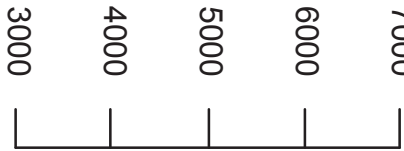


ELEVATION (FEET)



DESCRIPTION OF GEOLOGIC MAP UNITS

This map shows the distribution of geologic units northwest of the town of Sierra Blanca, north of Interstate Highway 10 in the Gunsight Hills South Quadrangle. Geologic units were mapped, and structural elements were measured in the field; where bedrock units are covered by surficial units and vegetation, or access is limited, units were interpreted using soil data, well-drilling records, previous mapping, and surveys.

BEDROCK UNITS

**Qal** Alluvium — River and stream floodplain deposits, silty sand, mud, channel gravel, rounded pebbles, and cobbles.

**Qac** Undivided alluvium and colluvium — Angular bedrock fragments, gravel, silt, sand, and clay; increasing amounts of igneous material around the Tertiary intrusive units. These deposits are mostly above flood level across the desert plain, except along the river and stream channels prone to flash floods. Fluvial characteristics, such as point bars, oxbows, and abandoned-channel segments are not well preserved.

**Qtb** Bolson deposits — Clay, silt, sandstone and conglomerate terrace gravels. Finer-grained material found in the central areas, coarsening to pebble and boulder conglomerates on the outer edges.

**Ti** Intrusive igneous rocks — Rhyolitic laccoliths and intrusive igneous rocks. These rhyolites range in color from tan to purple to red to grey, and are occasionally mottled or brecciated. Textures range from aphanitic to porphyritic to microgranitic, predominantly composed of 48–53% alkali feldspar, 28–30% quartz, 8–14% sodic plagioclase, 4–5% annitic biotite, 2–3% magnetite-hematite Fe–Ti oxides. At least one laccolith, Round Top, has been prospected for uranium, fluorine, and rare earth element potential with exotic accessory minerals like changbaite, columbite, cryolite, tantalite, thorite, yttriofluorite, and yttrioceite.

**Tds** Andesitic / dioritic dikes and sills — Dikes and sills ranging from 1 to 20 meters thick are found in close association with rhyolitic laccoliths and plutons. They are typically gray to black, porphyritic, with zoned phenocrysts of sodic labradorite, altered olivine and clinopyroxene, in a matrix of predominantly labradorite plagioclase, olivine, augite and accessory magnetite and apatite. Contacts with the rhyolite and limestone are sharp and may have intruded earlier than the rhyolite as the mafic constituent of a bimodal volcanic event.

**Kb** Buda Limestone — Thin- to thick-bedded, resistant, finely crystalline, gray to brown limestone, containing some chert nodules. Occasionally interbedded with gray limestone marl, calcareous shale, and contains microscopic shell fragments (mainly gastropods, pelecypods, and foraminifera) in variable amounts throughout.

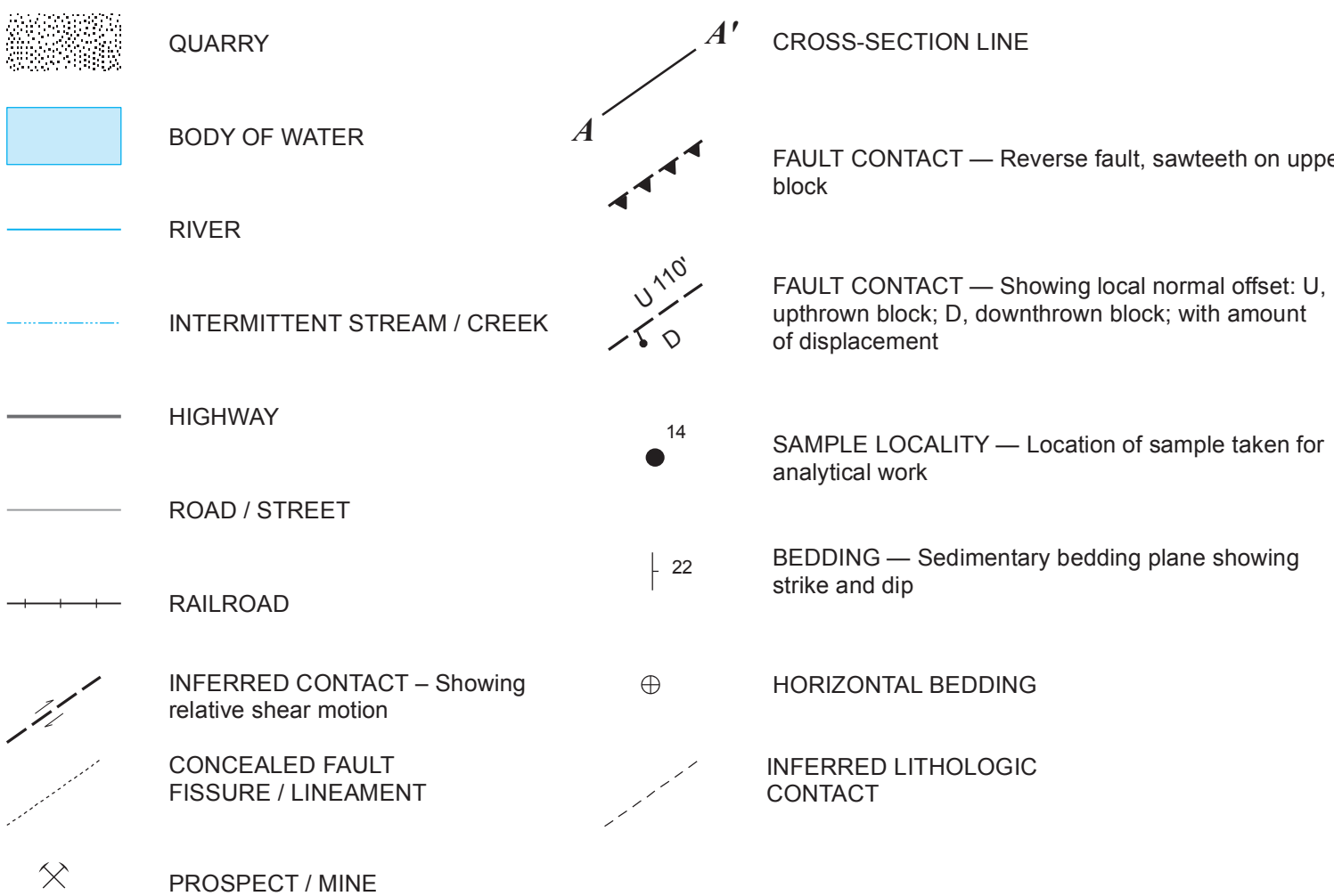
**Kf** Finlay Limestone — Alternating resistant and nonresistant units of fine-grained, massive, thick-bedded, gray limestone that is fossiliferous and occasionally cherty. Interbedded with shaly, silty, and calcareous limestone, and thin beds of siltstone and sandstone. *Dichyoconus wainutensis* foraminifera and *Exogyra texana* Roemer occur throughout the unit.

**Kcx** Cox Sandstone — White to various shades of red, orange, and brown; thin- to thick-bedded, occasionally cross-bedded, fine- to medium-grained, hematitic, quartz sandstone to conglomeratic sandstone cemented by authigenic silica. Rarely interbedded with thin, micritic, limestone layers, and red and green shale layers toward the base.

**Kcg** Campagrande Formation — Massive- to thick-bedded, fine-grained, gray limestone, occasionally interbedded with thin layers of marl, sandstone, conglomerate, siltstone, and shale. Limestone is fossiliferous throughout, with diagnostic *Orbitulina d'Orbigny* foraminifera found near the base of the unit.

MAP SYMBOLS

(All map symbols may not appear on this sheet.)



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BUREAU OF ECONOMIC GEOLOGY  
Jackson School of Geosciences  
The University of Texas at Austin

10100 Burnet Road, Bldg. 130 • Austin, Texas 78758  
Phone: 512-471-7144 • Fax: 512-471-4140  
email: [pubsales@beg.utexas.edu](mailto:pubsales@beg.utexas.edu)  
website: [www.beg.utexas.edu](http://www.beg.utexas.edu)

BUREAU OF ECONOMIC GEOLOGY  
Jackson School of Geosciences  
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10100 Burnet Road, Bldg. 130 • Austin, Texas 78758  
Phone: 512-471-7144 • Fax: 512-471-4140  
email: [pubsales@beg.utexas.edu](mailto:pubsales@beg.utexas.edu)  
website: [www.beg.utexas.edu](http://www.beg.utexas.edu)

Topographic base map from:  
U.S. Geological Survey (1976 — edited 1979)

Projection:  
Universal Transverse Mercator Zone 13N

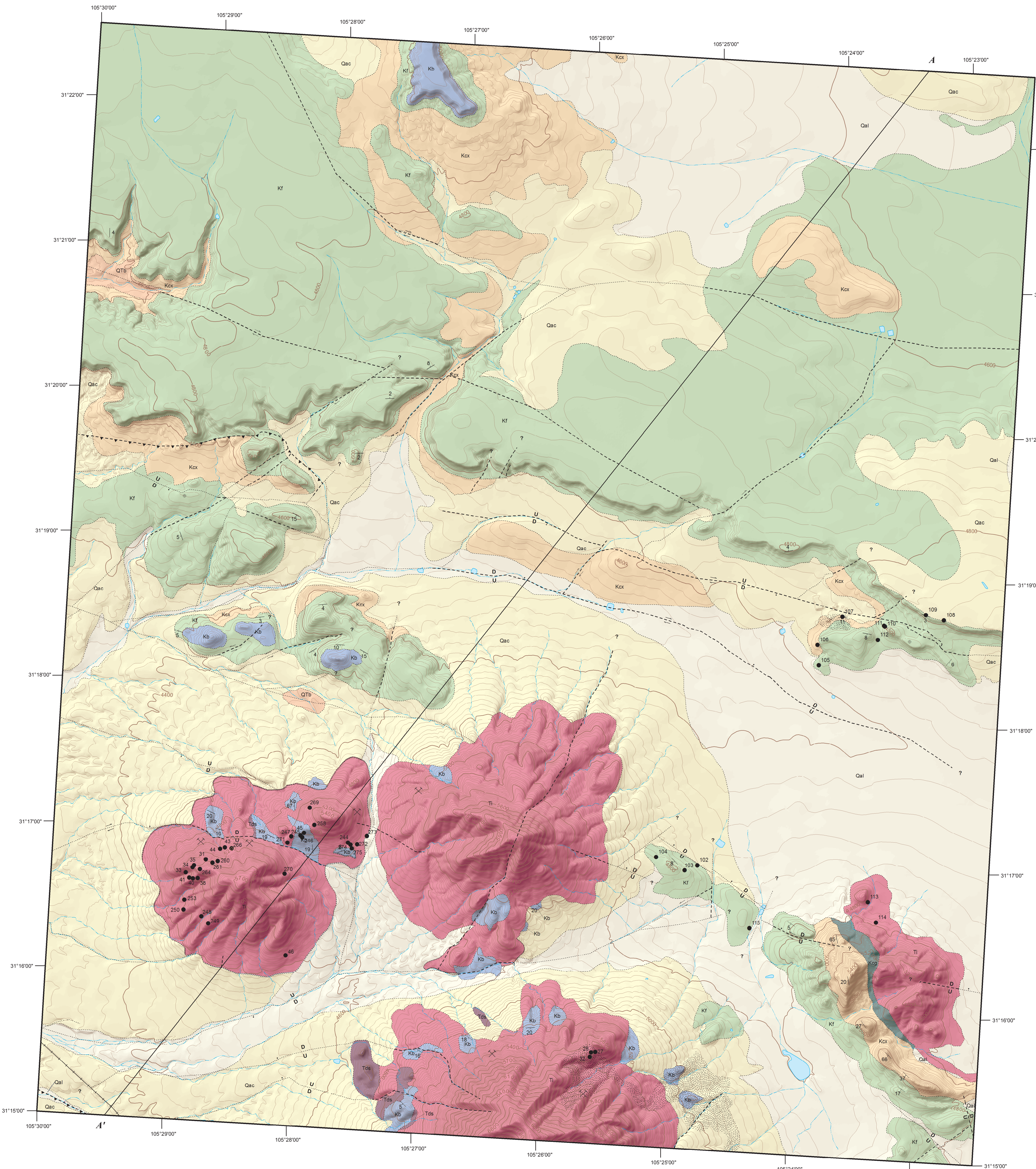
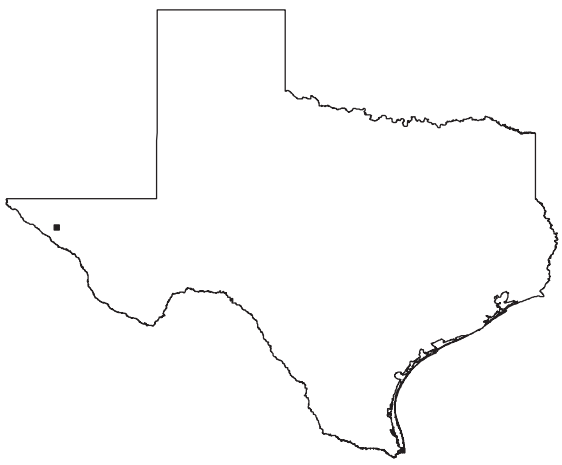
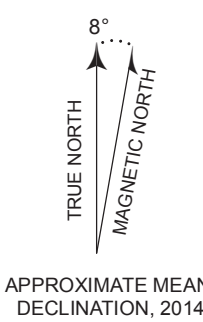
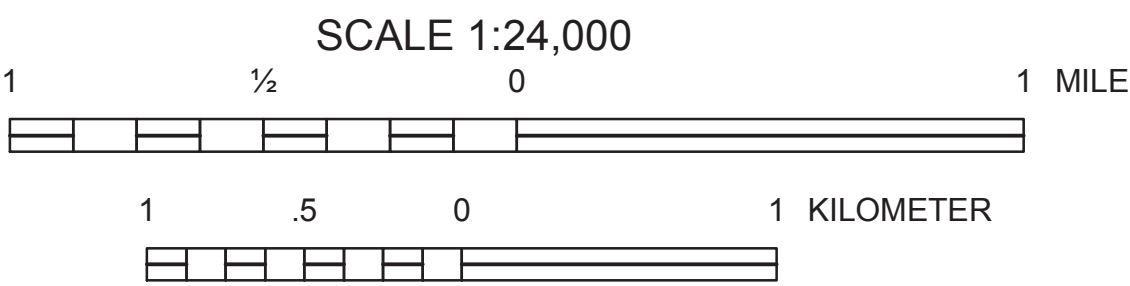
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North American Datum of 1983

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Brent A. Elliott  
2014

SCALE 1:24,000



UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 13N, NAD 83  
CONTOUR INTERVAL IS 20 FT  
DATUM IS MEAN SEA LEVEL

GEOLOGIC MAP OF THE GUNSIGHT HILLS  
SOUTH QUADRANGLE, TEXAS