

FIG. 1. Site locations of the 254 photographic features indexed.

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# An Airphoto Index To Physical and Cultural Features in the Western United States

As that for the Eastern part was compiled earlier,\* photo interpreters now have the material for the entire Nation.

## INTRODUCTION

**T**HE INDEX PRESENTED is keyed to Agricultural Stabilization and Conservation Service photos and corresponding U. S. Geological Survey Maps. The photo groups

\* *Photogrammetric Engineering*, Vol. 31, No. 5, page 896, Sept. 1965.

for the 254 selected features in the index were selected from photo index sheets stored at the western laboratory of the Agricultural Stabilization and Conservation Service in Salt Lake City, Utah, and provide representative coverage of physiographic, cultural, vegetative and land use features within the western United States.

The index should provide photo interpreters within various fields the opportunity to gather select photo coverage of the western U. S., while at the same time allowing topographic map reference of the selected physical or cultural feature.

The primary concern of the index is to locate characteristic examples of physical and cultural phenomena, and to this end various authoritative texts and uncounted maps were utilized in selecting some of the features; these texts appear in the bibliography, the map references have been omitted because of the great number of aeronautical charts,

film at a nominal scale of 1:20,000 or about 1,667 feet per inch.

#### USING THE INDEX

The index is arranged in alphabetical order by states, from Arizona to Wyoming; features are numbered consecutively from 1 to 254. The county name is listed first, followed by county codes, roll number, exposures, year of photography, number of covering photo index sheets, description of the feature, and the corresponding U. S. Geological Survey topographic map. Photo index numbers are shown in the event that more than one index

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*ABSTRACT: Cultural geographers, physical geographers, geomorphologists, and photo interpreters should find that this index provides a representative number of examples of physical and cultural features in the western United States. More than 250 of these features have been located on contact prints available from the USDA's photo laboratories at Salt Lake City and Asheville. Descriptions and pertinent data for ordering the photographs has been supplemented with the inclusion of corresponding USGS topographic map coverage for each photo grouping.*

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large-scale topographic maps, raised relief maps, physiographic diagrams, road maps, and other maps that were involved.

Assistance was freely dispensed by the Geography-Geology Department faculty of Wisconsin State University-Whitewater concerning other features throughout the United States. All features that could be cross referenced to textual accounts have been referenced to the bibliography by code number and page in the text.

It should be noted that since the compilation of the photo index all negative material for Minnesota and South Dakota has been transferred to the Eastern Photo Laboratory, Agricultural Stabilization and Conservation Service, United States Department of Agriculture, 45 South French Broad Ave., Asheville, North Carolina 28801. Contact prints were generally selected as a series of three consecutive photos in the same flight line, e.g. CEU-3DD 1(2)3, however, several of the features necessitated use of more than three consecutive photos, and it was occasionally necessary to list three or more prints from an adjacent flight line to assure complete stereoscopic coverage of large or non-centered features. Parentheses were placed around the print number or numbers designated as the best photos for each feature. All prints listed were taken on panchromatic

sheet was required for coverage of the feature. The notation, "All 1," indicated that a single photo index sheet covers the entire county. Photographic examples of some of the features listed are presented in Figures 2 through 6, with Figure 1 showing the actual geographic location of the features listed in the photo index.

#### ORDERING PHOTOGRAPHS FROM THE INDEX

Prints should be ordered by county name, symbol, film roll number, exposure number, and date as listed in the index. Either single- or double-weight paper should be specified. Orders should be directed to:

Western Laboratory  
Aerial Photography Division  
Agricultural Stabilization and Conservation Service  
U. S. Department of Agriculture  
2505 Parleys Way  
Salt Lake City, Utah 84109.

Photographic coverage taken with nitrate film during the years 1936 through 1941 may be obtained through the National Archives:

National Archives and Records Service  
Cartographic Branch  
General Services Administration  
Washington, D. C. 20408.

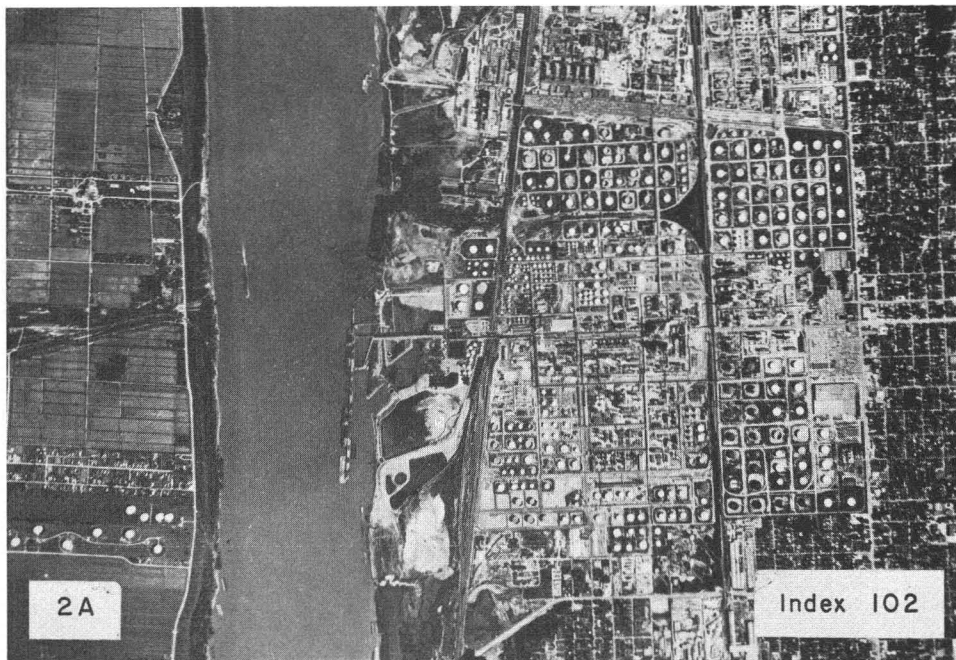


FIG. 2a. Heavy industrial complex along the Mississippi River at Baton Rouge, Louisiana. Oil refineries, tank farms, petrochemical plant, and cement plant are all in evidence, whereas immediately adjacent is a residential area of the city.

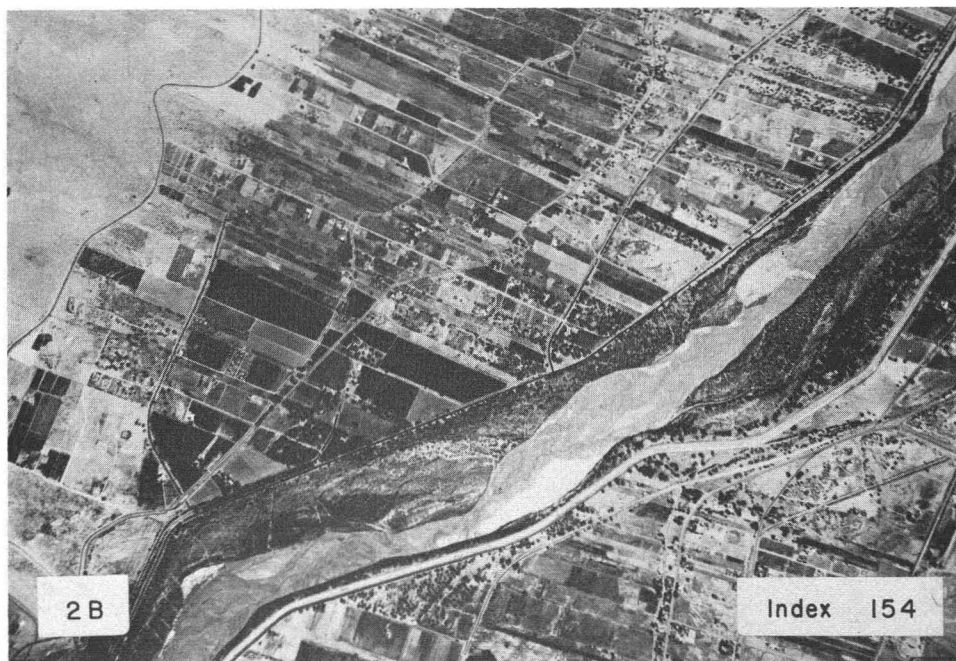


FIG. 2b. Irrigated agriculture on the Upper Rio Grande showing historical connection of early colonization with present day land use patterns.



FIG. 3a. Llano Estacado of West Texas, an area of shallow, randomly distributed depressions where wheat farming depends primarily on pump irrigation because of the low average rainfall.

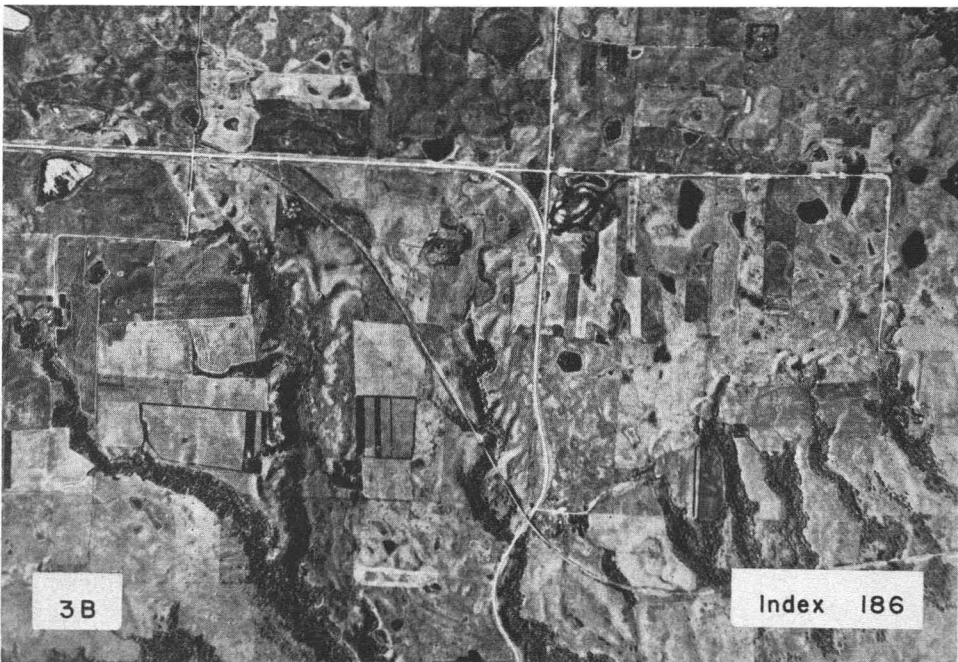


FIG. 3b. Portion of the Bemis moraine with knob and kettle topography; moraine associated with the Mankato stage of Wisconsin glaciation. Livestock and small grains furnish major source of area income.

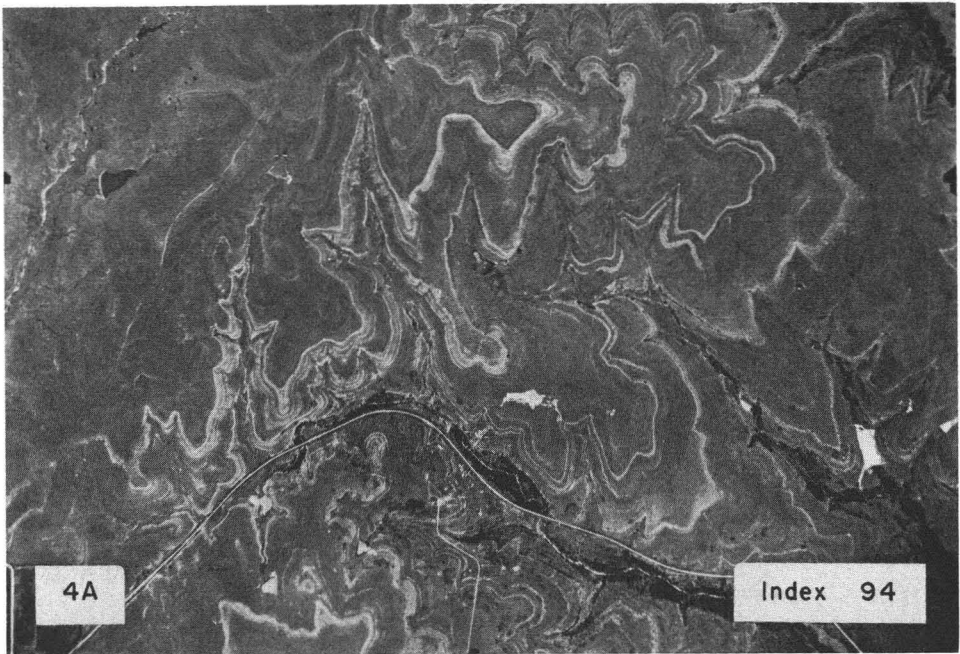


FIG. 4a. Flint Hills of Kansas with an almost contour-map appearance due to the outcropping of limestone ledges. Many small ponds on the creeks of the area conserve water for stock raising which is the main occupation of the rather rocky, thin-soil area.

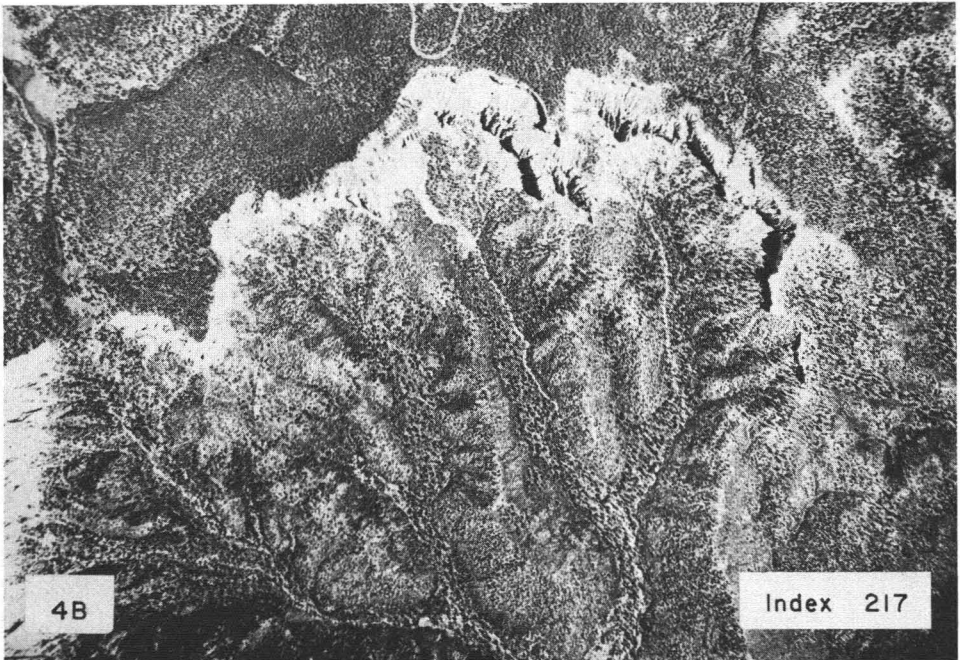


FIG. 4b. Pink Cliffs of Utah, at the southeast edge of the Paunsagunt Plateau, formed due to resistant Wasatch formation. Bryce Canyon area is a fault-line scarp set aside as a National Park with pine forest providing the major cover in the area.



FIG. 5a. Avery Island, a low salt dome supporting both agriculture and oil exploration, located on the eastern margin of the Mississippi River delta. (To facilitate publication, identifying numbers "5A" and "Index 106" were cropped from the original illustration.—*Editor*)

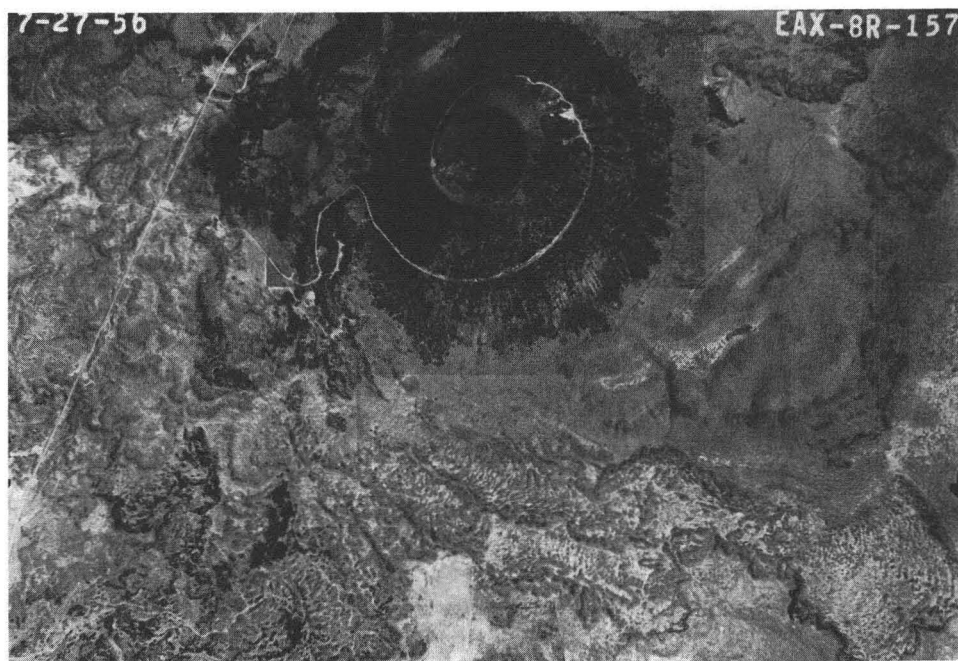


FIG. 5b. Capulin Mountain is an extinct composite volcano rising almost 1000 feet above the surrounding lava plain, with the caldera plunging down over 400 feet from the crater rim. (To facilitate publication, identifying numbers "5B" and "Index 157" were cropped from the original illustration.—*Editor*)

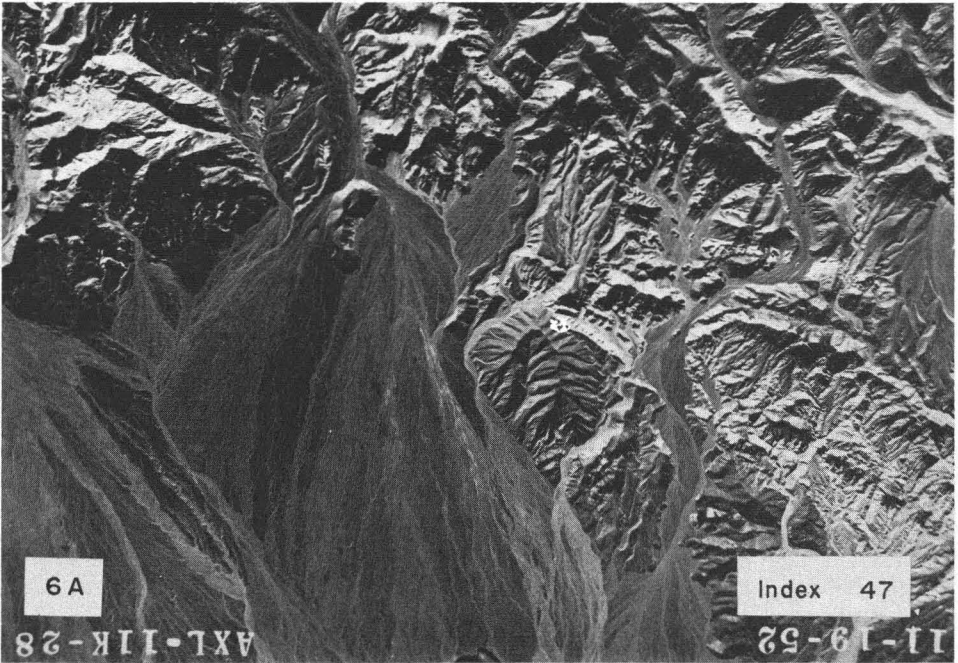


FIG. 6a. Piedmont alluvial fan emitting from the Panimint Range. Semi-arid area of temporary streams which funnel debris into cone-shaped fans along the mountain front.

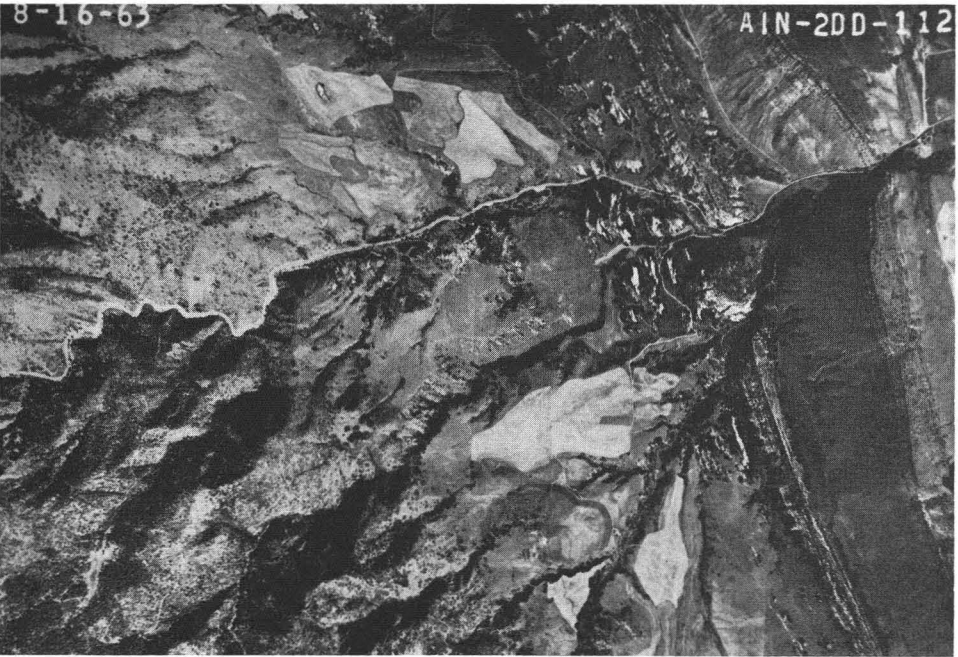


FIG. 6b. Portion of the Dakota hogback with stream dissection by Deer Creek. Part of the steeply dipping Cretaceous Dakota sandstone outcropping at the western edge of the Colorado Piedmont. (To facilitate publication, identifying numbers "6B" and "Index 63" were cropped from the original illustration.—*Editor*)

Payment must be made in advance on all orders, and 4 to 6 weeks may be required for delivery of prints. As of June 1967 prices for contact prints at the nominal scale of 1:20,000 were:

Number of prints	Price per print
1-5	\$1.00
6-100	0.85
over 100	0.65

Enlargements may be obtained at four scales ranging from 1:15,840 on prints 14 by 14 inches to 1:4,800 on prints 40 by 40 inches. Prices vary from \$2.00 to \$5.60 per print. Photo index sheets at a scale of 1 inch per mile cost \$2.00 for a sheet 20 by 24 inches.

#### ORDERING U. S. GEOLOGIC SURVEY MAPS FROM THE INDEX

Topographic map quadrangles should be ordered by name, date and scale as shown in the index. The 7½ and 15 minute quadrangles are printed at scales of 1:24,000 and 1:62,500 respectively. Where this standard coverage is not available, 1:250,000 and 1:125,000 quadrangles have been listed.

Maps of areas west of the Mississippi River, including all of Louisiana and Minnesota, should be ordered from:

U. S. Geologic Survey  
Distribution Section  
Federal Center, Building 25  
Denver, Colorado.

#### ACKNOWLEDGMENTS

The author wishes to express his thanks to the State Research Committee of the Wisconsin State University system and to the Dean of the Graduate School, Professor Donald Graham, for the financial and administrative

assistance rendered in obtaining the research grant that made this photo index a reality. Dr. T. Eugene Avery, Chairman and Professor, Department of Forestry, University of Illinois, who acted as co-author of a similar index for the eastern U. S., merits special mention because of his constant academic hand in seeing the western index to completion.

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No.	County	County Symbol, Roll, Exposures	Photo Date	Index Sheet No.	Description of Features	U.S.G.S. Quadrangle Map Coverage
<b>ARIZONA</b>						
1	Cochise	DUH-4EE 89(90)91	1964	4	<i>Irrigation</i> —Irrigation along San Pedro River at St. David.	St. David—1958 15'—1:62,500
2	Cochise	DUH-2EE 59(60,61)62	1964	6	<i>Three Sisters Buttes</i> —Old volcanic remnants much dissected by arid land erosion.	Cochise—1958 15'—1:62,500 Pearce—1958 15'—1:62,500
3	Cochise	DUH-5V 2(3)4	1958	5	<i>Shaft mining</i> —Commonwealth Mine, turquoise and diamond mine.	Pearce—1958 15'—1:62,500
4	Maricopa	DHP-3EE 87(88,89)90	1964	9	<i>Irrigation</i> —Cotton & vegetable irrigation near Buckeye, Arizona. ( <i>I</i> , p. 375).	Hassayampa—1958 7½'—1:24,000
5	Maricopa	DHP-5EE 84(85)86	1964	12	<i>Irrigation</i> —Ditch irrigation of cotton. ( <i>II</i> , p. 476).	Buckhorn—1956 7½'—1:24,000
6	Maricopa	DHP-9EE 41(42)43	1964	11	<i>Industrial complex</i> —Kaiser aluminum plant in suburban Phoenix, Arizona. ( <i>8</i> , p. 29).	Fowler—1952 7½'—1:24,000



No.	County	County Symbol, Roll, Exposures	Photo Date	Index Sheet No.	Description of Features	U.S.G.S. Quadrangle Map Coverage
7	Maricopa	DHP-3EE 108(109)110	1964	14	<i>Braided stream channel</i> —Big bend of the Gila River with exposed sand bars.	Cotton Center—1951 15'—1:62,500
8	Maricopa	DHP-5EE 149(150,151)152	1964	12	<i>Auto proving grounds</i> —Desert proving grounds of General Motors outside of Mesa, Arizona.	Desert Well—1956 7½'—1:24,000 Higley—1956 7½'—1:24,000
9	Pima	DHQ-2V 74(75)76	1958	5	<i>Open pit mining</i> —Pima Mine copper mine.	Twin Buttes—1957 15'—1:62,500
10	Yuma	CVK-2EE 110(111)112	1964	3	<i>Irrigation</i> —Gila River irrigation at Roll, Arizona.	Roll—1955 7½'—1:24,000
<b>ARKANSAS</b>						
11	Arkansas	CCB-2EE 159(160)161	1964	5	<i>Rice Culture</i> —Mississippi River terraces of silty-loam (3, p. 237).	Gillet—1935 15'—1:62,500
12	Ashley	CFC-2EE 178(179)180	1964	4	<i>Forestry operation</i> —Integrated plant at Greenwood—1963 Crosset. (8, p. 178).	1:250,000 Harrison—1904 30'—1:125,000
13	Boone	AVQ-5GG 220(221)222	1965	2	<i>Huntsville Prairie</i> —Rolling terrain with mixed agriculture.	Cato—1953 7½'—1:24,000
14	Faulkner	EN-2BB 188(189,190)191 249(250,251)252	1960	4	<i>Folded structure</i> —Portion of Arkansas River valley near Lake Conway.	Conway—1961 15'—1:62,500
15	Hot Springs	BPU-1GG 112(113)114 169(170)171	1965	1	<i>Bauxite mining</i> —Open pit mining complex; alumina refinery.	Malvern—1949 15'—1:62,500
16	Logan	II-6BB 16(17)18 53(54)55	1961	2	<i>Petit Jean Valley</i> —Frontal portion of a plunging anticline.	Booneville—1939 15'—1:62,500
17	Logan	II-6BB 161(162)163	1961	4	<i>Petit Jean Valley</i> —Plunging syncline broken by water gap of Petit Jean Creek.	Booneville—1939 15'—1:62,500
18	Madison	CZO-1GG 276(277)278	1965	2	<i>Boston mountains</i> —Farms on flat top crests; forested valleys. (3, p. 234).	Spring Valley—1958 7½'—1:24,000
19	Miller	CEU-3DD 90(91)92	1963	3	<i>Petroleum operations</i> —oil and gas wells near Fouke.	Fouke SE—1952 7½'—1:24,000
20	Perry	BPV-2BB 81(82)83 119(120,121)122	1960	3	<i>Intense folding</i> —Fourche la Fave River valley with water gap and limited agriculture in valley.	Hot Springs—1894 30'—1:125,000
<b>CALIFORNIA</b>						
21	Butte	AAX-1EE 137(138)139	1964	5	<i>Feather River project</i> —Irrigation and water reservoir project linked to the Great Valley and Los Angeles.	Bidwell Bar—1950 7½'—1:24,000 Oroville—1949 7½'—1:24,000
22	Butte	AAX-2EE 206(207)208	1964	5	<i>Strip-mining</i> —gold mining by dredge at Oroville.	Oroville—1949 7½'—1:24,000
23	Colusa	AAV-2EE 135(136)137	1964	2	<i>Rice cultivation</i> —Terracing of farmland in Sacramento River valley. (3, p. 204).	Maxwell—1952 15'—1:62,500
24	Humboldt	CVL-12N 27(28,29)30	1954	15	<i>Forest operations</i> —Agriculture and forestry operations in the Coast Range along the Eel River. (3, p. 202).	Weott—1951 15'—1:62,500
25	Imperial	ABN-7M 73(74)75	1953	7	<i>Sand dune field</i> —Transverse dunes in Imperial Valley dunal area. (13, p. 445).	Amos—1956 7½'—1:24,000
26	Imperial	ABN-1M 130(131)132	1953	12	<i>Salton Trough</i> —Sand dunes and part of the irrigation canal system. (1, p. 377).	Midway Well—1954 7½'—1:24,000 Midway Well NW—1954 7½'—1:24,000
27	Kern	ABL-17K 4(5)6	1952	25	<i>Borax mining</i> —Pacific Coast Borax Co. mine and mill north of Rodgers Dry Lake; Mojave Desert area.	Johannesburg SW—1947 7½'—1:24,000
28	Kern	ABL-2BB 41(42)43	1961	5	<i>Petroleum operations</i> —Oil wells among the agricultural crops of the San Joaquin Valley.	Rosedale—1954 7½'—1:24,000
29	Kern	ABL-12K 84(85)86	1952	8	<i>Kern River fan debris</i> —Large alluvial fan with braided stream. (1, p. 479).	Gosford—1954 7½'—1:24,000
30	Kern	ABL-10K 36(37)38	1952	12	<i>Playa lake bed</i> —Koehn dry lake bed; some farmland.	Saltdale—1943 15'—1:62,500
31	Kings	ABJ-22T 25(26)27	1957	5	<i>Tulare Lake bed</i> —Old lake bed of interior drainage now being farmed. (1, p. 476).	Kettleman City—1963 7½'—1:24,000
32	Los Angeles	AXJ-5K 37(38)39	1952	14	<i>Sand and gravel operations</i> —Large sand and gravel open pit mine in the Rio Hondo Wash.	Baldwin Park—1953 7½'—1:24,000 El Monte—1953 7½'—1:24,000
33	Los Angeles	AXJ-14K 95(96)97	1953	16	<i>Signal Hill</i> —One of earliest oil field areas in California.	Long Beach—1949 7½'—1:24,000

No.	County	County Symbol, Roll, Exposures	Photo Date	Index Sheet No.	Description of Features	U.S.G.S. Quadrangle Map Coverage
34	Los Angeles	AXJ-7K 66(67,68)69 139(140,141)142	1952	16	<i>Terminal Island</i> —Wharfs and heavy industry along the Los Angeles waterfront.	Long Beach—1949 7½'—1:24,000 San Pedro—1964 7½'—1:24,000
35	Los Angeles	AXJ-3W 123(124)125	1959	3	<i>Fault zone</i> —San Andreas fault near Palmdale. (2, p. 540).	Ritter Ridge—1958 7½'—1:24,000
36	Marin	DRH-3K 77(78)79 DRH-4K 177(178)179	1952	1	<i>Fault zone</i> —Tomales Bay, part of the San Andreas Rift Zone. (2, p. 541).	Point Reyes—1954 15'—1:62,500
37	Merced	ABF-2BB 242(243)244	1961	3	<i>Cropland irrigation</i> —Part of the San Joaquin Valley irrigation complex. (3, p. 206).	Newman—1952 7½'—1:24,000
38	Monterey	ABG-25R 50(51)52	1956	6	<i>Mediterranean scrub forest</i> —Rain shadow area vegetation. (14, p. 421).	Sycamore Flat—1956 7½'—1:24,000
39	Monterey	ABG-2CC 146(147)148	1963	5	<i>Salinas River Valley</i> —Agriculture along the Salinas River valley with Mediterranean scrub forest along the valley sides. (14, p. 421).	Wunpost—1949 7½'—1:24,000
40	Orange	AXK-1FF 32(33)34	1965	1	<i>Citrus groves</i> —Orchards on alluvial fan material of the Lomas de Santiago.	Tustin—1948 7½'—1:24,000 El Toro—1949 7½'—1:24,000
41	Riverside	AXM-6W 133(134)135	1959	7	<i>Lake Cahuilla shoreline</i> —Strand lines of former fresh water lake. (2, p. 497).	Cathedral City—1958 7½'—1:24,000 Rancho Mirage—1957 7½'—1:24,000
42	Riverside	AXM-16W 152(153)154	1959	9	<i>Citrus orchards</i> —Orchards on piedmont alluvial fan debris. (1, p. 507).	Corona S—1954 7½'—1:24,000
43	San Bernardino	AXL-1K 73(74)75	1952	25	<i>Amboy Crater</i> —Old volcanic crater in the Mojave desert. (2, p. 495).	Amboy Crater—1954 7½'—1:24,000
44	San Bernardino	AXL-19W 90(91)92	1959	5	<i>Mojave Desert</i> —Irrigation along the Mojave River. (14, p. 329).	Helendale—1956 7½'—1:24,000
45	San Bernardino	AXL-16W 137(138)139	1959	10	<i>Kaiser steel plant</i> —Integrated steel plant. (7, p. 436).	Fontana—1953 7½'—1:24,000 Guasti—1953 7½'—1:24,000
46	San Bernardino	AXL-17W 35(36,37)38 54(55)56	1959	11	<i>Piedmont alluvial fans</i> —Radial drainage; orchards. (1, p. 502).	Ontario—1954 15'—1:62,500
47	San Bernardino	AXL-11K 27(28)29 AXL-9K 181(182)183	1952	2	<i>Piedmont alluvial fans</i> —Interior basin with centripetal drainage.	Avawatz Pass—1951 15'—1:62,500
48	San Luis Obispo	AXH-10R 147(148,149)150	1956	16	<i>Elongate blowout dunes</i> —Coastal dune area. (13, p. 441).	Guadalupe—1959 7½'—1:24,000 Point Sal—1958 7½'—1:24,000
49	Santa Barbara	BTM-10K 14(15)16	1954	2	<i>Coalinga oil fields</i> —Old oil field area with some forest reversion. (1, p. 494).	Orcutt—1959 7½'—1:24,000
50	Siskiyou	DDC-10P 89(90,91,92)93	1955	12	<i>Lava flow</i> —Part of lava flow from Mount Shasta; Haystack Butte, old volcanic cone.	Dwinnell Reservoir—1954 15'—1:62,500
51	Siskiyou	DDC-11P 39(40,41,42,43)44	1955	19	<i>Mount Shasta</i> —Old volcanic cone. (1, p. 421).	Shasta—1954 15'—1:62,500
52	Sutter	AAZ-2EE 35(36,37)38 46(47,48)49	1964	2	<i>Sutter Buttes</i> —Old volcanic cones showing severe erosion. (1, p. 473).	Pennington—1954 7½'—1:24,000 Sutter Buttes—1954 7½'—1:24,000
<b>COLORADO</b>						
53	Alamosa	CWO-1P 48(49,50)51	1955	2	<i>Dunal area</i> —Dune field adjacent to the Sangro de Cristo Mountains.	Great Sand Dunes National Monument—1938 7½'—1:24,000
54	Alamosa	CWO-1P 41(42,43)44	1955	2	<i>Piedmont alluvial fans</i> —Fan debris from the Sangro de Cristo Mountain Range.	Great Sand Dunes National Monument—1938
55	Arapahoe	YH-3DD 295(296)297	1963	3	<i>Bombing target range</i> —Part of Lowry AFB.	Strasburg SW—1961 7½'—1:24,000
56	Boulder	AIM-1DD 176(177)178	1963	1	<i>Table Mountain</i> —Flat-topped mountain group near Boulder. (2, p. 311).	Hygiene—1950 7½'—1:24,000
57	Boulder	AIM-1DD 52(53)54	1963	1	<i>Northern Colorado irrigation</i> —Utilizing snowmelt runoff and reservoir system. (3, p. 182).	Hygiene—1950 7½'—1:24,000
58	Boulder	AIM-1DD 17(18)19	1963	2	<i>Flouspar mine and mill</i> —Rocky Mountain front mining.	Niwot—1951 7½'—1:24,000

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59	Fremont	EKT-2CC 39(40,41)42	1962	4	<i>Royal Gorge of the Arkansas River</i> —Breaks through a hogback ridge onto the High Plains. (13, p. 351).	Canon City—1959 7½'—1:24,000 Royal Gorge—1959 15'—1:62,500
60	Garfield	DXN-6BB 147(148,149)150	1962	3	<i>Book Plateau</i> —Stream dissection of plateau surface, a part of North Dry Fork of Roan Creek.	Roan Creek—1929 15'—1:62,500
61	Huerfano	DYT-6P 83(84,85)86 DYT-3P 86(87,88)89	1955	8	<i>Spanish Peaks</i> —Much eroded igneous mountain group. (1, p. 41).	Spanish Peaks—1897 30'—1:125,000
62	Huerfano	DYT-3P 24(25)26	1955	8	<i>Igneous dike</i> —Radiating from Spanish Peaks; disruption of drainage. (14, p. 227).	Spanish Peaks—1897 30'—1:125,000
63	Jefferson	AIN-2DD 111(112)113	1963	4	<i>Dakota hogback</i> —Stream dissection by Deer Creek. (2, p. 310).	Littleton—1957 7½'—1:24,000 Indian Hills—1957 7½'—1:24,000
64	Las Animas	AXP-14EE 110(111,112)113	1964	17	<i>Raton Mesa</i> —Lava flows in advanced stage of dissection.	Elmoro—1895 30'—1:125,000
65	Las Animas	AXP-1EE 28(29,30)31	1964	10	<i>Purgatoire Canyon</i> —Dissection in Dakota sandstone; Red Rocks country.	Mesa de Maya—1893 30'—1:125,000
66	Lincoln	YK-2CC 27(28)29	1962	10	<i>Terrace and escarpment</i> —Part of Colorado High Plains. (1, p. 144).	Arroyo—1889 30'—1:125,000
67	Mesa	AIG-1BB 165(166)167	1961	3	<i>Irrigated cropland</i> —Colorado River irrigation project at Grand Junction. (10, p. 500).	Mack—1962 7½'—1:24,000
68	Montrose	DXO-8AA 168(169,170)171	1960	7	<i>Black Canyon of the Gunnison</i> —Erosion of submature plateau. (1, p. 117).	Black Canyon of the Gunnison Nat'l. Mon.—1950 7½'—1:24,000
69	Montrose	DXO-14AA 85(86,87)88	1960	2	<i>Uncompahgre Plateau</i> —Escarpment face of the plateau with dissection by the Dolores River.	Paradox Valley—1922 30'—1:125,000
70	Montrose	DXO-5AA 83(84,85)86	1960	5	<i>Uncompahgre Plateau</i> —Linear drainage of the plateau surface.	Moabe—1962 1:250,000
71	Rio Grande	CWT-9DD 92(93,94)95	1963	3	<i>Alluvial fans</i> —Portion of San Luis valley showing valley filling. (1, p. 130).	Aztec—1961 1:250,000
72	San Miguel	EHZ-7AA 22(23,24,25)26	1960	1	<i>Alpine glaciation</i> —Cirques, U-shaped valley of Mount Mears; adjacent to the Uncompahgre Plateau.	Montrose—1909 30'—1:125,000 Gray Head—1953 7½'—1:24,000
<b>HAWAII</b>						
73	Hawaii	EKL-7CC 149(150)151	1965	4	<i>Shield volcano</i> —Lava flow of 1859; the Puu Anuhulu homestead area. (14, p. 226).	Puako—1928 15'—1:62,500
74	Hawaii	EKL-10CC 84(85,86,87)88	1965	12	<i>Shield volcano</i> —Mokuaweoweo crater; Mauna Loa area; lava flows.	Mauna Loa—1926 15'—1:62,500
75	Hawaii	EKL-14CC 4(5)6	1965	15	<i>Shield volcano</i> —Lava flow from Mokuaweoweo crater.	Honuaopu—1921 15'—1:62,500 Mauna Loa—1926 15'—1:62,500
76	Honolulu	EKM-1CC 98(99)100	1962	2	<i>Sugar cane plantations</i> —On weathered volcanic soils.	Haleiwa—1953 7½'—1:24,000
77	Honolulu	EKM-2CC 209(210)211	1963	4	<i>Honolulu resort area</i> —Part of Honolulu and Waikiki beach; Diamond Head.	Honolulu—1959 7½'—1:24,000
78	Maui	EKQ-1CC 35(36)37	1965	1	<i>Pineapple plantations</i> —On weathered volcanic soils.	Lanai—1923 15'—1:62,500
<b>IDAHO</b>						
79	Ada	DHT-3DD 96(97)98	1964	1	<i>Irrigated farmland</i> —Portion of Snake River Plain. (1, p. 247).	Eagle—1953 7½'—1:24,000
80	Adams	DYU-3P 91(92,93)94	1955	2	<i>Hells Canyon</i> —Canyon of Snake River in old lava flow.	Cuprum—1957 15'—1:62,500
81	Bingham	CXN-1R 193(194)195	1956	5	<i>Ferry Butte</i> —Old rhyolitic volcano on Snake River Plain. (1, p. 240).	Blackfoot—1943 15'—1:62,500 Pingree—1955 7½'—1:24,000
82	Bingham	CXN-3AA 117(118)119	1960	1	<i>Shield volcano</i> —Lava flow area; linear farm arrangement; surficial sand dunes.	Firth—1955 7½'—1:24,000 Lincoln Creek—1955 7½'—1:24,000
83	Blaine	CVO-1EE 243(244)245	1964	5	<i>Lava flow</i> —Recent flow of Snake River Plain. (1, p. 238).	Idaho Falls—1955 1:250,000
84	Bonneville	CXO-4AA 205(206)207	1960	3	<i>Snake River Plain</i> —Mechanized farmland. (3, p. 193).	Poplar—1951 7½'—1:24,000

No.	County	County Symbol, Roll, Exposures	Photo Date	Index Sheet No.	Description of Features	U.S.G.S. Quadrangle Map Coverage
85	Bonneville	CXO-2AA 105(106)107	1960	2	<i>Sand hills</i> —Area of hairpin dunes. (13, p. 447).	Idaho Falls S—1948 7½'—1:24,000 Ammon—1924 15'—1:62,500
86	Butte	CVP-5W 192(193)194	1959	8	<i>Shield volcano</i> —Sunset, Grassy, and North Crater cones of the northern part of Craters of the Moon. (2, p. 230).	Craters of the Moon National Monument—1957 1:31,680
87	Kootenai	DOS-5V 26(27)28	1958	3	<i>Coeur d'Alene</i> —Pulpmill and pulp storage on lake.	Coeur d'Alene—1957 15'—1:62,500
88	Madison	CXS-6AA 50(51,52)53	1960	1	<i>Menan Buttes</i> —Old lava cones.	Menan Buttes—1951 7½'—1:24,000
89	Shoshone	DYW-1FF 86(87)88	1965	1	<i>Zinc mining</i> —Smelter at Smelteryville—Kellogg.	Kellogg—1957 15'—1:62,500
<b>KANSAS</b>						
90	Barton	CHG-1FF 197(198,199)200	1965	4	<i>Cheyenne Bottoms Sink</i> —Oil wells, karst topography.	Ellinwood NW—1956 7½'—1:24,000
91	Barton	CHG-1FF 213(214)215	1965	1	<i>Petroleum operations</i> —Trapp oil and gas field. (15, p. 370).	Great Bend—1955 1:250,000
92	Clark	CHE-2AA 199(200)201	1960	3	<i>Karst topography</i> —St. Jacob's Well lime sink area. (1, p. 29).	Ashland—1896 30'—1:125,000 Meade—1896 30'—1:125,000
93	Clark	CHE-2AA 124(125)30	1960	2	<i>Karst topography</i> —Subsidence through solution. (2, p. 305).	Ashland—1896 30'—1:125,000
94	Elk	AZJ-4W 207(208)209	1959	3	<i>Flint Hills escarpment</i> —Eroded portion of the Great Plains. (2, p. 251).	Grenola—1962 7½'—1:24,000 Burden—1885 30'—1:125,000
95	Elk	AZJ-4W 124(125)126	1959	1	<i>Flint Hills</i> —Pasture area due to soil restriction. (3, p. 164).	Piedmont SW—1964 7½'—1:24,000
96	Greeley	CCS-1FF 72(73)74	1965	3	<i>High Plains</i> —Semiarid region of dry farming of wheat. (3, p. 166).	Scott City—1955 1:250,000
97	Johnson	ZL-4W 63(64)65	1959	all 1	<i>Rolling prairie</i> —Part of corn belt although diversified farming present. (3, p. 163).	Olathe—1956 <sup>7</sup> 7½'—1:24,000 Lenexa—1963 7½'—1:24,000
98	Rawlins	DHB-1BB 190(191,192)193	1961	2	<i>Aligned drainage</i> —Possibly due to old longitudinal dunes. (2, p. 308).	Atwood—1951 15'—1:62,500
99	Sedgwick	AYE-2DD 122(123,124)125	1963	6	<i>Wichita City</i> —City area and McConnell A.F.B.	Derby—1956 7½'—1:24,000 Wichita E.—1956 7½'—1:24,000
<b>LOUISIANA</b>						
100	Ascension	CQE-2FF 51(52)53	1965	3	<i>Donaldsonville</i> —City area; French long lots.	Donaldsonville—1937 15'—1:62,500 White Castle—1936 15'—1:62,500
101	Assumption	CEF-5FF 9(10)11	1965	1	<i>French long lots</i> —Old land use system; natural levee. (3, p. 241).	Napoleonville—1952 15'—1:62,500 White Castle—1936 15'—1:62,500
102	Baton Rouge	CQF-7T 13(14,15)16	1959	2	<i>Industrial complex</i> —Heavy industry on Baton Rouge waterfront.	Scotlandville—1963 7½'—1:24,000
103	Calcasieu	CGG-1DD 285(286)287	1963	6	<i>Petroleum operations</i> —Oil refineries on Lake Charles (west side).	Westlake—1955 7½'—1:24,000
104	Calcasieu	CGG-2DD 243(244)245	1963	1	<i>Petroleum operations</i> —Lake Charles oil and gas field.	Hecker—1956 7½'—1:24,000 Moss Bluff—1955 7½'—1:24,000
105	East Carroll	CTK-1FF 205(206,207)208 22(23,24)25	1964	1	<i>Lake Providence</i> —Oxbow lake; meander scrolls.	Mayersville—1939 15'—1:62,500
106	Iberia	CEH-3DD 147(148,149)150	1963	2	<i>Avery Island</i> —Salt dome; radial drainage; oil wells; limited farmland. (4, p. 508).	Delcambre—1963 7½'—1:24,000
107	Pointe Coupee	CQL-3T 128(129)130	1959	4	<i>False River crevasse</i> —Old levee break of the False River.	Port Hudson—1963 7½'—1:24,000
108	Pointe Coupee	CQL-4T 13(14,15,16,17)18 40(41,42,43,44)45	1959	4	<i>False River</i> —Showing oxbow lake.	New Roads—1939 15'—1:62,500
109	Tensas	CTO-3FF 113(114,115)116	1964	5	<i>Mississippi River</i> —Oxbows, portions of former river channel.	Locust Ridge—1939 15'—1:62,500
<b>MINNESOTA</b>						
110	Clay	BXR-3FF 49(50)51	1965	1	<i>Glacial lake plain</i> —Along the Buffalo and Red Rivers; wheat farming. (3, p. 154).	Georgetown—1963 7½'—1:24,000

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111	Clearwater	BXS-1AA 8(9,10)11 BXS-2AA 75(76)77	1960	1	<i>Swampland</i> —Some artificial drainage west of Red Lake. (3, p. 153).	Bemidji—1954 1:250,000
112	Cook	CIT-3 56(57)58	1941	all 1	<i>Pre-Cambrian shield</i> —Rock lakes and igneous outcrops.	Grand Portage—1959 7½'—1:24,000
113	Hennepin	WN-2EE 101(102)103 WN-3EE 145(146)147	1964	3	<i>Minneapolis city</i> —Downtown and university of Minnesota.	Minneapolis, St. Paul & vicinity—1952 7½'—1:24,000
114	Martin	BJD-4CC 39(40)41	1962	2	<i>Prairie land</i> —Some land drainage, corn and soybean area. (3, p. 157).	Fairmont—1954 1:250,000
115	Polk	BYE-2V 98(99,100)101	1958	1	<i>Lake Agassiz</i> —Old beach lines of former glacial lake.	Crookston—1953 15'—1:62,500
116	St. Louis	CIR-38 2(3,4,5)6	1940	4	<i>Iron ore mining</i> —Open pit mining. (15, p. 383).	Buhl—1951 7½'—1:24,000
117	St. Louis	CIR-1G 11(12)13	1953	all 1	<i>Industrial complex</i> —U. S. Steel plant.	Duluth W—1954 7½'—1:24,000
118	St. Louis	CIR-1G 54(55,56)57	1953	all 1	<i>Industrial complex</i> —Iron ore docks and grain elevators.	Duluth, Superior & vicinity—1954 7½'—1:24,000
119	Winona	CS-1CC 62(63,64)65	1962	3	<i>Dissected plain</i> —Land use controlled by relief; some loess; livestock farming. (3, p. 156).	Houston—1958 15'—1:62,500
<b>MONTANA</b>						
120	Blaine	MV-5R 210(211)212	1956	8	<i>Irrigation</i> —Canal and ditch irrigation along Milk River. (10, p. 506).	Chinook—1902 7½'—1:24,000
121	Cascade	MX-1T 11(12,13,14)15	1957	3	<i>Strip farming</i> —Wheat farms on both sides of Missouri River and Ryan Dam.	Portage—1949 15'—1:62,500
122	Deerlodge	EHM-2AA 85(86,87,88)89	1960	2	<i>Industrial Complex</i> —Anaconda smelter at Anaconda.	Anaconda—1961 15'—1:62,500
123	Gallatin	NE-4FF 141(142,143)144	1965	4	<i>Missouri River</i> —Headwaters of the Missouri River at Three Forks.	Manhattan—1949 15'—1:62,500 Three Forks—1950 15'—1:62,500
124	Glacier	MS-2T 125(126)127	1958	7	<i>Petroleum operations</i> —Cut Bank oil field.	Cut Bank—1934 30'—1:125,000
125	Glacier	MS-7T 59(60)61	1958	1	<i>East Flattop Mountain</i> —Part of old Rocky Mountains peneplain.	Chief Mountain—1938 30'—1:125,000
126	Glacier	MS-9T 175(176)177	1958	1	<i>Chief Mountain</i> —Rootless mountain result of overthrust fault.	Chief Mountain—1938 30'—1:125,000
127	Glacier	MS-5T 63(64)65	1958	8	<i>Cirques</i> —Alpine glaciation.	Browning—1921 30'—1:125,000
128	Lewis & Clark	AZU-5EE 16(17)18	1964	11	<i>Gold mining</i> —Gold dredging; county hospital.	Helena—1950 15'—1:62,500
129	Lewis & Clark	AZU-2EE 63(64)65	1964	1	<i>Timber operations</i> —Block cutting. (10, p. 313).	Butte—1958 1:250,000
130	Madison	CXK-1EE 82(83)84 136(137)138	1964	7	<i>Ennis Lake</i> —Alluvial fans; braided stream and delta.	Ennis—1949 15'—1:62,500
131	McCone	AZN-6FF 299(300)301	1965	9	<i>Missouri-Yellowstone plain</i> —Dissected floodplain area; dryland wheat farming. (3, p. 176).	Chelsea—1912 15'—1:62,500 Poplar—1910 15'—1:62,500
132	Meagher	DWV-3N 131(132)133	1954	6	<i>Castle Mountains</i> —Old volcanic uplift; flat crest; glaciated. (1, p. 218).	White Sulphur Springs—1958 1:250,000
133	Park	DWW-4FF 57(58)59	1965	9	<i>Yellowstone valley</i> —Devils Slide; Cinnabar Mountain. (4, p. 30).	Miner—1955 15'—1:62,500
134	Valley	NC-16W 68(69,70)71	1959	14	<i>Fort Peck Dam</i> —One of largest earthen dams in world.	Nashua—1914 15'—1:62,500
135	Wheatland	DWY-2CC 201(202,203)204 DWY-4CC 33(34,35)36	1962	3	<i>Dissected dome</i> —Hogback ridges. (4, p. 504).	Roundup—1954 1:250,000
136	Yellowstone	ZW-10T 146(147)148	1957	9	<i>Billings area</i> —Showing cliffs, the Rimrocks.	Billings West—1957 7½'—1:24,000
<b>NEBRASKA</b>						
137	Banner	CAH-5AA 254(255)256	1961	2	<i>High Plains</i> —Wheat farms; strip cropping. (3, p. 168).	Murray Lake—1960 7½'—1:24,000
138	Dawson	BMS-1DD 178(179,180)181	1963	5	<i>Platte River</i> —Braided river; irrigation siphon. (4, p. 214).	Bertrand NW—1962 7½'—1:24,000
139	Douglas	UO-1FF 3(4)5	1965	2	<i>Omaha area</i> —Union stock yards and meat packing plants.	Omaha South—1956 7½'—1:24,000
140	Morrill	CBA-3AA 39(40)41	1960	2	<i>Chimney Rock</i> —Loess dissection along the North Platte River.	Scotts Bluff—1964 1:250,000

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141	Scotts Bluff	CBC-1AA 49(50)51	1960	2	<i>Platte River</i> —Showing bluff of loess.	Lyman—1960 7½'—1:24,000 Morrill—1963 7½'—1:24,000
142	Scotts Bluff	CBC-2AA 65(66)67	1960	2	<i>Goshen Hole lowland</i> —Wide portion of North Platte valley. (2, p. 306).	Morrill—1963 7½'—1:24,000
143	Sheridan	CBD-7N 129(134,131)132	1954	9	<i>Sand Hills</i> —Old vegetated dunes. (3, p. 169).	Lakeside—1950 15'—1:62,500
144	Thayer	BNP-2CC 78(79)80	1962	4	<i>Loess plains</i> —Corn Belt area, poorly dissected plain. (3, p. 167).	Chester—1960 7½'—1:24,000
<b>NEVADA</b>						
145	Churchill	DOP-1EE 38(39,40)41	1964	1	<i>Irrigation</i> —Farmland adjacent to Stillwater Lake.	Carson Lake—1951 15'—1:62,500 Stillwater—1950 15'—1:62,500
146	Churchill	DOP-2EE 133(134,135)136	1964	1	<i>Block faulting</i> —Part of Carson Lake and Bunejug Mountains, old fault block mountains.	Carson Lake—1951 15'—1:62,500
147	Lyon	ENI-3EE 80(81)82	1964	7	<i>Irrigation</i> —Smith valley farmland; Pine Nut Mountains, outliers of the Sierra Nevadas.	Desert Creek Peak—1956 15'—1:62,500 Wellington—1957 15'—1:62,500
148	Pershing	DED-1EE 24(25,26)27	1964	1	<i>Humboldt Sink</i> —Piedmont alluvial fans of the Trinity Mountain range, and West Humboldt Mountain range.	Lovelock—1956 15'—1:62,500 Lovelock—1931 30'—1:125,000 Toulon—1956 15'—1:62,500
<b>NEW MEXICO</b>						
149	Colfax	EAV-9R 55(56,57)58 149(150,151)152	1956	10	<i>Park Plateau</i> —Old sandstone area; Rayado Mesa.	Miami—1956 15'—1:62,500
150	Colfax	EAV-10R 163(164,165)166	1956	1	<i>Hogback ridges</i> —The Wall and the Little Wall dissected by streams at foot of the Sangre de Cristo Mountains.	Ash Mountain—1962 15'—1:62,500
151	Lea	DHO-1CC 125(126)127	1962	5	<i>Petroleum operations</i> —East Lovington oil field; mottled soil pattern of the Llano Estacado; aligned drainage.	Lovington—1962 15'—1:62,500
152	Otero	EKH-1CC 63(64)65	1962	1	<i>Tularosa Basin</i> —Down-faulted block; a bolson area. (1, p. 386).	Tularosa—1948 15'—1:62,500
153	Quay	CII-3W 174(175,176)177	1959	2	<i>Llano Estacado</i> —Outer limits across the Canadian River. (3, p. 214).	Logan—1962 15'—1:62,500
154	Sandoval	DFD-2DD 119(120)121	1963	2	<i>Irrigation</i> —Agriculture along the Rio Grande; Spanish land grants. (3, p. 213).	Alameda—1960 7½'—1:24,000
155	San Juan	EKV-2CC 80(81)82	1962	1	<i>Pueblo ruins</i> —Near Aztec.	Aztec—1959 15'—1:62,500
156	Socorro	DFA-3DD 44(45)46	1963	2	<i>Rio Grande</i> —Braided channel. (14, p. 279).	Loma de Las Camas—1959 7½'—1:24,000 Socorro—1959 7½'—1:24,000
157	Union	EAX-8R 156(157)158	1956	1	<i>Capulin Mountain</i> —Volcanic crater.	Dalhart—1962 1:250,000
158	Union	EAX-2R 30(31,32)33	1956	4	<i>Shield volcano</i> —New lava flow on Park Plateau.	Dalhart—1962 1:250,000
<b>NORTH DAKOTA</b>						
159	Cavalier	DGL-4CC 260(261)262	1962	2	<i>Glacial features</i> —Drift plain and kettle holes. (3, p. 174).	Devil's Lake—1953 1:250,000
160	Golden Valley	CCQ-2FF 133(134)135	1965	3	<i>Sentinel Butte</i> —Near Medora; wheat farmland and longline plowing. (1, p. 67).	Dickinson—1953 1:250,000
161	Grand Forks	ZZ-3CC 195(196,197)198	1962	2	<i>Lake Agassiz</i> —Beach ridges. (3, p. 173).	Inkster SE—1963 7½'—1:24,000
162	Kidder	BAC-1AA 61(62)63	1960	1	<i>Missouri Couteau</i> —Belt of moraines; many kettles. (1, p. 73).	New Rockford—1952 1:250,000
163	McLean	BAQ-1V 193(194,195)196	1958	8	<i>Garrison Dam and Reservoir</i> —Large flood control dam.	Garrison—1920 15'—1:62,500 Stanton—1948 15'—1:62,500
164	McLean	BAQ-7V 26(27)28	1958	2	<i>Great Plains farmland</i> —Large scale mechanized wheat farming.	Blackwater Lake—1956 7½'—1:24,000
165	Slope	AXE-3FF 235(236)237	1965	4	<i>Badland topography</i> —along Little Missouri River. (3, p. 175).	Dickinson—1953 1:250,000
166	Williams	BUL-1V 56(57,58)59	1958	8	<i>Missouri River</i> —Braided stream channel; old meander loop.	Ray—1909 30'—1:125,000

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<b>OKLAHOMA</b>						
167	Atoka	CFM-5CC 74(75,76)77	1963	4	<i>Complex folding</i> —overturned and thrust faulting. (2, p. 283).	Farris—1957 7½'—1:24,000
168	Atoka	CFM-5CC 67(68)69	1963	1	<i>Ouachita Mountains</i> —Folding; forest land with limited farm land. (3, p. 218).	Lane NE—1957 7½'—1:24,000
169	Carter	CFN-3DD 90(91)92	1963	1	<i>Arbuckle Mountains</i> —Deeply weathered old peneplain surface; folding. (2, p. 252).	Springer—1964 7½'—1:24,000
170	Carter	CFN-1DD 12(13)14	1963	2	<i>Petroleum operations</i> —Oil wells and feeder lines.	Addington—1937 30'—1:125,000
171	Comanche	CZO-3BB 94(95)96	1961	2	<i>Wichita Mountains</i> —Elk Mountain; Lincoln Mountain. (2, p. 253).	Quanah Mountain—1956 7½'—1:24,000
172	Pushmataha	KCH-3N 13(14,15)16	1955	2	<i>Ouachitas</i> —Folding and nose of a plunging anticline.	Tuskahoma—1908 30'—1:125,000 Aikchi—1908 30'—1:125,000
<b>OREGON</b>						
173	Curry	EOS-2FF 2(3,4)5	1965	4	<i>Cape Sebastian</i> —Sandy beach and headland. (14, p. 364).	Gold Beach—1954 15'—1:62,500
174	Curry	EOS-2FF 118(119,120)121	1965	2	<i>Cape Blanco</i> —Wave cut terraces. (1, p. 463).	Cape Blanco—1954 15'—1:62,500
175	Curry	EOS-3FF 6(7)8	1965	4	<i>Crook Point</i> —Coastal sand dunes.	Gold Beach—1954 15'—1:62,500
176	Curry	EOS-1FF 135(136)137	1965	5	<i>Timber operations</i> —Cascade Mountains forestry.	Mount Emily—1954 15'—1:62,500
177	Harney	EFL-6V 77(78,79)80	1958	12	<i>Squaw Butte</i> —Interior drainage. (1, p. 273).	Squaw Butte Ranch—1936 7½'—1:24,000
178	Klamath	CNO-2AA 149(150,151, 152)153	1960	7	<i>Faulting</i> —Portion of fault scarp and graben. (13, p. 483).	Modoc Point—1957 15'—1:62,500
179	Klamath	CNO-2AA 163(164)165	1960	6	<i>Timber operations</i> —Klamath Falls pulp and paper mills.	Klamath Falls—1957 15'—1:62,500
180	Lake	CHZ-49K 111(112)113	1954	20	<i>Scarp face</i> —Northeast shore of Lake Albert. (4, p. 566).	Crescent—1962 1:250,000
181	Linn	DFM-2DD 253(254)255	1963	2	<i>Willamette Valley</i> —Irrigated speciality crops. (3, p. 200).	Lebanon—1957 15'—1:62,500
182	Sherman	AAE-1FF 69(70)71	1965	1	<i>Columbia River</i> —John Day power development project near Biggs.	Wasco—1957 15'—1:62,500
<b>SOUTH DAKOTA</b>						
183	Butte	BNU-2BB 100(101,102)103	1961	9	<i>Red Valley</i> —Belle Fourche River.	Belle Fourche—1954 7½'—1:24,000 Fruitdale—1954 7½'—1:24,000
184	Custer	BNW-6CC 95(96)97	1962	1	<i>Black Hills</i> —Signal Mountain. (1, p. 80).	Signal Hill—1955 7½'—1:24,000
185	Lawrence	BOE-1BB 113(114)115	1961	2	<i>Homestake gold mine</i> —Near Lead. (6, p. 290).	Lead—1961 7½'—1:24,000
186	Marshall	CBU-4FF 88(89,90)91	1965	4	<i>Morainal area</i> —Reduced cropland area; rough knob and kettle topography. (3, p. 172).	Milbank—1953 1:250,000
187	Meade	BOG-3CC 153(154)155	1962	10	<i>Great plains</i> —Alkali River confluence; Belle Fourche River. (3, p. 171).	Hereford SE—1953 7½'—1:24,000 Hereford SW—1953 7½'—1:24,000
188	Pennington	BOI-5CC 209(210)211	1962	2	<i>Harney Peak</i> —Old weathered granitic peak. (1, p. 81).	Custer—1956 15'—1:62,500 Mount Rushmore—1954 15'—1:62,500
189	Pennington	BOI-5CC 204(205)206	1962	2	<i>Mount Rushmore</i> —Historical monument carved in sedimentary rocks.	Mount Rushmore—1954 15'—1:62,500
190	Pennington	BOI-6CC 18(19,20)21	1962	7	<i>Badlands</i> —Badlands National Monument. (14, p. 336).	Quinn Table SW—1960 7½'—1:24,000 Scenic—1954 7½'—1:24,000
<b>TEXAS</b>						
191	Brazoria	BQR-5T 83(84)85	1958	4	<i>Rice acreage</i> —Ditch irrigation (3, p. 231).	Angleton—1943 7½'—1:24,000 Rosharon—1943 7½'—1:24,000
192	Dallas	DJU-4EE 86(87)88	1964	3	<i>White Rock escarpment</i> —Differential erosion of tilted sedimentary rocks. (14, p. 275).	Duncanville—1959 7½'—1:24,000
193	Dallas	DJU-4EE 93(94,95)96	1964	2	<i>Gravel strip mining</i> —Trinity River Basin gravel beds.	Irving—1959 7½'—1:24,000

No.	County	County Symbol, Roll, Exposures	Photo Date	Index Sheet No.	Description of Features	U.S.G.S. Quadrangle Map Coverage
194	Galveston	DQO-15T 11(12)13	1958	2	<i>Petroleum operations</i> —Oil refinery in Texas City.	Texas City—1954 7½'—1:24,000 Virginia Point—1954 7½'—1:24,000
195	Galveston	DQO-13T 3(4)5	1958	2	<i>Galveston city</i> —On offshore bar.	Galveston—1954 7½'—1:24,000
196	Garza	CVC-1DD 91(92)93	1962	2	<i>Caprock escarpment</i> —Accumulation of caliche material. (2, p. 301).	Lubbock—1954 1:250,000
197	Gregg	CFW-2DD 124(125)126	1963	2	<i>Petroleum operations</i> —Oil field near Kilgore. (8, p. 182).	Kilgore—1936 15'—1:62,500
198	Hale	CRS-2EE 228(229)230	1963	3	<i>High Plains</i> —Depressions partially filled with water as a result of deflation or subsidence. (2, p. 305).	Abernathy—1957 15'—1:62,500
199	Harris	BQY-5FF 35(36)37	1964	8	<i>Petroleum operations</i> —Oil refinery west of Baytown; Houston ship canal. (9, p. 207).	Highlands—1953 7½'—1:24,000 La Porte—1955 7½'—1:24,000 Morgan Point—1956 7½'—1:24,000
200	Harris	BQY-4FF 35(36,37)38	1964	7	<i>Port of Houston</i> —Ship canal; steel plant. (5, p. 241).	Jacinto City—1955 7½'—1:24,000 Pasadena—1955 7½'—1:24,000
201	Harris	BQY-3FF 221(222)223	1964	7	<i>Houston ship canal</i> —Turning basin and wharves.	Park Place—1955 7½'—1:24,000 Settegast—1955 7½'—1:24,000
202	Hidalgo	CGM-7AA 65(66,67)68	1962	6	<i>Rio Grande</i> —Oxbow lakes and meanders. (15, p. 166).	Progreso—1956 7½'—1:24,000
203	Kenedy	DCL-7C 117(118,119)120	1943	3	<i>Yarborough Pass</i> —Tidal inlet through the Laguna Madre; portion of the Intra-coastal Waterway.	Yarborough Pass—1952 7½'—1:24,000
204	Kenedy	DCL-2BB 191(192)193	1961	2	<i>Sand areas</i> —Dunes adjacent to Baffin Bay. (3, p. 229).	Sarita 4 NE—1951 7½'—1:24,000
205	Lamb	CVE-1DD 265(266)267	1962	4	<i>Llano Estacado</i> —Sinkholes; wheat farms.	Anton—1957 15'—1:62,500
206	Montgomery	AWU-9W 156(157)158	1958	5	<i>Petroleum operations</i> —Oil area within pine flats of southern pine forest of inner Gulf Coast.	Conroe—1958 7½'—1:24,000
207	Palo Pinto	BRF-2W 6(7)8	1959	2	<i>Palo Pinto area</i> —Steep sided mesas. (1, p. 59).	Palo Pinto—1958 15'—1:62,500
208	Real	EOG-2FF 205(206)207	1965	3	<i>Edwards Plateau</i> —Dissected upland surface. (2, p. 64).	York Hollow—1933 15'—1:62,500
209	Smith	CKN-1P 186(187)188	1958	1	<i>Forest belt</i> —Reversion of cropland to forest due to soil quality. (3, p. 233).	Winona—1943 15'—1:62,500
210	Uvalde	DAI-6W 206(207)208	1959	1	<i>Balcones Escarpment</i> —Fault scarp separating the Edwards Plateau and Gulf Coastal Plain.	Tarpley—1933 15'—1:62,500 Utopia—1933 15'—1:62,500
<b>UTAH</b>						
211	Box Elder	AAH-6W 34(35,36)37	1959	13	<i>Lake Bonneville</i> —Shorelines and Point Lookout Mountains.	Tremonton—1961 7½'—1:24,000
212	Cache	AAL-2W 117(118)119	1959	3	<i>Irrigation</i> —Irrigation works used by Mormons on Blacksmith fork near Hyrum. (10, p. 503).	Logan, Utah-Idaho—1939 30'—1:125,000 Logan—1961 7½'—1:24,000
213	Cache	AAI-2W 167(168)169	1959	3	<i>Wasatch Range</i> —Fault scarp front. (4, p. 187).	Logan—1961 7½'—1:24,000
214	Carbon	DRV-4BB 10(11,12)13	1962	2	<i>Book Cliffs</i> —South-facing escarpment of Eocene rocks. (1, p. 305).	Wellington—1914 15'—1:62,500
215	Garfield	DIC-8AA 13(14)15	1960	1	<i>Entrenched meanders</i> —Escalante natural bridge.	Calf Creek—1964 7½'—1:24,000
216	Kane	DSA-6AA 28(29,30)31	1960	5	<i>White Cliffs</i> —Spring Point and Timber Mountain.	Johnson, Utah-Ariz.—1954 15'—1:62,500
217	Kane	DSA-6AA 172(173)174	1960	1	<i>Bryce Canyon</i> —Pink Cliffs; natural bridge. (1, p. 298).	Bryce Canyon—1932 1:31,680
218	Kane	DSA-6AA 36(37,38)39	1960	5	<i>Vermillion Cliffs</i> —Hells Bellows and Crescent Butte. (1, p. 302).	Johnson, Utah-Ariz.—1954 15'—1:62,500
219	Salt Lake	AAL-28K 161(162,163)164 AAL-30K 130(131)132	1953	2	<i>Copper Mining</i> —Bingham pit. (11, p. 215).	Bingham Canyon—1952 7½'—1952
220	Salt Lake	AAL-12V 49(50,51,52)53	1958	1	<i>Petroleum operations</i> —Oil refinery; railroad yards; sand and gravel works.	Salt Lake City N—1963 7½'—1:24,000
221	Salt Lake	AAL-1W 11(12,13)14	1959	1	<i>Copper Mining</i> —Magna smelter and tailings pond.	Magna—1952 7½'—1:24,000



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222	Salt Lake	AAL-1W 9(10)11	1959	1	<i>Salt mining</i> —Saltair salt plant.	Saltair—1951 7½'—1:24,000
223	Salt Lake	AAL-30K 17(18)19	1953	1	<i>Copper mining</i> —Refinery and smelter.	Garfield—1952 7½'—1:24,000
224	Salt Lake	AAL-12V 7(8,9)10	1958	5	<i>Lake Bonneville</i> —Strand lines of old glacial lake.	Draper—1963 7½'—1:24,000 Lehi—1951 7½'—1:24,000
225	Salt Lake	AAL-2B 94(95)96	1946	1	<i>Salt Flats</i> —Portion of Great Salt Lake.	Antelope Island S—1952 7½'—1:24,000
226	San Juan	DIG-9P 172(173)174	1955	5	<i>Abajo Mountains</i> —Laccolith mountains; Abajo Peak. (14, p. 331).	Monticello—1957 15'—1:62,500
227	San Juan	DIG-11F 31(32,33)34 40(41,42)43	1950	1	<i>Entrenched meanders</i> —Hatch Wash tributary to Colorado River.	Hatch Point—1954 15'—1:62,500
228	Utah	CVX-2FF 124(125,126)127	1965	1	<i>Provo steel mills</i> —Geneva Steel plant.	Orem—1948 7½'—1:24,000
<b>WASHINGTON</b>						
229	Clallam	DYE-1DD 78(79)80	1963	2	<i>Timber operations</i> —Sawmill at Port Angeles; sand spit.	Port Angeles—1961 15'—1:62,500
230	Douglas	AAQ-6FF 48(49)50	1965	11	<i>Palisades</i> —Columnar basalt. (13, p. 360).	Malaga—1912 15'—1:62,500
231	Douglas	AAQ-2FF 247(248,249)250	1965	8	<i>The Grand Coulee</i> —Lenore Lake. (1, p. 227).	Ephrata—1956 15'—1:62,500
232	Douglas	AAQ-3FF 246(247,248)249	1965	5	<i>Terminal moraine</i> —Frontal moraine of alpine glaciation. (2, p. 448).	Ritzville—1953 1:250,000
233	Douglas	AAQ-1FF 13(14,15)16 22(23)24	1965	7	<i>Grand Coulee Dam</i> —On the Columbia River; old channel called Grand Coulee.	Grand Coulee Dam—1948 15'—1:62,500
234	Grant	AAR-3BB 177(178,179)180	1961	8	<i>Dunal area</i> —Sand dunes northwest side of Moses Lake.	Mae—1956 7½'—1:24,000 Moses Lake S—1956 7½'—1:24,000
235	Grant	AAR-4BB 46(47,48)49	1961	4	<i>Coulees</i> —Wheat farmland. (1, p. 258).	Ritzville—1953 1:250,000
236	Kittitas	FZ-9CC 163(164,165)166 204(205,206)207	1964	2	<i>Alpine glaciation</i> —Cirques, aretes and pater noster lakes.	Skykonish—1902 30'—1:125,000
237	Kittitas	FZ-8CC 96(97,98)99	1964	3	<i>Timber operations</i> —Block cutting in the Cascades.	Lester—1962 15'—1:62,500 Snoqualmie Pass—1961 15'—1:62,500
238	Pierce	DZR-2P 175(176,177)178	1955	5	<i>Ohop River valley</i> —Part of old glacial valley, now with misfit stream, Ohop creek.	Ohop Valley—1944 15'—1:62,500
239	Spokane	AAN-18T 34(35)36	1957	5	<i>Aluminum Industry</i> —Reduction plant at Mead.	Deer Park—1949 15'—1:62,500
240	Whitman	CCL-9T 50(51)52	1957	6	<i>Steptoe Butte</i> —Quartzite mountain.	Steptoe—1964 7½'—1:24,000
241	Whitman	CCI-6T 111(112,113)114	1957	9	Palouse area—Wheat farms of rolling loess material.	Hay—1952 15'—1:62,500
242	Yakima	NL-17R 78(79)80	1959	7	<i>Fruit farms</i> —Along Yakima River. (1, p. 267).	Harrah—1958 7½'—1:24,000 Wapoto—1958 7½'—1:24,000
<b>WYOMING</b>						
243	Campbell	DKA-10V 41(42)43	1958	1	<i>Pumpkin Buttes</i> —North and Middle Buttes.	Rollingpin Ranch—1953 7½'—1:24,000 South Butte—1953 7½'—1:24,000
244	Crook	BBU-5V 128(129)130	1958	5	<i>Devils tower</i> —Old volcanic plug with columnar structure.	Devils Tower National Monument—1949 1:4,800
245	Hot Springs	CWH-2N 32(33,34)35	1954	7	<i>Bighorn Basin</i> —Showing ridges west of Thermopolis. (3, p. 179).	Thermopolis—1955 1:250,000
246	Hot Springs	CWH-1N 111(112,113)114	1954	7	<i>Bighorn Basin</i> —Showing ridges west of Thermopolis.	Blue Mesa—1916 15'—1:62,500
247	Laramie	BBT-4R 81(82)83	1956	5	<i>The Gangplank</i> —Connection between erosional topography of the Rockies and depositional topography of the Great Plains.	Cheyenne—1962 1:250,000
248	Natrona	DXP-2AA 102(103,104)105	1960	4	<i>Platte River</i> —Gap through Oil Mountain anticline. (2, p. 360).	Bessemer Mountain—1951 7½'—1:24,000
249	Park	BBM-4BB 23(24)25	1961	5	<i>Shoshone River</i> —Terraces; oil refinery. (13, p. 360).	Cody—1949 15'—1:62,500

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250	Park	BBM-4BB 54(55,56)57	1961	4	<i>North Fork Shoshone River</i> —Canyon through mountain area; Buffalo Bill Reservoir.	Cody—1949 15'—1:62,500 Wapiti—1957 15'—1:62,500
251	Park	BBM-3BB 165(166,167)168	1961	5	<i>Bighorn Basin</i> —Around Shoshone River. (1, p. 166).	Cody—1949 15'—1:62,500
252	Park	BBM-2BB 65(66)67	1961	5	<i>Hearl Mountain</i> —Northwest of Cody. (2, p. 376).	Cody—1949 15'—1:62,500
253	Sheridan	BBP-5V 211(212,213)214	1958	1	<i>Sheep Mountain</i> —Elongated dome. (12, p. 587).	Boyd Ridge—1960 7½'—1:24,000 Mexican Hill—1960 7½'—1:24,000
254	Uinta	CVT-1AA 64(65)66 CVT-2AA 52(53)54	1960	3	<i>Bear River divide</i> —Showing natural pass through it. (3, p. 181).	Ogden—1954 1:250,000



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