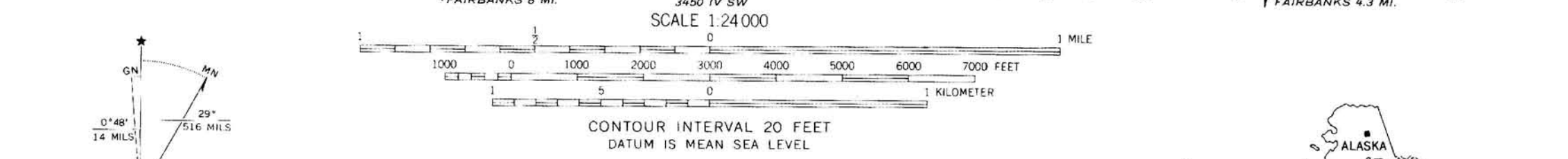


BASE BY U.S. GEOLOGICAL SURVEY, 1966



**MAP SHOWING CONSTRUCTION MATERIALS
IN THE FAIRBANKS D-2 NW QUADRANGLE, ALASKA**

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SOURCES OF CONSTRUCTION MATERIAL

This map is based on data presented on the Geologic map of the Fairbanks D-2 NW quadrangle (Map I-507, Pewe and Bell, 1975a), the Map showing distribution of permafrost in the Fairbanks D-2 NW quadrangle (Map MF-688A, Pewe and Bell, 1975b), the Map showing ground-water conditions in the Fairbanks D-2 NW quadrangle (Map MF-688B, Pewe and Bell, 1975c), and the Map showing foundation conditions in the Fairbanks D-2 NW quadrangle (Map MF-688C, Pewe and Bell, 1975d). Additional information, especially detailed subsurface data, can be obtained from these maps.

This map provides basic information on where construction materials may be obtained near the surface. The map units are defined on the basis of type of material and distribution of permafrost.

The upland hills are bedrock with a cover of as much as 200 feet of windblown silt (loess). The suitability of the bedrock for use in construction is variable, and the bedrock generally is not a good source of gravel as the best source of coarse material in the upland areas are the placer-mine dredge tailings, which are excellent for foundation material and pervious fill, especially when processed.

The upland hills are generally free of permafrost and present no major excavation problems. The silt mantle generally is well drained, dry, and very easily removed unless it is frozen. The bedrock may contain an upper weathered zone about 3-10 feet thick that is easily removed compared with the fresh bedrock, which in some instances has to be blasted.

The valley bottoms of the upland contain thick silt accumulations that are perennially frozen with high ice content. The silt also contains much organic material, and, as a result, these deposits generally are undesirable as sources of material. Silt is the only easily accessible material, and, if it is frozen, blasting is required. Creek gravel (exposed as tailings) is buried 30-300 feet beneath the silt, making it usually inaccessible.

Areas containing peat have been included on the map because peat is a good resource material, though not suitable for construction. Peat occurs in oval-shaped bodies within the valley-bottom silt.

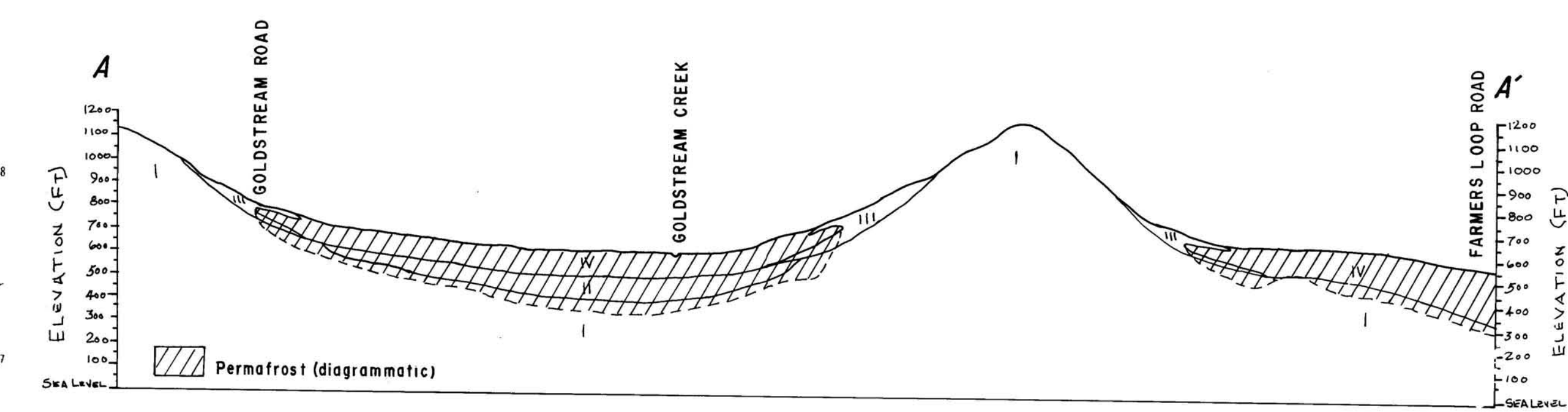
It should be noted that the map units are generalized and local variations may occur, especially near contacts between units. Detailed mechanical analyses, soil properties, and moisture contents are given on the foundation conditions map.

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EXPLANATION

- I** BEDROCK
Upper 3-10 feet is weathered and decomposed bedrock, primarily gravel (50-60 percent) with sand (20-30 percent) and silt (10-20 percent). Fresh bedrock may be a soft schist or a harder variety containing quartzite; locally contains marble; contains hard quartz veins. Fresh bedrock cut by numerous joints, fractures, and foliation planes. Both fresh and silt. Generally free of permafrost; north-facing slopes may contain permafrost with low ice content.
 - II** TAILINGS
Placer-mine dredge tailings exposed as steep embankment gravel piles; locally leveled; 3 to more than 75 feet thick. Primarily gravel (80 percent) with fragments 1/4 to 1/2 inch in diameter and some cobbles 10 inches or larger; sand (3 percent) and silt (2 percent). Well sorted as result of dredging process; undisturbed gravel may contain as much as 50 percent frozen; well drained except in some depressions.
 - III** LOESS
Material is loose and porous and easily excavated by power tools unless frozen. Good for subgrade, ballast, rip rap, pervious fill, and, if processed, good for base course and aggregate. Water table generally lies at base of tailings.
 - IV** MUCK
Valley-bottom accumulations of reworked silt 30 to more than 300 feet thick; perennially frozen with high ice content, and less than 10 percent clay; locally contains layers and lenses of sand and gravel. Contains abundant organic matter. Poorly drained and marshy in summer; land clearing produces quartzite. Overlies old creek gravel more than 100 feet thick. Where loess overlies muck, both units are mapped as muck.
 - V** PEAT
Large oval-shaped areas in valley-bottom muck are rich in peat; 3 to more than 20 feet thick; perennially frozen with high ice content. Very difficult to excavate unless thawed; blasting only moderately successful. When thawed, viscous sediment slides into excavation. Good source of raw peat in thawed areas. Poor drainage usually requires dewatering of excavation pits.
- SYMBOLS**
- Contact
 - Indefinite or gradational
 - Gravel pit



VERTICAL EXAGGERATION X 4

GENERALIZED CROSS SECTION