%, Sa=49%, Gr=23%, Moisture=4.3%
2									BOH 2	2.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

TEST HOLE LOG

HOLE # TH21-34

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.995823* ***LONGITUDE :*** *-156.020811*
Coordinate System:

Station / Location: *134+82*
Offset: *0' CL*
Elevation:

Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Total Depth: *2.0 feet*
Date: *12/18/2021 - 12/18/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)		
Time		
Date		
Symbol		

Weather: Clear

Surface: Gravel

Depth (Feet)	Sample Data: Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	GRAB	FS155					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry, Nf FS155 p200=26%, Sa=51%, Gr=23%, Moisture=6.2% — 0.0
1										1.0
	GRAB	FS156					SM			**SILTY SAND with Gravel** (SM) Brown Light brown, dry FS156 p200=31%, Sa=51%, Gr=18%, Moisture=5.0%
2									BOH 2	2.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

Sheet Number 1 of 1

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

TEST HOLE LOG

HOLE # TH21-35

STATE OF ALASKA DOT&PF
Central Region Materials

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992007* ***LONGITUDE :*** *-156.033294*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *109+81*
Offset: *67' Lt*
Elevation:

Total Depth: *37.0 feet*
Date: *12/19/2021 - 12/19/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	12.5	
Time		
Date		
Symbol	▼	

Weather: Light Rain

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification	Frozen Zone	Soil Graphic
0	GRAB	FS157					SM		
1	GRAB	FS158					SM		
5	SPT		10, 11, 10, 9			21	GP-GM		
8	SPT		4, 3, 4, 3			7			
11	SPT	FS160	3, 3, 3, 2			6			
13	SPT	FS161	1, 1, 2, 3				OL		
14							ML		
16	SPT	FS162	2, 2, 3, 5			5			

SUBSURFACE MATERIAL

SILTY SAND with Gravel (SM) Brown Light brown, dry FS157 p200=15%, Sa=44%, Gr=41%, Moisture=11.1% — 0.0 / 0.5

SILTY SAND with Gravel (SM) Brown Light brown, dry FS158 p200=19%, Sa=43%, Gr=38%, Moisture=6.8%

GRAVEL with Silt and Sand (GP-GM) Brown Grey, dry FS159 and FS160 combined for gradation., p200=12%, Sa=42%, Gr=46%, Moisture=6.0% — 5.0

Bottom of seasonal frost at 7 ft. — 7.0

FS160 Moisture=6.3%

Highly Organic SILT with Organics (OL) Grey, moist to wet FS161 Moisture=56.8%, Org=16.5% — 12.5

Slightly Organic SILT (ML) Grey, moist to wet — 13.5

FS162 p200=84%, Sa=16%, Gr=0%, Moisture=32.6%

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

STATE OF ALASKA DOT&PF
Central Region Materials

TEST HOLE LOG

HOLE # TH21-35

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Airport Rehabilitation*
LATITUDE : *62.992007* ***LONGITUDE :*** *-156.033294*
Coordinate System:
Equipment_Type: *Geoprobe 6620DT*
Drilling Method: *Hollow-Stem Auger*
Field Crew: *Steve S. and Luke E.*

Station / Location: *109+81*
Offset: *67' Lt*
Elevation:

Total Depth: *37.0 feet*
Date: *12/19/2021 - 12/19/2021*
Geologist: *F. Plumlee*

Ground Water Data		
Depth in (ft.)	12.5	
Time		
Date		
Symbol	▼	

Weather: Light Rain

Surface: Gravel

Depth (Feet)	Sample Type	Number	Blow Count	Sample	Recovery	N-Value	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
20									**Slightly Organic SILT** (ML) Grey, moist to wet (cont.)
21	SPT	FS163	2 2 3 3	X	■	5			FS163 Moisture=29.1%
22									
23									
24									
25									FS164 Moisture=32.1%, Org=2.6%
26	SPT	FS164	1 1 2 2	X	■	3			
27							OL/ML		**Organic SILT** (OL/ML) 27.0
28									
29									
30									FS165 Moisture=44.6%, Org=6.5%
31	SPT	FS165	1 2 3 3	X	■	5			
32									
33									
34									
35									FS166 Moisture=42.3%
36	SPT	FS166	2 3 6 9	X	■	9			
37								BOH 37	37.0

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb. hammer with 30 in. drop ☐ 340 lb. hammer with 30 in. drop

A USCS LOG OF TEST HOLE TAKOTNA AIRPORT REHAB DRAFT GINT LOGS.GPJ 2006DATATEMPLATE.GDT 2/3/25

2025 MATERIAL SITE MS-6 TEST HOLE LOGS

LOG OF TEST HOLE

HOLE # TH25-01

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.847747*, ***LONGITUDE :*** *62.856207*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *13.5 ft*
Date: *3/22/25 - 3/26/25*
Geologist: *F. Plumlee*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Boulders/Cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL	Depth (Feet)
0	HSA									**Cobbles and boulders with soil**	0
1										**boulder** boulder	1
1.5											1.5
2	Casing	54R	*			MC				Attempted MC and SPT samples. Refusal with no recovery.	2
3											
3.5										**boulder** boulder	3.5
4	Wireline Coring (NQ) and Tri-cone & Casing Advancer									Run 1 Recovery = 29%, RQD = 0%	
5				Run 1		CORE					5
5.5											5.5
6										Run 2 Recovery = 19%, RQD = 0%	
7				Run 2		CORE					7
8										Run 3 Recovery = 17%, RQD = 0%	
9				Run 3		CORE					9
10										Run 4 Recovery = 25%, RQD = 0%	
11				Run 4		CORE					11
12				Run 5		CORE				**boulder** boulder Run 5 Recovery = 33%, RQD = 0%	12
13											
13.5									BOH 13.5	Notes: Drilled on packed snow halfway up the slope, Drilling refusal at 13.5 feet. Soil between the cobbles and boulders. It was later determined (in summer) to be drilled in a boulder field. Drill Casing was not able to be recovered from surface to BOH.	13.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-02

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.847886*, ***LONGITUDE :*** *62.857323*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *100.1 ft*
Date: *6/13/25 - 6/20/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

SUBSURFACE MATERIAL

Depth (Feet)	Drill Method	Sample Number	Recovery	Sample Type	Sample	Soil Graphic	
0	Hollow-Stem Auger						Surface to 6 feet: Overburden: Boulders and cobbles with soil. Boulders up to 3' diameter at and below surface
1							boulder/boulders
2							
3							
4							
5							cobbles/boulders
6	NQ Wire Line Coring						**ALTERED DIORITE (Per Petrographic Report)** Dark gray to Grey, Strong Rock (R4), Slightly weathered, Overall - Generally close to moderate fracture spacing.
7							Run 1: 6 to 9.9 ft. Recovery = 91%, RQD = 34%. Number pieces >4" (2 at 4" and 12 ")
8		Run 1		CORE			
9							
10		Run 2		CORE			Run 2: 9.9 to 10.2 ft. Recovery = 63%, RQD = 0%.
11							Run 3: 10.2 to 15 ft. Recovery = 96%, RQD = 55%. Number pieces >4" (3 at 5", 12.5", and 14.5")
12							Highly fractured from 11.5'-12.5'
13		Run 3		CORE			
14							
15							Run 4: 15 to 20 ft. Recovery = 88%, RQD = 52%. Number pieces >4" (3 at 5", 12.5", and 13.5")
16							
17		Run 4		CORE			
18							
19							
20							Run 5: 20 to 25 ft. Recovery = 98%, RQD = 72%. Number pieces >4" (4 at 7", 9", 11" and 16")
21							
22		Run 5		CORE			
23							
24							Increasing crystal size, ~10mm quartz and plagioclase
25							Run 6: 25 to 27.9 ft. Recovery = 83%, RQD = 66%. Number pieces >4" (2 at 11" and 12")
26							

9.9
10.2
11.5
15
20
24
25

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-02

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.847886*, ***LONGITUDE :*** *62.857323*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *100.1 ft*
Date: *6/13/25 - 6/20/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
26	NQ Wire Line Coring			Run 6		CORE				Quartz veins ~1mm thick
27										
28										Run 7: 27.9 to 30 ft. Recovery = 100%, RQD = 100%. Number pieces >4" (2 at 7" and 18")
29				Run 7		CORE				
30										Run 8: 30 to 35 ft. Recovery = 98%, RQD = 98%. Number pieces >4" (2 at 31" and 28.5")
31										Thin quartz veins (1mm)
32				Run 8		CORE				
33										
34										Quartz xenocrysts
35										Run 9: 35 to 40 ft. Recovery = 98%, RQD = 89%. Number pieces >4" (3 at 40", 9.5", and 4")
36										Possible flow banding Iron staining in fractures
37				Run 9		CORE				
38										
39										
40										Run 10: 40 to 45 ft. Recovery = 100%, RQD = 7%. Number pieces >4" (1 at 4") Extremely close to very close fracture spacing.
41										
42				Run 10		CORE				
43										Fractured zone 44'-46'
44										
45										**ALTERED DIORITE/BASALT BRECCIA (Per Petrographic Report)** Run 11: 45 to 50 ft. Recovery = 100%, RQD = 100%. Number pieces >4" (13", 14.5", 13.5", and 19")
46										
47				Run 11		CORE				1-2mm quartz veins
48										
49										
50										Run 12: 50 to 55 ft. Recovery = 99%, RQD = 78%. Number pieces >4" (6 at 16.5", 5", 4", 11", 4", and 6")
51										
52										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-02

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.847886*, ***LONGITUDE :*** *62.857323*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *100.1 ft*
Date: *6/13/25 - 6/20/25*
Geologist: *I. Minnock*

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
52	NQ Wire Line Coring			Run 12		CORE				Up to 8mm phenocrysts, iron staining in fractures
53										
54										
55										Run 13: 55 to 60 ft. Recovery = 99%, RQD = 92%. Number pieces >4" (5 at 6", 11", 9", 14", and 15")
56										
57				Run 13		CORE				More aphanitic texture
58										
59										
60										Run 14: 60 to 65 ft. Recovery = 95%, RQD = 92%. Number pieces >4" (3 at 34", 12", and 9")
61										Plag crystals aligned at 35-45 deg, 1mm pyrite in fracture
62				Run 14		CORE				
63										Fairly sharp contact between aphanitic moderately aligned porphyritic andesite and flow banded porphyritic andesite
64										
65										**ALTERED BASALT (Per Petrographic Report)** Run 15: 65 to 70 ft. Recovery = 100%, RQD = 93%. Number pieces >4" (3 at 36.5", 7.5", and 11.5")
66										
67				Run 15		CORE				
68										
69										
70										Run 16: 70 to 75 ft. Recovery = 96%, RQD = 77%. Number pieces >4" (4 at 5", 26.5", 10.5", and 4")
71										
72				Run 16		CORE				
73										
74										Increased iron stains in fractures
75										Run 17: 75 to 80 ft. Recovery = 95%, RQD = 65%. Number pieces >4" (1 at 39")
76										Quartz and iron staining in near-vertical fracture
77				Run 17		CORE				
78										

Ground Water Data

Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-02

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.847886*, ***LONGITUDE :*** *62.857323*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *100.1 ft*
Date: *6/13/25 - 6/20/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
78	NQ Wire Line Coring									Pyrite in core
80				Run 18		CORE				Run 18: 80 to 85 ft. Recovery = 103%, RQD = 88%. Number pieces >4" (2 at 36.5" and 16")
85				Run 19		CORE				Run 19: 85 to 90 ft. Recovery = 90%, RQD = 78%. Number pieces >4" (5 at 10", 6", 19.5", 4.5", and 6.5") Quartz and plagioclase More aphanitic, iron stains in fractures
90				Run 20		CORE				Run 20: 90 to 95 ft. Recovery = 100%, RQD = 98%. Number pieces >4" (4 at 13", 12", 16.5", and 17.5") Iron staining in fractures
95				Run 21		CORE				Run 21: 95 to 100.1 ft. Recovery = 100%, RQD = 97%. Number pieces >4" (2 at 43" and 15") 1mm quartz veins Iron staining and quartz in fractures
100									BOH 100.1	Notes: Petrographic samples taken at 8', 46', and 66'. Petrographic report attached in Appedix C

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-03

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.849016*, ***LONGITUDE :*** *62.856806*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *103.4 ft*
Date: *6/22/25 - 6/27/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
0	Hollow-Stem Auger									Vegetated mat. Roots and organics with boulders up to 3' at surface. Overburden soil/rock
1.5										boulder/boulders
3										Organic Silt and cobbles/boulders
4										boulder/boulders
5										
5.5	Tri-cone & Casing									
6.5				Run 1		CORE				Run 1: 6.5 to 11.5 ft. Recovery = 20%, RQD = 0%. Number pieces >4" (0). Overburden Soil/rock
7.5										
9										
10										
11.5				Run 2		CORE				Run 2: 11.5 to 12.5 ft. Recovery = 42%, RQD = 0%. Number pieces >4" (0). Overburden soil/rock
12.5	NQ Coring									Run 3: 12.5 to 17.5 ft. Recovery = 97%, RQD = 52%. Number pieces >4" (3 at 6", 7.5", and 17.5"). Bedrock
12.55										**ALTERED DIORITE (Per Petrographic Report)** Dark Gray. Strong Rock (R4). Slightly weathered to moderately weathered. Generally very close fracture spacing
14										Iron staining in fractures. 1-3mm plagioclase phenocrysts
15				Run 3		CORE				
17.5										Run 4: 17.5 to 22.5 ft. Recovery = 90%, RQD = 15%. Number pieces >4" (1 at 9")
19										Iron staining in fractures
20				Run 4		CORE				
21										Highly fractured section 20.9' to 21.9', iron staining in fractures
22.5										Run 5: 22.5 to 25.5 ft. Recovery = 100%, RQD = 0%. Number pieces >4" (0)
23				Run 5		CORE				
24										Kaolinite and iron staining in fractures
25				Run 6		CORE				
25.5										Run 6: 25.5 to 27.5 ft. Recovery = 100%, RQD = 0%. Number pieces >4" (0)
27										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-03

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.849016*, ***LONGITUDE :*** *62.856806*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *103.4 ft*
Date: *6/22/25 - 6/27/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
27	NQ Coring			Run 7		CORE				Highly fractured, kaolinite with iron staining in fractures
28										Run 7: 27.5 to 31.7 ft. Recovery = 56%, RQD = 0%. Number pieces >4" (0)
29										
30										
31				Run 8		CORE				
32										Run 8: 31.7 to 32.5 ft. Recovery = 100%, RQD = 0%. Number pieces >4" (0)
33										High amount of iron staining in fractures Run 9: 32.5 to 37.5 ft. Recovery = 95%, RQD = 37%. Number pieces >4" (4 at 5", 8", 4", and 5")
34				Run 9		CORE				
35										
36										
37										
38										Run 10: 37.5 to 42.5 ft. Recovery = 95%, RQD = 55%. Number pieces >4" (6 at 10", 5", 5", 4.5", 4", and 4.5") Kaolinite and iron staining in fractures
39				Run 10		CORE				
40										
41										
42										
43										Run 11: 42.5 to 47.5 ft. Recovery = 97%, RQD = 28%. Number pieces >4" (2 at 12" and 4.5")
44				Run 11		CORE				
45										
46										
47										High angle quartz vein
48				Run 12		CORE				Run 12: 47.5 to 50 ft. Recovery = 80%, RQD = 0%. Number pieces >4" (0)
49										Iron staining in fractures
50				Run 13		CORE				Run 13: 50 to 52.5 ft. Recovery = 97%, RQD = 0%. Number pieces >4" (0)
51										near vertical fractures
52										High angle 89 to 90 deg fractures, kaolinite and some iron staining in fractures
53										Run 14: 52.5 to 57.5 ft. Recovery = 100%, RQD = 10%. Number pieces >4" (1 at 6")
54										

27 | 27.5 | 31.7 | 32 | 32.5 | 37.5 | 38 | 42.5 | 47 | 47.5 | 49 | 50 | 51 | 52 | 52.5

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-03

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.849016*, ***LONGITUDE :*** *62.856806*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *103.4 ft*
Date: *6/22/25 - 6/27/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
54	NQ Coring			Run 14		CORE				Vertical to near vertical fractures intersected by 45 deg fractures
55										
56										
57										
57.5										Run 15: 57.5 to 60.75 ft. Recovery = 95%, RQD = 10%. Number pieces >4" (1 at 4")
58				Run 15		CORE				
59										iron staining in fractures
60										
60.75				Run 16		CORE				Run 16: 60.75 to 62.5 ft. Recovery = 86%, RQD = 0%. Number pieces >4" (0)
61										
62										
62.5										Run 17: 62.5 to 67.5 ft. Recovery = 97%, RQD = 23%. Number pieces >4" (2 at 10" and 4")
63										Near vertical tightly spaced fractures, kaolinite and minor iron staining in fractures
64				Run 17		CORE				
65										
66										
67										fewer phenocrysts
67.5										Run 18: 67.5 to 72.5 ft. Recovery = 88%, RQD = 0%. Number pieces >4" (0)
68										
69				Run 18		CORE				Near vertical fractures, kaolinite and iron staining in fractures
70										
71										
72										
72.5										Run 19: 72.5 to 77.5 ft. Recovery = 90%, RQD = 13%. Number pieces >4" (2 at 4" and 4")
73										
74				Run 19		CORE				2 to 3mm kaolinite in fractures, kaolinite in abundance
75										
76										
77										
77.5										Run 20: 77.5 to 81.5 ft. Recovery = 95%, RQD = 15%. Number pieces >4" (1 at 9")
78										Highly fractured, near vertical
79				Run 20		CORE				
80										
81										

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

LOG OF TEST HOLE

HOLE # TH25-03

STATE OF ALASKA DOT&PF
Central Region Materials
Geology Section

PROJECT NUMBER : *CFAPT00805*
PROJECT : *Takotna Apt Rehab - Sterling Landing Rd MP 7.6 Material Site Inv.*
LATITUDE : *-155.849016*, ***LONGITUDE :*** *62.856806*

Station / Location: *See Test Hole Location Map*
Offset:
Elevation:

Equipment Type: *CME 850*
Hole Type: *Wireline Core (NQ)*
Field Crew: *Northern Region Materials*

Total Depth: *103.4 ft*
Date: *6/22/25 - 6/27/25*
Geologist: *I. Minnock*

Ground Water Data		
Depth (ft.)	Not Observed	
Time		
Date		
Symbol		

Surface: Trees and vegetation with boulders and cobbles

Depth (Feet)	Sample Data: Drill Method	Blow Count	N Value	Sample Number	Recovery	Sample Type	Sample	USCS Classification Frozen Zone	Soil Graphic	SUBSURFACE MATERIAL
81	NQ Coring									81.5
82										Highly fractured section 81.3' to 81.7'
83				Run 21		CORE				Run 21: 82.5 to 83.8 ft. Recovery = 96%, RQD = 43%. Number pieces >4" (2 at 7" and 5") 82.5
84										83.8
85				Run 22		CORE				Run 22: 83.8 to 86.4 ft. Recovery = 69%, RQD = 0%. Number pieces >4" (0)
86										86.4
87										Run 23: 86.4 to 91.4 ft. Recovery = 7%, RQD = 0%. Number pieces >4" (0) 86.5 **ALTERED DIORITE (Per Petrographic Report)** 87
88										Fewer phenocrysts. Moderately weathered. Poor core recovery 88
89				Run 23		CORE				Extremely close to very close fracture spacing, vertical to near-vertical 0.5 to 2cm spacing, kaolinite and rare iron staining in fractures
90										88' to 96' - Rubble with very low recovery 90
91										91.4
92										Run 24: 91.4 to 93.9 ft. Recovery = 7%, RQD = 0%. Number pieces >4" (0)
93				Run 24		CORE				
94										93.9
95				Run 25		CORE				Run 25: 93.9 to 96.4 ft. Recovery = 57%, RQD = 0%. Number pieces >4" (0)
96										96.4
97										Run 26: 96.4 to 101.4 ft. Recovery = 5%, RQD = 0%. Number pieces >4" (0)
98										Trace quartz in fractures, rare phenocrysts 98
99				Run 26		CORE				
100										98' to 104' - Rubble with very low recovery 100
101										101.4
102				Run 27		CORE				Run 27: 101.4 to 102.4 ft. Recovery = 25%, RQD = 0%. Number pieces >4" (0) 102.4
103				Run 28		CORE				Run 28: 102.4 to 103.4 ft. Recovery = 17%, RQD = 0%. Number pieces >4" (0) 103.4
									BOH 103.4	Notes: Casing unrecoverable from surface to 12.5' bgs. Petrographic sample taken at 44'. Petrographic report attached in Appedix C

☒ CME Auto Hammer ☐ Cathead Rope Method ☒ 140 lb hammer with 30 in. drop ☐ 340 lb hammer with 30 in. drop

APPENDIX C

2021, 2023, & 2025 PRECONSTRUCTION SAMPLE SUMMARY REPORTS

2004 and 2010 Lab Data

2010 PRECONSTRUCTION SAMPLE SUMMARY

Project No. 56774 Project Name Takotna Airport Relocation

Station							
Offset (feet)							
Depth (feet)							
Test Site ID		Mountainside Sluff Area	Stockpile	Stockpile	Stockpile in Pit		
Field No.		Q-4	Q-2	Q-3	Q-1		
Submitted By		J. Klebesadel #3	J. Klebesadel #3	J. Klebesadel #3	J. Klebesadel #3		
Date Sampled		8/3/2010	7/26/2010	7/27/2010	7/25/2010		
Lab No.		2010A-1898	2010A-1846	2010A-1847	2010A-1845		
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4						
	#10						
	#40						
	#100						
	#200						
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	/	/	/	/	/
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	2.54 /	/	/	/
SpG SSD Coarse/Fine		/	/	2.58 /	/	/	/
SpG App Coarse/Fine		2.76 /	/	2.66 /	/	/	/
Absorption Coarse/Fine		/	/	1.8 /	/	/	/
Degradation Value		77	2	10	20		
LA / LA Low / Nordic		13 / /	22 / /	20 / /	18 / /	/ /	/ /
Sulfate Soundness C/F		1 / 7	41 / 5	3 / 5	3 / 4	/	/
Comment:							

Gradation tests based on minus 3" material.

2021 Lab Data

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-1'	1-1.75'	2.5-3'	5-6.5'	7.5-8.5'	10-11'
Test Site ID		TH21-01	TH21-01	TH21-01	TH21-01	TH21-01	TH21-01
Field No.		FS-01	FS-02	FS-03	FS-04	FS-05	FS-06
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/2/2021
Lab No.		2022A-0045	2022A-0046	2022A-0047	2022A-0048	2022A-0049	2022A-0050
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"		100				
	1/2"		99				
	3/8"		96				
	#4		83				
	#10		68				
	#40		47				
	#100		35				
	#200		29.3				
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		9.4 /	6.1 /	4 /	3.7 /	7.7 /	2.4 /
% Grvl / Snd / Fines		/ /	17 / 54 / 29	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		5-11'	12.5-14'	15-16'	0-1'	1-2'	2-3'
Test Site ID		TH21-01	TH21-01	TH21-01	TH21-02	TH21-02	TH21-02
Field No.		FS-04, FS-05, FS-06	FS-07	FS-08	FS-09	FS-10	FS-11
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/2/2021
Lab No.		2022A-0051	2022A-0052	2022A-0053	2022A-0054	2022A-0055	2022A-0056
Percent Passing Sieve Size	3"						
	2"						
	1"	96			100		
	3/4"	86			100		
	1/2"	77			94		
	3/8"	70			91		
	#4	53			79		
	#10	37			66		
	#40	19			47		
	#100	14			36		
	#200	11.6			29.5		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	27.4 /	41.4 / 6.8	4.8 /	4 /	3.8 /
% Grvl / Snd / Fines		47 / 41 / 12	/ /	/ /	21 / 49 / 30	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		1-3'	0-1.25'	1.25-2'	2-3'	1.25-3'	0-.5'
Test Site ID		TH21-02	TH21-03	TH21-03	TH21-03	TH21-03	TH21-04
Field No.		FS-10, FS-11	FS-12	FS-13	FS-14	FS-13, FS-14	FS-15
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/2/2021	12/4/2021
Lab No.		2022A-0057	2022A-0058	2022A-0059	2022A-0060	2022A-0061	2022A-0062
Percent Passing Sieve Size	3"						
	2"						
	1"	98	99			98	100
	3/4"	97	97			95	99
	1/2"	92	92			88	90
	3/8"	87	86			85	82
	#4	75	71			72	65
	#10	62	57			55	45
	#40	41	38			37	28
	#100	31	29			29	21
	#200	25.3	24.1			24.1	17.3
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	5.8 /	3.9 /	9.1 /	/	6.5 /
% Grvl / Snd / Fines		25 / 50 / 25	29 / 47 / 24	/ /	/ /	28 / 48 / 24	35 / 48 / 17
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0.5-1.25'	2.5-4.5'	5-7'	2.5-4.5'	7.5-8'	8-8.5'
Test Site ID		TH21-04	TH21-04	TH21-04	TH21-04	TH21-04	TH21-04
Field No.		FS-16	FS-17	FS-18	FS-17, FS-18	FS-19	FS-20
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/4/2021	12/4/2021	12/4/2021	12/4/2021	12/4/2021	12/4/2021
Lab No.		2022A-0063	2022A-0064	2022A-0065	2022A-0066	2022A-0067	2022A-0068
Percent Passing Sieve Size	3"						
	2"						
	1"	98			99		
	3/4"	97			96	100	
	1/2"	92			91	88	
	3/8"	88			84	74	
	#4	76			64	50	
	#10	63			46	32	
	#40	44			26	18	
	#100	33			19	14	
	#200	27.8			16.6	11.3	
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		5.7 /	6.5 /	11.6 /	/	7.1 /	38.8 / 7.9
% Grvl / Snd / Fines		24 / 48 / 28	/ /	/ /	36 / 47 / 17	50 / 39 / 11	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		10-11.5'	12.5-13'	13-14'	15-16'	20-22'	25-27'
Test Site ID		TH21-04	TH21-04	TH21-04	TH21-04	TH21-04	TH21-04
Field No.		FS-21	FS-22	FS-23	FS-24	FS-25	FS-26
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/4/2021	12/4/2021	12/4/2021	12/4/2021	12/4/2021	12/4/2021
Lab No.		2022A-0069	2022A-0070	2022A-0071	2022A-0072	2022A-0073	2022A-0074
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4						
	#10						
	#40						
	#100						
	#200						
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		28.6 /	184.5 /	50.8 / 10.5	34.7 / 5	34.6 / 5	36.6 / 5.6
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-0.5'	0.5-1.25'	2.5-4'	5-6.5'	7.5-8.5'	10-11'
Test Site ID		TH21-05	TH21-05	TH21-05	TH21-05	TH21-05	TH21-05
Field No.		FS-27	FS-28	FS-29	FS-30	FS-31	FS-32
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0075	2022A-0076	2022A-0077	2022A-0078	2022A-0079	2022A-0080
Percent Passing Sieve Size	3"						
	2"						
	1"	100	99	100	100		
	3/4"	99	97	98	96		
	1/2"	92	94	91	87		
	3/8"	83	91	84	79		
	#4	66	78	64	59		
	#10	52	63	45	40		
	#40	33	45	24	21		
	#100	22	35	18	15		
	#200	16.8	29.1	15.1	12.7		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		9.8 /	5.7 /	5.7 /	6.2 /	6.9 /	6.7 /
% Grvl / Snd / Fines		34 / 49 / 17	22 / 49 / 29	36 / 49 / 15	41 / 46 / 13	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		12.5-14'	14-14.5'	17.5-19'	20-21.5'	0-0.5'	0.5-1.25'
Test Site ID		TH21-05	TH21-05	TH21-05	TH21-05	TH21-06	TH21-06
Field No.		FS-33	FS-34	FS-35	FS-36	FS-37	FS-38
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0081	2022A-0082	2022A-0083	2022A-0084	2022A-0085	2022A-0086
Percent Passing Sieve Size	3"						
	2"						
	1"					100	98
	3/4"					99	96
	1/2"					88	92
	3/8"					80	89
	#4					62	77
	#10					46	64
	#40					29	45
	#100					20	34
	#200					16.1	28.7
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		117.1 / 39.7	30.3 / 4.3	41.5 / 4.3	42.9 /	9.6 /	6.1 /
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	38 / 46 / 16	23 / 48 / 29
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		2.5-4'	5-6'	7.5-8.5'	2.5-8.5'	10-11'	12.5-13'
Test Site ID		TH21-06	TH21-06	TH21-06	TH21-06	TH21-06	TH21-06
Field No.		FS-39	FS-40	FS-41	FS-39, FS-40, FS-41	FS-42	FS-43
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0087	2022A-0088	2022A-0089	2022A-0090	2022A-0091	2022A-0092
Percent Passing Sieve Size	3"						
	2"						
	1"				97		
	3/4"				93		
	1/2"				85		
	3/8"				78		
	#4				59		
	#10				42		
	#40				22		
	#100				15		
	#200				12.9		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		5.1 /	5.5 /	6.2 /	/	6.3 /	6.6 /
% Grvl / Snd / Fines		/ /	/ /	/ /	41 / 46 / 13	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		13-13.5'	15-16.5'	17.5-19'	20-21.5'	25-27'	30-32'
Test Site ID		TH21-06	TH21-06	TH21-06	TH21-06	TH21-06	TH21-06
Field No.		FS-44	FS-45	FS-46	FS-47	FS-48	FS-49
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0093	2022A-0094	2022A-0095	2022A-0096	2022A-0097	2022A-0100
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4						
	#10						
	#40						
	#100						
	#200						
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		47.3 / 16.6	37.7 / 8.3	55.3 / 13.4	44.9 / 9.7	29.8 /	37.6 / 6.9
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		35-37'	0-1.25'	1.25-2'	2.5-3.5'	5-6.5'	7.5-8.5'
Test Site ID		TH21-06	TH21-07	TH21-07	TH21-07	TH21-07	TH21-07
Field No.		FS-50	FS-51 (& FS-116)	FS-52	FS-53	FS-54	FS-55
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0101	2022A-0102	2022A-0103	2022A-0104	2022A-0105	2022A-0106
Percent Passing Sieve Size	3"						
	2"						
	1"		99	98			
	3/4"		98	96	100		
	1/2"		87	90	93		
	3/8"		79	86	89		
	#4		63	74	67		
	#10		47	60	49		
	#40		32	40	29		
	#100		23	29	23		
	#200		18.4	23.8	20.3		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		44.1 /	6.1 /	6.1 /	7.5 /	5.5 /	5.8 /
% Grvl / Snd / Fines		/ /	37 / 45 / 18	26 / 50 / 24	33 / 47 / 20	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		10-11'	5-11'	12.5-13'	13-13.5'	15-16'	17.5-19.5'
Test Site ID		TH21-07	TH21-07	TH21-07	TH21-07	TH21-07	TH21-07
Field No.		FS-56	FS-54, FS-55, FS-56	FS-57	FS-58	FS-59	FS-60
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0107	2022A-0108	2022A-0109	2022A-0110	2022A-0111	2022A-0112
Percent Passing Sieve Size	3"						
	2"						
	1"		99	100			
	3/4"		95	97			
	1/2"		86	81			
	3/8"		79	72			
	#4		58	48			
	#10		40	31			
	#40		21	16			
	#100		15	11			
	#200		12.7	9.6			
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		5.1 /	/	6.5 /	285.5 / 95.3	77.4 / 29.4	35.9 / 7.1
% Grvl / Snd / Fines		/ /	42 / 45 / 13	52 / 38 / 10	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		20-21.5'	25-27'	0-0.5'	0.5'-1.25'	5-5.5'	10-11.5'
Test Site ID		TH21-07	TH21-07	TH21-08	TH21-08	TH21-08	TH21-08
Field No.		FS-61	FS-62	FS-63	FS-64	FS-65	FS-66
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0113	2022A-0114	2022A-0115	2022A-0116	2022A-0117	2022A-0118
Percent Passing Sieve Size	3"						
	2"						
	1"			100	100		
	3/4"			98	99		
	1/2"			85	95		
	3/8"			76	92		
	#4			59	80		
	#10			46	65		
	#40			29	45		
	#100			20	34		
	#200			16.4	27.7		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		29.7 /	49.4 / 9.5	7.8 /	6 /	7.6 /	40.2 /
% Grvl / Snd / Fines		/ /	/ /	41 / 43 / 16	20 / 52 / 28	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		12.5-14.5'	15-17'	0-0.5'	0.5-1.33'	5-6'	7.5-8.5'
Test Site ID		TH21-08	TH21-08	TH21-09	TH21-09	TH21-09	TH21-09
Field No.		FS-67	FS-68	FS-70	FS-71	FS-72	FS-73
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0119	2022A-0120	2022A-0122	2022A-0123	2022A-0124	2022A-0125
Percent Passing Sieve Size	3"						
	2"						
	1"			100	100		
	3/4"			98	98		
	1/2"			83	90		
	3/8"			74	83		
	#4			58	66		
	#10			44	51		
	#40			29	34		
	#100			20	24		
	#200			15.8	19.4		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		36.1 /	38.6 /	11.8 /	7.4 /	5.4 /	5.9 /
% Grvl / Snd / Fines		/ /	/ /	42 / 42 / 16	34 / 47 / 19	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		10-11'	5-11'	12.5-14'	15-15.5'	17.5-19.5'	20-22'
Test Site ID		TH21-09	TH21-09	TH21-09	TH21-09	TH21-09	TH21-09
Field No.		FS-74	FS-72, FS-73, FS-74	FS-75	FS-76	FS-77	FS-78
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0126	2022A-0127	2022A-0128	2022A-0129	2022A-0130	2022A-0131
Percent Passing Sieve Size	3"						
	2"						
	1"		99				
	3/4"		91				
	1/2"		81				
	3/8"		71				
	#4		52				
	#10		35				
	#40		18				
	#100		14				
	#200		11.8				
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		6.4 /	/	38.6 / 6.5	39.9 / 6.8	58.6 / 5.8	59.4 / 6.4
% Grvl / Snd / Fines		/ /	48 / 40 / 12	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-0.75'	0.75-1.5'	5-6.5'	7.5-9'	10-11.5'	12.5-13.5'
Test Site ID		TH21-10	TH21-10	TH21-10	TH21-10	TH21-10	TH21-10
Field No.		FS-79	FS-80	FS-81	FS-82	FS-83	FS-84
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0132	2022A-0133	2022A-0134	2022A-0135	2022A-0136	2022A-0137
Percent Passing Sieve Size	3"						
	2"						
	1"	100	100	100	98	100	100
	3/4"	99	98	95	95	98	98
	1/2"	89	94	91	88	96	85
	3/8"	81	91	85	83	91	78
	#4	62	79	65	70	78	60
	#10	48	65	46	56	66	45
	#40	32	47	25	36	43	25
	#100	23	37	18	22	25	15
	#200	18.7	30.2	15.1	16.8	19.6	11.7
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		7 /	5.6 /	5.9 /	5.5 /	7.2 /	6.1 /
% Grvl / Snd / Fines		38 / 43 / 19	21 / 49 / 30	35 / 50 / 15	30 / 53 / 17	22 / 58 / 20	40 / 48 / 12
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		20-21'	21-22'	25-26'	27.5-29'	30-31.5'	32.5-34.5'
Test Site ID		TH21-10	TH21-10	TH21-10	TH21-10	TH21-10	TH21-10
Field No.		FS-85	FS-86	FS-87	FS-88	FS-89	FS-90
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0138	2022A-0139	2022A-0140	2022A-0141	2022A-0142	2022A-0143
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"	100					
	1/2"	98					
	3/8"						
	#4	96					
	#10	81					
	#40	58					
	#100	48					
	#200	42.8					
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		40.9 /	36.5 /	37.7 /	46.3 / 6.9	51.8 /	47.5 / 5.2
% Grvl / Snd / Fines		4 / 53 / 43	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-0.75'	0.75'-1.5'	5-6'	7.75'-8.25'	10-11.5'	12.5'-13.5'
Test Site ID		TH21-11	TH21-11	TH21-11	TH21-11	TH21-11	TH21-11
Field No.		FS-91	FS-92	FS-93	FS-94	FS-95	FS-96
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021
Lab No.		2022A-0144	2022A-0145	2022A-0146	2022A-0147	2022A-0148	2022A-0149
Percent Passing Sieve Size	3"						
	2"	100					
	1"	80	93	100			
	3/4"	76	86	93			
	1/2"	65	75	79			
	3/8"	58	68	73			
	#4	45	49	53		100	
	#10	33	33	37		99	
	#40	20	22	20		94	
	#100	13	17	14		88	
	#200	10.5	14	12		85	
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	A-4(3) /	/
Unified Class						ML	
USCSD Class						Silt with sand	
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	29 / 25 / 4	/ /
Sample Prep						Dry	
Nat Moist / Organic		8.7 /	5.8 /	6 /	25.5 /	26.6 /	30.4 /
% Grvl / Snd / Fines		55 / 34 / 11	51 / 35 / 14	47 / 41 / 12	/ /	0 / 15 / 85	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		15-16'	17.5-18.5'	20-21'	22.5-24.5'	25-27'	27.5-29.5'
Test Site ID		TH21-11	TH21-11	TH21-11	TH21-11	TH21-11	TH21-11
Field No.		FS-97	FS-98	FS-99	FS-100	FS-101	FS-102
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021
Lab No.		2022A-0150	2022A-0151	2022A-0152	2022A-0153	2022A-0154	2022A-0155
Percent Passing Sieve Size	3"						
	2"						
	1"			100			
	3/4"			95			
	1/2"			94			
	3/8"			91			
	#4			80	100		
	#10			70	99		
	#40			49	96		
	#100			34	92		
	#200			28	88.5		
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	A-4(6) /	/	/
Unified Class					ML		
USCSD Class					Silt		
Atterburg LL/PL/PI		NV / NV / NP	/ /	/ /	32 / 25 / 7	/ /	/ /
Sample Prep		Dry			Dry		
Nat Moist / Organic		35.6 /	34.4 / 4.5	19.6 /	36.3 /	33.3 /	38.5 /
% Grvl / Snd / Fines		/ /	/ /	20 / 52 / 28	0 / 11 / 89	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		30-32'	0-0.5'	0.5-1.25'	0-0.5'	0.5-1.25'	0-0.5'
Test Site ID		TH21-11	TH21-12	TH21-12	TH21-13	TH21-13	TH21-14
Field No.		FS-103	FS-104	FS-105	FS-106	FS-107	FS-108
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/10/2021	12/16/2021	12/16/2021	12/16/2021	12/16/2021	12/8/2021
Lab No.		2022A-0156	2022A-0157	2022A-0158	2022A-0159	2022A-0160	2022A-0161
Percent Passing Sieve Size	3"						
	2"			100			
	1"		100	98	100	100	100
	3/4"		99	98	99	98	98
	1/2"		89	94	88	95	88
	3/8"		81	92	82	93	81
	#4		65	79	65	85	64
	#10		52	68	53	73	50
	#40		34	49	36	52	33
	#100		25	39	26	41	23
	#200		19.9	32.8	21	34.3	19
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		43.9 /	8.5 /	5.9 /	10 /	5.6 /	7.7 /
% Grvl / Snd / Fines		/ /	35 / 45 / 20	21 / 46 / 33	35 / 44 / 21	15 / 51 / 34	36 / 45 / 19
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0.5-1.25'	0-0.5'	0.5-1.25'	0-1'	1-2'	0-1'
Test Site ID		TH21-14	TH21-15	TH21-15	TH21-16	TH21-16	TH21-17
Field No.		FS-109	FS-110	FS-111	FS-112	FS-113	FS-114
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0162	2022A-0163	2022A-0164	2022A-0165	2022A-0166	2022A-0167
Percent Passing Sieve Size	3"						
	2"						
	1"	99	99	99	100	99	100
	3/4"	97	98	98	100	97	99
	1/2"	91	88	93	94	92	92
	3/8"	88	80	90	90	89	86
	#4	77	65	81	77	80	70
	#10	65	52	69	65	71	56
	#40	46	34	52	47	52	40
	#100	35	24	41	35	40	30
	#200	29.4	19.8	34.8	29.1	33	25.2
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		5.4 /	10.2 /	5.3 /	6.4 /	4.3 /	6.7 /
% Grvl / Snd / Fines		23 / 48 / 29	35 / 45 / 20	19 / 46 / 35	23 / 48 / 29	20 / 47 / 33	30 / 45 / 25
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		1-1.75'	0-1'	1-1.75'	0-1'	1-1.75'	0-1.25'
Test Site ID		TH21-17	TH21-18	TH21-18	TH21-19	TH21-19	TH21-20
Field No.		FS-115	FS-116	FS-117	FS-118	FS-119	FS-120
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0168	2022A-0169	2022A-0170	2022A-0171	2022A-0172	2022A-0173
Percent Passing Sieve Size	3"						
	2"						
	1"	100	100	100	100	99	100
	3/4"	98	99	99	99	97	100
	1/2"	91	89	96	93	92	92
	3/8"	87	83	92	86	88	87
	#4	75	69	83	67	74	71
	#10	64	56	73	51	60	58
	#40	46	39	53	35	43	42
	#100	36	29	40	25	32	31
	#200	30.2	24.2	32.9	21	27.1	26.3
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		4 /	5.9 /	4.9 /	6.6 /	4.8 /	6.1 /
% Grvl / Snd / Fines		25 / 45 / 30	31 / 45 / 24	17 / 50 / 33	33 / 46 / 21	26 / 47 / 27	29 / 45 / 26
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		1.25-2'	0-0.5'	0.5-1.25'	0-0.5'	0.5-1.25'	0-0.5'
Test Site ID		TH21-20	TH21-21	TH21-21	TH21-22	TH21-22	TH21-23
Field No.		FS-121	FS-122	FS-123	FS-124	FS-125	FS-126
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0174	2022A-0175	2022A-0176	2022A-0177	2022A-0178	2022A-0179
Percent Passing Sieve Size	3"						
	2"						
	1"	98	100	99	100	97	100
	3/4"	96	99	98	98	96	99
	1/2"	91	89	94	86	93	86
	3/8"	88	82	91	79	90	77
	#4	77	65	80	62	79	59
	#10	63	51	68	46	66	43
	#40	44	33	49	27	46	26
	#100	34	23	37	17	35	18
	#200	28.7	19.1	30.9	13.9	28.9	15
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		4.3 /	8.9 /	6 /	8.4 /	5.8 /	6.4 /
% Grvl / Snd / Fines		23 / 48 / 29	35 / 46 / 19	20 / 49 / 31	38 / 48 / 14	21 / 50 / 29	41 / 44 / 15
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value						10	
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0.5-1.25'	0-0.5'	0.5-1.25'	0-1'	1-1.75'	0-0.5'
Test Site ID		TH21-23	TH21-24	TH21-24	TH21-25	TH21-25	TH21-26
Field No.		FS-127	FS-128	FS-129	FS-130	FS-131	FS-132
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0180	2022A-0181	2022A-0182	2022A-0183	2022A-0184	2022A-0185
Percent Passing Sieve Size	3"						
	2"						
	1"	99	100	100	100	100	97
	3/4"	98	96	99	100	99	93
	1/2"	92	79	94	96	96	81
	3/8"	89	71	91	92	94	73
	#4	75	54	78	81	84	54
	#10	62	42	64	67	74	40
	#40	44	27	44	46	55	24
	#100	33	19	33	34	42	16
	#200	27.3	15.8	27.3	27.9	35.3	12.5
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		6.4 /	7.5 /	6.5 /	6.5 /	5.7 /	8.3 /
% Grvl / Snd / Fines		25 / 48 / 27	46 / 38 / 16	22 / 51 / 27	19 / 53 / 28	16 / 49 / 35	46 / 41 / 13
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0.5-1.25'	0.5-6.5'	7.5-8.5'	10-11'	12.5-14'	15-16'
Test Site ID		TH21-26	TH21-26	TH21-26	TH21-26	TH21-26	TH21-26
Field No.		FS-133	FS-134	FS-135	FS-136	FS-137	FS-138
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/8/2021
Lab No.		2022A-0186	2022A-0187	2022A-0188	2022A-0189	2022A-0190	2022A-0191
Percent Passing Sieve Size	3"						
	2"						
	1"	100	97				
	3/4"	99	97			100	
	1/2"	93	92			97	
	3/8"	90	85			95	
	#4	73	66			88	
	#10	55	45			84	
	#40	37	23			77	
	#100	29	15			70	
	#200	25.1	11.6			66.1	
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	A-4(2) /	/
Unified Class						ML	
USCSD Class						Sandy silt	
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	32 / 28 / 4	/ /
Sample Prep						Dry	
Nat Moist / Organic		7.1 /	6 /	48.3 / 8	36.2 / 6.1	41.1 /	32.9 /
% Grvl / Snd / Fines		27 / 48 / 25	34 / 54 / 12	/ /	/ /	12 / 22 / 66	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		17.5-19'	20-22'	0-1.25'	1.25-2'	0-1'	1-1.75'
Test Site ID		TH21-26	TH21-26	TH21-27	TH21-27	TH21-28	TH21-28
Field No.		FS-139	FS-140	FS-141	FS-142	FS-143	FS-144
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/8/2021	12/8/2021	12/8/2021	12/8/2021	12/9/2021	12/9/2021
Lab No.		2022A-0192	2022A-0193	2022A-0194	2022A-0195	2022A-0196	2022A-0197
Percent Passing Sieve Size	3"						
	2"				100		
	1"			100	94	100	99
	3/4"			99	93	98	97
	1/2"			91	89	88	91
	3/8"			85	85	81	87
	#4			72	76	63	76
	#10		100	58	65	49	64
	#40		99	38	48	33	47
	#100		96	28	37	24	36
	#200		93.7	23.3	31	19.8	29.8
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	A-4(6) /	/	/	/	/
Unified Class			ML				
USCSD Class			Silt				
Atterburg LL/PL/PI		/ /	35 / 30 / 5	/ /	/ /	/ /	/ /
Sample Prep			Dry				
Nat Moist / Organic		40 / 4.8	33.6 /	6.9 /	6.3 /	10.4 /	4.5 /
% Grvl / Snd / Fines		/ /	0 / 6 / 94	28 / 49 / 23	24 / 45 / 31	37 / 43 / 20	24 / 46 / 30
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-1'	1-2'	0-1'	1-1.75'	0-1'	1-1.75'
Test Site ID		TH21-29	TH21-29	TH21-30	TH21-30	TH21-31	TH21-31
Field No.		FS-145	FS-146	FS-147	FS-148	FS-149	FS-150
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0198	2022A-0199	2022A-0200	2022A-0201	2022A-0202	2022A-0203
Percent Passing Sieve Size	3"						
	2"						
	1"	100	98	100	98	100	98
	3/4"	99	96	99	96	99	97
	1/2"	92	89	89	87	92	91
	3/8"	86	86	82	84	86	88
	#4	72	74	66	70	73	77
	#10	56	62	51	56	61	63
	#40	38	43	34	38	42	44
	#100	28	32	24	29	30	33
	#200	22.9	26.6	19.4	23.7	24.9	27.1
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		5.7 /	4.1 /	7 /	5.7 /	8.5 /	5.1 /
% Grvl / Snd / Fines		28 / 49 / 23	26 / 47 / 27	34 / 47 / 19	30 / 46 / 24	27 / 48 / 25	23 / 50 / 27
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value		11.3					
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-1'	1-1.75'	0-1.25'	1.25-2'	0-1.25'	1.25-2'
Test Site ID		TH21-32	TH21-32	TH21-33	TH21-33	TH21-34	TH21-34
Field No.		FS-151	FS-152	FS-153	FS-154	FS-155	FS-156
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021
Lab No.		2022A-0204	2022A-0205	2022A-0206	2022A-0207	2022A-0208	2022A-0209
Percent Passing Sieve Size	3"						
	2"				100		
	1"	100	98	100	96	100	98
	3/4"	99	95	99	95	99	96
	1/2"	92	92	91	90	93	92
	3/8"	86	90	85	86	89	90
	#4	72	82	71	77	77	82
	#10	57	71	58	65	64	71
	#40	39	50	38	45	44	50
	#100	29	38	27	34	32	37
	#200	24.1	30.9	22.4	28.3	26.4	31
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		6.1 /	8.9 /	6.1 /	4.3 /	6.2 /	5 /
% Grvl / Snd / Fines		28 / 48 / 24	18 / 51 / 31	29 / 49 / 22	23 / 49 / 28	23 / 51 / 26	18 / 51 / 31
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-0.5'	0.5-1.25'	5-6'	10-10.5'	5-10.5'	12.5-13.5'
Test Site ID		TH21-35	TH21-35	TH21-35	TH21-35	TH21-35	TH21-35
Field No.		FS-157	FS-158	FS-159	FS-160	FS-159 & FS-160	FS-161
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee
Date Sampled		12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/9/2021	12/19/2021
Lab No.		2022A-0210	2022A-0211	2022A-0212	2022A-0213	2022A-0214	2022A-0215
Percent Passing Sieve Size	3"						
	2"						
	1"	100	96			100	
	3/4"	98	92			99	
	1/2"	85	83			88	
	3/8"	77	77			77	
	#4	59	62			54	
	#10	44	46			35	
	#40	28	30			18	
	#100	20	23			14	
	#200	15.4	19			11.9	
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		11.1 /	6.8 /	6 /	6.3 /	/	56.8 / 16.5
% Grvl / Snd / Fines		41 / 44 / 15	38 / 43 / 19	/ /	/ /	46 / 42 / 12	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		15-16.5'	20-21'	25-26.5'	30-32'	35-37'	
Test Site ID		TH21-35	TH21-35	TH21-35	TH21-35	TH21-35	
Field No.		FS-162	FS-163	FS-164	FS-165	FS-166	
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	F. Plumlee	
Date Sampled		12/19/2021	12/19/2021	12/19/2021	12/19/2021	12/19/2021	
Lab No.		2022A-0216	2022A-0217	2022A-0218	2022A-0219	2022A-0220	
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4	100					
	#10	100					
	#40	94					
	#100	88					
	#200	83.8					
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		32.6 /	29.1 /	32.1 / 2.6	44.6 / 6.5	42.3 /	/
% Grvl / Snd / Fines		0 / 16 / 84	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	/	/	/	/	/
SpG SSD Coarse/Fine		/	/	/	/	/	/
SpG App Coarse/Fine		/	/	/	/	/	/
Absorption Coarse/Fine		/	/	/	/	/	/
Degradation Value							
LA / LA Low / Nordic		/ /	/ /	/ /	/ /	/ /	/ /
Sulfate Soundness C/F		/	/	/	/	/	/
Comment:							

Gradation tests based on minus 3" material.

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)							
Test Site ID		Talus Slope Surface	Talus Slope Surface	Talus Slope Surface			
Field No.		FS21-1	FS21-2	FS21-3			
Submitted By		F. Plumlee	F. Plumlee	F. Plumlee			
Date Sampled		6/9/2021	6/9/2021	6/9/2021			
Lab No.		2021A-1268	2021A-1269	2021A-1270			
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4						
	#10						
	#40						
	#100						
	#200						
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	/	/	/	/	/
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		2.75 /	2.784 /	2.777 /	/	/	/
SpG SSD Coarse/Fine		2.769 /	2.796 /	2.793 /	/	/	/
SpG App Coarse/Fine		2.801 /	2.819 /	2.821 /	/	/	/
Absorption Coarse/Fine		0.7 /	0.5 /	0.6 /	/	/	/
Degradation Value		72.7	77.9	72.7			
LA / LA Low / Nordic		14 / /	15 / /	26 / /	/ /	/ /	/ /
Sulfate Soundness C/F		1 /	1 /	1 /	/	/	/
Comment:							

Gradation tests based on minus 3" material.

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information

Laboratory No.: 2021A-1268

Name: Takotna Airport Rehabilitation
Project No.: 00805
Sample: Rock
Item/Spec No.: .
Field No.: FS21-1
Sampled From: Talus Slope Surface
Submitted By: F. Plumlee
Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd
Sampled By: F. Plumlee
Date Received: 06/10/2021
Location: Takotna Airport
Quantity Represented: As Required
Date Completed: 06/22/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity
Date Reported: 06/22/2021

Sieve Analysis	Lab	Field	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			
.02 mm			
.002 mm			
Fineness Modulus			

	Lab	Specs
% Organic		
% Natural Moisture		
pH of Soil		
% Sticks & Roots		
Dry Unit Weight, pcf		
% Lightweight Particles		
Uncompacted Voids of FA		
Specific Gravity of Soil		
Sand Equivalent		
Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	1			
	Agg. Specific Gravity, Bulk	2.750			
	Agg. Specific Gravity, SSD	2.769			
AASHTO T85	Agg. Specific Gravity, App.	2.801			
	% Absorption	0.7			
AASHTO T96	LA Abrasion, Total % Loss @ 100 revs % Loss	14			
ATM 313	Degradation	73			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture
- Single Face
- Double Face

Atterberg Limits
- Liquid Limit
- Plastic Limit
- Plastic Index

Flat / Elongated
- 1:3
- 1:5

Soil Classification

% +3"	FSV
	AASHTO
% Gravel	Unified
% Sand	
% Silt/Clay	
% Clay	

Micro Deval - 5.8

Remarks:

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information
Laboratory No.: 2021A-1269

Name: Takotna Airport Rehabilitation
Project No.: 00805
Sample: Rock
Item/Spec No.: .
Field No.: FS21-2
Sampled From: Talus Slope Surface
Submitted By: F. Plumlee
Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd
Sampled By: F. Plumlee
Date Received: 06/10/2021
Location: Takotna Airport
Quantity Represented: As Required
Date Completed: 06/24/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity
Date Reported: 06/28/2021

Sieve Analysis	Lab	Field	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			
.02 mm			
.002 mm			
Fineness Modulus			
% Fracture			
Single Face			
Double Face			
Atterberg Limits			
Liquid Limit			
Plastic Limit			
Plastic Index			
Flat / Elongated			
1:3			
1:5			

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**1**			
	Agg. Specific Gravity, Bulk	**2.784**			
	Agg. Specific Gravity, SSD	**2.796**			
AASHTO T85	Agg. Specific Gravity, App.	**2.819**			
	% Absorption	**0.5**			
AASHTO T96	LA Abrasion, Total % Loss	**15**			
	@ 100 revs % Loss				
ATM 313	Degradation	**78**			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"		FSV
		AASHTO
% Gravel		Unified
% Sand		
% Silt/Clay		
% Clay		

Micro Deval - 5.4

Remarks:

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information

Laboratory No.: 2021A-1270

Name: Takotna Airport Rehabilitation | Project No.: 00805
Sample: Rock | Item/Spec No.: . | Field No.: FS21-3
Sampled From: Talus Slope Surface | Submitted By: F. Plumlee | Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd | Sampled By: F. Plumlee | Date Received: 06/10/2021
Location: Takotna Airport | Quantity Represented: As Required | Date Completed: 06/22/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity | Date Reported: 06/22/2021

	Lab	Field	Specs
Sieve Analysis			
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			
.02 mm			
.002 mm			
Fineness Modulus			
% Fracture			
Single Face			
Double Face			
Atterberg Limits			
Liquid Limit			
Plastic Limit			
Plastic Index			
Flat / Elongated			
1:3			
1:5			

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	1			
	Agg. Specific Gravity, Bulk	2.777			
	Agg. Specific Gravity, SSD	2.793			
AASHTO T85	Agg. Specific Gravity, App.	2.821			
	% Absorption	0.6			
AASHTO T96	LA Abrasion, Total % Loss @ 100 revs % Loss	26			
ATM 313	Degradation	73			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

Remarks: **Micro Deval- 4.7**

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0102**

Name: **Takotna Airport Rehabilitation**
Sample: **Soil**
Sampled From: **TH21-07, Depth 0-1.25'**
Source: **Airport**
Location: **Takotna Airport**
Examined For: **Gradation, Moisture, Micro Deval**

Project No.: **00805**
Item/Spec No.:
Submitted By: **F. Plumlee**
Sampled By:
Quantity Represented: **As Required**

Field No.: **FS-51**
Date Sampled: **12/08/2021**
Date Received: **03/02/2022**
Date Completed: **03/14/2022**
Date Reported: **03/14/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"	**100**	
1"	**99**	
3/4"	**98**	
1/2"	**87**	
3/8"	**79**	
1/4"	**70**	
#4	**63**	
#8		
#10	**47**	
#16		
#30		
#40	**32**	
#50		
#80		
#100	**23**	
#200	**18.4**	
.02 mm		
.002 mm		
Fineness Modulus		

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	**6.1**	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
	Sulfate Soundness, % Loss				
	Agg. Specific Gravity, Bulk				
	Agg. Specific Gravity, SSD				
	Agg. Specific Gravity, App.				
	% Absorption				
	LA Abrasion, Total % Loss				
	@ 100 revs % Loss				
ATM 313	Degradation				
	Nordic Abrasion				
AASHTO T327	Micro Deval	**25.4**	Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
37 % Gravel	AASHTO
45 % Sand	Unified
18 % Silt/Clay	
% Clay	

Remarks:
Chart on back
Combined w FS-116 for Micro Deval
↳ TH21-18 (0-1.0 ft)

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0103**

Name: **Takotna Airport Rehabilitation**
Sample: **Soil**
Sampled From: **TH21-07, Depth 1.25-2'**
Source: **Airport**
Location: **Takotna Airport**
Examined For: **Gradation, Moisture, Micro Deval**

Project No.: **00805**
Item/Spec No.:
Submitted By: **F. Plumlee**
Sampled By:
Quantity Represented: **As Required**

Field No.: **FS-52**
Date Sampled: **12/08/2021**
Date Received: **03/02/2022**
Date Completed: **03/15/2022**
Date Reported: **03/15/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"	**100**	
1"	**98**	
3/4"	**96**	
1/2"	**90**	
3/8"	**86**	
1/4"	**79**	
#4	**74**	
#8		
#10	**60**	
#16		
#30		
#40	**40**	
#50		
#80		
#100	**29**	
#200	**23.8**	
.02 mm		
.002 mm		
Fineness Modulus		

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	**6.1**	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
	Sulfate Soundness, % Loss				
	Agg. Specific Gravity, Bulk				
	Agg. Specific Gravity, SSD				
	Agg. Specific Gravity, App.				
	% Absorption				
	LA Abrasion, Total % Loss				
	@ 100 revs % Loss				
	Degradation				
	Nordic Abrasion				
AASHTO T327	Micro Deval	**27.3**	Table 3		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	
	FSV
	AASHTO
26 % Gravel	Unified
50 % Sand	
24 % Silt/Clay	
% Clay	

Remarks:

Chart on back
Combined w FS-38 for Micro Deval

↳ TH21-06 (0.5-1.25 ft)

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0122**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Soil** Item/Spec No.: Field No.: **FS-70**
Sampled From: **TH21-09, Depth 0-0.5'** Submitted By: **F. Plumlee** Date Sampled: **12/09/2021**
Source: **Airport** Sampled By: Date Received: **03/02/2022**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **03/14/2022**
Examined For: **Gradation, Moisture Content, Micro Deval** Date Reported: **03/14/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"		
1"	100	
3/4"	98	
1/2"	83	
3/8"	74	
1/4"	64	
#4	58	
#8		
#10	44	
#16		
#30		
#40	29	
#50		
#80		
#100	20	
#200	15.8	
.02 mm		
.002 mm		
Fineness Modulus		

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	11.8	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

	Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
Friable Particles				
Sulfate Soundness, % Loss				
Agg. Specific Gravity, Bulk				
Agg. Specific Gravity, SSD				
Agg. Specific Gravity, App.				
% Absorption				
LA Abrasion, Total % Loss				
@ 100 revs % Loss				
Degradation				
Nordic Abrasion				

AASHTO T327 Micro Deval 26.5 Table 2

Organic Impurities

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

Soil Classification
% +3" FSV
AASHTO
42 % Gravel Unified
42 % Sand
16 % Silt/Clay
% Clay

Remarks:

Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:
Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0123**

Name: **Takotna Airport Rehabilitation**
Sample: **Soil**
Sampled From: **TH21-09, Depth 0.5-1.33'**
Source: **Airport**
Location: **Takotna Airport**
Examined For: **Gradation, Moisture Content, Micro Deval**

Project No.: **00805**
Item/Spec No.:
Submitted By: **F. Plumlee**
Sampled By:
Quantity Represented: **As Required**

Field No.: **FS-71**
Date Sampled: **12/09/2021**
Date Received: **03/02/2022**
Date Completed: **03/14/2022**
Date Reported: **03/14/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"		
1"	100	
3/4"	98	
1/2"	90	
3/8"	83	
1/4"	72	
#4	66	
#8		
#10	51	
#16		
#30		
#40	34	
#50		
#80		
#100	24	
#200	19.4	
.02 mm		
.002 mm		
Fineness Modulus		

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	7.4	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

	Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
Friable Particles				
Sulfate Soundness, % Loss				
Agg. Specific Gravity, Bulk				
Agg. Specific Gravity, SSD				
Agg. Specific Gravity, App.				
% Absorption				
LA Abrasion, Total % Loss				
@ 100 revs % Loss				
Degradation				
Nordic Abrasion				
ASHTO T327 Micro Deval	22.5	Table 2		
Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

A

Soil Classification
% +3"
FSV
AASHTO
Unified

34 % Gravel
47 % Sand
19 % Silt/Clay
% Clay

Remarks:

Chart on back
Combined w FS-80 & FS-154 for Micro Deval

↳ FS21-33 (1.0-2.0 ft)
↳ TH21-10 (0.75-2.0 ft)

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0144**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Soil** Item/Spec No.: Field No.: **FS-91**
Sampled From: **TH21-11, Depth 0-0.75'** Submitted By: **F. Plumlee** Date Sampled: 12/10/2021
Source: **Airport** Sampled By: Date Received: 03/02/2022
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **03/14/2022**
Examined For: **Gradation, Moisture Content, Micro Deval** Date Reported: **03/14/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"	100	
1 1/2"	92	
1"	80	
3/4"	76	
1/2"	65	
3/8"	58	
1/4"	50	
#4	45	
#8		
#10	33	
#16		
#30		
#40	20	
#50		
#80		
#100	13	
#200	10.5	
.02 mm		
.002 mm		
Fineness Modulus		

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	8.7	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

	Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
Friable Particles				
Sulfate Soundness, % Loss				
Agg. Specific Gravity, Bulk				
Agg. Specific Gravity, SSD				
Agg. Specific Gravity, App.				
% Absorption				
LA Abrasion, Total % Loss				
@ 100 revs % Loss				
Degradation				
Nordic Abrasion				

AASHTO T327 Micro Deval 21.7 Table 1
Organic Impurities
Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

Soil Classification
% +3" FSV
AASHTO
Unified
55 % Gravel
34 % Sand
11 % Silt/Clay
% Clay

Remarks:

Chart on back
Combined w FS-143 & FS-104 for Micro Deval
↳ TH21-12 (0-0.5 ft)
↳ TH21-28 (0-1.0 ft)

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2022A-0145**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Soil** Item/Spec No.: Field No.: **FS-92**
Sampled From: **TH21-11, Depth 0.75'-1.5'** Submitted By: **F. Plumlee** Date Sampled: **12/10/2021**
Source: **Airport** Sampled By: Date Received: **03/02/2022**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **03/14/2022**
Examined For: **Gradation, Moisture Content, Micro Deval** Date Reported: **03/14/2022**

Sieve Analysis	Lab	Specs AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"	100	
1"	93	
3/4"	86	
1/2"	75	
3/8"	68	
1/4"	56	
#4	49	
#8		
#10	33	
#16		
#30		
#40	22	
#50		
#80		
#100	17	
#200	14.0	
.02 mm		
.002 mm		
Fineness Modulus		

		Lab	Specs
	% Organic		
AASHTO T265	% Natural Moisture	5.8	
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
	Sulfate Soundness, % Loss				
	Agg. Specific Gravity, Bulk				
	Agg. Specific Gravity, SSD				
	Agg. Specific Gravity, App.				
	% Absorption				
	LA Abrasion, Total % Loss				
	@ 100 revs % Loss				
	Degradation				
	Nordic Abrasion				
AASHTO T327	Micro Deval	42.2 Table 3			
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec 95 min

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

Soil Classification
% +3"
FSV
AASHTO
Unified

51 % Gravel
35 % Sand
14 % Silt/Clay
% Clay

Remarks:

Chart on back
Combined w FS-133 & FS-105 for Micro Deval

↳ TH21-12 (0.5-1.25 ft)
↳ TH21-26 (0.5-1.25 ft)

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information

Laboratory No.: 2021A-1270

Name: Takotna Airport Rehabilitation Project No.: 00805
Sample: Rock Item/Spec No.: . Field No.: FS21-3
Sampled From: Talus Slope Surface Submitted By: F. Plumlee Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd Sampled By: F. Plumlee Date Received: 06/10/2021
Location: Takotna Airport Quantity Represented: As Required Date Completed: 06/22/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity Date Reported: 06/22/2021

Sieve Analysis	Lab	Field	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			
.02 mm			
.002 mm			
Fineness Modulus			
% Fracture			
Single Face			
Double Face			
Atterberg Limits			
Liquid Limit			
Plastic Limit			
Plastic Index			
Flat / Elongated			
1:3			
1:5			

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	1			
	Agg. Specific Gravity, Bulk	2.777			
	Agg. Specific Gravity, SSD	2.793			
AASHTO T85	Agg. Specific Gravity, App.	2.821			
	% Absorption	0.6			
AASHTO T96	LA Abrasion, Total % Loss	26			
	@ 100 revs % Loss				
ATM 313	Degradation	73			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

Remarks:

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: _____
Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information

Laboratory No.: 2021A-1269

Name: Takotna Airport Rehabilitation Project No.: 00805
Sample: Rock Item/Spec No.: . Field No.: FS21-2
Sampled From: Talus Slope Surface Submitted By: F. Plumlee Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd Sampled By: F. Plumlee Date Received: 06/10/2021
Location: Takotna Airport Quantity Represented: As Required Date Completed: 06/24/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity Date Reported: 06/28/2021

Sieve Analysis	Lab	Field	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			
.02 mm			
.002 mm			
Fineness Modulus			
% Fracture			
Single Face			
Double Face			
Atterberg Limits			
Liquid Limit			
Plastic Limit			
Plastic Index			
Flat / Elongated			
1:3			
1:5			

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	1			
	Agg. Specific Gravity, Bulk	2.784			
	Agg. Specific Gravity, SSD	2.796			
AASHTO T85	Agg. Specific Gravity, App.	2.819			
	% Absorption	0.5			
AASHTO T96	LA Abrasion, Total % Loss	15			
	@ 100 revs % Loss				
ATM 313	Degradation	78			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

Remarks:

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: _____
Mike Yerkes, P.E.
Regional Materials Engineer

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Information

Laboratory No.: 2021A-1268

Name: Takotna Airport Rehabilitation Project No.: 00805
Sample: Rock Item/Spec No.: . Field No.: FS21-1
Sampled From: Talus Slope Surface Submitted By: F. Plumlee Date Sampled: 06/09/2021
Source: MP 7.6 Sterling Landing Rd Sampled By: F. Plumlee Date Received: 06/10/2021
Location: Takotna Airport Quantity Represented: As Required Date Completed: 06/22/2021
Examined For: LA Abrasion, Degradation, Sulfate Soundness, Specific Gravity Date Reported: 06/22/2021

	Lab	Field	Specs
Sieve Analysis			
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			
.02 mm			
.002 mm			
Fineness Modulus			
% Fracture			
Single Face			
Double Face			
Atterberg Limits			
Liquid Limit			
Plastic Limit			
Plastic Index			
Flat / Elongated			
1:3			
1:5			

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	1			
	Agg. Specific Gravity, Bulk	2.750			
	Agg. Specific Gravity, SSD	2.769			
AASHTO T85	Agg. Specific Gravity, App.	2.801			
	% Absorption	0.7			
AASHTO T96	LA Abrasion, Total % Loss	14			
	@ 100 revs % Loss				
ATM 313	Degradation	73			
	Nordic Abrasion				
	California Bearing Ratio				
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
	AASHTO
% Gravel	Unified
% Sand	
% Silt/Clay	
% Clay	

Remarks:

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: _____
Mike Yerkes, P.E.
Regional Materials Engineer

2023 Lab Data

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station		MP 7.6 Volcanic	MP 7.6 Volcanic	Old Airport Shale	Takotna River Gravel		
Offset (feet)							
Depth (feet)		Surface	Surface	Surface	Surface		
Test Site ID		Surface	Surface	Surface	Surface		
Field No.		FS23-01	FS23-02	FS23-03	FS23-04		
Submitted By		C. Boeckman	C. Boeckman	C. Boeckman	C. Boeckman		
Date Sampled		10/25/2023	10/25/2023	10/25/2023	10/25/2023		
Lab No.		2023A-3128	2023A-3129	2023A-3130	2023A-3131		
Percent Passing Sieve Size	3"						
	2"						
	1"						
	3/4"						
	1/2"						
	3/8"						
	#4						
	#10						
	#40						
	#100						
	#200						
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	/	/	/	/	/
% Grvl / Snd / Fines		/ /	/ /	/ /	/ /	/ /	/ /
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		2.773 /	2.771 /	2.512 /	2.553 /	/	/
SpG SSD Coarse/Fine		2.79 /	2.79 /	2.588 /	2.591 /	/	/
SpG App Coarse/Fine		2.82 /	2.824 /	2.717 /	2.654 /	/	/
Absorption Coarse/Fine		0.6 /	0.7 /	3 /	1.5 /	/	/
Degradation Value		66.8	62.4	1	4.7		
LA / LA Low / Nordic		13 / /	14 / /	21 / /	22 / /	/ /	/ /
Sulfate Soundness C/F		1 /	2 /	23 /	8 /	/	/
Comment:							

Gradation tests based on minus 3" material.

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2023A-3131**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**

Sample: **Rock** Item/Spec No.: Field No.: **FS23-04**

Sampled From: **Surface, Sta. Takotna River Gravel, Depth Surfac** Submitted By: **C. Boeckman** Date Sampled: **10/25/2023**

Source: **Airport** Sampled By: Date Received: **11/14/2023**

Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **12/12/2023**

Examined For: **LA Abrasion, Sulfate Soundness, Micro Deval, Degradation, SpG** Date Reported: **12/12/2023**

Sieve Analysis	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		
.02 mm		
.002 mm		
Fineness Modulus		
% Fracture		
Single Face		
Double Face		
Atterberg Limits		
Liquid Limit		
Plastic Limit		
Plastic Index		
Flat / Elongated		
1:3		
1:5		

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**8**			
	Agg. Specific Gravity, Bulk	**2.553**			
	Agg. Specific Gravity, SSD	**2.591**			
AASHTO T85	Agg. Specific Gravity, App.	**2.654**			
	% Absorption	**1.5**			
AASHTO T96	LA Abrasion, Total % Loss	**22**			
	@ 100 revs % Loss				
ATM 313	Degradation	**5**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**23**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
	AASHTO
% Gravel	Unified
% Sand	
% Silt/Clay	
% Clay	

Remarks:

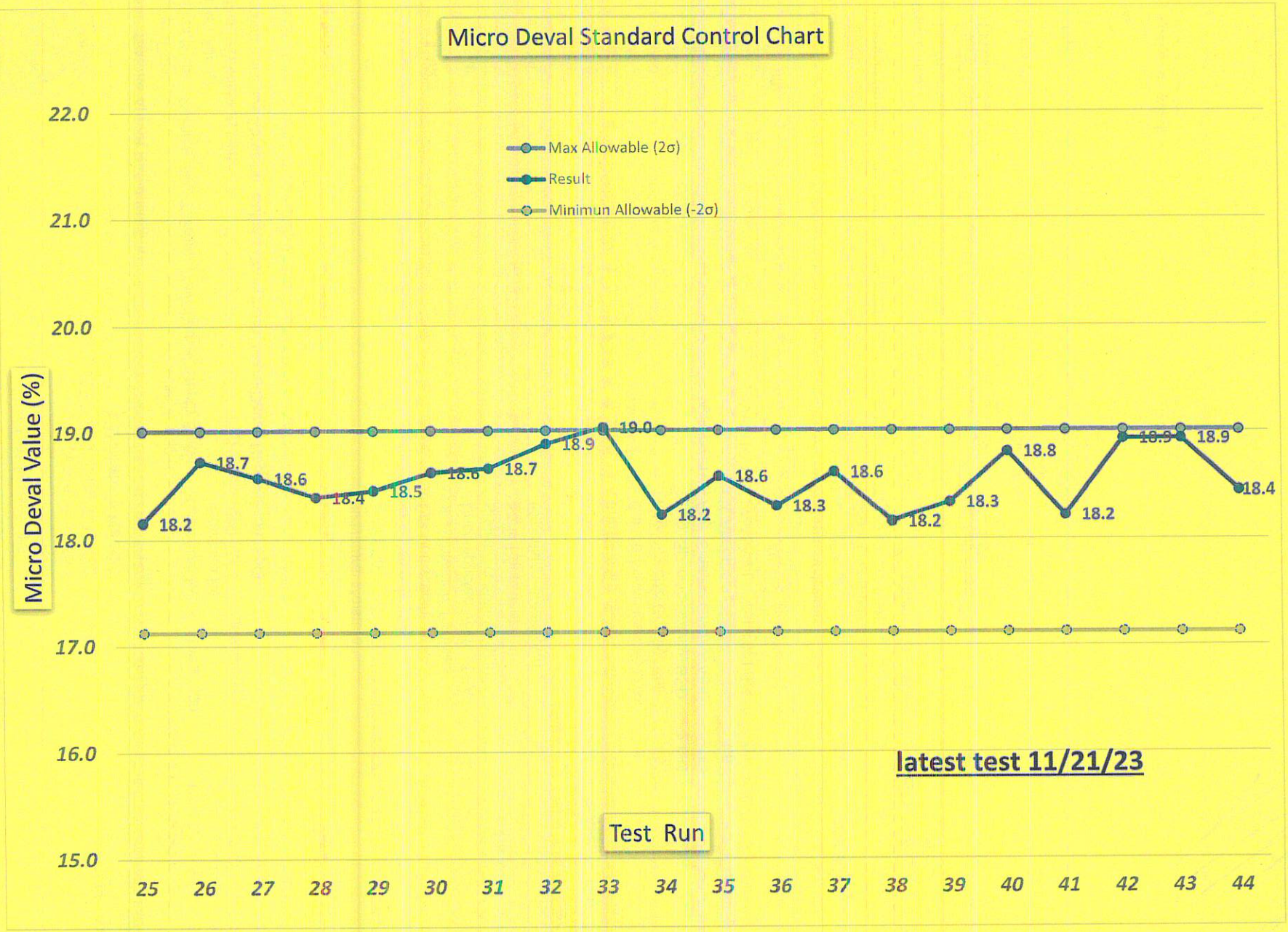
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: _____

Mike Yerkes, P.E.
Regional Materials Engineer



11/24/2023

Micro Deval Control ChartChart1 (uncoloured)

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2023A-3130**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock** Item/Spec No.: Field No.: **FS23-03**
Sampled From: **Surface, Sta. Old Airport Shale, Depth Surface** Submitted By: **C. Boeckman** Date Sampled: **10/25/2023**
Source: **Airport** Sampled By: Date Received: **11/14/2023**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **12/12/2023**
Examined For: **LA Abrasion, Sulfate Soundness, Micro Deval, Degradation, SpG** Date Reported: **12/12/2023**

Sieve Analysis	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		
.02 mm		
.002 mm		
Fineness Modulus		

		Lab	Specs
% Organic			
% Natural Moisture			
pH of Soil			
% Sticks & Roots			
Dry Unit Weight, pcf			
% Lightweight Particles			
Uncompacted Voids of FA			
Specific Gravity of Soil			
Sand Equivalent			
Expansion Breakdown			

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**23**			
	Agg. Specific Gravity, Bulk	**2.512**			
	Agg. Specific Gravity, SSD	**2.588**			
AASHTO T85	Agg. Specific Gravity, App.	**2.717**			
	% Absorption	**3.0**			
AASHTO T96	LA Abrasion, Total % Loss	**21**			
	@ 100 revs % Loss				
ATM 313	Degradation	**1**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**55.2**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture
Single Face
Double Face

Atterberg Limits
Liquid Limit
Plastic Limit
Plastic Index

Flat / Elongated
1:3
1:5

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

Remarks:

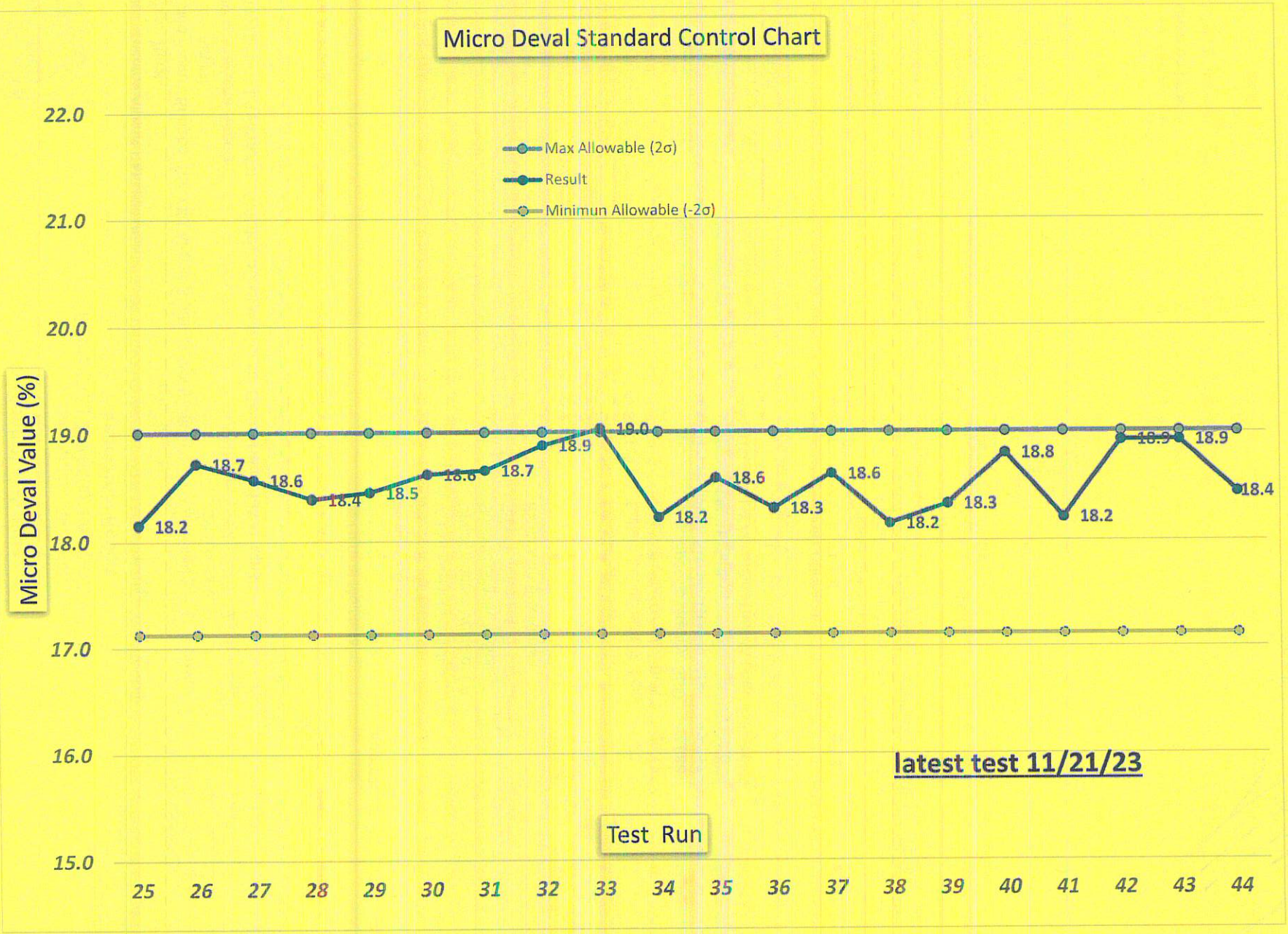
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: 

Mike Yerkes, P.E.
Regional Materials Engineer



11/24/2023

Micro Deval Control ChartChart1 (uncoloured)

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2023A-3129**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**

Sample: **Rock** Item/Spec No.: Field No.: **FS23-02**

Sampled From: **Surface, Sta. MP 7.6 Volcanic, Depth Surface** Submitted By: **C. Boeckman** Date Sampled: **10/25/2023**

Source: **Airport** Sampled By: Date Received: **11/14/2023**

Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **12/12/2023**

Examined For: **LA Abrasion, Sulfate Soundness, Micro Deval, Degradation, SpG** Date Reported: **12/12/2023**

	Lab	Specs
Sieve Analysis		
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		
.02 mm		
.002 mm		
Fineness Modulus		
% Fracture		
Single Face		
Double Face		
Atterberg Limits		
Liquid Limit		
Plastic Limit		
Plastic Index		
Flat / Elongated		
1:3		
1:5		

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		
		Coarse	
		Lab	Specs
	Friable Particles		
AASHTO T104	Sulfate Soundness, % Loss	**2**	
	Agg. Specific Gravity, Bulk	**2.771**	
	Agg. Specific Gravity, SSD	**2.790**	
AASHTO T85	Agg. Specific Gravity, App.	**2.824**	
	% Absorption	**0.7**	
AASHTO T96	LA Abrasion, Total % Loss	**14**	
	@ 100 revs % Loss		
ATM 313	Degradation	**62**	
	Nordic Abrasion		
AASHTO T327	Micro Deval	**7.6**	NMAS Table 2
	Organic Impurities		

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
	AASHTO
% Gravel	Unified
% Sand	
% Silt/Clay	
% Clay	

Remarks:

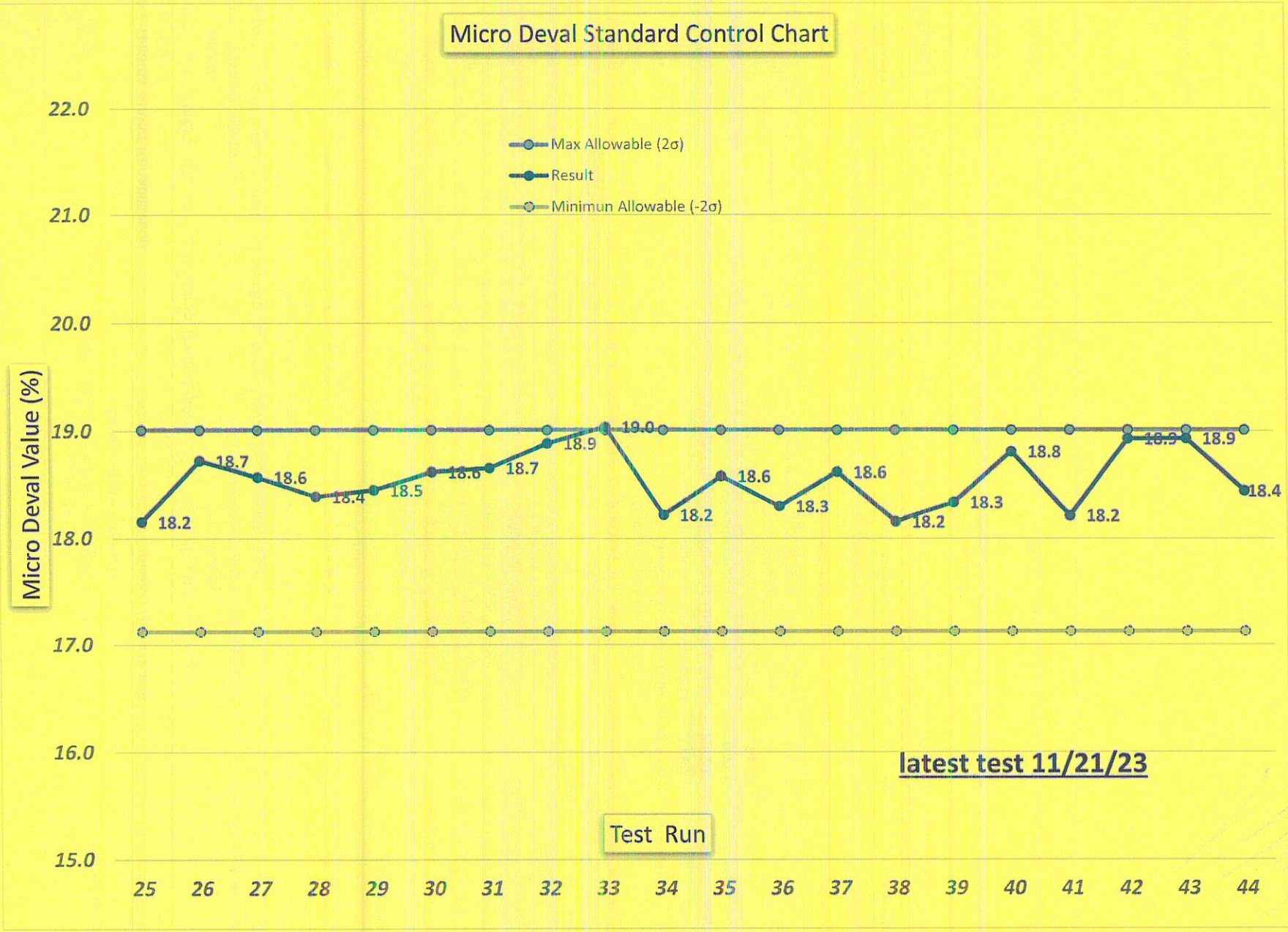
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
22.0
21.0
20.0
19.0
18.0
17.0
16.0
15.0
18.2
18.7
18.6
18.4
18.5
18.6
18.7
18.9
19.0
18.2
18.6
18.3
18.6
18.2
18.3
18.8
18.2
18.9
18.9
18.4
latest test 11/21/23
Test Run
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2023A-3128**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**

Sample: **Rock** Item/Spec No.: Field No.: **FS23-01**

Sampled From: **Surface, Sta. MP 7.6 Volcanic, Depth Surface** Submitted By: **C. Boeckman** Date Sampled: **10/25/2023**

Source: **Airport** Sampled By: **C. Boeckman** Date Received: **11/14/2023**

Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **12/12/2023**

Examined For: **LA Abrasion, Sulfate Soundness, Micro Deval, Degradation, SpG** Date Reported: **12/12/2023**

	Lab	Specs
Sieve Analysis		
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		
.02 mm		
.002 mm		
Fineness Modulus		
% Fracture		
Single Face		
Double Face		
Atterberg Limits		
Liquid Limit		
Plastic Limit		
Plastic Index		
Flat / Elongated		
1:3		
1:5		

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**1**			
	Agg. Specific Gravity, Bulk	**2.773**			
	Agg. Specific Gravity, SSD	**2.790**			
AASHTO T85	Agg. Specific Gravity, App.	**2.820**			
	% Absorption	**0.6**			
AASHTO T96	LA Abrasion, Total % Loss	**13**			
	@ 100 revs % Loss				
ATM 313	Degradation	**67**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**6.9**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

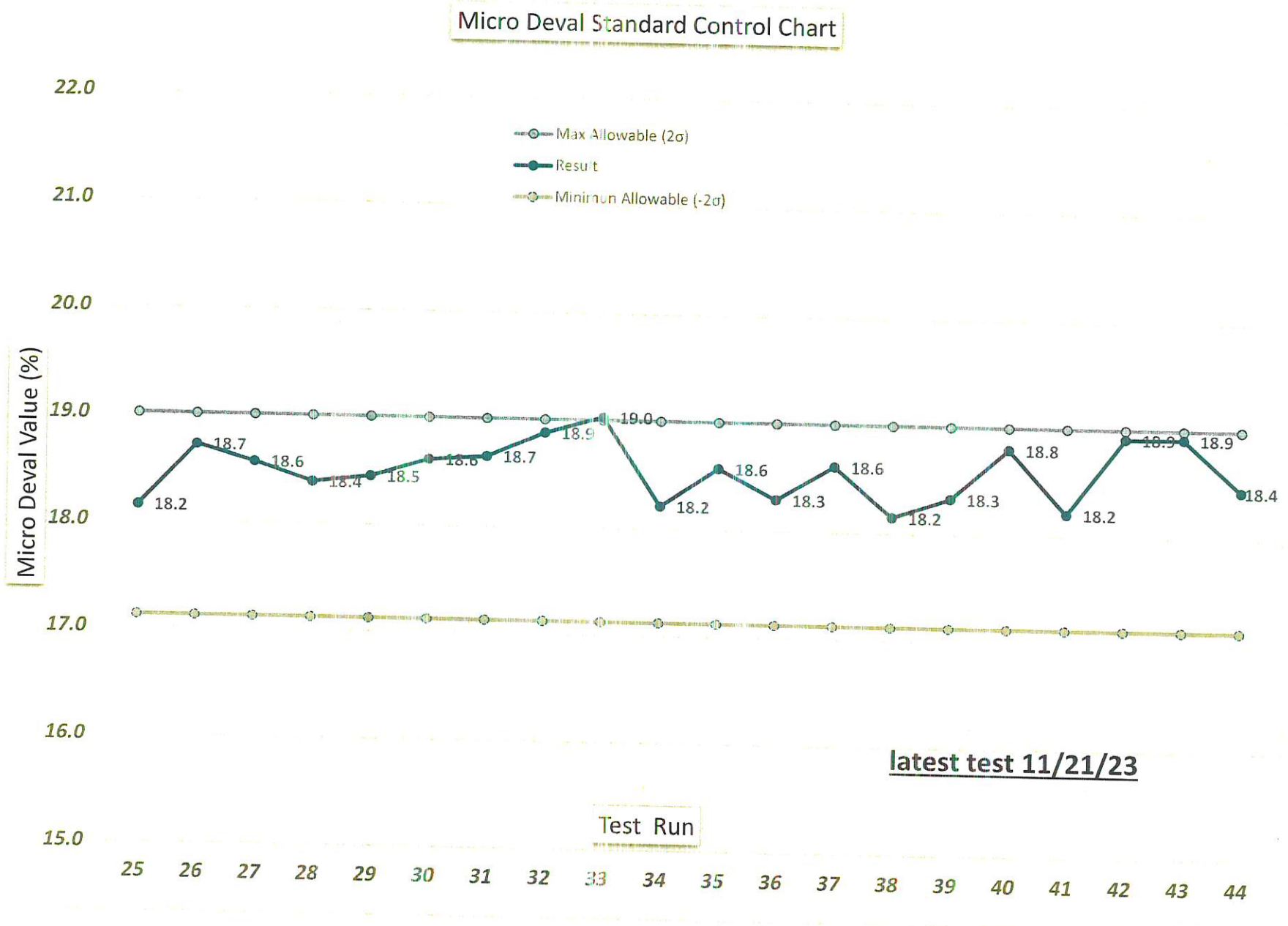
Remarks:

Chart on back

Signature: Mike Yerkes, P.E.
Regional Materials Engineer

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED



11/24/2023

Micro Deval Control ChartChart1 (uncoloured)

2025 Lab Data

PRECONSTRUCTION SAMPLE SUMMARY

Project No. 805 Project Name Takotna Airport Rehabilitation

Station							
Offset (feet)							
Depth (feet)		0-13'	6-33'	33-88'	88-100'	12.5-52.5'	52.5-104'
Test Site ID		TH 25-01	TH25-02	TH25-02	TH25-02	TH25-03	TH25-03
Field No.		FS-01	FS-02	FS-03	FS-04	FS-05	FS-06
Submitted By		F. Plumlee	I. Minnock	I. Minnock	I. Minnock	I. Minnock	I. Minnock
Date Sampled		3/28/2025	6/20/2025	6/20/2025	6/20/2025	6/27/2025	6/27/2025
Lab No.		2025A-0142	2025A-0954	2025A-0955	2025A-0956	2025A-0957	2025A-0958
Percent Passing Sieve Size	3"						
	2"						
	1"		92	91	90	92	91
	3/4"		69	70	65	72	69
	1/2"		41	44	40	45	39
	3/8"		32	36	30	35	29
	#4		19	21	17	20	15
	#10		9	10	9	10	8
	#40		3	3	3	4	3
	#100		2	2	2	2	2
	#200		1.1	1.1	1.2	1.5	1.4
	.02mm						
	.002mm						
FSV Class							
AASHTO / DOTTSD		/	/	/	/	/	/
Unified Class							
USCSD Class							
Atterburg LL/PL/PI		/ /	/ /	/ /	/ /	/ /	/ /
Sample Prep							
Nat Moist / Organic		/	/	/	/	/	/
% Grvl / Snd / Fines		/ /	81 / 18 / 1	79 / 20 / 1	83 / 16 / 1	80 / 18 / 2	85 / 14 / 1
Opt Mois/Max Dry Den		/	/	/	/	/	/
SpG Bulk Coarse/Fine		/	2.799 /	2.8 /	2.8 /	2.794 /	2.787 /
SpG SSD Coarse/Fine		/	2.809 /	2.808 /	2.809 /	2.803 /	2.798 /
SpG App Coarse/Fine		/	2.826 /	2.825 /	2.824 /	2.818 /	2.817 /
Absorption Coarse/Fine		/	0.3 /	0.3 /	0.3 /	0.3 /	0.4 /
Degradation Value		71.5	85.1	85.1	83.6	67.9	39.3
LA / LA Low / Nordic		/ /	12 / /	12 / /	12 / /	11 / /	11 / /
Sulfate Soundness C/F		/	1 /	0 /	0 /	1 /	2 /
Comment:							

Gradation tests based on minus 3" material.

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0142**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**

Sample: **Soil** Item/Spec No.: Field No.: **FS-01**

Sampled From: **TH 25-01, Depth 0-13'** Submitted By: **F. Plumlee** Date Sampled: **03/28/2025**

Source: **Centerline** Sampled By: **F. Plumlee** Date Received: **04/22/2025**

Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **04/29/2025**

Examined For: **Micro Deval** Date Reported: **04/29/2025**

Sieve Analysis	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*		
.02 mm		
.002 mm		
Fineness Modulus		
% Fracture		
Single Face		
Double Face		
Atterberg Limits		
Liquid Limit		
Plastic Limit		
Plastic Index		
Flat / Elongated		
1:3		
1:5		

*Procedure B employed to wash sample per AASHTO T-11

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse		Fine	
		Lab	Specs	Lab	Specs
	Friable Particles				
	Sulfate Soundness, % Loss				
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk				
	Agg. Specific Gravity, SSD				
	Agg. Specific Gravity, App.				
	% Absorption				
	LA Abrasion, Total % Loss				
	@ 100 revs % Loss				
ATM 313	Degradation	72			
	Nordic Abrasion				
AASHTO T327	Micro Deval	8.0	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
% Gravel	AASHTO
% Sand	Unified
% Silt/Clay	
% Clay	

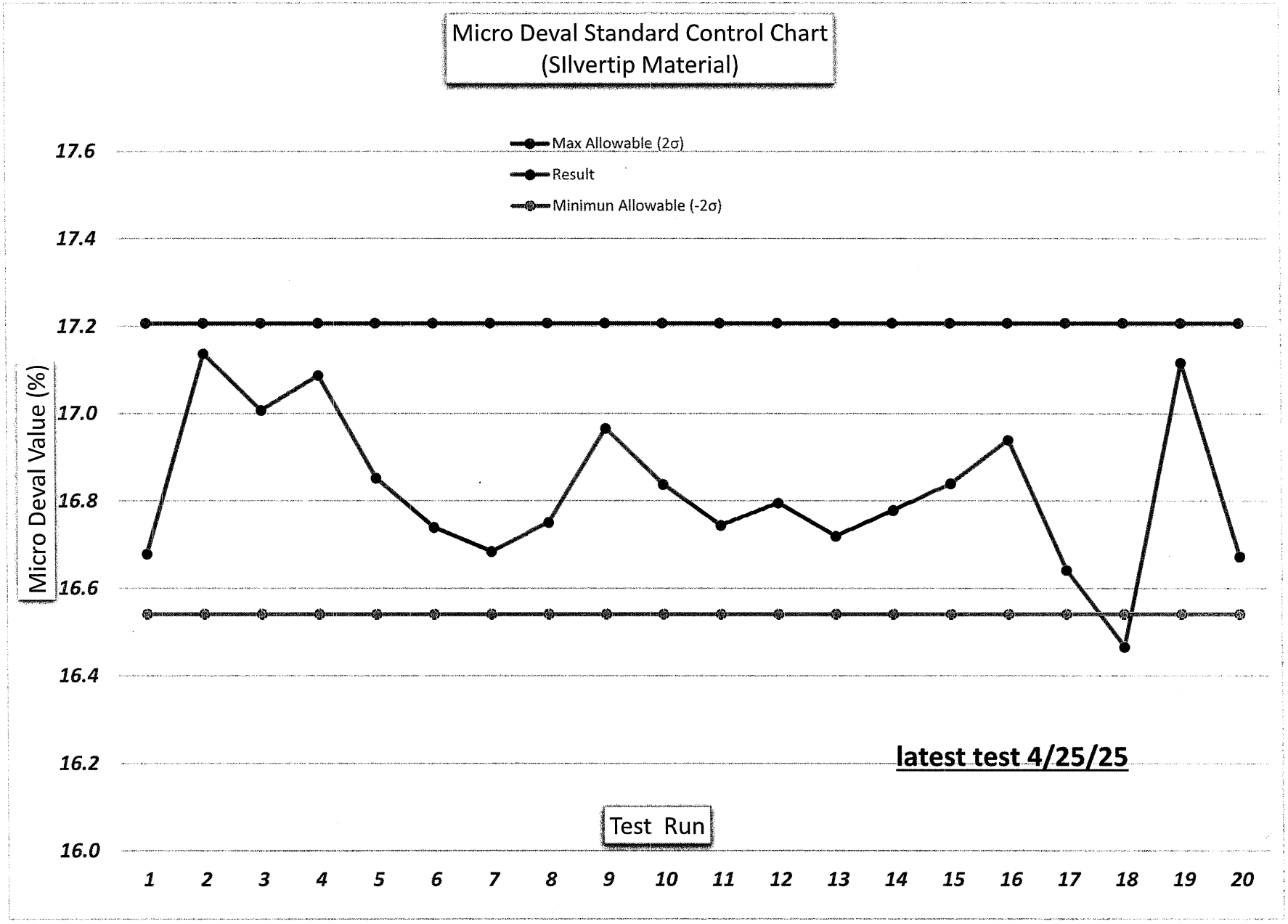
Remarks:

Chart on back.

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature: _____
Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
17.6
17.4
17.2
17.0
16.8
16.6
16.4
16.2
16.0
Micro Deval Value (%)
latest test 4/25/25
Test Run
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0954**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock Core Samples** Item/Spec No.: Field No.: **FS-02**
Sampled From: **TH25-02, Depth 6-33'** Submitted By: **I. Minnock** Date Sampled: **06/20/2025**
Source: Sampled By: **I. Minnock** Date Received: **07/15/2025**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **07/26/2025**
Examined For: **LA Abrasion, Deg, Micro Deval, Sulfate Soundness, SpG, Gradation** Date Reported: **07/26/2025**

Sieve Analysis	Lab	Specs
	AASHTO T27 & T11	
4"		
3"		
2"		
1 1/2"	**100**	
1"	**92**	
3/4"	**69**	
1/2"	**41**	
3/8"	**32**	
1/4"	**23**	
#4	**19**	
#8	**10**	
#10	**9**	
#16	**6**	
#30	**4**	
#40	**3**	
#50	**2**	
#80		
#100	**2**	
#200*	**1.1**	
.02 mm		
.002 mm		
Fineness Modulus		

	Lab	Specs
% Organic		
% Natural Moisture		
pH of Soil		
% Sticks & Roots		
Dry Unit Weight, pcf		
% Lightweight Particles		
Uncompacted Voids of FA		
Specific Gravity of Soil		
Sand Equivalent		
Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**1**			
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk	**2.799**			
	Agg. Specific Gravity, SSD	**2.809**			
AASHTO T85	Agg. Specific Gravity, App.	**2.826**			
	% Absorption	**0.3**			
AASHTO T96	LA Abrasion, Total % Loss	**12**			
	@ 100 revs % Loss				
ATM 313	Degradation	**85**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**3.1**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture

Single Face			
Double Face			

Atterberg Limits

Liquid Limit			
Plastic Limit			
Plastic Index			

Flat / Elongated

1:3			
1:5			

*Procedure B employed to wash sample per AASHTO T-11

Soil Classification

% +3"	FSV
	AASHTO
81 % Gravel	Unified
18 % Sand	
1 % Silt/Clay	
% Clay	

Remarks:

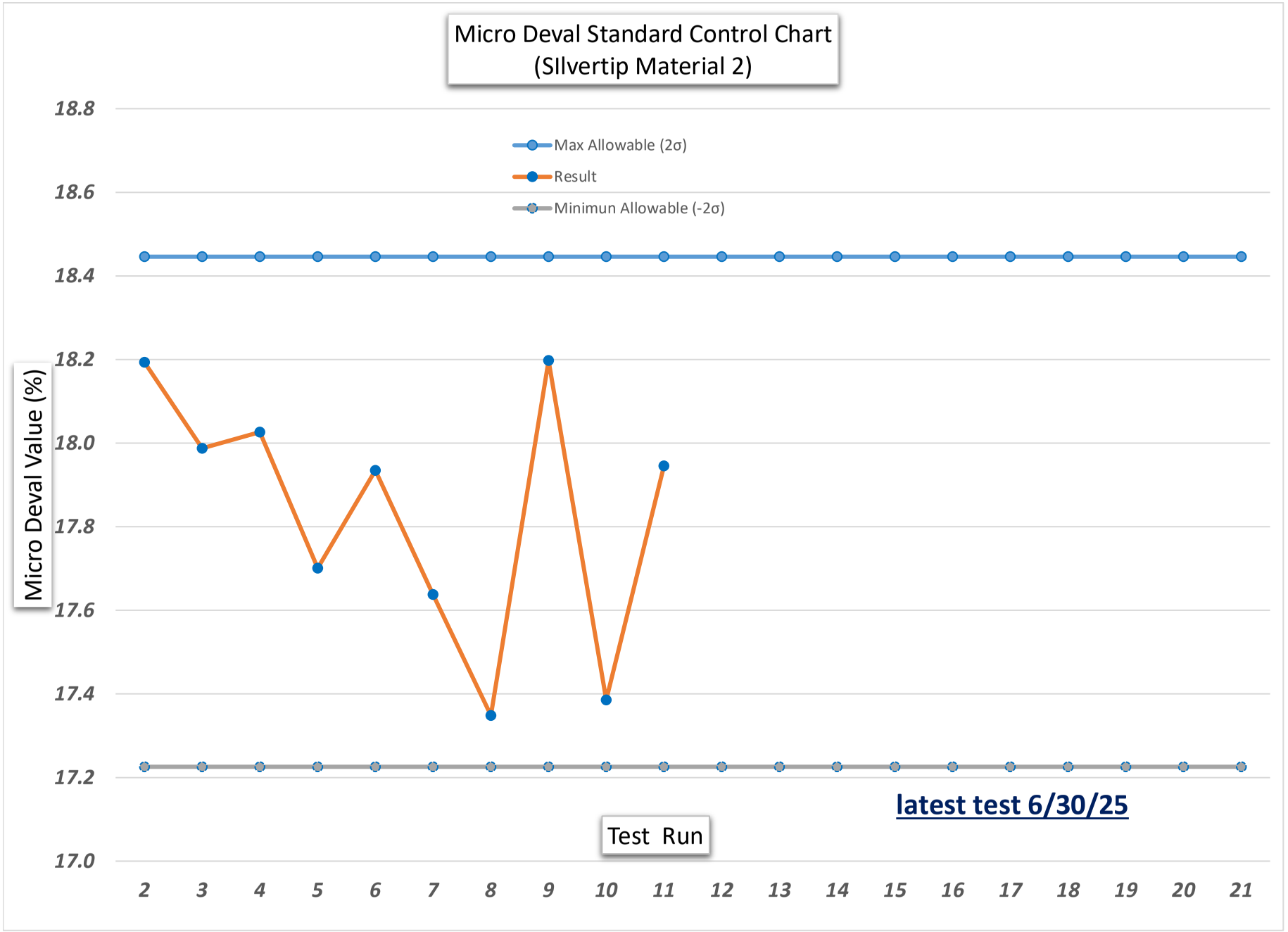
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [ ]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material 2)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
18.8
18.6
18.4
18.2
18.0
17.8
17.6
17.4
17.2
17.0
latest test 6/30/25
Test Run
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0957**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock Core Samples** Item/Spec No.: Field No.: **FS-05**
Sampled From: **TH25-03, Depth 12.5-52.5'** Submitted By: **I. Minnock** Date Sampled: **06/27/2025**
Source: Sampled By: **I. Minnock** Date Received: **07/15/2025**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **07/26/2025**
Examined For: **LA Abrasion, Deg, Micro Deval, Sulfate Soundness, SpG, Gradation** Date Reported: **07/26/2025**

Sieve Analysis	Lab	Specs
	AASHTO T27 & T11	
4"		
3"		
2"		
1 1/2"	**100**	
1"	**92**	
3/4"	**72**	
1/2"	**45**	
3/8"	**35**	
1/4"	**25**	
#4	**20**	
#8	**11**	
#10	**10**	
#16	**7**	
#30	**5**	
#40	**4**	
#50	**3**	
#80		
#100	**2**	
#200*	**1.5**	
.02 mm		
.002 mm		
Fineness Modulus		

	Lab	Specs
% Organic		
% Natural Moisture		
pH of Soil		
% Sticks & Roots		
Dry Unit Weight, pcf		
% Lightweight Particles		
Uncompacted Voids of FA		
Specific Gravity of Soil		
Sand Equivalent		
Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**1**			
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk	**2.794**			
	Agg. Specific Gravity, SSD	**2.803**			
AASHTO T85	Agg. Specific Gravity, App.	**2.818**			
	% Absorption	**0.3**			
AASHTO T96	LA Abrasion, Total % Loss	**11**			
	@ 100 revs % Loss				
ATM 313	Degradation	**68**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**4.1**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec

% Fracture

Single Face	
Double Face	

Atterberg Limits

Liquid Limit	
Plastic Limit	
Plastic Index	

Flat / Elongated

1:3	
1:5	

*Procedure B employed to wash sample per AASHTO T-11

Soil Classification

% +3"	
	FSV
	AASHTO
	Unified
80	% Gravel
18	% Sand
2	% Silt/Clay
	% Clay

Remarks:

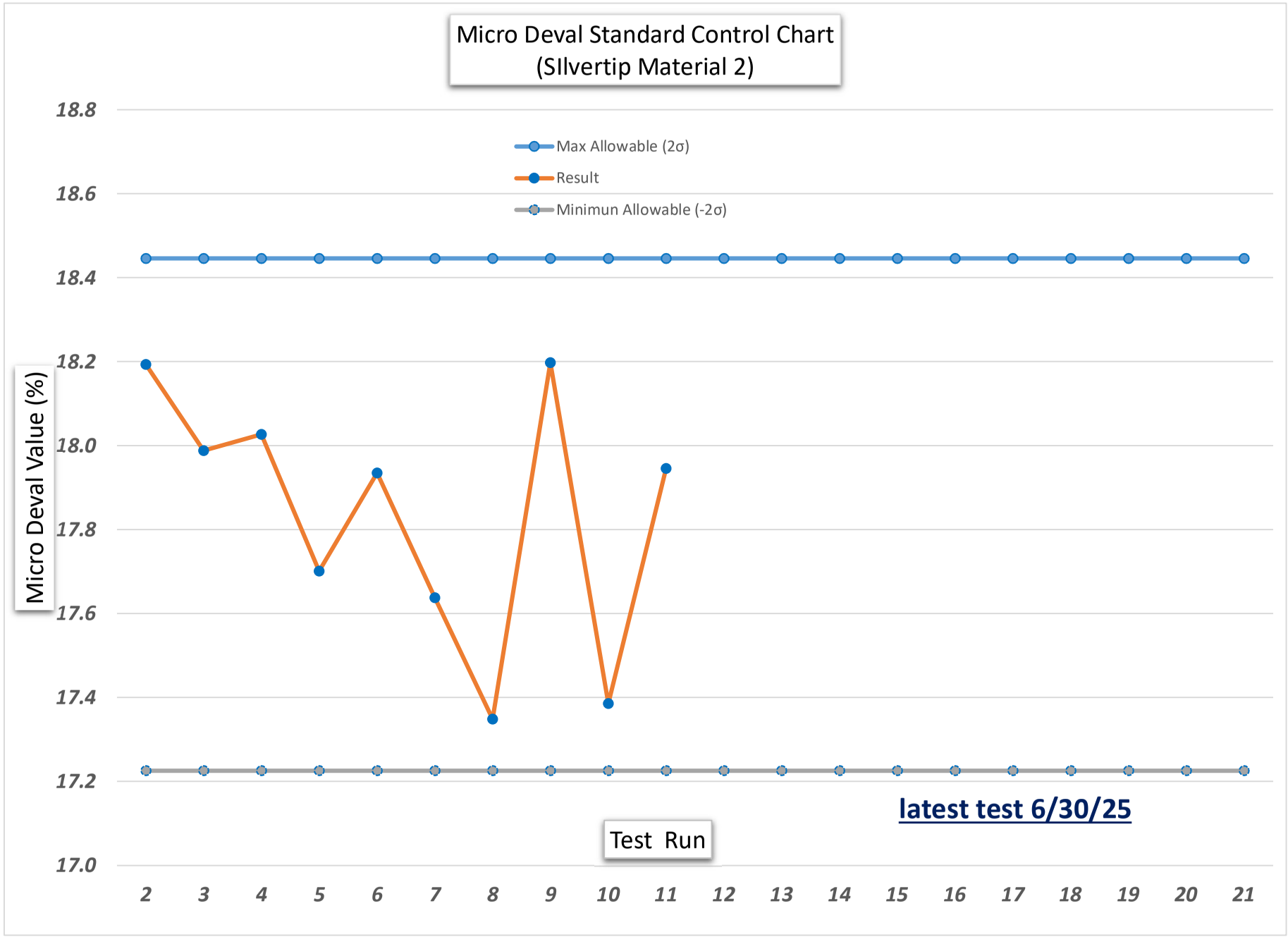
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [ ]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material 2)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
18.8
18.6
18.4
18.2
18.0
17.8
17.6
17.4
17.2
17.0
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Test Run
latest test 6/30/25

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0955**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock Core Samples** Item/Spec No.: Field No.: **FS-03**
Sampled From: **TH25-02, Depth 33-88'** Submitted By: **I. Minnock** Date Sampled: **06/20/2025**
Source: Sampled By: Date Received: **07/15/2025**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **07/26/2025**
Examined For: **LA Abrasion, Deg, Micro Deval, Sulfate Soundness, SpG, Gradation** Date Reported: **07/26/2025**

Sieve Analysis	Lab	Specs
		AASHTO T27 & T11
4"		
3"		
2"		
1 1/2"	**100**	
1"	**91**	
3/4"	**70**	
1/2"	**44**	
3/8"	**36**	
1/4"	**26**	
#4	**21**	
#8	**11**	
#10	**10**	
#16	**6**	
#30	**4**	
#40	**3**	
#50	**2**	
#80		
#100	**2**	
#200*	**1.1**	
.02 mm		
.002 mm		
Fineness Modulus		

% Fracture
- Single Face
- Double Face

Atterberg Limits
- Liquid Limit
- Plastic Limit
- Plastic Index

Flat / Elongated
- 1:3
- 1:5

*Procedure B employed to wash sample per AASHTO T-11

		Lab	Specs
	% Organic		
	% Natural Moisture		
	pH of Soil		
	% Sticks & Roots		
	Dry Unit Weight, pcf		
	% Lightweight Particles		
	Uncompacted Voids of FA		
	Specific Gravity of Soil		
	Sand Equivalent		
	Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**0**			
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk	**2.800**			
	Agg. Specific Gravity, SSD	**2.808**			
AASHTO T85	Agg. Specific Gravity, App.	**2.825**			
	% Absorption	**0.3**			
AASHTO T96	LA Abrasion, Total % Loss	**12**			
	@ 100 revs % Loss				
ATM 313	Degradation	**85**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**2.6**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

Soil Classification

% +3"	FSV
	AASHTO
79 % Gravel	Unified
20 % Sand	
1 % Silt/Clay	
% Clay	

Remarks:

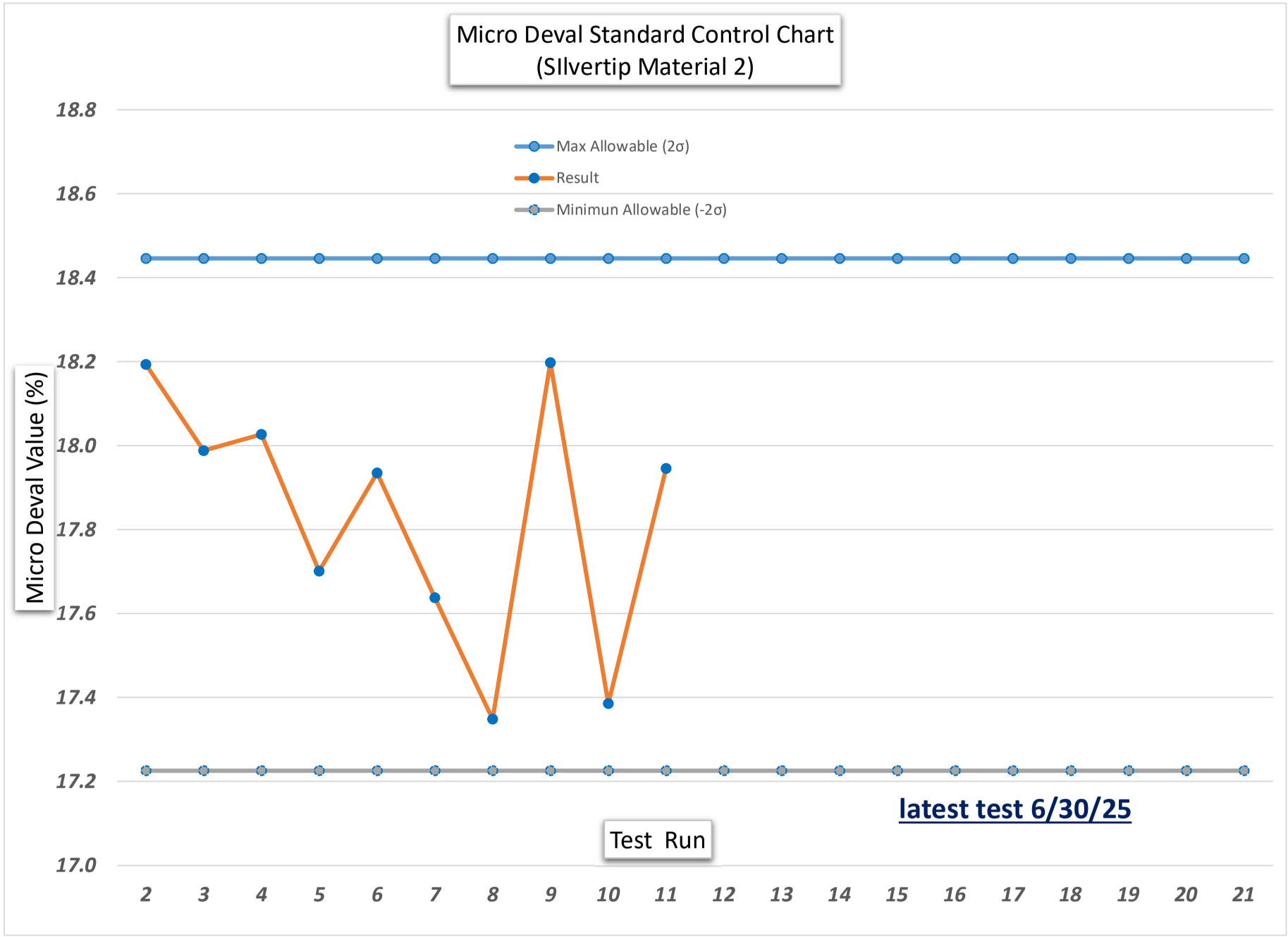
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material 2)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
18.8
18.6
18.4
18.2
18.0
17.8
17.6
17.4
17.2
17.0
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Test Run
latest test 6/30/25

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab

5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0958**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock Core Samples** Item/Spec No.: Field No.: **FS-06**
Sampled From: **TH25-03, Depth 52.5-104'** Submitted By: **I. Minnock** Date Sampled: **06/27/2025**
Source: Sampled By: Date Received: **07/15/2025**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **07/26/2025**
Examined For: **LA Abrasion, Deg, Micro Deval, Sulfate Soundness, SpG, Gradation** Date Reported: **07/26/2025**

Sieve Analysis	Lab	Specs
	AASHTO T27 & T11	
4"		
3"		
2"		
1 1/2"	**100**	
1"	**91**	
3/4"	**69**	
1/2"	**39**	
3/8"	**29**	
1/4"	**20**	
#4	**15**	
#8	**9**	
#10	**8**	
#16	**6**	
#30	**4**	
#40	**3**	
#50	**3**	
#80		
#100	**2**	
#200*	**1.4**	
.02 mm		
.002 mm		
Fineness Modulus		

	Lab	Specs
% Organic		
% Natural Moisture		
pH of Soil		
% Sticks & Roots		
Dry Unit Weight, pcf		
% Lightweight Particles		
Uncompacted Voids of FA		
Specific Gravity of Soil		
Sand Equivalent		
Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**2**			
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk	**2.787**			
	Agg. Specific Gravity, SSD	**2.798**			
AASHTO T85	Agg. Specific Gravity, App.	**2.817**			
	% Absorption	**0.4**			
AASHTO T96	LA Abrasion, Total % Loss	**11**			
	@ 100 revs % Loss				
ATM 313	Degradation	**39**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**15.5**	NMAS Table 2		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture

Single Face			
Double Face			

Atterberg Limits

Liquid Limit			
Plastic Limit			
Plastic Index			

Flat / Elongated

1:3			
1:5			

*Procedure B employed to wash sample per AASHTO T-11

Soil Classification

% +3"	FSV
	AASHTO
85 % Gravel	Unified
14 % Sand	
1 % Silt/Clay	
% Clay	

Remarks:

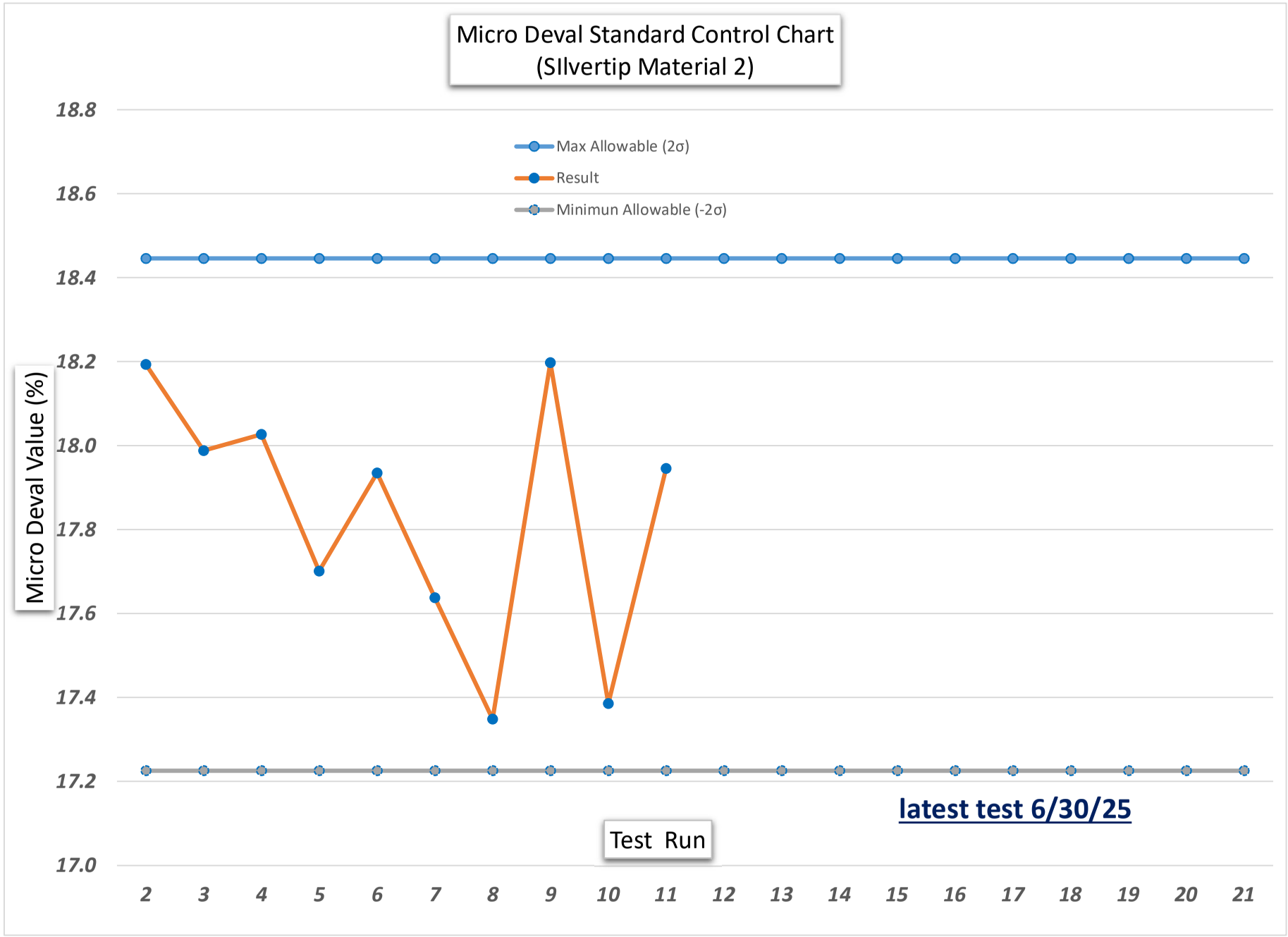
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material 2)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
18.8
18.6
18.4
18.2
18.0
17.8
17.6
17.4
17.2
17.0
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Test Run
latest test 6/30/25

State of Alaska
Department of Transportation & Public Facilities
Central Materials Lab
5750 East Tudor Road
Anchorage, AK 99507
Phone (907) 269-6200 FAX (907) 269-6201

Laboratory Report

Preconstruction

Laboratory No.: **2025A-0956**

Name: **Takotna Airport Rehabilitation** Project No.: **00805**
Sample: **Rock Core Samples** Item/Spec No.: Field No.: **FS-04**
Sampled From: **TH25-02, Depth 88-100'** Submitted By: **I. Minnock** Date Sampled: **06/20/2025**
Source: Sampled By: Date Received: **07/15/2025**
Location: **Takotna Airport** Quantity Represented: **As Required** Date Completed: **08/04/2025**
Examined For: **LA Abrasion, Deg, Micro Deval, Sulfate Soundness, SpG, Gradation** Date Reported: **08/04/2025**

Sieve Analysis	Lab	Specs
	AASHTO T27 & T11	
4"		
3"		
2"		
1 1/2"	**100**	
1"	**90**	
3/4"	**65**	
1/2"	**40**	
3/8"	**30**	
1/4"	**21**	
#4	**17**	
#8	**11**	
#10	**9**	
#16	**7**	
#30	**4**	
#40	**3**	
#50	**3**	
#80		
#100	**2**	
#200*	**1.2**	
.02 mm		
.002 mm		
Fineness Modulus		

	Lab	Specs
% Organic		
% Natural Moisture		
pH of Soil		
% Sticks & Roots		
Dry Unit Weight, pcf		
% Lightweight Particles		
Uncompacted Voids of FA		
Specific Gravity of Soil		
Sand Equivalent		
Expansion Breakdown		

		Coarse Lab	Coarse Specs	Fine Lab	Fine Specs
	Friable Particles				
AASHTO T104	Sulfate Soundness, % Loss	**0**			
(Recycled Sodium Sulfate)	Agg. Specific Gravity, Bulk	**2.800**			
	Agg. Specific Gravity, SSD	**2.809**			
AASHTO T85	Agg. Specific Gravity, App.	**2.824**			
	% Absorption	**0.3**			
AASHTO T96	LA Abrasion, Total % Loss	**12**			
	@ 100 revs % Loss				
ATM 313	Degradation	**84**			
	Nordic Abrasion				
AASHTO T327	Micro Deval	**3.1**	NMAS Table1		
	Organic Impurities				

Mortar Making Properties of Sand - Compressive Strength

Unwashed	Washed	Ratio	Spec
			95 min

% Fracture

Single Face			
Double Face			

Atterberg Limits

Liquid Limit			
Plastic Limit			
Plastic Index			

Flat / Elongated

1:3			
1:5			

*Procedure B employed to wash sample per AASHTO T-11

Soil Classification

% +3"	FSV
83 % Gravel	AASHTO
16 % Sand	Unified
1 % Silt/Clay	
% Clay	

Remarks:

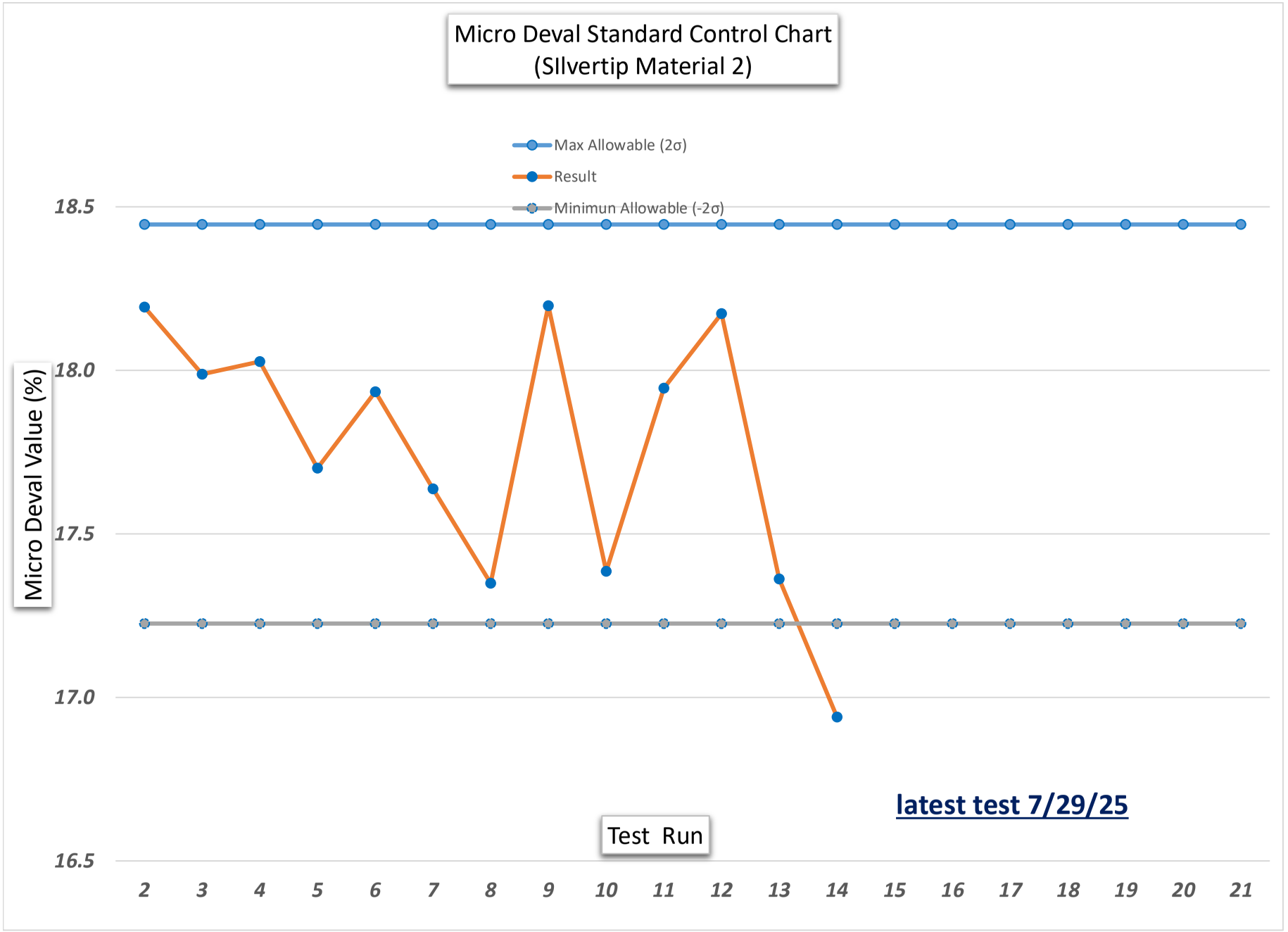
Chart on back

D2 The Material as Submitted Conforms to Specifications
Yes [ ] No [ ] NA [X]

THE TEST RESULTS ARE ONLY REPRESENTATIVE OF THE MATERIAL AS SUBMITTED

Signature:

Mike Yerkes, P.E.
Regional Materials Engineer


Micro Deval Standard Control Chart
(SIlvertip Material 2)
Max Allowable (2σ)
Result
Minimun Allowable (-2σ)
Micro Deval Value (%)
18.5
18.0
17.5
17.0
16.5
Test Run
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
latest test 7/29/25

Petrographic Report # PM2

September 17, 2025

for

Ian Minnock
Central Region Materials
Alaska DOT + PF
5750 E Tudor Rd
Anchorage, AK 99507

by

Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions - v. 250108

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

The term “leucoxene” is used for fine grained [magnetite/ilmenite ± sphene ± rutile] that is white in oblique incident reflected light when a polished thin section is not available.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B μm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm; 51 x 76 mm; or 1" round; (2) Finish: standard lapping (STD); or polished (POL); (3) Stains: sodium cobaltinitrite (SCN); alizarin red S + potassium ferricyanide (ARSPF); and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none; permanent Loctite acrylic (PLA); or permanent Norland acrylic (PNA).

Photomicrograph captions contain the following items of information in consecutive order separated by forward slashes: (1) sample identifier; (2) JPG image file name composed of concatenated [job identification code + sequence number]; (3) illumination type; and (4) field of view (FOV). For illumination types: "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates oblique incident illumination. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight. Unless otherwise noted, sequential images are taken in XPL and PPL of a single field of view.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation, e.g., Quartz, Plagioclase, K-feldspar, sericite, biotite, ferroan calcite, actinolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); carbonates are classified according to Folk (1959); and metamorphic rocks classified according to IUGS (Fettes and Desmons, 2011).

The term “protolith” is used for the interpreted primary lithology. The term “precursor” is used for a secondary lithology from which the current rock was derived.

SAMPLE # **TH25-02-8** September 17, 2025

ROCK NAME ALTERED DIORITE - probably formed by alteration (secondary phlogopite + K-feldspar + actinolite) of very fine, weakly porphyritic diorite intrusive protolith.

MINERALS Phlogopite (36% + K-feldspar (36%) + plagioclase (26%) + clinopyroxene (2%) + opaques (1%) + actinolite (<1%).

TEXTURES Intrusive igneous protolith.

Phenocrysts (1%)

Plagioclase (1%) are weakly altered to phlogopite..

Xenoliths/Xenocrysts (0%) were not observed.

Groundmass (99%) is dominated by [plagioclase moderately altered to K-feldspar] + [clinopyroxene strongly altered to phlogopite] + opaques.

Vesicles (0%) were not observed.

ALTERATION No other alteration features were observed.

SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top 2/3) + ARSPF (none) Cover: PLN

IMAGES TH25-02-8 PM2-001.jpg/XPL/27 x 46 mm ALTERED DIORITE showing typical appearance.

TH25-02-8 PM2-002.jpg/PPL/27 x 46 mm Same.

TH25-02-8 PM2-009.jpg/XPL/4.00 x 5.83 mm ALTERED DIORITE showing typical appearance.

TH25-02-8 PM2-010.jpg/PPL/4.00 x 5.83 mm Same.

SAMPLE # **TH25-02-46** September 17, 2025

ROCK NAME ALTERED BASALT/DIORITE BRECCIA -- probably formed by brecciation and alteration (secondary phlogopite + K-feldspar + actinolite) of fine grained, weakly porphyritic [basalt and diorite].

MINERALS Phlogopite (40% + K-feldspar (30%) + plagioclase (20%) + clinopyroxene (5%) + opaques (3%) + actinolite (2%) + carbonate (<1%).

TEXTURES Brecciated.

Framework Grains (?%)

Weakly Porphyritic Basalt with very fine groundmass that is dominantly altered to very fine grained phlogopite.

Weakly Porphyritic Diorite with a distinctly coarser groundmass which is dominated by [plagioclase strongly altered to K-feldspar] + [clinopyroxene (?) strongly altered to phlogopite].

Matrix (?%) is composed of the comminuted equivalent of the framework grains.

Cement (?%) is dominated by phlogopite + K-feldspar.

ALTERATION Alteration features of indeterminate relative ages: (1) hydrothermal alteration of groundmass dominated by phlogopite ± K-feldspar; and (2) brecciation (mechanism indeterminate).

SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top 2/3) + ARSPF (none) Cover: PLN

IMAGES TH25-02-46 PM2-003.jpg/XPL/27 x 46 mm ALTERED BASALT/DIORITE BRECCIA showing typical appearance.

TH25-02-46 PM2-004.jpg/PPL/27 x 46 mm Same.

TH25-02-46 PM2-012.jpg/XPL/4.00 x 5.83 mm ALTERED BASALT/DIORITE BRECCIA showing typical appearance.

TH25-02-46 PM2-011.jpg/PPL/4.00 x 5.83 mm Same.

SAMPLE # **TH25-02-66** September 17, 2025

ROCK NAME ALTERED BASALT - probably formed by alteration (secondary phlogopite + K-feldspar + actinolite + carbonate) of very fine, weakly porphyritic diorite intrusive protolith.

MINERALS Phlogopite (69% + plagioclase (15%) + K-feldspar (10%) + clinopyroxene (5%) + actinolite (1%). + carbonate (<1%) + opaques (<1%).

TEXTURES Extrusive igneous protolith.

Phenocrysts (5%)

Plagioclase (5%) are weakly altered to phlogopite..

Xenoliths/Xenocrysts (0%) were not observed.

Groundmass (95%) is dominated by [plagioclase weakly altered to K-feldspar] + [clinopyroxene strongly altered to phlogopite] + opaques.

Vesicles (0%) were not observed.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) veins of phlogopite + actinolite + opaques.

Alteration features of indeterminate relative ages: (1)

SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top 2/3) + ARSPF (none) Cover: PLN

IMAGES TH25-02-66 PM2-005.jpg/XPL/27 x 46 mm ALTERED BASALT showing typical appearance.

TH25-02-66 PM2-006.jpg/PPL/27 x 46 mm Same.

TH25-02-66 PM2-013.jpg/XPL/4.00 x 5.83 mm ALTERED BASALT showing typical appearance.

TH25-02-66 PM2-014.jpg/PPL/4.00 x 5.83 mm Same.

SAMPLE # **TH25-03-44** September 17, 2025

ROCK NAME ALTERED DIORITE - probably formed by alteration (secondary phlogopite + K-feldspar + actinolite) of very fine, weakly porphyritic diorite intrusive protolith.

MINERALS Phlogopite (30% + K-feldspar (30%) + plagioclase (30%) + clinopyroxene (5%) + actinolite (5%) + opaques (<1%).

TEXTURES Intrusive igneous protolith.

Phenocrysts (1%)

Plagioclase (1%) are weakly altered to phlogopite..

Xenoliths/Xenocrysts (0%) were not observed.

Groundmass (99%) is dominated by [plagioclase moderately altered to K-feldspar] + [clinopyroxene strongly altered to phlogopite] + opaques.

Vesicles (0%) were not observed.

ALTERATION No other alteration features were observed.

SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top 2/3) + ARSPF (none) Cover: PLN

IMAGES TH25-03-44 PM2-007.jpg/XPL/27 x 46 mm ALTERED DIORITE showing typical appearance.

TH25-03-44 PM2-008.jpg/PPL/27 x 46 mm Same.

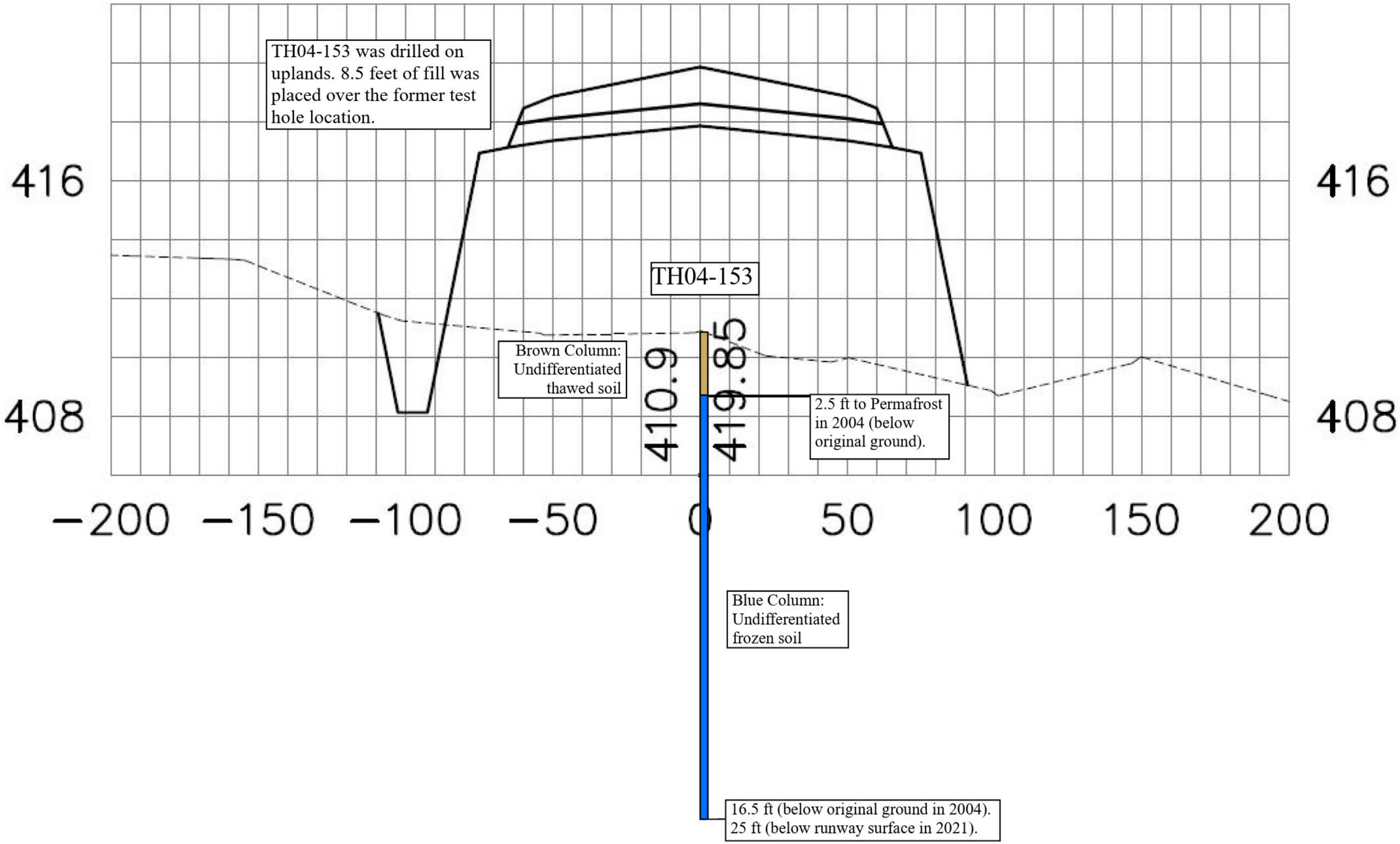
TH25-03-44 PM2-015.jpg/XPL/4.00 x 5.83 mm ALTERED DIORITE showing typical appearance.

TH25-03-44 PM2-016.jpg/PPL/4.00 x 5.83 mm Same.

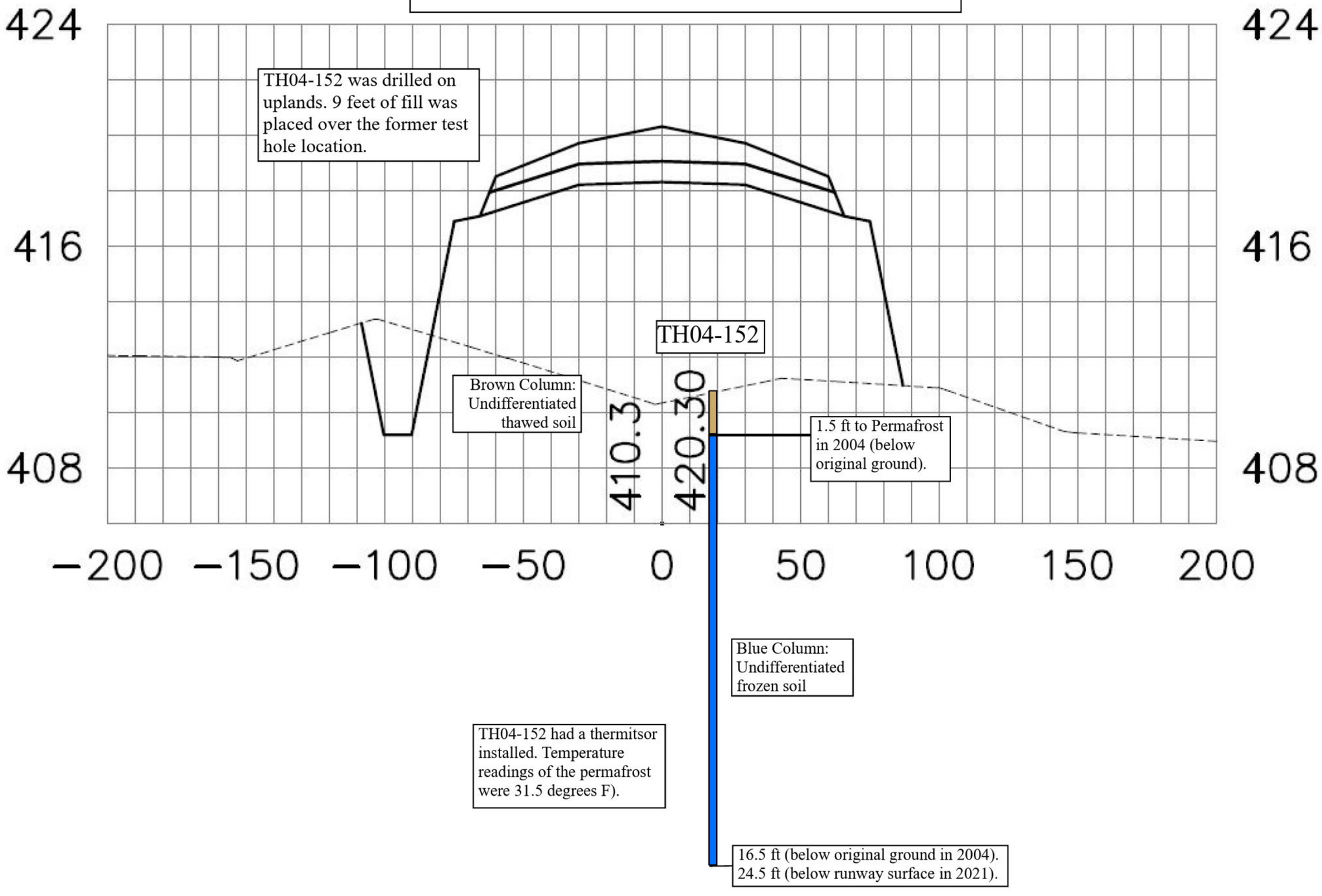
APPENDIX D

RUNWAY CROSS SECTIONS (ANNOTATED)

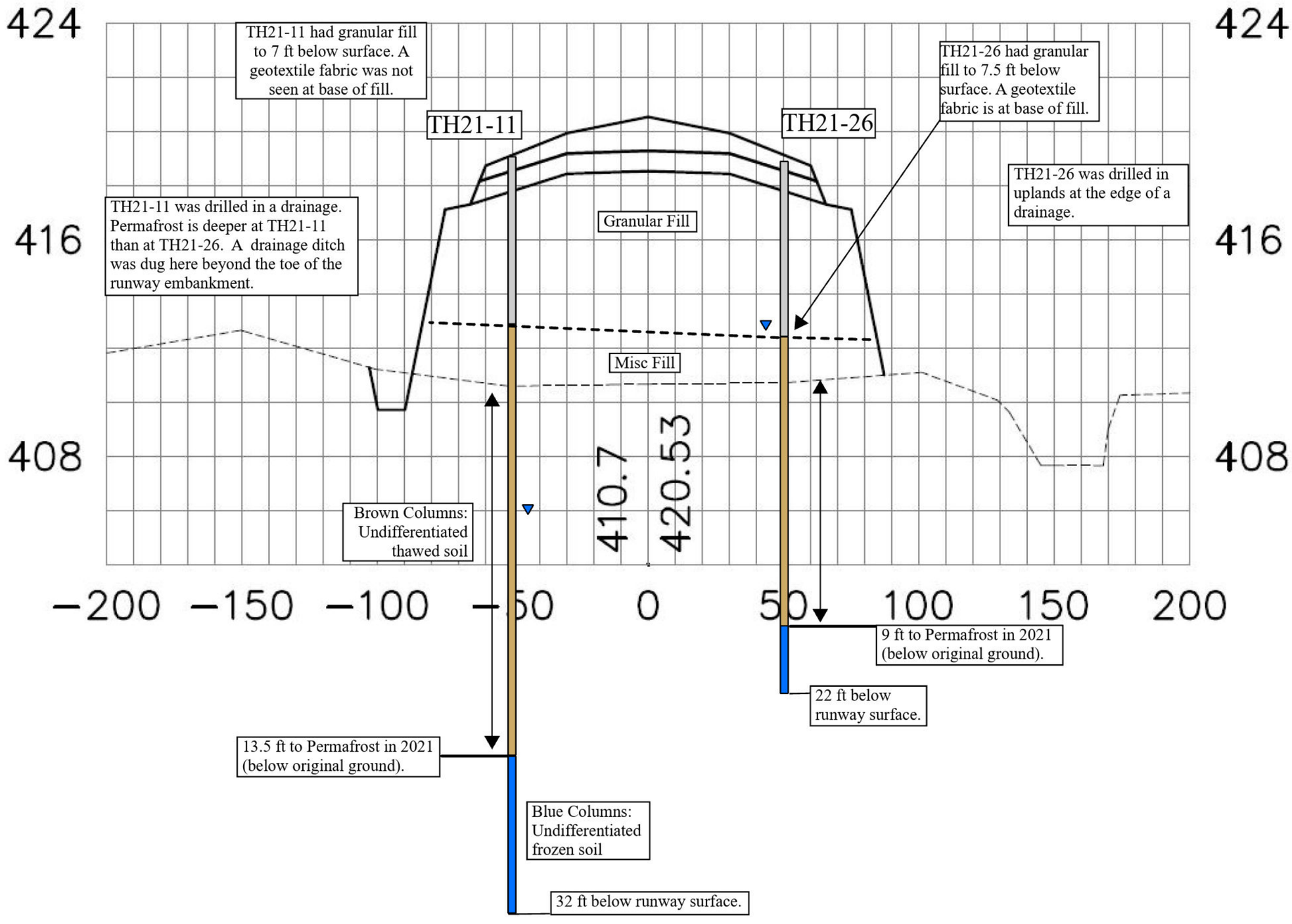
Takotna Airport Runway
Cross Section 99+00



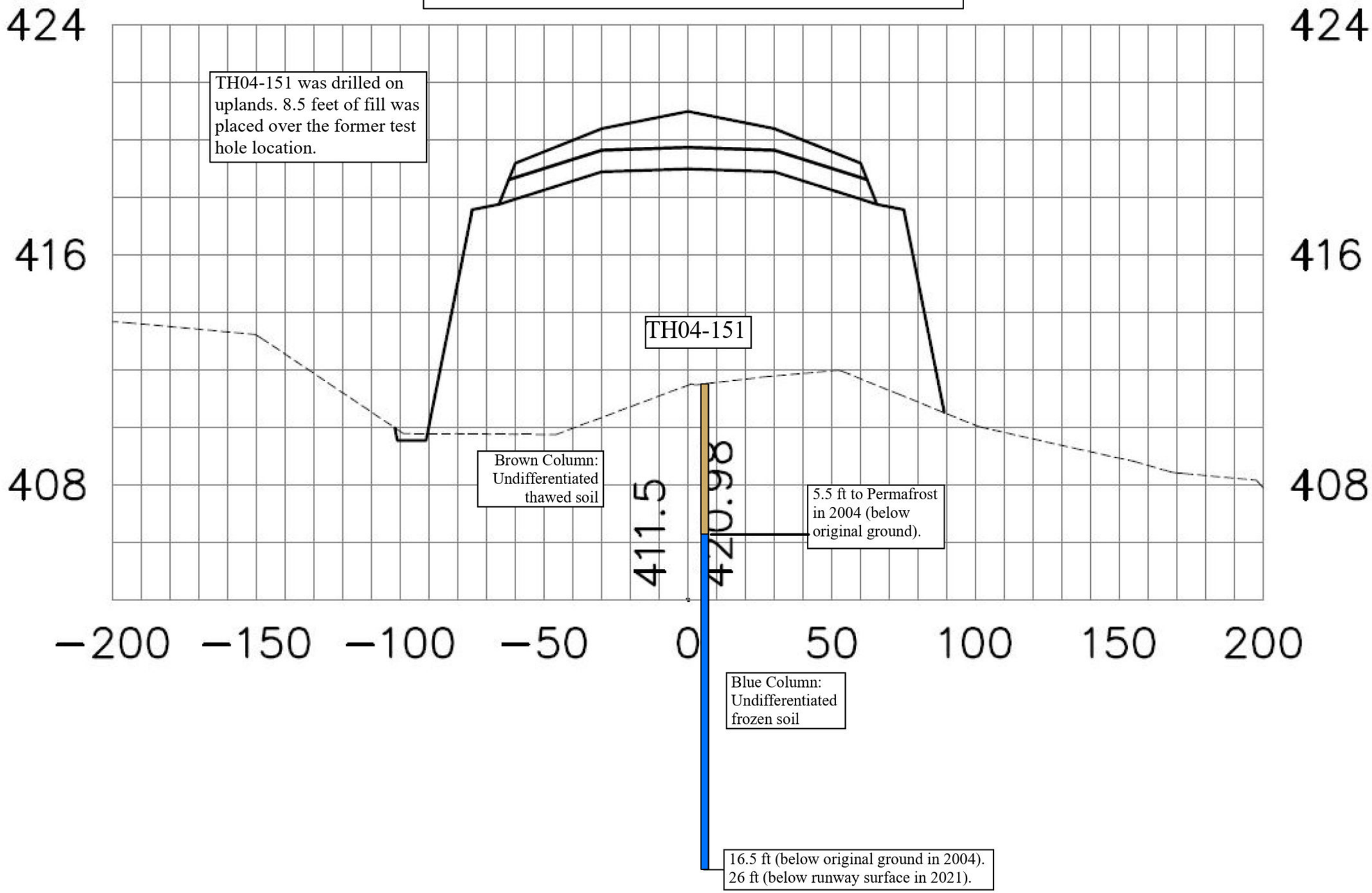
Takotna Airport Runway
Cross Section 102+00



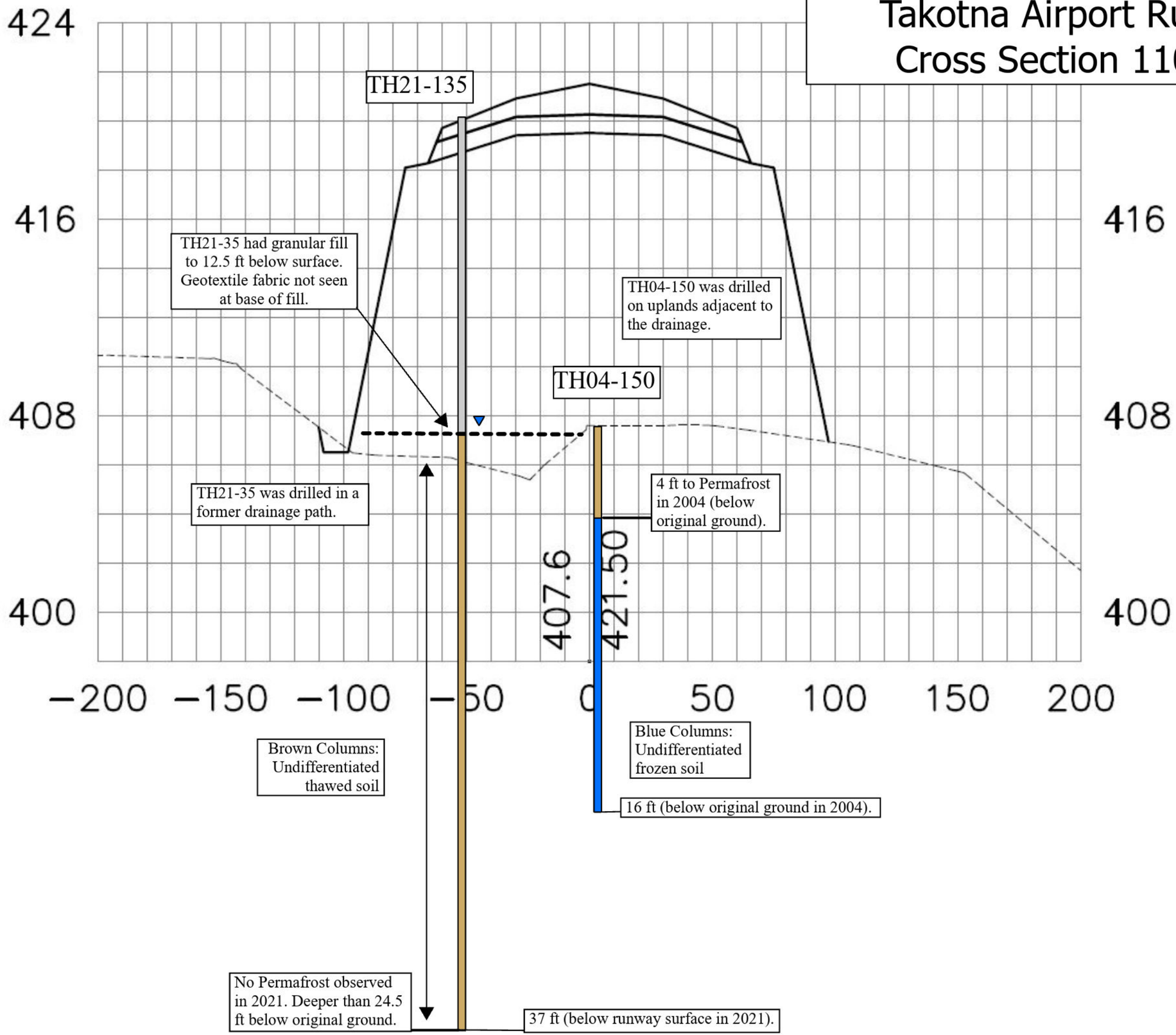
Takotna Airport Runway
Cross Section 103+50



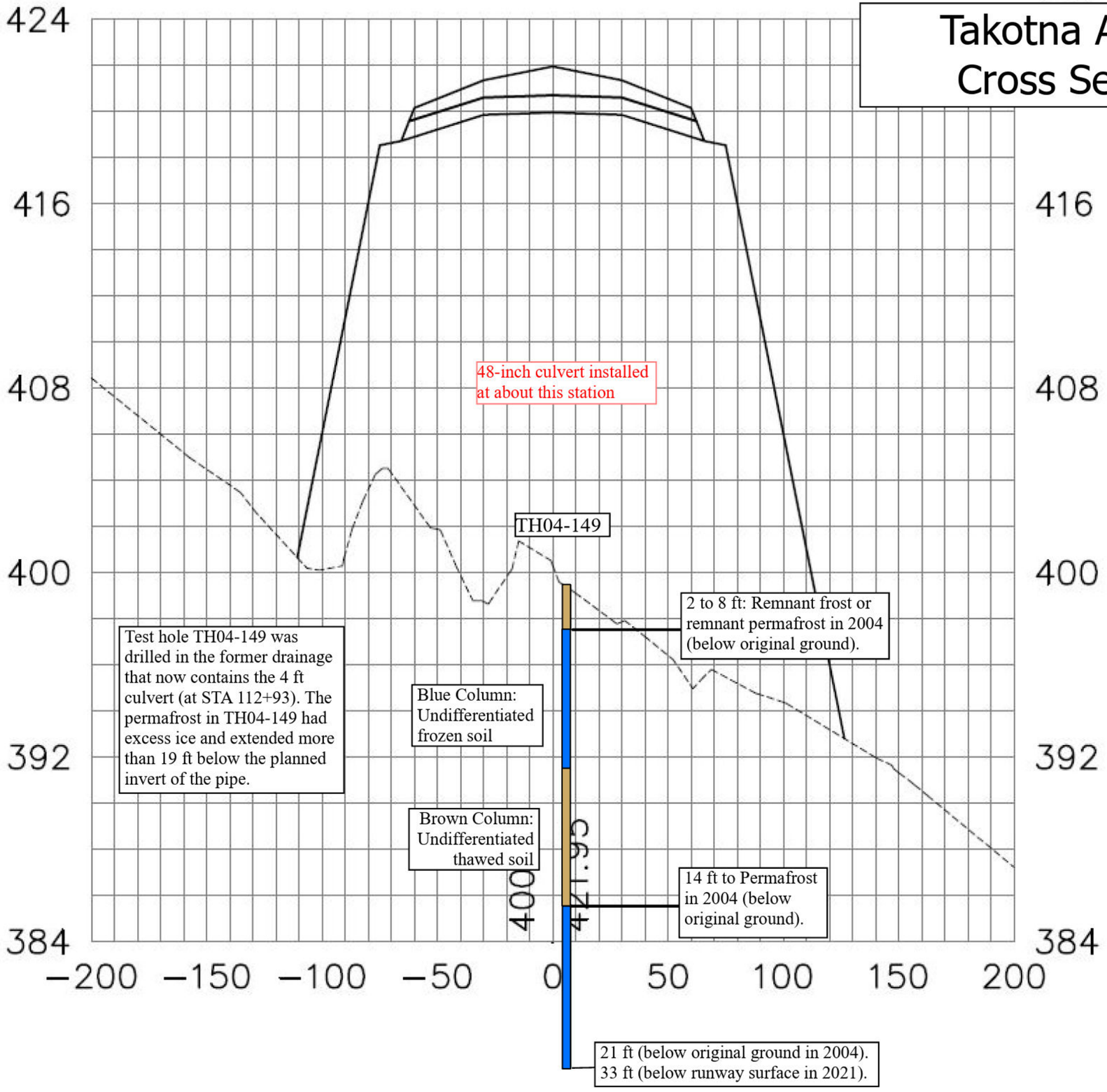
Takotna Airport Runway
Cross Section 106+50



Takotna Airport Runway Cross Section 110+00



Takotna Airport Runway Cross Section 113+00



Takotna Airport Runway
Cross Section 115+50

424
416
408
400
392

TH21-07

TH21-07 had granular fill to 13 ft below surface. Geotextile fabric at base of fill.

TH04-148 was drilled in a bog.

TH04-148

TH21-07 was drilled in uplands. It had a 4 ft thick layer of peat below the gravel fill. Permafrost is below this peat layer.

Brown Columns: Undifferentiated thawed soil

8 ft to Permafrost in 2021 (below granular fill).

11 ft to Permafrost in 2004 (below original ground).

27 ft (below current runway surface).

Blue Columns: Undifferentiated frozen soil

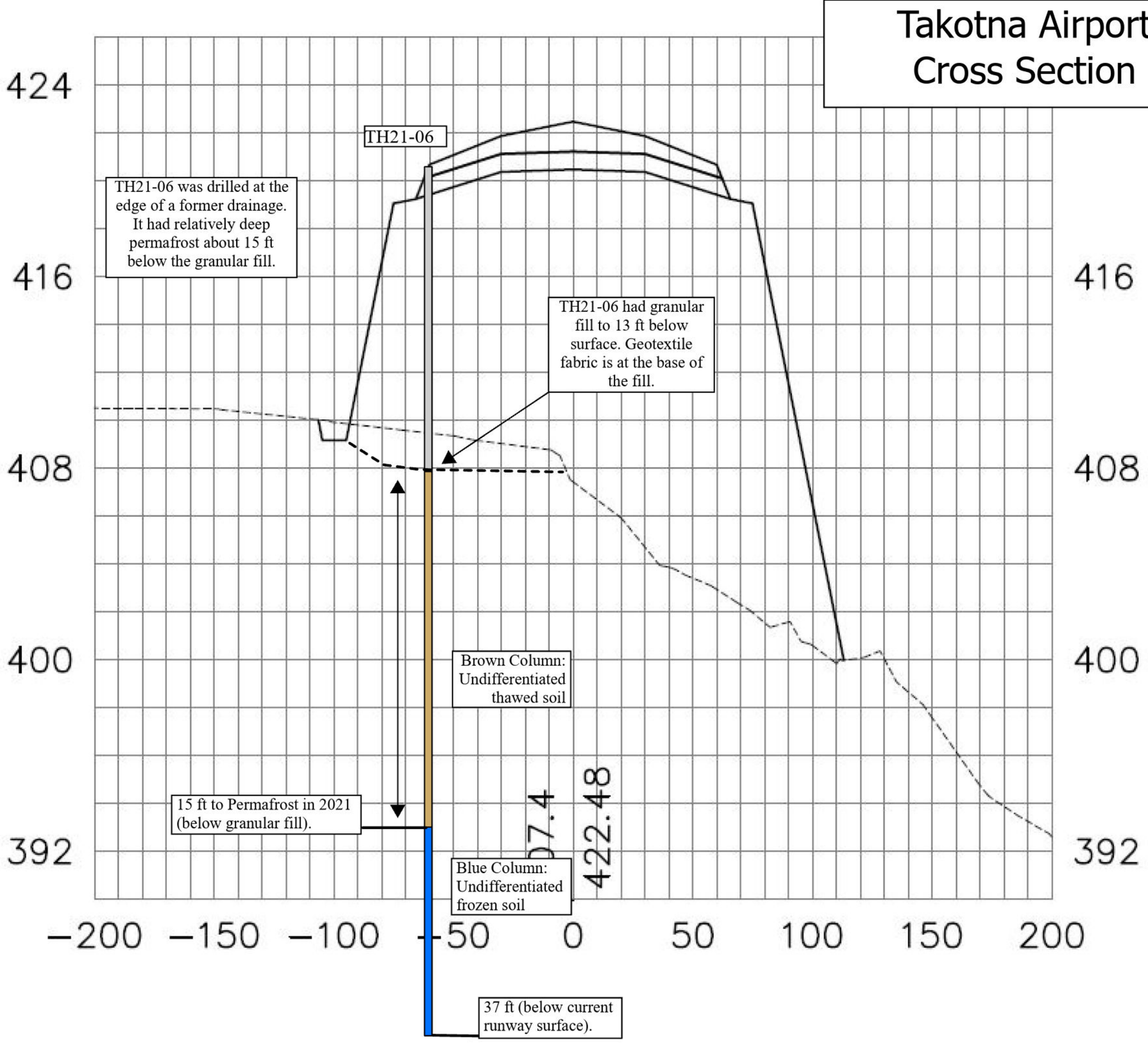
408.8

422.33

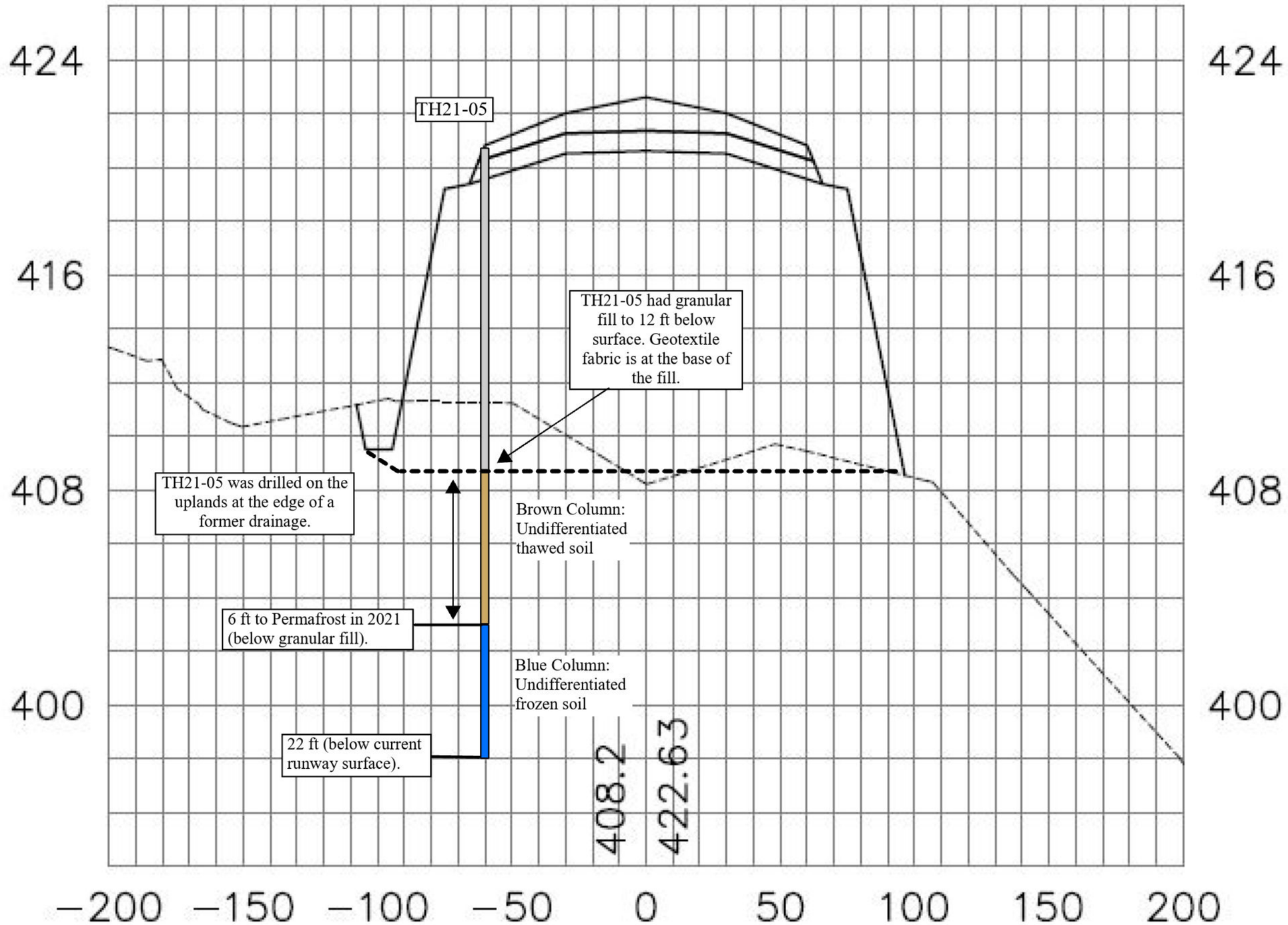
31 ft (below current runway surface).

−200 −150 −100 −50 0 50 100 150 200

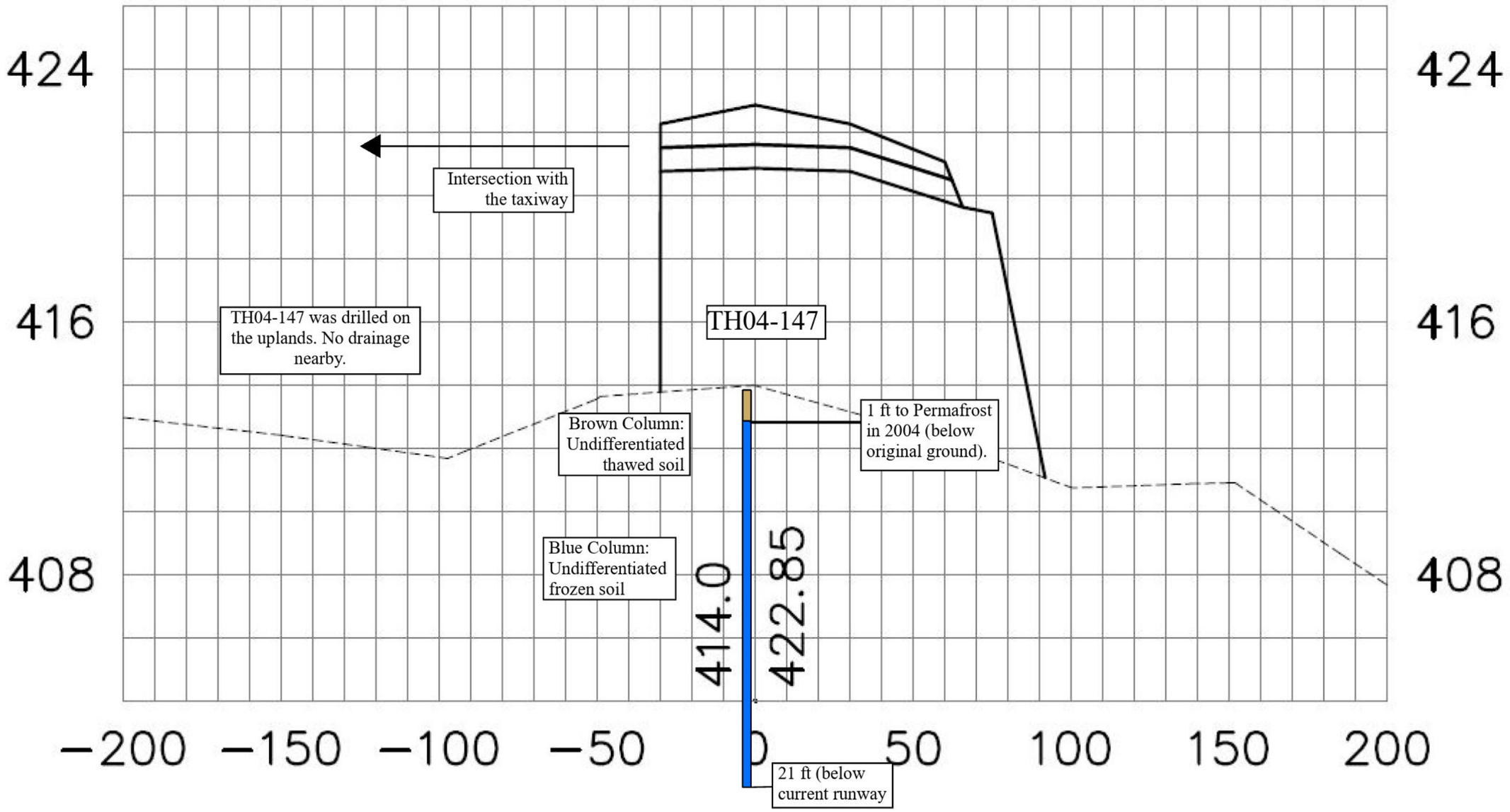
Takotna Airport Runway
Cross Section 116+50



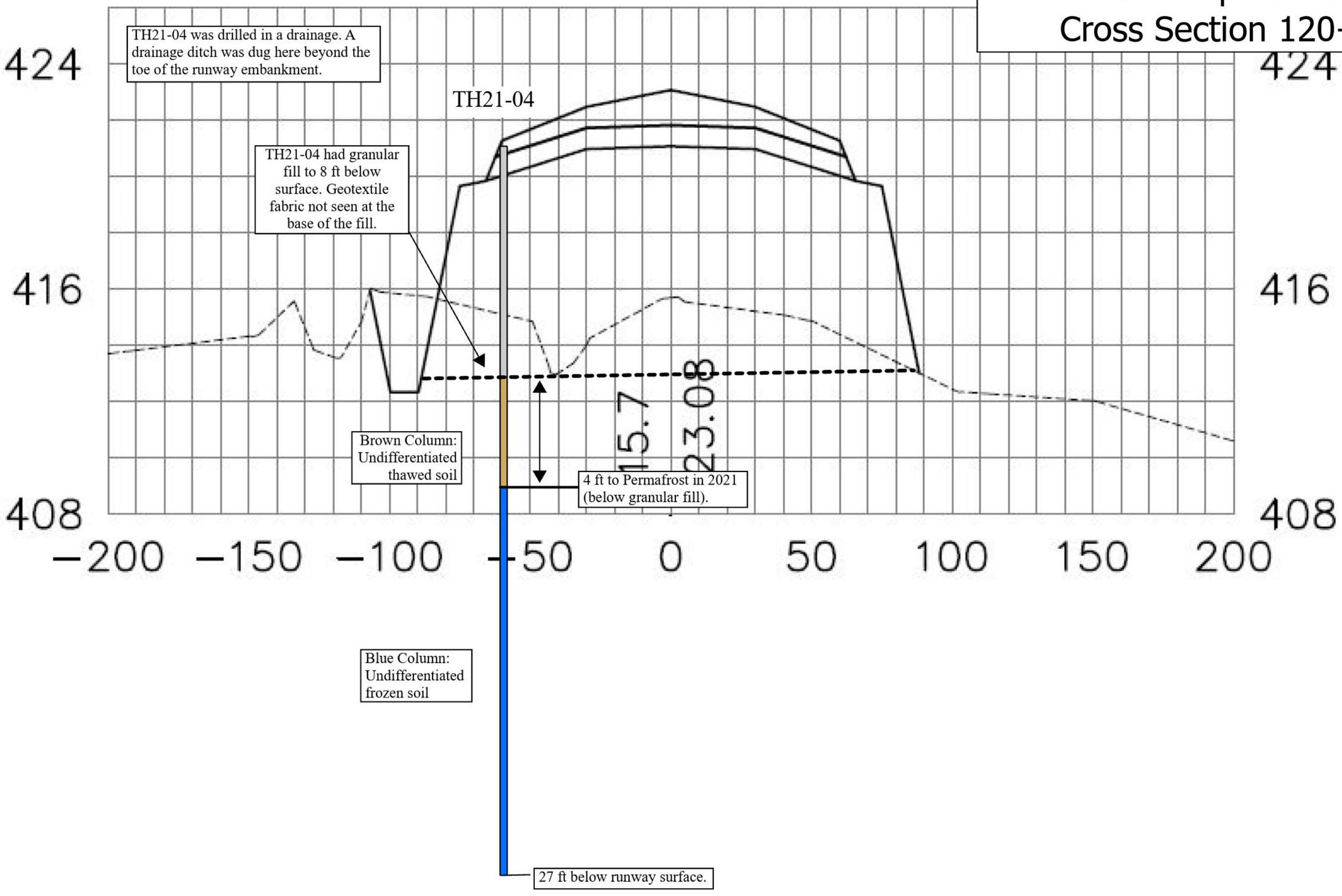
Takotna Airport Runway
Cross Section 117+50



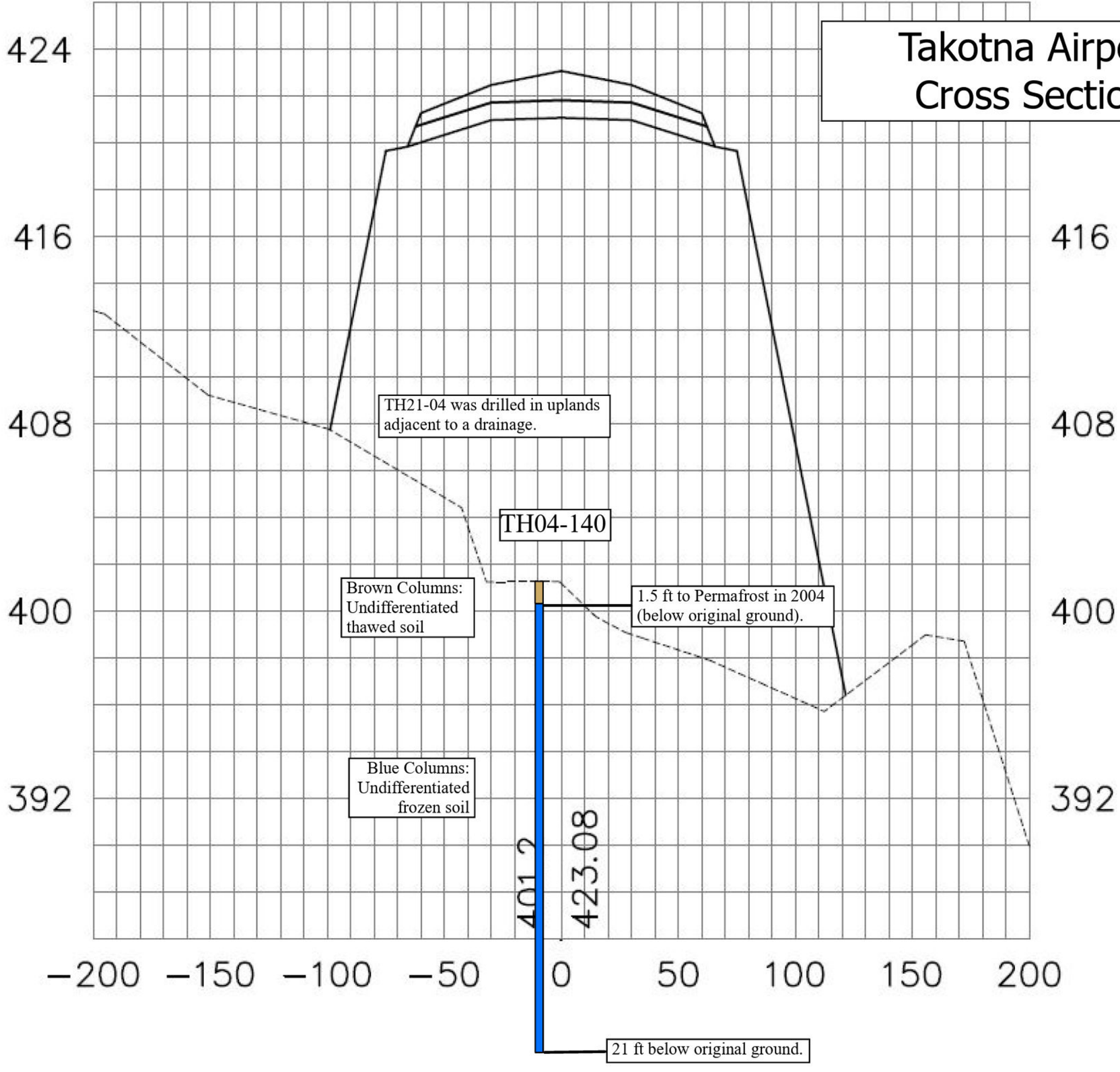
Takotna Airport Runway
Cross Section 119+00



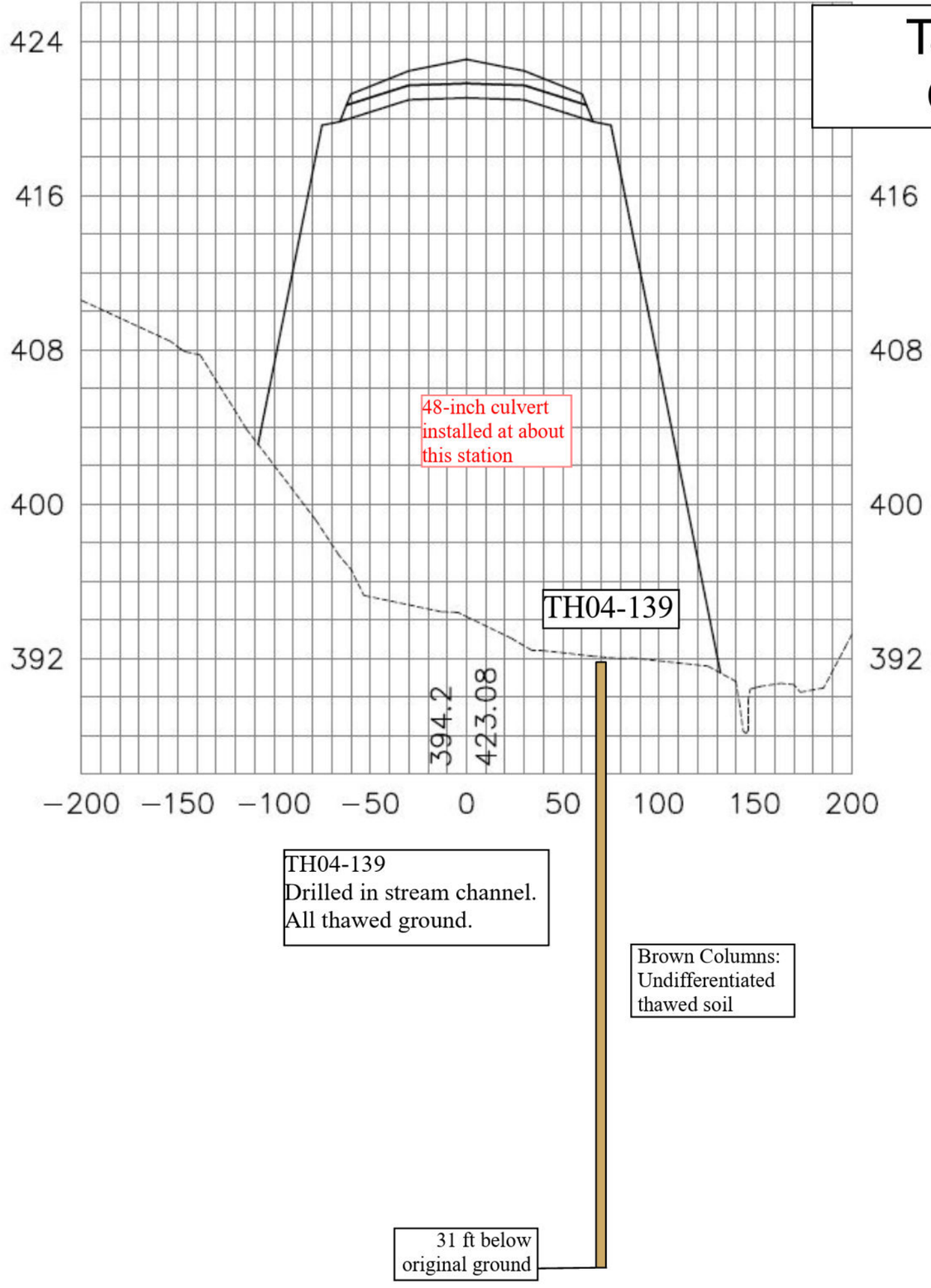
Takotna Airport Runway
Cross Section 120+50



Takotna Airport Runway
Cross Section 122+50



Takotna Airport Runway
Cross Section 123+00

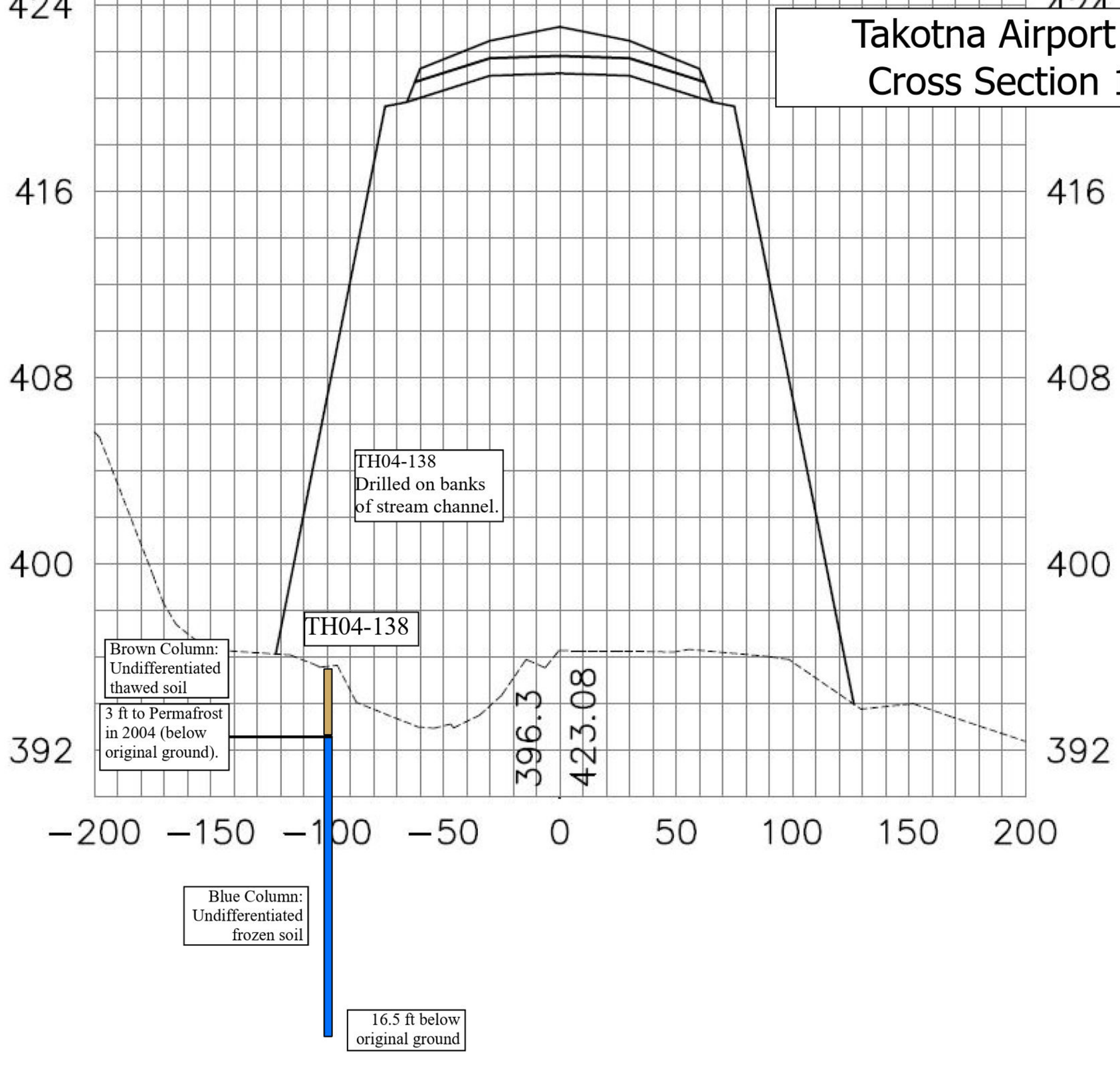


TH04-139
Drilled in stream channel.
All thawed ground.

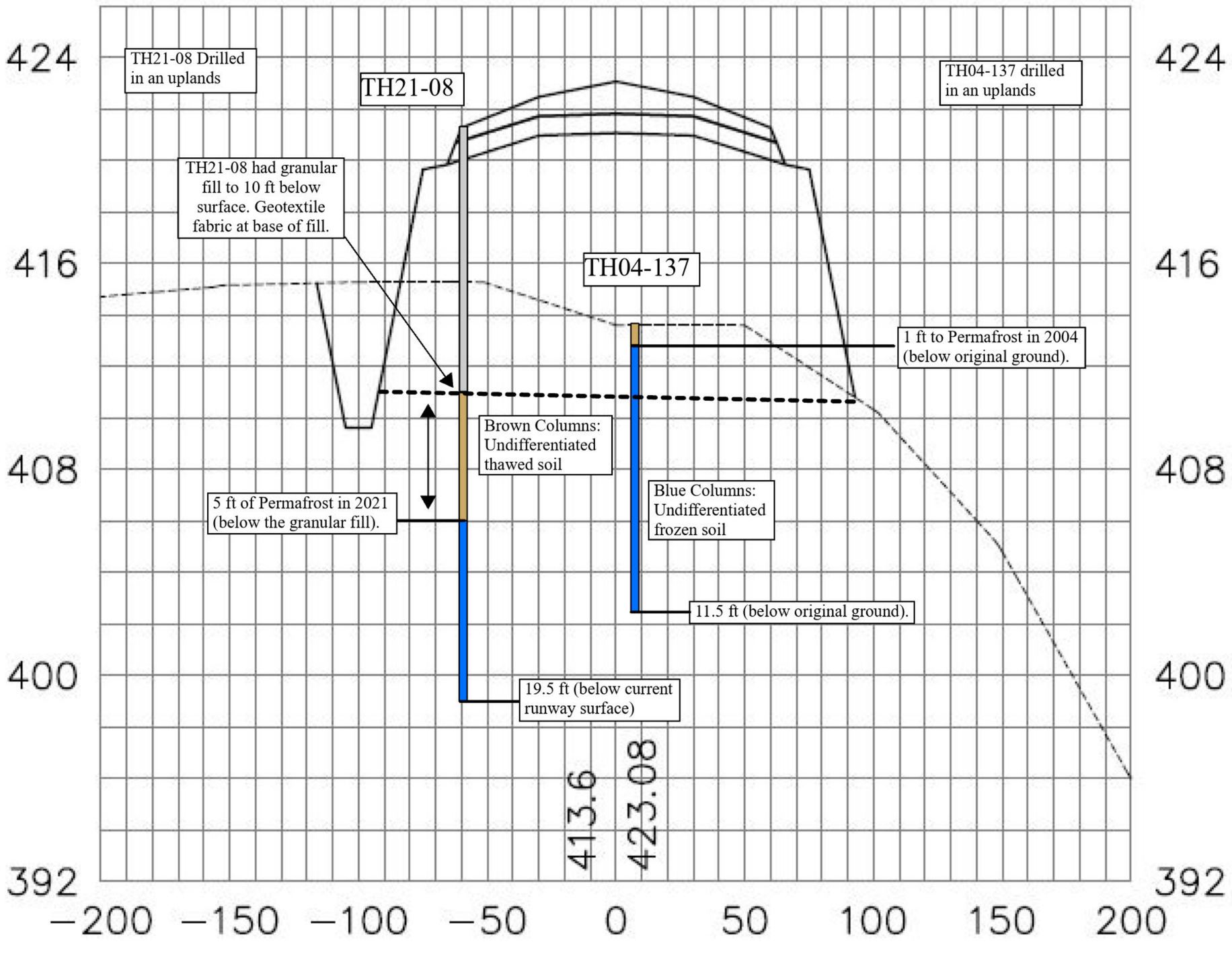
Brown Columns:
Undifferentiated thawed soil

31 ft below original ground

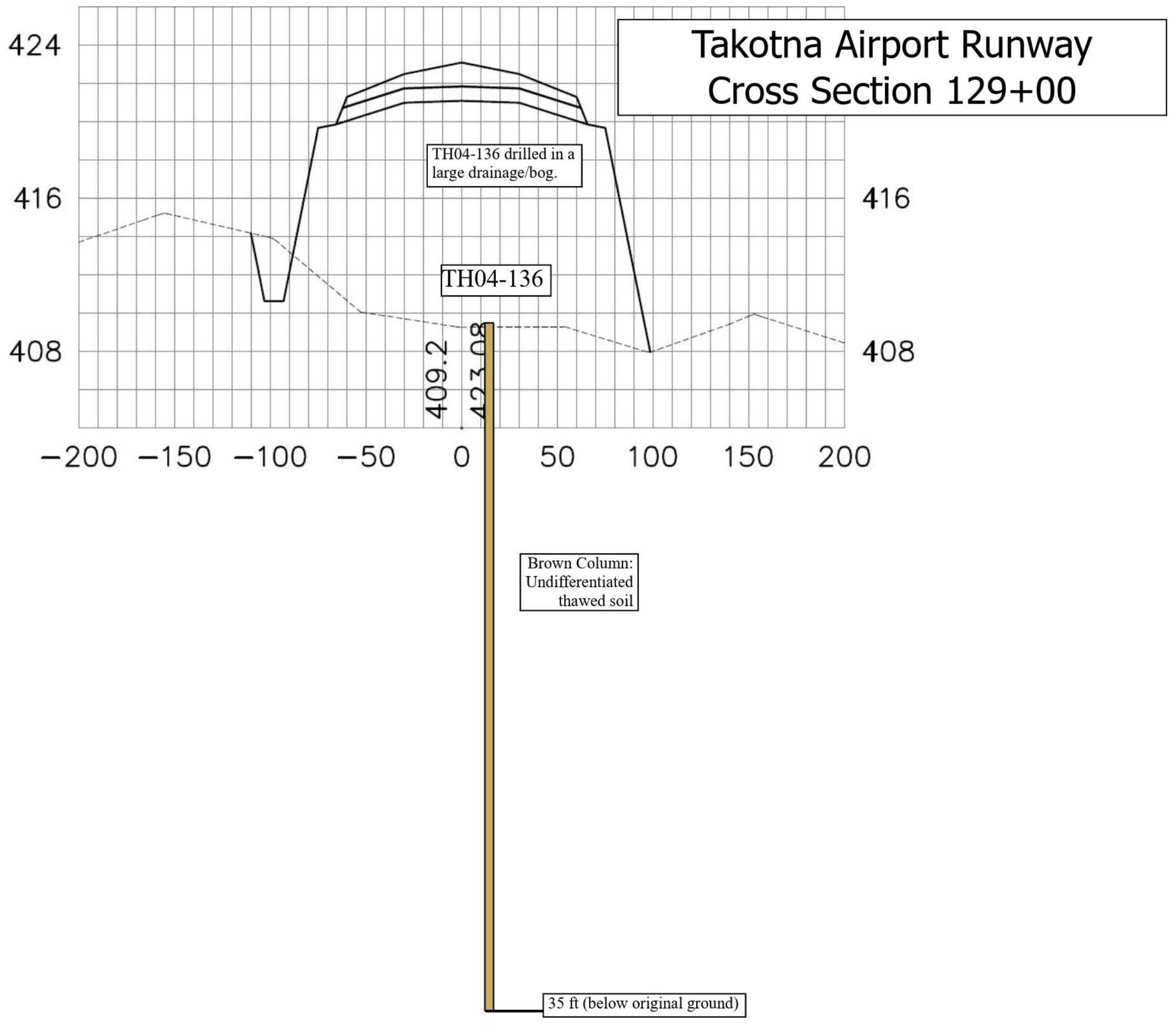
Takotna Airport Runway
Cross Section 123+50



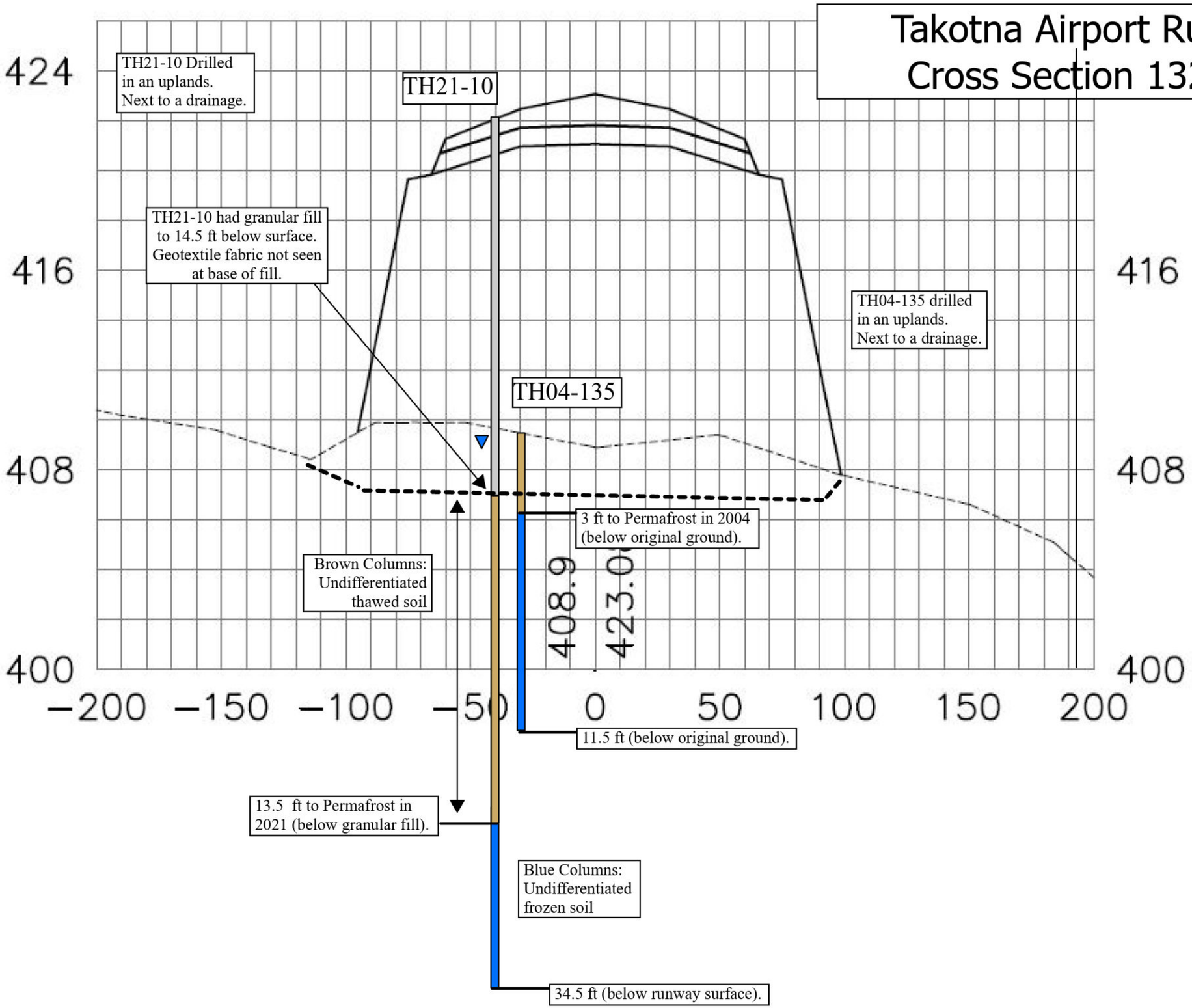
Takotna Airport Runway
Cross Section 126+50



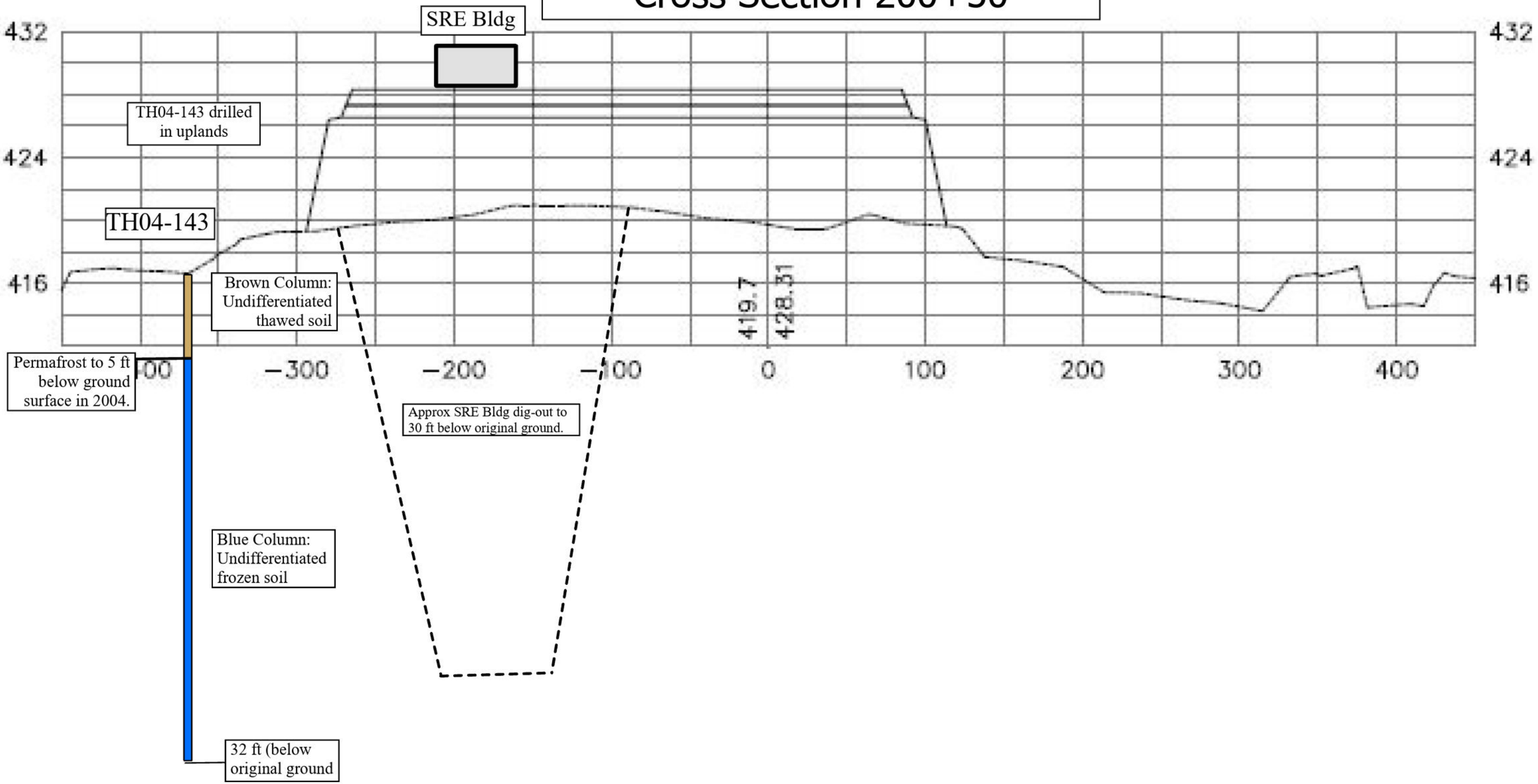
Takotna Airport Runway
Cross Section 129+00



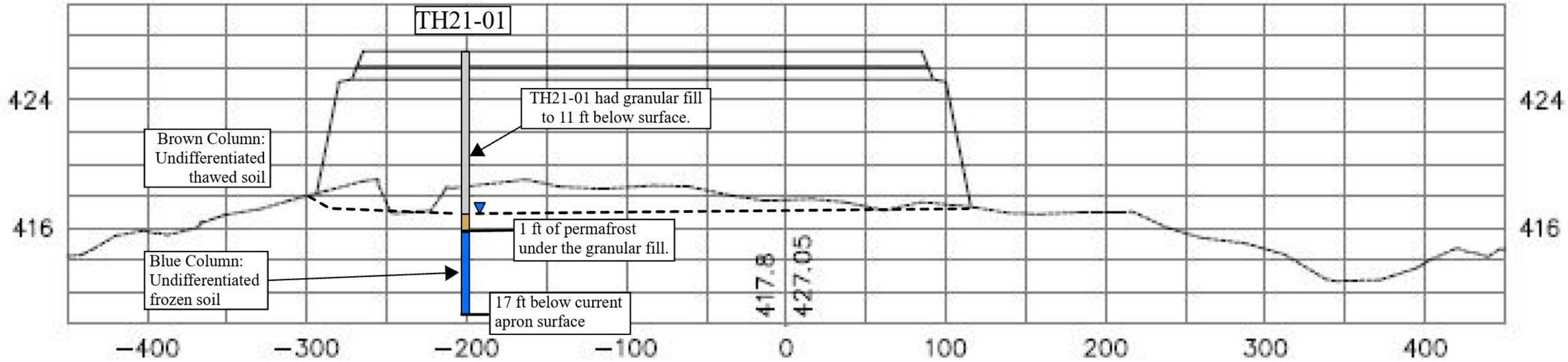
Takotna Airport Runway
Cross Section 132+00



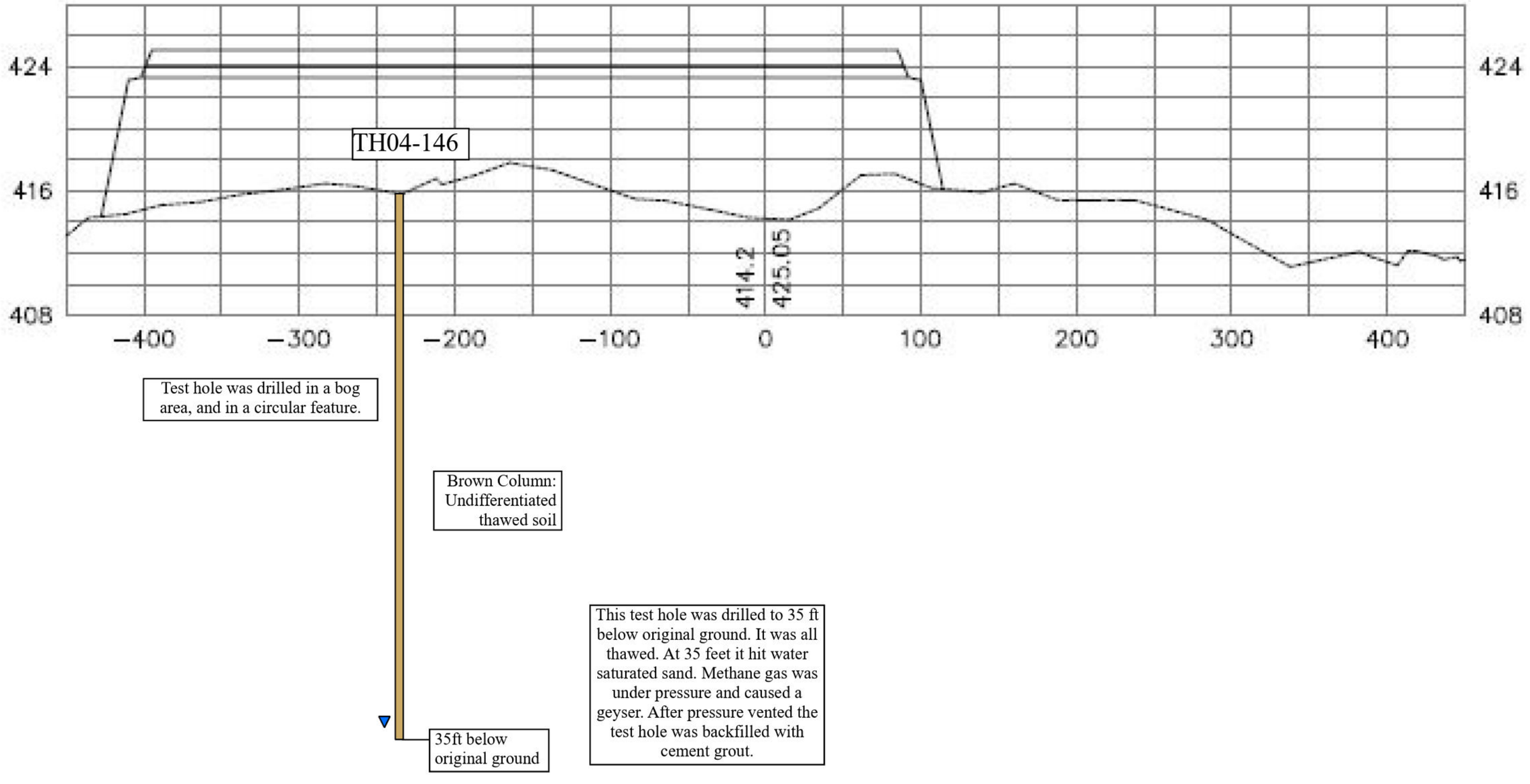
Takotna Airport Apron
Cross Section 200+50



Takotna Airport Apron
Cross Section 201+50



Takotna Airport Apron
Cross Section 202+50



APPENDIX E

PHOTO LOG

December 2021: TH21-01

December 2021: TH21-04

December 2021: TH21-05

December 2021: TH21-06

December 2021: Frozen Silt in TH21-08

December 2021: TH21-10

December 2021: TH21-26

March 2025 view of Sugarloaf Mtn. from Sterling Landing Rd., looking west

CME 850x tracked drill rig winching up the hill in deep snow

NQ Coring at TH25-01

Recovered material from TH25-01

June 2025 view of Sterling Landing Rd. from Sugarloaf Mtn., facing east

Water hauling vehicles parked on Sterling Landing Rd.

Setting up to drill on TH25-02

Drilling TH25-02

Augering through surface material at TH25-02


TH25-02 (12.5' - 17.3')
Box 2
Takotna
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-02 (17.3 - 23.6)
Box 3
Takotna
20.1
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-02 (23.6 -28.5)
Box 4
Takotna
25.1
27.9


TH 25-02 (28.5'-34.2')
Box 5
Takotna
30.1


TH25-02 (34.2'-41.0')
Box 6
Takotna
See Log
35.1
35.7
40.1


TH25-02 (41.0'-47.3')
Box 7
Takotna


TH25-02 (47.3'- 53.6')
Box 8
Takotna
5'8½
1'05


TH25-02 (53.6'-60.1')
Box 9
Takotna
1'35
6'01


TH25-02 (60.1'-66.6')
Box 10
Takotna
65.1


TH25-02 (66.6'-73.5')
Box 11
Takotna
70.1


TH25-02 (73.5'-80.1')
Box 12
Takotna
75'
80'
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-02 (80.1'-85.1')
Box 13
Takotna
80'
85'
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-02 (85.1' - 91.6')
Box 14
Takotna
91.1
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-02 (91.6' - 96.1')
Box 15
Takotna
95.1
3
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves

Moving between TH25-02 and 25-03

Drilling at TH35-03


TH25-03 (6.5' - 17.3')
BOX 1
Takotna
6.5
11.5
12.5
17.3
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03 (17.3'-25.3')
BOX 2
Takotna
17.3
17.5
22.5
25.3
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03(25.3 – 32.5)
Box 3
Takotna
25.3
25.5
27.5
31.6
32.5
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03(32.5 – 39.0)
Box 4
Takotna
32.5
37.5
39.0
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03 (39.0 – 45.5')
BOX 5
Takotna
39.0
42.5
45.5


TH25-03 (45.5' – 51.2')
BOX 6
Takotna
45.5
47.5
50.0
51.2


TH25-03(51.2-57.5)
BOX 7
Takotna
51.2
52.5
57.5
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03 (57.5'- 63.9')
BOX 8
Takotna
57.5
62.5
63.9
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03 (63.9'-71.1')
BOX 09
Takotna
63.9
71.1
Do you have it all covered?
JOB PREP
• Primer • Tape • Caulk
PAINT
• Brush • Roller • Tray
CLEAN UP
• Cleaner • Rags • Gloves


TH25-03(71.1'-77.5')
B0X10
Takotna
71.1
77.5
77.5


TH25-03(77.5-83.1')
B0X11
Takotna
77.5
83.1


TH25-03 (83.1'-102.5')
BOX 12
Takotna
83.1
See Note
84.8
87.5
See Note
92.5
97.5
102.5


TH25-03 (102.5-104.0 TD)
BOX 13
Takotna
102.5
103.5
104