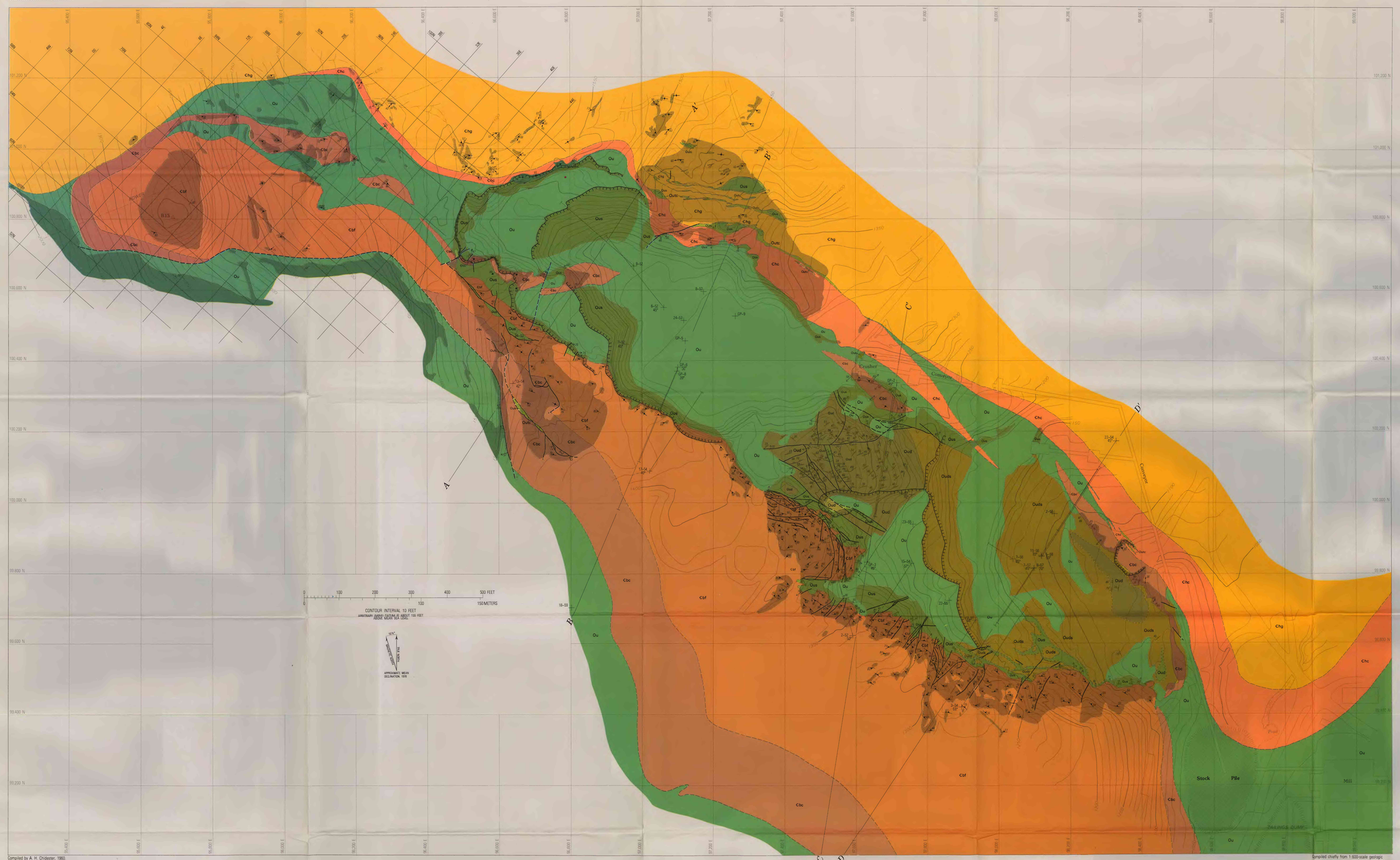


Compiled by A. H. Chidester, 1960.

Compiled chiefly from 1:600-scale geologic planetable map by A. H. Chidester, W. M. Cady, A. L. Albee, P. L. Weis, and G. M. Koch, July–September 1951; revised in part by Chidester and J. C. Rattré in June 1952, by Chidester and Cady in October 1957, and by Chidester and D. R. Nichols in October 1957 and October 1958. The portion west of 96,000 E. is based chiefly on a 1:3,600-scale planetable map by Chidester and C. A. Rattré, June–August 1953.

CORRELATION OF MAP UNITS

DESCRIPTION OF MAP UNITS

Qsd SURFICIAL DEPOSITS (QUATERNARY)—Shown only on structure sections

ULTRAMAFIC IGNEOUS ROCKS AND DERIVATIVES[1] (ORDOVICIAN)[2]

Ou ULTRAMAFIC ROCKS, UNDIFFERENTIATED—Chiefly dunite (Oud), massive serpentinite (Ouds), and schistose serpentinite (Ous); may include a few small masses of talc-carbonate rock and steatite (Outc)

Oud DUNITE[3]—Composed essentially of olivine, but all of unit has been partially serpentinized; grades into massive serpentinite (Ouds)

Ouds MASSIVE SERPENTINITE[3]—Composed chiefly of bladed serpentine (antigorite and (or) lizardite); chrysotile sparse to moderately abundant in matrix, locally prominent as cross-fiber veins. Relict grains of olivine persist but range widely in abundance. The rock retains the textural appearance of dunite

Ous SCHISTOSE SERPENTINITE[3]—Matrix composed chiefly or entirely of bladed serpentine (antigorite and (or) lizardite); chrysotile confined chiefly to shear surfaces; little or no relict olivine

Outc TALC-CARBONATE ROCK AND STEATITE[3]—Talc-carbonate rock is composed typically of about 40 percent magnesite and 60 percent talc, and it is intergradational with steatite, composed essentially of talc. Steatite commonly has a thin selvage of tremolite; where appreciably less than 0.3 m thick, a steatite body commonly consists chiefly or entirely of tremolite and minor chlorite

BELVIDERE MOUNTAIN FORMATION[1] (LOWER CAMBRIAN)

Cbf FINE AMPHIBOLITE—Greenish-gray to medium-bluish-gray, distinctly bedded. Individual crystals of hornblende are rarely discernible to the naked eye

Cbc COARSE AMPHIBOLITE—Dark-greenish-gray or greenish-black, distinctly bedded; contains minor amounts of fine amphibolite. Hornblende crystals are predominantly 5–10 mm long and range to as much as 25 mm

HAZENS NOTCH FORMATION (CAMBRIAN (?))

Chc GRAPHITIC QUARTZ-MUSCOVITE-CHLORITE-ALBITE SCHIST—In pl. 1, which includes other carbonaceous units of the Hazens Notch, this unit forms a part of a unit designated as Ghc2

Chg QUARTZ-ALBITE-MUSCOVITE-CHLORITE GNEISS—Greenish-gray

Contact—Solid where exposed, dashed where readily inferred. Arrow shows direction and amount of dip (vertical, inclined)

Indefinite or gradational contact

Limit of exposure—Within quarry, also serves as boundary between undifferentiated ultramafic rocks (Ou) (ultramafic rocks masked by quarry rubble) and the several varieties of ultramafic rock

Quarry rubble—Shown only on structure sections

Fault or shear zone—Solid where exposed, dashed where readily inferred. Barbed arrow shows direction and amount of dip (vertical, inclined); diamond-headed arrow shows bearing and plunge of slickensides

Strike and dip of axial plane of minor fold

PLANAR FEATURES

Strike and dip of bedding

Strike and dip of schistosity parallel to bedding

Inclined

Vertical

Strike and dip of schistosity divergent from bedding, in nonbedded rock, or where relations are indeterminate

Inclined

Vertical

Strike and dip of slip cleavage

LINEAR FEATURES

Generally combined with one of the above planar symbols for features in bedded rocks

Bearing and plunge of minor fold axis or lineation

Pattern, in plan, of folded or crinkled bedding

Strike and dip of layering in ultramafic rocks

Inclined

Vertical

Diamond-drill hole on map—Cross locates collar, tick locates bottom of hole; value in degrees gives inclination from the horizontal.

Inclined

Vertical

Diamond-drill hole on cross sections—Circle indicates the collar, double circle the piercing point, and tick the bottom of the hole.

Within 10 feet of plane of section

Projected more than 10 feet onto plane of section

Inclined to and intersecting plane of section

B15 Triangulation point in mine survey

Foot of dump or stockpile

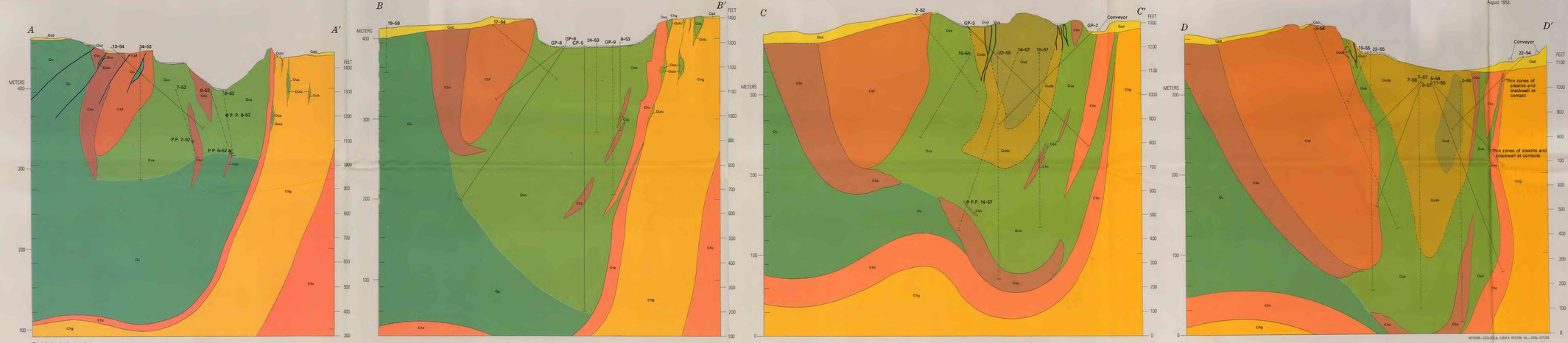
Top of quarry wall or edge of bench

Mine drilling grid lines, marked by stakes on the ground

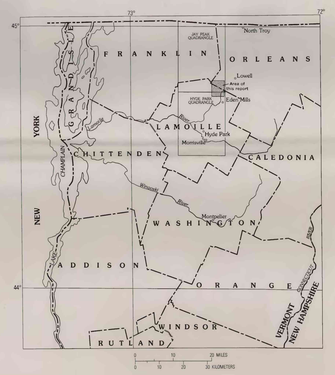
[1]Darker color where exposed, lighter color where covered

[2]The Ordovician age designation refers to the age of emplacement of the intrusive ultramafic rocks, not to the age of the parent igneous rocks or the metamorphic derivatives (see text subheading discussions under "Tectonic and petrogenic synthesis").

[3]Within the ultramafic body rock covered by surficial deposits or by quarry rubble is shown on the geologic map as undifferentiated ultramafic rock (Ou). On structure sections, where drill-hole data and extrapolation of surface exposures permit, identifiable varieties of ultramafic rock (Oud, Ouds, Ous) are distinguished beneath such covered areas.



Ticks left of vertical line in meters.
Ticks right of vertical line in feet.



GEOLOGIC MAP AND STRUCTURE SECTIONS OF LOWELL QUARRY AND VICINITY, LOWELL, ORLEANS COUNTY, VERMONT