

EXPLANATION

UNCONSOLIDATED DEPOSITS

Qra

Recent alluvium
Interfingering lenses of washed, clean gravel, sand, and silt, with local occurrences of cobbles and boulders up to 3 feet in diameter. Water table is generally within 5 feet of the surface. Entire surface is subject to occasional flooding. No frost action in gravel areas; however, mild frost action in areas of sand and silt. Permafrost not recognized. Poor road foundation because of flooding. However, a good source of borrow.

Qaf

Alluvial fans
Interfingering lenses of clean cobbles, coarse and fine gravel, and minor quantities of sand and silt. Commonly mantled by a few inches of flood-plain and wind-blown silt. Drainage is generally good. Locally, covered by swamps. Permafrost is at least 10 to 15 feet below the surface. Local flooding occurs, and stream channels are subject to radical changes during and after flooding. Generally good road foundations; however, some areas are only fair road foundations. Generally good source of borrow.

Qs

Swamp
Generally more than 1 foot of peat and silt underlying poorly drained areas. Common thickness of silt and sand underlies peat and silt. Permafrost is generally within 2 to 3 feet of the surface, and locally immediately underlies the vegetation cover. Lenses and stringers of clear ice as much as 6 inches thick are common. Unfavorable for road foundations and a poor source of borrow.

Qic

Interchannel silt
Consists of 95 percent silt and 5 percent fine sand. Silt and sand are chiefly quartz grains. Drainage is poor; hence, intense frost action occurs in this material. Permafrost generally is within 3 to 4 feet of the surface. Locally, permafrost may immediately underlie the vegetation cover. Permafrost will thaw when the vegetation cover is disrupted or destroyed. Unfavorable for road foundation and a poor source of borrow.

Qc

Channel sand
Consists of 95 percent washed, medium-grained sand and 5 percent, subrounded to rounded fine gravel. Locally, gravel up to 3/4 of an inch is found. Locally, mantled by 2 to 3 feet of silt. Surface drainage is good. Sub-surface drainage is fair, but locally where the water table lies within 1 to 2 feet of the surface, drainage is poor. Frost action is lacking or very mild. Permafrost lies at depths greater than 6 feet. Good road foundation and good source of fine borrow.

Qg

Outwash gravel
Interbedded clean, coarse-grained sand and sandy gravel of approximately equal proportions. Gravel pebbles are flat to well-rounded and consist of greenstone, quartz, and granite, and minor amounts of conglomerate, mafic schist, argillite, and chert. Pebbles range from 1/4 of an inch to 6 inches in diameter and average 3/8 of an inch. Outwash gravel mantled by floodplain and wind-blown fine sand and silt a few inches to 5 feet thick. Drainage is good. No frost action. Depth to permafrost ranges from 10 feet to greater than 30 feet. Good road foundation and good source of borrow.

BEDROCK

Tn

Nenana gravel
Interbedded medium- to fine-grained sandstone, shale siltstone, claystone, and conglomerate with thin lenses of coarse-grained sandstone. Conglomerate pebbles are chiefly schist, quartzite, gneiss, and igneous rocks of varying composition. Pebbles are generally well rounded and range from 1 to 3 inches in diameter. Many pebbles are weathered. Generally good road foundation. Good source of fine borrow, however, poor source of coarse borrow.

pCb

Birch Creek schist
Quartz, mica, calcareous schists, and minor amounts of greenstone. Fresh outcrops are greenish, appear massive, and break into thick slabs. Weathered outcrops are gray, brown or red, and break into thin slabs. Schist weathers easily when exposed. Fair road foundation, but, poor source of borrow.

Geologic contact
(Includes gradational contact, inferred contacts, and indefinite boundaries of surficial deposits)

OA

Location of samples shown on figure 2

Trail

ROAD SYMBOL

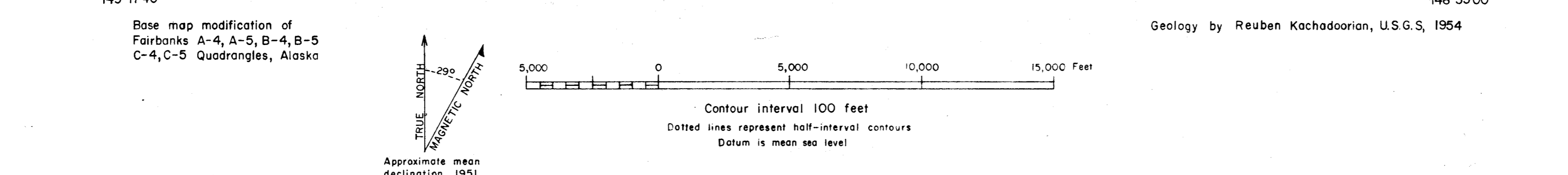
"P" line

Preliminary route of a segment of the proposed highway from Nenana to McKinley Park; surveyed in 1954.

QUATERNARY

TERTIARY

PRECAMBRIAN



Base map modification of Fairbanks A-4, A-5, B-4, B-5 C-4, C-5 Quadrangles, Alaska

Geology by Reuben Kachadorian, U.S.G.S, 1954

This map is preliminary and has not been edited or revised for conformity with U.S. Geological Survey standards and nomenclature.

ENGINEERING GEOLOGY OF THE NENANA-REX AREA, ALASKA