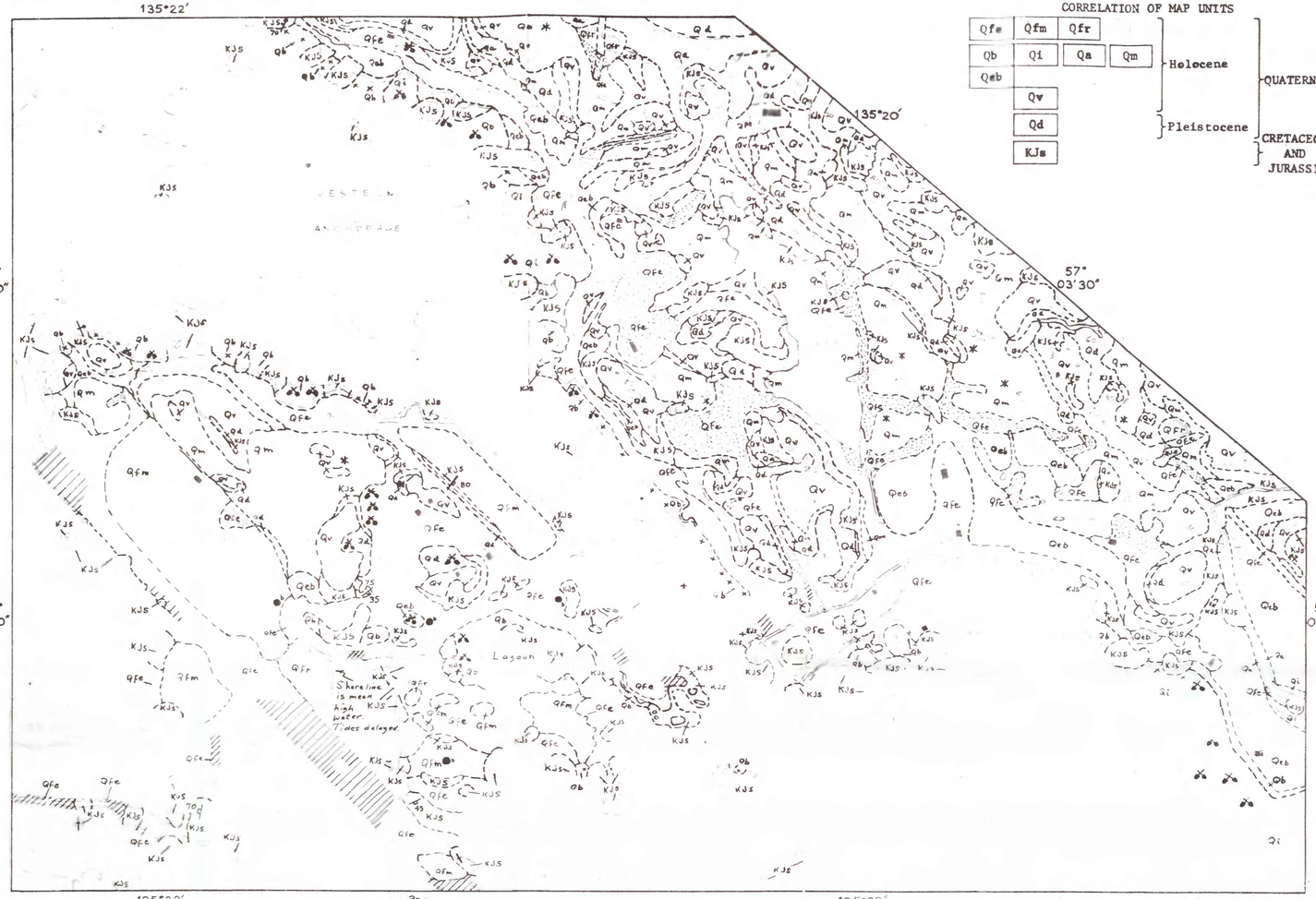


CORRELATION OF MAP UNITS

DESCRIPTION OF MAP UNITS

MANMADE FILL (HOLOCENE)--Chiefly one or more of the following: (1) sandy gravel or sand; (2) drift, chiefly till; (3) riprap (armor rock); (4) dumped muskeg and volcanic ash; and (5) garbage, scrap metal, and trash. Fills generally loose; and some large fills firm. Thickness variable; may average 7 feet (2 m) and range from about 4 feet (1 m) to as much as 65 feet (20 m). Large fills in historic offshore areas overlie sand, gravel, and bedrock

Qfe — Embankment fill, mostly (1) and (2); along shores exposed to high waves, mostly (3). Where diagonally ruled, unit is more than 25 feet (7.6 m) thick; where stippled, unit is underlain by muskeg or elevated lagoons

Qfm — Modified ground, areas composed chiefly of bedrock and drift which have been deeply excavated and subsequently covered by embankment fill less than 4 feet (1 m) thick

Qfr — Refuse fill, mainly (4) and (5); upper several feet is an emplaced cover of alluvial deposits, drifts, or blocks of angular rock. Where stippled, unit is underlain by muskeg or elevated lagoons

Qa — ALLUVIAL DEPOSITS (HOLOCENE)--Mostly sandy gravel with some cobbles; locally includes lenses of sand and organic silt. Stones subrounded to subangular. Loose, moderately well bedded and well sorted within beds. Thickness may average 8 feet (2.4 m); maximum possibly 20 feet (6 m). Overlies drift, volcanic ash and bedrock. Some alluvial deposits grade laterally to deltaic deposits. Overlain in places by manmade fill and patches of muskeg deposits too small to be shown.

Qb — MODERN BEACH DEPOSITS (HOLOCENE)--Mixtures or concentrations of gravel, cobbles, sand, and boulders; size range depends upon sediment source and exposure to waves and currents. Upper limit of deposit is coarsest sector and is several feet above mean higher high water. Near mean lower low water sand may predominate. Stones mostly subrounded and range from rounded to subangular. Thickness may average 7.5 feet (2.3 m) and range from 5 to 15 feet (1.5 to 4.6 m). Overlies bedrock, and includes some bedrock outcrops too small to be shown

Qi — MODERN DELTA DEPOSITS OF THE INTERTIDAL ZONE (HOLOCENE)--Chiefly sandy gravel; with some small cobbles; lenses of sand or sandy silt at depth. Includes some beach deposits. Loose; well stratified and well sorted within beds. Stones mostly subrounded. Thickness near Indian River possibly 30 feet (9 m); elsewhere, 15 feet (5 m). Merges seaward to finer-grained delta deposits, and landward to modern beach deposits, alluvium, and elevated shore and delta deposits. Generally overlies bedrock

Qm — MUSKEG AND OTHER ORGANIC DEPOSITS (HOLOCENE)--Muskeg and other wet, commonly moss covered or boggy ground; includes elevated lagoons. Irregularly stratified beds of moss, water plants, and some woody fragments, all in differing states of decomposition. Near elevated lagoons, lower part probably includes some fine sand and silt. Porous, and generally very loose and wet. Thickness may average 7 feet (2.1 m); maximum known, 75 feet (22.9 m). Overlies mainly volcanic ash, drift, and elevated shore and delta deposits. Overlain extensively by areas of manmade fill too small or thin to be shown

Qeb — ELEVATED SHORE AND DELTA DEPOSITS (HOLOCENE)--Chiefly sandy gravel and some cobbles. Loose, well bedded and well sorted within beds; stones subrounded, some subangular. Thickness may average 10 feet (3.0 m); maximum may be at least 20 feet (6.1 m). Occurs in very low ridges that are elevated beach berms or offshore bars. Overlies bedrock, drift, and, locally, volcanic ash. Overlain by muskeg deposits and areas of manmade fill too small to be shown

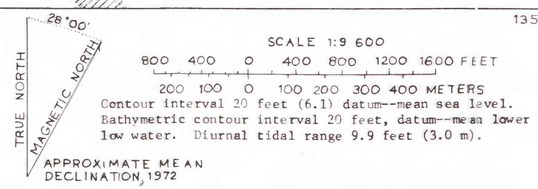
Qv — VOLCANIC ASH DEPOSITS (HOLOCENE)--Chiefly ash of silt-, sand- and clay-sized particles; Subordinately lapilli of fine gravel-sized particles. Composed mostly of angular to subrounded particles of pumiceous glass and fragments of basalt and andesite. Tan to reddish yellow. Lightweight; firm where undisturbed. Well bedded and generally vertically graded within a bed, coarser material at base. Thickness about 5 feet (1.5 m) on level ground but on moderate to steep slopes thickness variable and may be at least 11 feet (3.4 m). Overlies drift and bedrock. Overlain by patches of muskeg and manmade fill too small to be shown

Qd — GLACIAL DRIFT DEPOSITS (PLEISTOCENE)--Dominantly till, a mixture of gravel, cobbles, and some boulders in a matrix of sand, silt, and clay. Variable size distribution; concentrations of cobbles and boulders in places. Tan to medium and dark gray. Compact, unsorted, and unstratified. Gravel and cobbles angular to subrounded. Thickness variable but may average 10 feet (3.0 m); maximum possibly 50 feet (15.2 m). Locally, upper part may include thin lenses of fine sand or silt. Overlies bedrock. Overlain by patches of volcanic ash, muskeg, elevated shore deposits, and alluvium to small to be shown

KJs — SITKA GROUP (CRETACEOUS AND JURASSIC)--Chiefly dark-gray, hard graywacke and interbedded subordinate argillite; some beds conglomeratic and contain angular or subrounded rock fragments of gravel size. Thickness of beds probably 1 to 10 feet (0.3 to 3.0 m); maximum may be 50 feet (15.2 m). Beds mostly strike northwest, and are vertical or dip steeply. Probably cut locally by dikes of fine-grained igneous rocks. Many steep small faults most of which strike northeast are present but not shown. Joints common; most strike northeast

Notes: Map units generally 4 ft (1.2 m) or more thick. Mean lower low water line is lower limit of mapping. Terminology of sediment grain-sizes follows National Research Council (1947): clay, less than 0.00015 in. (0.0039 mm); silt, 0.00015-0.0025 in. (0.0039-0.0625 mm); sand, 0.0025-0.0[illegible] in. (0.0625-2 mm); gravel, 0.0[illegible] about 2.5 in. (2-64 mm); cobbles, about 2.5-10.1 in. (64-256 mm); boulders, greater than 10.1 in. (256 mm)

Base map developed from charts, engineering drawings, maps, and photo mosaics by: Photronix, Inc. for Alaska State Housing Authority, 1961; Hubbell and Waller, Engineering Corp. for City of Sitka, 1962; Alaska Dept. of Highways, 1969, 1971; U.S. National Ocean Survey, Chart 8244, 1973; Wyller, Killewich, Van Doren, and Hazard for Alaska Div. of Aviation, 1971.



SCALE 1:9 600

800 400 0 400 800 1200 1600 FEET

200 100 0 100 200 300 400 METERS

Contour interval 20 feet (6.1) datum--mean sea level. Bathymetric contour interval 20 feet, datum--mean lower low water. Diurnal tidal range 9.9 feet (3.0 m).

Bedrock geology from Berg and Hinckley (1963) and Loney, Pomerov, Brew, and Muffler (1964). Surficial geology by L. A. Yehle, and R. W. Lemke, 1965; L. A. Yehle, 1968, 1971.

Contact--Dashed where approximately located, inferred, or gradational

Strike and dip of beds

Vertical--Top of beds unknown

Vertical--Top of beds (as determined by sedimentary structures) in direction of dot

75 Inclined--Top of beds unknown

70 Inclined--Top of beds known from sedimentary structures

70 Strike and dip of inclined joint or joint set

Quarry

Pit developed as source for aggregate; intertidal zone only

Abandoned pit (developed as source mainly for fill)

Location of underwater outcrop of bedrock several feet below level of mean lower low water

Center of domed muskeg (see text description of muskeg deposits)

Concentration of boulders, cobbles, or small outcrop of bedrock

Manmade structures--Diagrammatic and not drawn to correct scale or shape

Above-ground storage tank for water or fuel

Partially buried storage tank for water or fuel

Public building

Docks

Mean higher high water line

Mean lower low water line

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

FIGURE 5.--RECONNAISSANCE GEOLOGIC MAP OF SITKA AND VICINITY, ALASKA