



EXPLANATION

I
Bedrock
Igneous and metamorphic bedrock, exposed primarily on hillslopes and steep slopes where loess is less than 3 feet thick, underlies surficial deposits in all the quadrangle. Upper part is weathered. Where permafrost is present, ice content is low or absent but may be higher in weathered bedrock. No subsidence upon thawing of unweathered bedrock but may be slight upon thawing of weathered material. Frost action absent in unweathered bedrock but may be moderate in decayed bedrock. Unweathered bedrock has high bearing strength.

II
Tailings
Reworked creek gravel now exposed as placer-mine dredge tailings; 3 to more than 75 feet thick. Generally unfrozen but may be locally frozen with low ice content. No subsidence upon thawing; not susceptible to frost action. Material is loose but provides high bearing strength. Shown as undrained baried creek gravel in cross section.

III
River gravel
River flood-plain sand and gravel covered by as much as 15 feet of silt; thickness 1 foot to more than 400 feet. Discontinuous permafrost. If frozen, silt layer may have low to moderate ice content in the form of thin ice seams; underlying sand and gravel have low ground-ice content, restricted to pore spaces. Silt will show some subsidence upon thawing; sand and gravel will show no subsidence upon thawing. Silt may undergo intense frost action, but sand and gravel will undergo none. High bearing strength when frozen; sand and gravel high when thawed; silt moderate to high when thawed and well drained; low when poorly drained.

IV
Loess
Windblown silt present on middle and upper slopes and on low hillslopes; 3 to more than 200 feet thick. Not mapped where less than 3 feet thick. Generally free of permafrost; north-facing slopes contain permafrost with little or no ice content. Mildly susceptible to unsaturated frost action. High bearing strength when dry and in original position; very low when wet. Will stand in nearly vertical slopes. Extremely susceptible to gullying. On the map loess is not differentiated from muck (unit VII) where loess overlies peat muck (unit VIII); this relation is shown in cross section.

V
Alluvial fan silt
Alluvial fan silt overlying flood-plain sand and gravel; thickness as much as 50 feet. Discontinuous permafrost with moderate to low ice content primarily as pore ice but may contain ice seams and lenses. No large ice masses. Slight to moderate subsidence upon thawing. Seasonal frost action moderate to intense. High bearing strength when frozen or dry; low when wet or thawed when not well drained.

VI
River silt
River silt in broad, basinlike areas and elongate, sinuous meander scars; generally less than 15 feet thick but may be more than 30 feet. Discontinuous permafrost with moderate to high ice content as thin seams and small lenses. Young sloughs generally contain no permafrost. Moderate to great subsidence upon thawing. Seasonal frost action intense. High bearing strength when frozen; very low when thawed. Slopes in cuts subject to sloughing and landsliding upon thawing. Slopes subject to sloughing and landsliding upon thawing until well or moderately well drained.

VII
Muck
Reworked silt in valley bottoms and on lower slopes; 3-30 feet thick. Perennially frozen; moderate to high ice content as seams and lenses; overlies unit VIII, which has high ice content as seams, lenses, and large foliated ice masses. Ice content may be low and permafrost sporadic near surface loess zone uplope. Great differential subsidence upon thawing. Seasonal frost action intense. Permafrost causes poor drainage. High bearing strength when frozen or dry; very low when wet or thawed. Subject to sloughing and sliding upon thawing. Very susceptible to gullying.

VIII
Peat muck
Reworked organic silt in valley bottoms; 10 to more than 300 feet thick. Perennially frozen; high ice content as ice seams, lenses, and large foliated ice masses. Large ice masses near surface result in large polygonal pattern of traches. Great differential subsidence upon thawing. Seasonal frost action intense. Permafrost results in poor drainage. High bearing strength when frozen; very low when thawed. Slopes in cuts subject to sloughing and landsliding upon thawing. Where peat muck overlies by loess unit, both deposits mapped as muck (unit VII).

IX
Peat
Sphagnum-moss peat in valley bottoms; as much as 20 feet thick. Perennially frozen; high ice content as ice seams and lenses, and large foliated ice masses in underlying silt. Great subsidence upon thawing. Seasonal frost action intense. Peat and permafrost prevent good drainage. High bearing strength when frozen; very low when thawed. Slopes in cuts subject to sloughing and landsliding upon thawing. Generally poor for any sort of construction.

Artificial fill
Fill obtained locally; color indicates condition of underlying foundation

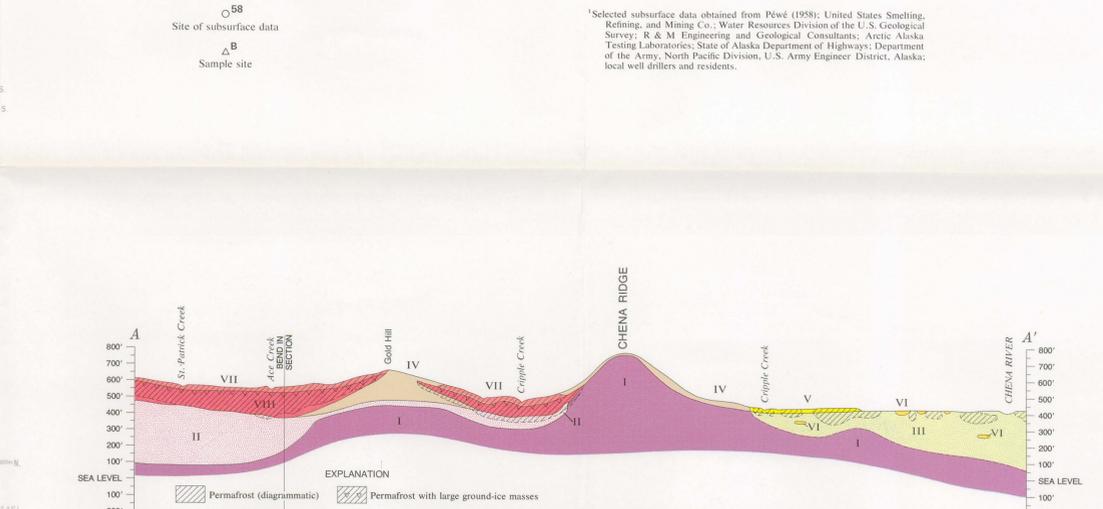
Contact
Generally indefinite or gradational; dotted where concealed

Gravel pit
X

Site of subsurface data
58

B
Sample site

S
Sample site



MAP SHOWING FOUNDATION CONDITIONS IN THE FAIRBANKS D-2 SW QUADRANGLE, ALASKA

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