

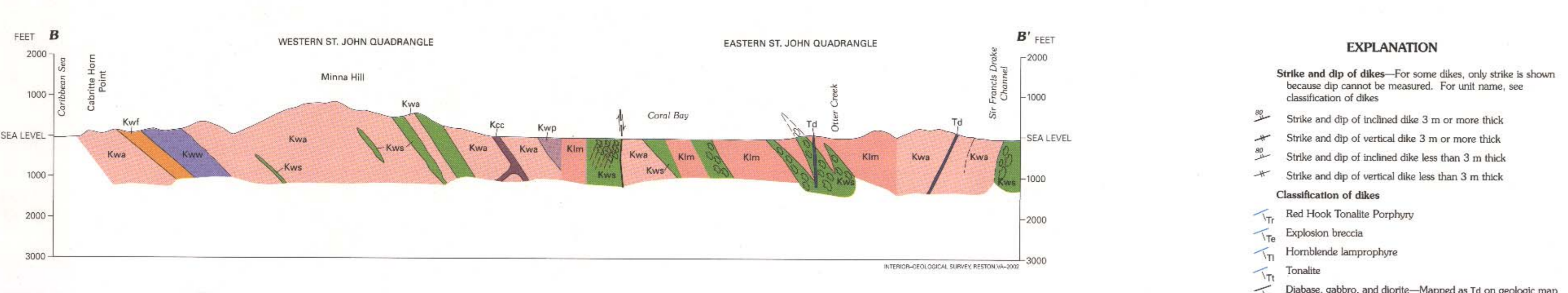
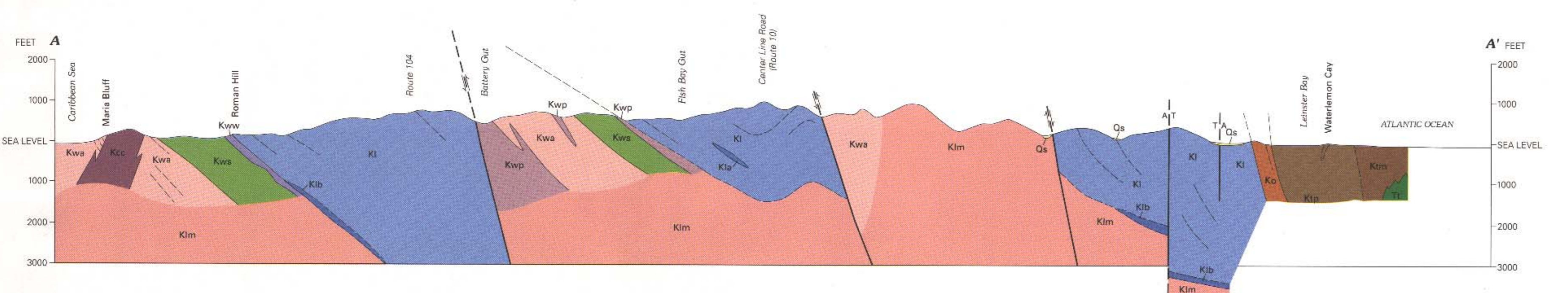
LIST OF MAP UNITS
[Dikes 3 m or more in width are shown where space permits. Unit 'a' is not shown on geologic maps see 'Map showing distribution and attitude of dikes on St. John' for location. For complete Description of Map Units, see Appendix A, this report.]

- Ca** Surficial deposits (Quaternary)
- Rt** Red Hook Tonallite Porphyry (new name) (Tertiary)
- Tt** Explosion breccia (Tertiary)—Shown only on inset map
- Tc** Hornblende lamprophyre (Tertiary)
- Td** Biotite-hornblende tonalite (Tertiary, late Eocene)
- Ta** Diabase, gabbro, and diorite (Tertiary)
- Tm** Tulu Formation (Upper Cretaceous, upper Turonian, upper Santonian, or younger)
- Mm** Mandal Member (new name)
- Km** Congo Cay Limestone Lens
- Mk** Marble, calc-silicate rock, and marble conglomerate
- Pm** Picara Member (new name)
- Kp** Marble conglomerate and calc-silicate-rich beds north of Maho Point
- Md** Medium-dark-gray, porphyritic meta-andesite south of Maho Point
- Oa** Outer Brass Limestone (Upper Cretaceous; upper Turonian to upper Santonian)
- Li** Louisa Formation (Cretaceous, Alban to Turonian or Santonian)
- Lp** Porphyritic, locally ventular andesite lens
- Ld** Porphyritic, locally amygdaloidal basalt and pillow basalt
- Kim** Unbedded Lameshaer Volcanic-Intrusive Complex (new name) (Lower Cretaceous; Aptian to lowermost Albian—includes Carven Hill Intrusive Suite and Water Island Formation)
- Kim** Unbedded Carven Hill Intrusive Suite (new name) (Early Cretaceous)
 - Ktr** Trochilite
 - Kcp** Coarsely porphyritic keratophyre
 - Kkp** Porphyritic keratophyre
 - Kop** Phenocryst-poor keratophyre
 - Kfp** Plagioclase-phyric keratophyre
 - Kgb** Gabbro
 - Kdc** Sheeted dike complex
- Wm** Water Island Formation (Lower Cretaceous)
 - Wkp** Porphyritic keratophyre
 - Wop** Phenocryst-poor keratophyre
 - Wfp** Plagioclase-phyric keratophyre
 - Wkb** Basalt and basaltic andesite
 - Wvb** Volcanic wacke and bedded tuff
 - Wrc** Rhyolitic tuff

EXPLANATION OF MAP SYMBOLS
[Where two or more symbols for planar or linear features are combined, their intersection marks the point of observation. Where a single planar feature and a single linear feature are combined, the center of the planar feature marks the point of observation. For a linear symbol alone, the base of the arrow marks the point of observation.]

- Contact**—Dashed where approximately located, dotted where concealed
- Fault**—Tribe shows dip where known, dashed where approximately located, dotted where concealed
- Ductile fault or local shear zone**
- Buttle fault**—Sense of movement shown if known. Strike-slip motion shown by arrows, or T (thrust) and A (normal) in cross section. For dip-slip motion: U (up) and D (down)
- High-angle reverse fault**—Teeth on upper plate
- FOLDS**
 - Anticline**—Showing trace of axial surface
 - Syncline**—Showing trace of axial surface
- MINOR FOLDS**
[May be combined with planar features]
- Bearing and plunge of fold axis**
- Bearing and plunge of sinistral fold**
- Bearing and plunge of dextral fold**
- PLANAR FEATURES**
 - Strike and dip of bedding**—Ball indicates plunging direction of beds known from sedimentary features. $\frac{1}{2}$ —graded bedding; $\frac{1}{2}$ —cherting
 - Inclined**
 - Vertical**
 - Overtorned**
 - Horizontal**
 - Generalized strike of vertical bedding**
 - Strike and dip of foliation**
 - Strike and dip of foliation parallel to bedding**
 - Inclined**
 - Coplanar, inclined**
 - Coplanar, vertical**
 - Coplanar, overturned**
 - Parallel strike, different dip**—Number closest to strike is dip value for foliation
 - Strike and dip of spaced cleavage**
 - Strike and dip of joint set**
 - Inclined**
 - Vertical**
 - Strike and dip of flow layering, layering of amygdaloids, or layering of pillows**—Ball indicates tops of pillows layering known from asymmetry of pillows
 - Strike and dip of dike 3 m or more in thickness**—Shown on geologic map where space permits; otherwise, see map showing distribution of dikes
 - Inclined**
 - Vertical**
 - Trend only**—Dip unknown
- LINEAR FEATURES**
[May be combined with planar features]
- Bearing and plunge of axis of columnar joints**
- Bearing and plunge of axes of bounding**
- OTHER FEATURES**
 - Fossil locality**
 - Inactive quarry**
 - Area of hydrothermal alteration**
 - Pillow lava**—Right side up. Shown only on cross section B-B'

Base from U.S. Geological Survey Western St. John, 1968 (revised 1982) and Eastern St. John, 1959 (photorevised 1982).
 Polyconic projection, Puerto Rico Datum, 1940 adjustment, 10,000-foot grid based on Puerto Rico coordinate system. Virgin Islands extension, 1000-meter Universal Transverse Mercator grid, zone 10.
 SCALE 1:24,000
 CONTOUR INTERVAL 40 FEET
 DOTTED LINES REPRESENT 10-FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL
 DEPTH CURVES AND SOUNDINGS IN FEET—LATIN IS MEAN LOW WATER
 THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
 SHORLINE SOUNDINGS APPROXIMATE TO THE APPROXIMATE LINE OF MEAN HIGH WATER
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 8.5 FEET
 Geology mapped in 1980-1988 and 1990; revised by M.L. Rankin
 Manuscript approved for publication March 26, 1998



EXPLANATION

- Strike and dip of dikes**—For some dikes, only strike is shown because dip cannot be measured. For unit name, see classification of dikes
- Strike and dip of inclined dike 3 m or more thick**
- Strike and dip of vertical dike 3 m or more thick**
- Strike and dip of inclined dike less than 3 m thick**
- Strike and dip of vertical dike less than 3 m thick**
- Classification of dikes**
 - Rt** Red Hook Tonallite Porphyry
 - Tt** Explosion breccia
 - Tc** Hornblende lamprophyre
 - Td** Tonalite
 - Ta** Diabase, gabbro, and diorite—Mapped as Tc on geologic map
 - Kim** Carven Hill Intrusive Suite (no sequence of intrusion implied)
 - Ktr** Trochilite
 - Kcp** Coarsely porphyritic keratophyre
 - Kkp** Porphyritic keratophyre
 - Kop** Phenocryst-poor keratophyre
 - Kfp** Plagioclase-phyric keratophyre
 - Kgb** Diabase



GEOLOGIC MAP OF ST. JOHN, U.S. VIRGIN ISLANDS

By
Douglas W. Rankin