RHO-BWI-ST-4

1

0007781
5 of 11

Geologic Studies of the
COLUMBIA PLATEAU
A Status Report

PLATES II-21 THROUGH II-30 PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

SPOKANE

PHOTOLINEAMENTS

SUPPLEMENTAL NOTATION:
FS - Fluvial striations
GP - Gravel pit
C - Lava cone
LS - Landslide
MR - Mega ripple
FZ - Fracture zone
GT - Glacial terminus

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

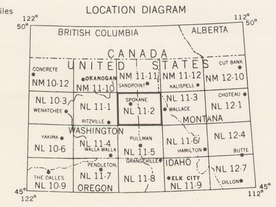
NUMBER CODE	DESCRIPTION OF LINEAMENT
/	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM



PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

RHO-BWI-ST-4
PLATE II-21

September 1979

● INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1965

WESTERN UNITED STATES 1:250,000

PHOTOLINEAMENTS

SANDPOINT

SUPPLEMENTAL NOTATION:
G - Glacial grooves
LS - Landslide
MR - Mega ripples
Q - Quarry

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data from Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
0	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Segment or Alignment
4	Linear Topographic Features or Alignments of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles

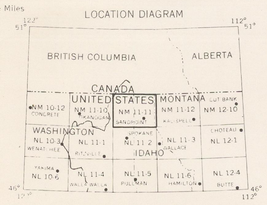
5 0 5 10 15 20 25 30 Kilometers

5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM



RHO-BWI-ST-4
PLATE II-22

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

September 1979

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1966

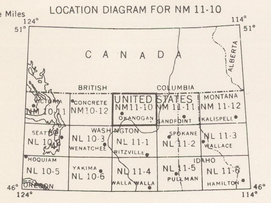
SUPPLEMENTAL NOTATION:
G - Glacial grooves
GP - Gravel pit
Q - Quarry
LS - Landslide

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NM 11-10



PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
E	Known Fault
F	Data from Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
0	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

October 1979

RHO-BWI-ST-4
PLATE II-23

● INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1964

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1966

SUPPLEMENTAL NOTATION:
- C - Ring structures
- E - Esker
- FL - Flood erosion
- G - Glacial grooves
- GM - Glacial moraine
- Q - Quarry
- W - Wind effects (includes dunes)

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
ø	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

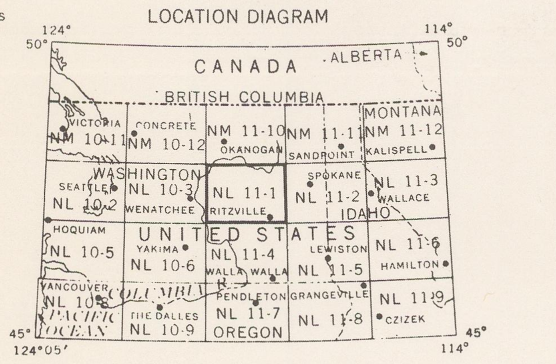
5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM



RHO-BWI-ST-4
PLATE II-24

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. A. STEPHAN

PACIFIC NORTHWEST LABORATORY

June 1979

WESTERN UNITED STATES 1:250,000
PHOTOLINEAMENTS

WENATCHEE

NL 10-3

SUPPLEMENTAL NOTATION:
- D - Dikes
- LS - Landslide
- RG - Rock glacier
- SM - Strip mine
- Q - Quarry

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
∅	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

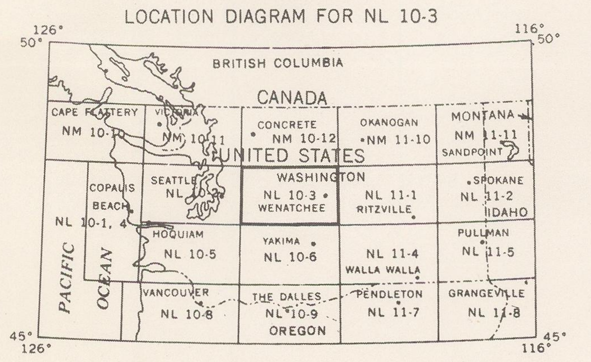
TRANSVERSE MERCATOR PROJECTION

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

LOCATION DIAGRAM FOR NL 10-3

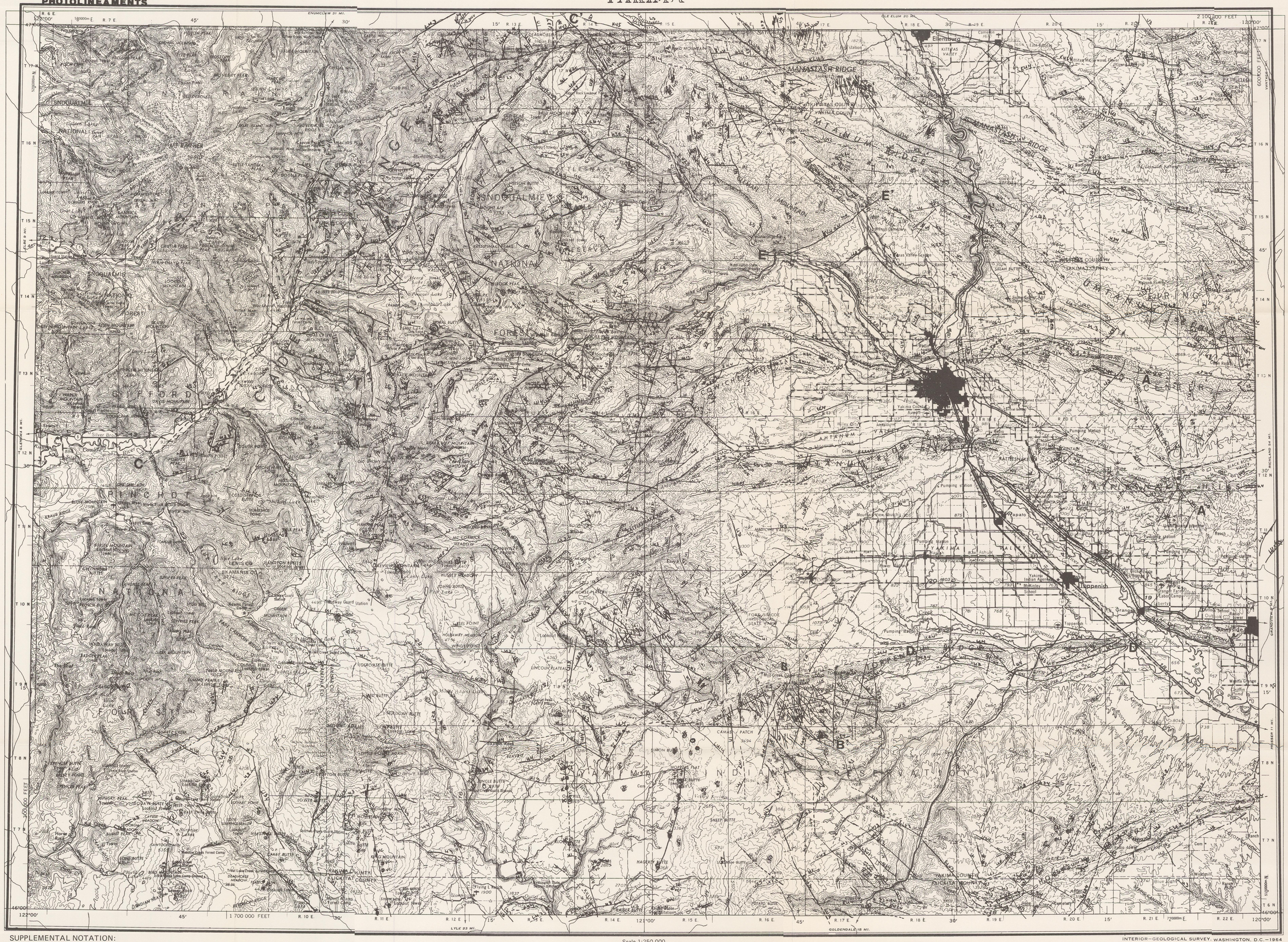


INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1964

RHO-BWI-ST-4
PLATE II-25

August 1979

PHOTOLINEAMENTS



SUPPLEMENTAL NOTATION:
LS - Landslide
M - Mud slide
Q - Quarry
VC - Volcanic cone

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

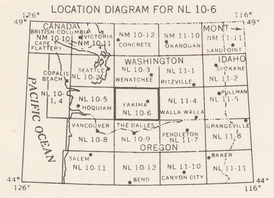
NUMBER CODE	DESCRIPTION OF LINEAMENT
0	Cultural Feature Recognized Textural Without Assigned Tectonic Significance Lighting Artifact Random Alignment of Features
1	Linear Textural Trend Pattern of Unconformity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NL 10-6



INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1964

RHO-BWI-ST-4
PLATE II-26

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

December 1979

WESTERN UNITED STATES 1:250,000

PHOTOLINEAMENTS

WALLA WALLA

NL 11-4

SUPPLEMENTAL NOTATION:
LS - Landslide

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1964

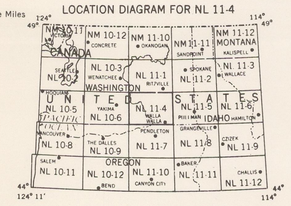
Scale 1:250,000

20 Statute Miles
30 Kilometers
15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NL 11-4



PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	TYPE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
0	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J G. STEPHAN

PACIFIC NORTHWEST LABORATORY

March 1979

RHO-BWI-ST-4

PLATE II-27

SUPPLEMENTAL NOTATION:
LS - Landslide
W - Wind erosion

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographic Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
0	Cultural Feature
	Erosional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Topographic Saddle or Gap Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NL 11-7

SEATTLE NL 10-2	WENATCHEE NL 10-5	SPOKANE NL 11-1	NL 11-2	MONT WALLACE NL 11-3
MOSQUIAH	WASHINGTON	WEIPPE	
PACIFIC OCEAN NL 10-5	YAKIMA NL 10-6	NL 11-4	NL 11-5 WALLMAN	NL 11-6 HAMILTON
		WALLA WALLA		
VANCOUVER NL 10-8	THE DALLES NL 10-9	PENDLETON NL 11-7	NL 11-8	GRANGEVILLE ELK CITY NL 11-9
SALEM NL 10-11	NL 10-12 BEND	OREGON CANYON CITY NL 11-10	BAKER NL 11-11	IDAHO CHALLIS NL 11-12
NK 10-2 ROSEBURG	NK 10-3 CRESCENT	NK 11-1 BURNS	NK 11-2 BOISE	HAILEY NK 11-3

124° 48° 114° 48° 124° 43° 114° 43°

RHO-BWI-ST-4
PLATE II-28

June 1979

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

● INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1964

PHOTOLINEAMENTS

SUPPLEMENTAL NOTATION:
LS - Landslide
VC - Volcanic cone

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NASA (National Aeronautic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs (Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

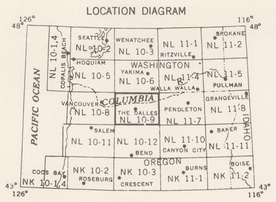
NUMBER CODE	DESCRIPTION OF LINEAMENT
/	Cultural Feature
	Positional Tolerance Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Gullying or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM



PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C.S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

● INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1965

RHO-BWI-ST-4

PLATE II-29

June 1979

PULLMAN

MR 8608 INTERIOR—GEOLOGICAL SURVEY WASHINGTON, D.C.—1963

SUPPLEMENTAL NOTATION:
LS - Landslide
VC - Volcanic cone
GP - Gravel pit

PHOTOLINEAMENT CLASSIFICATION SYSTEM

LETTER CODE	IMAGE OR DATA TYPE
N	NOAA (National Oceanic and Atmospheric Administration)
L	Landsat
U	U-2
S	Skylab
R	SLAR (Side-Looking Airborne Radar)
A	Aerial Photographs Other Than U-2
M	Magnetic Anomaly or Lineament
K	Known Fault
F	Data From Current Field Work

NUMBER CODE	DESCRIPTION OF LINEAMENT
//	Cultural Feature
	Functional Feature Without Apparent Tectonic Significance
	Lighting Artifact
	Random Alignment of Features
1	Linear Color or Tonal Pattern or Discontinuity
2	Linear Textural Discontinuity
3	Straight Stream or River Section or Alignment
4	Linear Topographic Features or Alignment of Topographic Features
5	Stratigraphic Discontinuity
6	Linear Pattern of Volcanic Features
7	Probable Joint

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NL 11-5

NM 10-12 CONCRETE	NM 11-10 OKANOGAN	NM 11-11 SANDPOINT	NM 11-12 KALISPELL · CUT BANK
NL 10-3 WENATCHEE · WESTVILLE	NL 11-1	NL 11-2 SPOKANE	NL 11-3 WALLACE · CHOTEAU
NL 10-6 LEAVENWORTH	NL 11-4 WALLA WALLA	NL 11-5 PULLMAN	NL 11-6 HAMILTON · BUTTE
NL 10-9 THE DALLES	NL 11-7 PENDLETON	NL 11-8 GRANGEVILLE	NL 11-9 ELK CITY · LEWISTON
NL 10-12 BEND	OREGON NL 11-10 CANYON CITY	NL 11-11 BAKER	IDAHO NL 11-12 CHALLIS · TWIN FALLS

122° 49° 112° 44° 122° 44° 112°

RHO-BWI-ST-4
PLATE II-30

PHOTOLINEAMENT MAP OF THE COLUMBIA PLATEAU IN EASTERN WASHINGTON

BY G. A. SANDNESS, C. S. KIMBALL, J. W. LINDBERG, B. L. SCOTT, AND J. G. STEPHAN

PACIFIC NORTHWEST LABORATORY

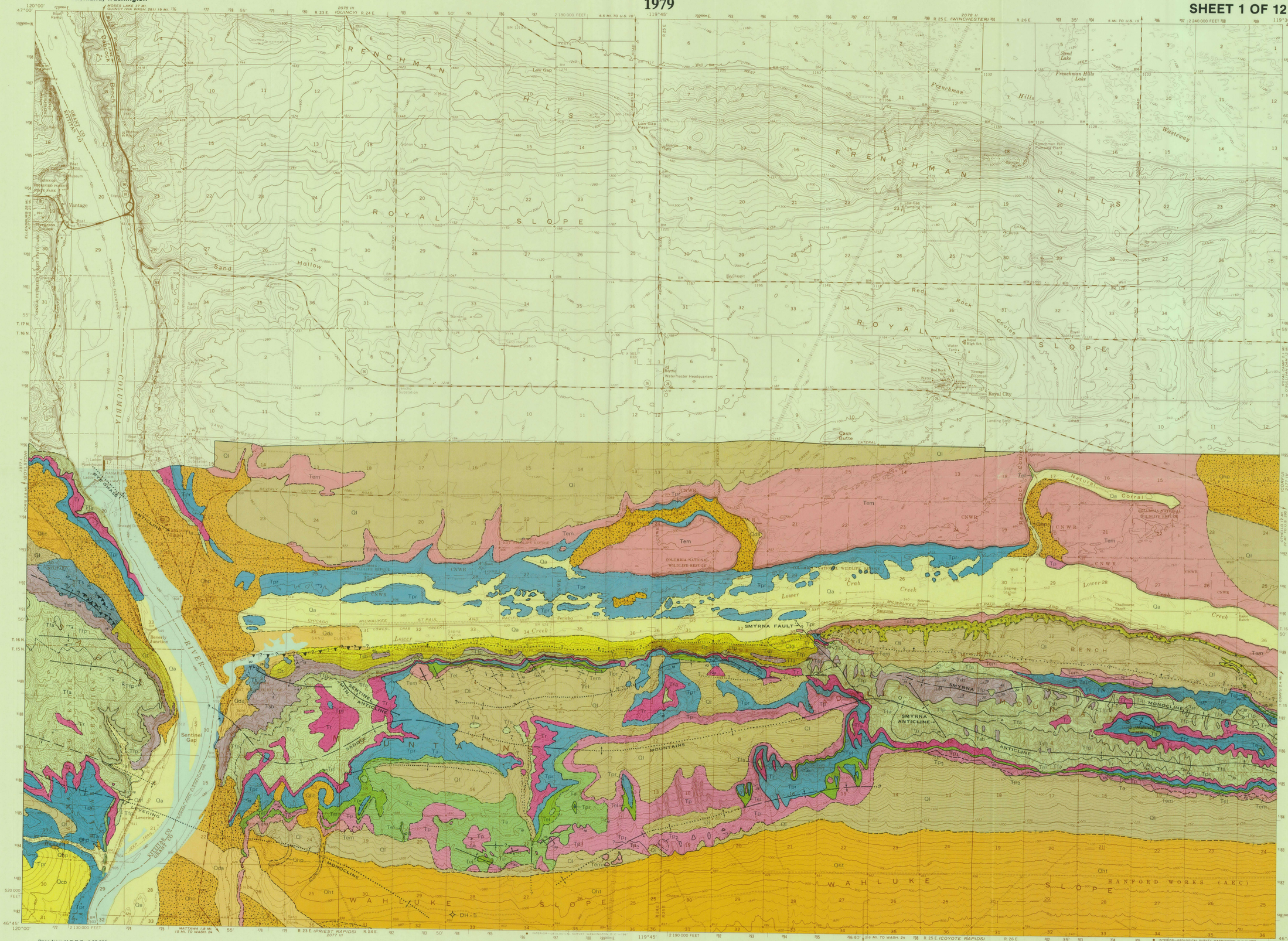
July 1979

Rockwell International

Rockwell Hanford Operations
Energy Systems Group
Richland, Washington

COMPILATION GEOLOGIC MAP OF THE PASCO BASIN, SOUTH CENTRAL WASHINGTON 1979

RHO-BWI-ST-4
SHEET 1 OF 12



Base from U.S.G.S., 1:62,500
Beverly and Smyrna Quadrangles

SCALE 1:62500

CONTOUR INTERVAL 20 AND 40 FEET
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1965 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET