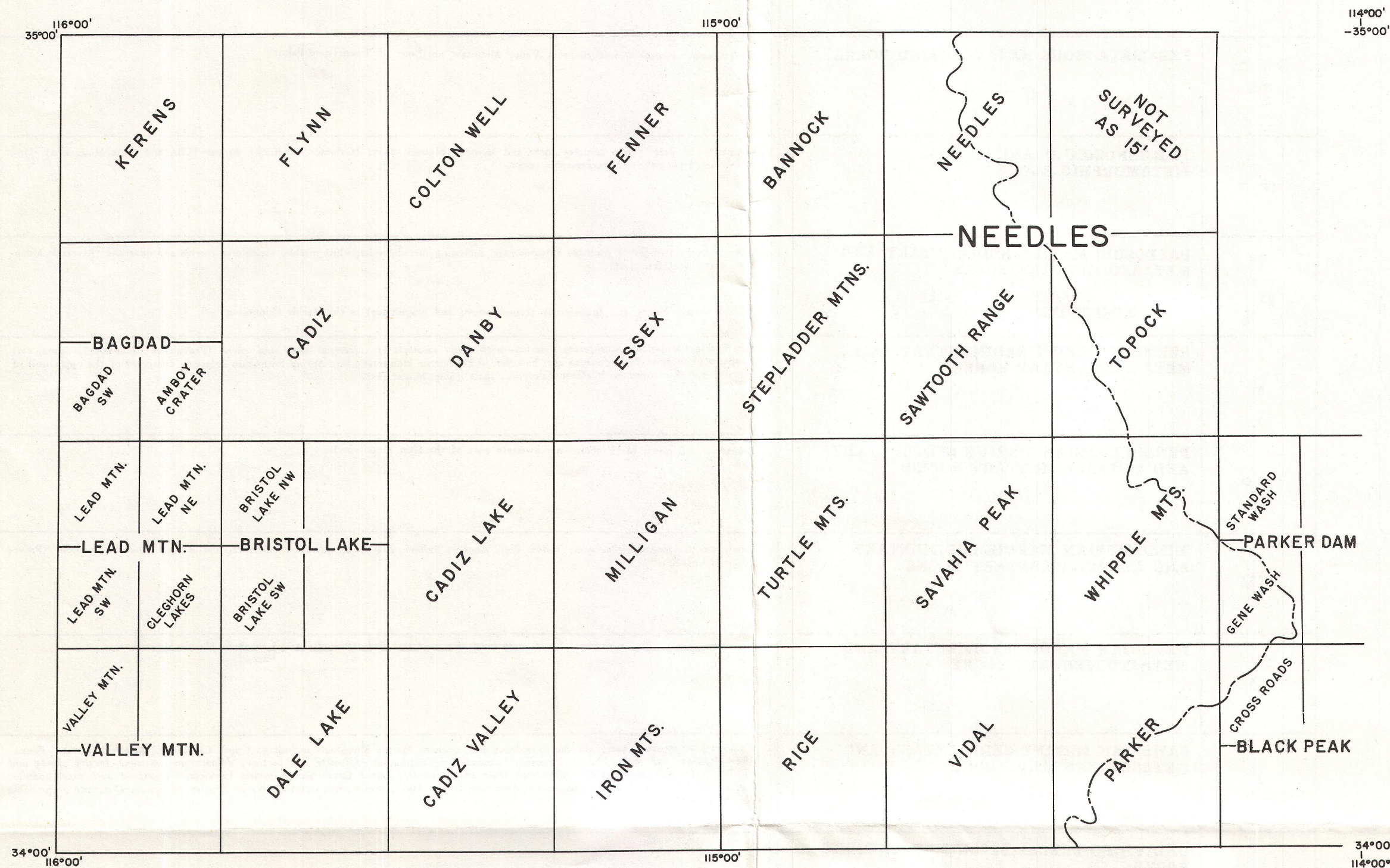


TOPOGRAPHIC QUADRANGLES
WITHIN THE NEEDLES SHEET
AVAILABLE FROM THE U.S. GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225
1963



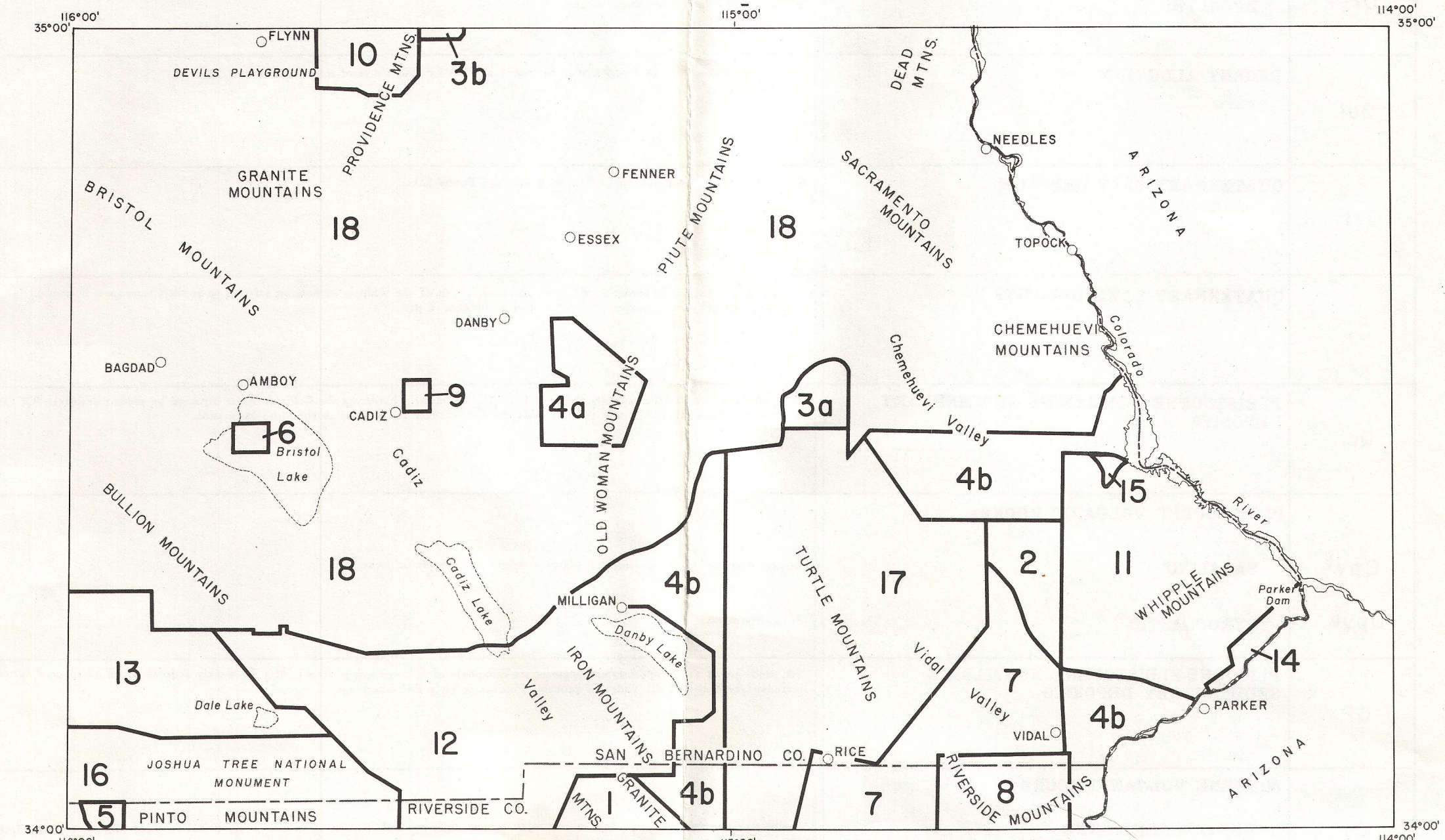
View northwest of Amboy Crater, a very recent cone composed of volcanic ejecta, surrounded by dark basaltic flow rocks. A thin veneer of wind blown sand gives the basalt a light appearance; thicker sand deposits are white. The Bristol Mountains, composed of dark Precambrian complex rocks and lighter granitic rocks are seen in the upper right, with the Granite Mountains on the skyline behind. The Lava Hills, in the upper left, are composed of Tertiary volcanic rocks underlain by Mesozoic granitic rocks and pre-Cenozoic granitic and metamorphic rocks. Photo by R. C. Frampton and J. S. Shelton, Claremont, California.

EXPLANATORY DATA
NEEDLES SHEET
GEOLOGIC MAP OF CALIFORNIA
OLAF P. JENKINS EDITION
Compiled by Charles C. Bishop, 1963

UNIVERSITY OF UTAH
RESEARCH INSTITUTE
EARTH SCIENCE LAB.

THIS DATA SHEET IS A REPRINT OF THE DATA SHEET ACCOMPANYING THE NEEDLES SHEET, GEOLOGIC MAP OF CALIFORNIA, OLAF P. JENKINS EDITION, FIRST PUBLISHED IN 1964. IT HAS NOT BEEN ALTERED. THE GEOLOGY SHOWN ON THE NEEDLES SHEET OF THE BOUGUER GRAVITY MAP OF CALIFORNIA IS ALSO REPRINTED FROM THE GEOLOGIC MAP OF CALIFORNIA, 1964. THE GRAVITY DATA PRESENTED WERE COMPILED IN 1976 AND PUBLISHED IN 1978.

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For a complete list of published geologic maps of this area see Division of Mines and Geology Special Reports 52 and 52-A.



View west from Coffin Spring in the northern part of the Turtle Mountains showing typical exposures of Tertiary volcanic rocks. Light colored pyroclastic material is interbedded with darker andesitic flow rocks. Photo by Richard B. Saul, 1963