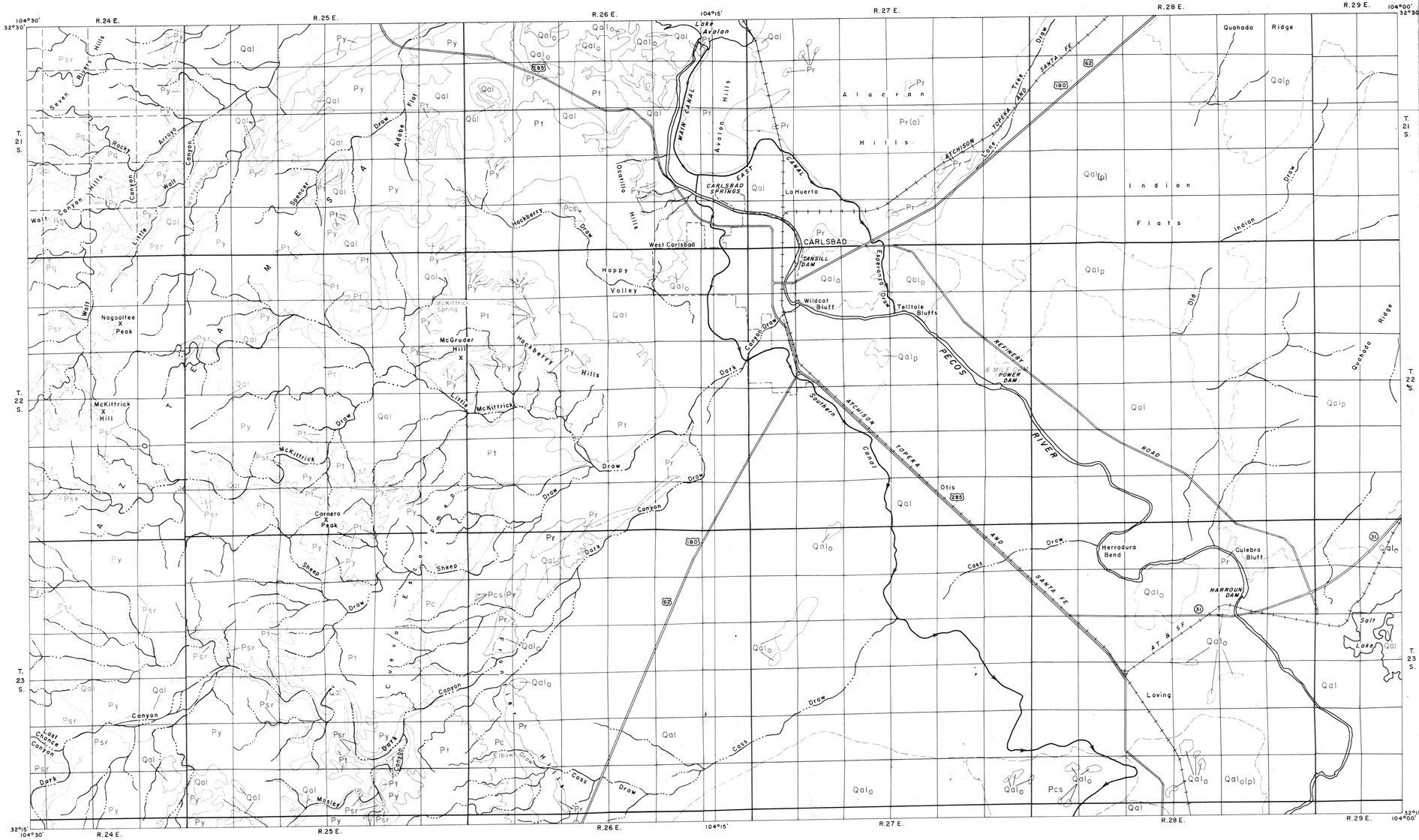

Plate 2.--Geologic map of part of the Carlsbad area, Eddy County, N. Mex.

EXPLANATION

Qal | Qal(p)

Alluvium

Area Qal - Gravel, sand, and silt with beds of caliche and limestone conglomerate, contains some eolian material. Yields large quantities of slightly saline water to irrigation wells east of Southern Canal, and moderately large quantities of fair to good quality water to wells west of the Southern Canal. Area Qal(p) - Playa material and reworked alluvial sand and silt, with some interbedded gravel. Locally, small hills capped by caliche and slumped Rustler dolomite. Considerable areas underlain by Ochoa gypsum.

Qalp

Alluvium (pediment phase)

Includes some older alluvium. Considerable areas underlain by Ochoa rwaidue. Most hills capped by pediment gravels and caliche, some hills are inliers of Rustler dolomite. Swales underlain by playa materials, dune sands, and reworked alluvium. Yields small quantities of water generally of poor quality to wells.

Qalo | Qalo(p)

Older alluvium

Area Qalo - Gravel, sand, and silt, and limestone conglomerate, contains some eolian sand and silt. Surficial material generally has a more mature caliche profile than surficial material of younger alluvium. Yields small quantities of water generally of poor quality to wells. Area Qalo(p) - Playa deposits consisting of alternating laminae of reworked gypsum and silt.

QUATERNARY

Pr | Pr(a)

Rustler formation

Area Pr - Vesicular dense dolomite underlain by gypsum and silt. In many places dolomite assumes anomalous dips resulting from removal of underlying evaporites. Yields small quantities of water of poor quality to stock wells. Area Pr(a) - Rustler formation is mostly mantled by thin alluvium, but locally alluvium may reach appreciable thickness.

Pcs

Castile formation

Surface exposures are gypsum altered from anhydrite. Contains reddish silt and insoluble residue that may be Salado or Rustler. Yields small amounts of water of poor quality to stock wells in Black River valley.

Ochoa

SHELF FACIES

Pt

Tansill formation

Thin- to medium-bedded dolomite and limestone with several interbedded silt beds in carbonate facies. Grades into gypsum and red silts in shelf area 4 to 6 miles from reef escarpment. Yields small amounts of water of fair to good quality to wells and springs in carbonate facies.

Py

Yates formation

Thin- to medium-bedded dolomite and limestone interbedded with many brownish sand and silt beds in carbonate facies. Carbonate facies grades into gypsum and silt beds in shelf area 5 to 7 miles from reef escarpment. Yields small amounts of water of good quality to domestic and stock wells in carbonate facies.

Psr

Seven Rivers formation

Dolomite and limestone interbedded with several sandstone and siltstone beds in carbonate facies. Grades into gypsum and silt in shelf area 12 to 15 miles from reef escarpment. Yields small amounts of water of good quality to domestic and stock wells in carbonate facies.

Pq

Queen formation

Dolomite interbedded with many brown sand and silt beds in carbonate facies. Grades into evaporite facies 15 to 18 miles north and northwest from Carlsbad. Yields small amounts of water of good to fair quality west of Carlsbad.

Guadalupe — Carlsbad group

REEF FACIES

Pe

Capitan limestone

A massive microcrystalline phase of reef material and a detrital and fragmental phase of reef talus material. Yields large quantities of water to wells in the vicinity of Carlsbad and the foothills of the Guadalupe Mountains southwest of Carlsbad. Yields water of good to fair quality west and southwest of Carlsbad.

PERMIAN

Contact

Dashed where gradational or indefinite